Anticipatory Processes in Language Comprehension:
The English Existential as an indicator of Newness

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Information packaging, i.e., how information is organized in the discourse is a phenomena affected by information status. For example, it has been shown that there is a strong tendency amongst many languages to place old information before new information in a sentence (see Arnold et al. 2013 for a review). In English, this ‘information shuffling’ can be achieved through the use of non-canonical syntax, such as passives and inversions. Indeed, there are so many different constructions in English that favor the placement of old information in sentence-initial position that this propensity has been called a “syntactic conspiracy” (Prince, 1981). In the current study, our focus is on English Existentials (e.g., There’s a cat in the hat). In this noncanonical construction, the post-verbal NP following “There + be” (e.g. ‘a cat’) introduces information that the speaker believes to be new to the hearer (Prince, 1992). Previous studies have shown that, under particular circumstances, hearers can anticipate information yet to be mentioned by the speaker (see Kamide 2008 for a review). In fact, research has shown that listeners are sensitive to discourse constraints involving information status and are able to quickly utilize this type of information during real-time sentence processing (Kaiser & Trueswell 2004 in Finnish). Thus, we asked: are hearers able to anticipate that new information will be mentioned as soon as they encounter an existential, even before they have heard the noun phrase?

We designed a visual-world eye-tracking study to test this hypothesis. The experiment investigated whether hearers engaged in anticipatory looking behavior towards the new entity depicted on the screen after the onset of “There was…”, but before they had enough auditory information to process the following noun phrase. Thirty-three monolingual English speakers participated for course credit. During critical trials, participants looked at images depicting three characters (e.g., a doctor, a patient and a nurse) while they heard sentences like like ex.(1,2):

(1) A nurse was discussing new procedures with the doctor. There was a sad patient with a broken leg in the reception area, waiting for her turn. [target]

(2) A nurse was discussing new procedures with the doctor. That day a sad patient with a broken leg was in the reception area, waiting for her turn. [control]

On targets, the first sentence introduced two out of the three pictured characters (e.g., nurse and doctor). This was followed by a second sentence, which was an Existential (ex.1) or a control sentence initiated by a temporal expression (ex.2). The experiment also included fillers, which involved images with differing numbers of characters, and not all of them were mentioned in the auditory stimuli.
We predicted that, if listeners were sensitive to the discourse properties of the Existential construction, they would shift their gazes towards the unmentioned entity (e.g., the patient) even before hearing the onset of the noun phrase ‘a sad patient.’ Since the sentence-initial temporal expressions impose no constraints regarding the information status of following information, in the control condition no such anticipatory looks are expected. We analyzed the proportion of looks to the unmentioned entity during a 400 milliseconds time window that begins at the onset of the existential (“There was...”). Crucially, this window ends before the onset of the succeeding NP. Our data shows that during this time, participants are significantly more likely to look at the unmentioned character in the Existential than the Control condition (p<0.05). Hence, even before they have enough access to enough phonological information to process the ensuing noun phrase, participants were able to anticipate that the upcoming noun will refer to a previously unmentioned entity. As a whole, our findings indicate that listeners do generate predictions regarding the newness of upcoming linguistic input as soon as they encounter the Existential construction, and can quickly use this information during online language processing to guide their expectations about which entity will be mentioned next. This points to a rapid integration of syntactic and discourse/pragmatic information.

References


