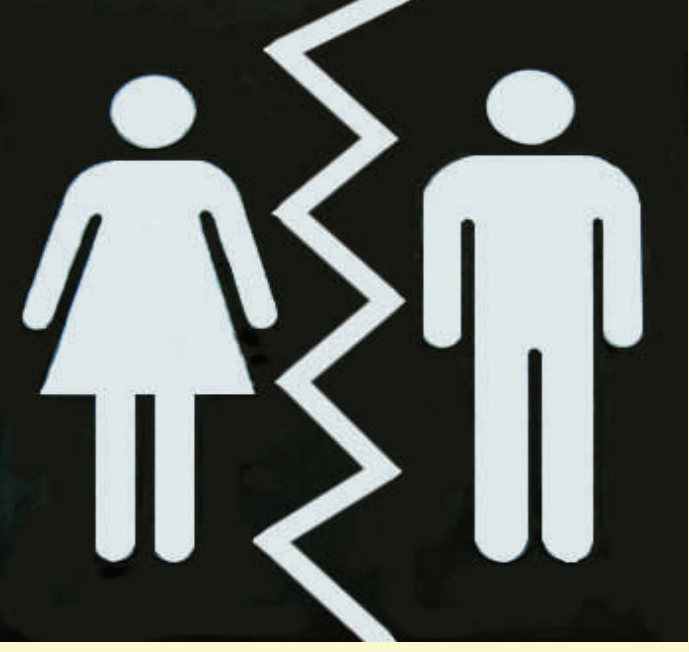# UROS PROJECT
Impact of Stereotypical Gender Information on Written Language

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Introduction:

In other languages gender associations are generally disambiguated and easily recognized by changes in the text (i.e. morphological/phonological identifiers). So in brief, changes within the sentence structure that identify whether the agent/person in the text is of a particular gender. In Spanish, for example, a preceding 'la' refers to the referent as female. English, however, has no regular morphological markings for gender (Carreiras et al, 1996) and because of this; English speakers presumably, must have some sort of compensatory process, or at the very least must infer information more regularly. For example, in words such as 'man' gender is part of the lexical entry whereas words like 'doctor' or 'nurse' are assumed to be neutral by definition, are stereotypically biased by world knowledge towards either male or female. For example, in words such as 'man' gender is part of the lexical entry whereas words like 'doctor' or 'nurse' are assumed to be carried out by both genders and therefore neutral, are stereotypically biased by world knowledge towards either male or female. People not only have real world knowledge about roles and the type of people that encompass these roles but also have specific knowledge about the common types of events or 'stories' that occur day to day (McRae and Matsuki, 2009., Metusalem et al, 2010., Matsuki et al, 2011). This idea was explored further by Altmann and Kamide (1999) in auditory sentence comprehension, using the visual-world paradigm. In this study participants heard sentences such as "the boy will eat the cake" while looking at a set of images, which included a boy, a cake, a car, a train and a ball. When eye movements were analyzed later, at the emergence of the verb 'eat' participants gaze fixated on the only edible item, in this case the cake, within the visual display. This suggests that inherent features of the word eat are instantly formulated to understand the text. When the verb 'eat' was substituted for the verb 'move' the presence of multiple movable objects created a different result. The fixation of gaze was spread across the objects because of the multiple movable objects in the visual field.
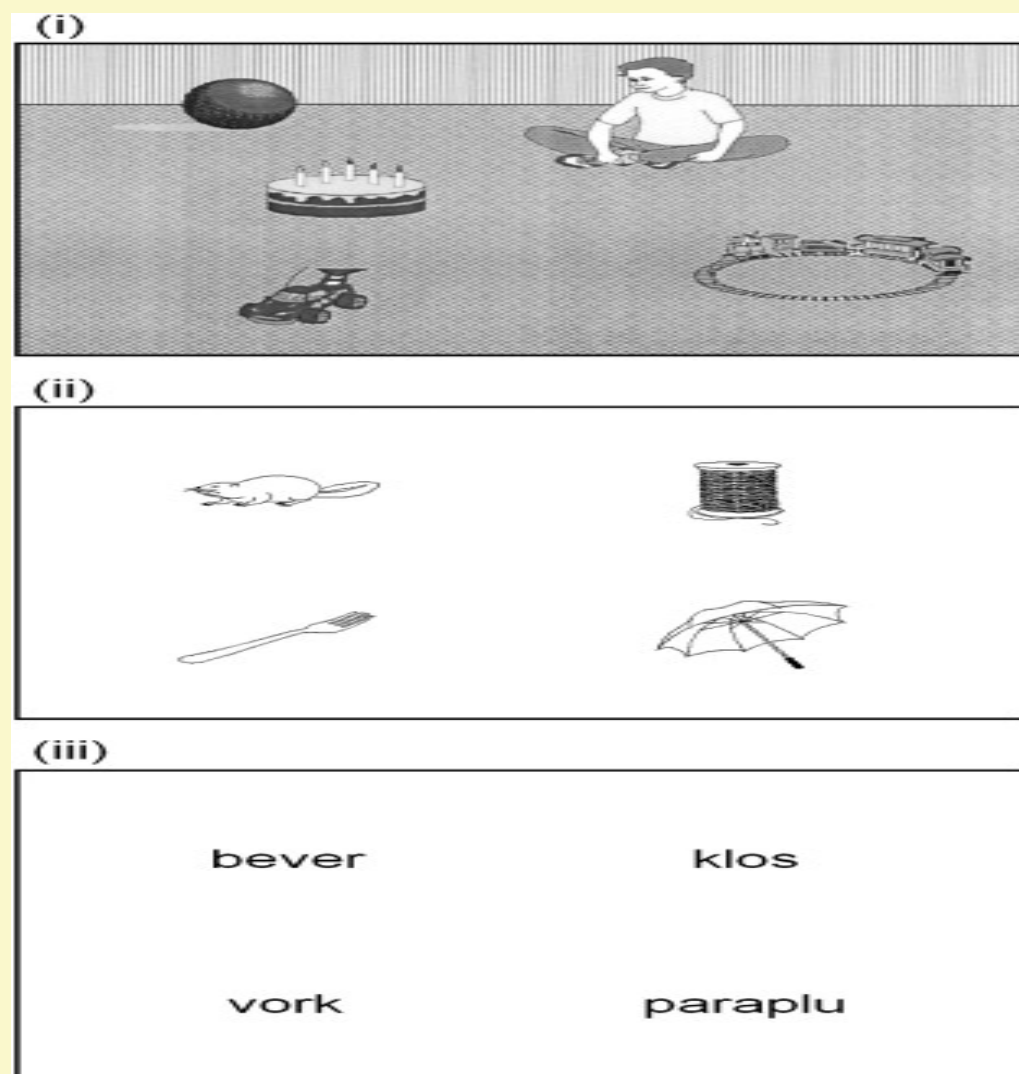
Such results show thematic or event, based knowledge is activated by the verb and the reader immediately hones in on the features that are relevant to the text to make on-line language comprehension easier (McRae et al, 2005., Metusalem et al, 2010). This study was particularly interested in the allocation of an 'agent', and what features the verb identifies that 'agent' to have – specifically whether gender allocations are of particular importance. If this feature is dominant in the structure of the verbs, we would expect to observe a tendency for participants to use either male of female agents, where appropriate. Specifically when participants are asked to produce written language after being exposed to a specific event.

Process:

Prior to UROS start date:

A total of 200 Verbs were generated through the use of the A machine usable dictionary The MRC psycholinguistic dictionary, which holds not on words but associated psychological and additional data of those words. Record was kept of certain parameters for later counterbalancing and differing points in terms of analysis. These came in the form of Thorndike and Lorge's written frequency (Thorndike and Lorge, 1944); Brown verbal frequency (Brown, 1984). These 200 Verbs were then given (after randomization) to a group of 30 Undergraduate students from the University of Lincoln (Age: 19 S.D: 1.22 14 - Male 16 - Female) and asked to rate on a 'Likert type scale of 1 to 10' on who they thought more likely to carry out each action, a male (1) or a Female (10) or anything in between (5) being neutral. A context for which the verb was to be taken in was next to the verb in question to remove any ambiguity, and it will therefore be required to use the verb in said context in future comprehension tasks. These ratings were then collated into means to have useable data in the form of stereotypes.


UROS Project:

During the UROS project itself the most extreme of these verbs were selected (Ratings, 1/2/3 together with ratings 8/9/10) to make a short list of 60 total verbs (20 male, 20 female and 20 neutral (ratings close to 5) verbs). These were tested to ensure that they were equally as extreme in their ratings. Once the verbs were selected they were constructed into the beginning part of a partial sentence (e.g. While 'verbing' the 'direct object'...). This list was then distributed to participants mostly by email and were required to complete the sentences present (See Appendix II for example of Instructions presented on the email). Participants were recruited primarily from the University of Lincoln and consisted of a total of 36 (male: female: mean age: S.D:)

Findings:

The study found that participants employed two independent strategies when tackling the completion of these sentences. The first was they would simply put themselves into the 'scenario, event or story' (e.g. While 'verbing' the 'direct object'... I ....). Alternatively some participants took information about the direct object when completing the sentences (While counting the money ... the coins rattled).
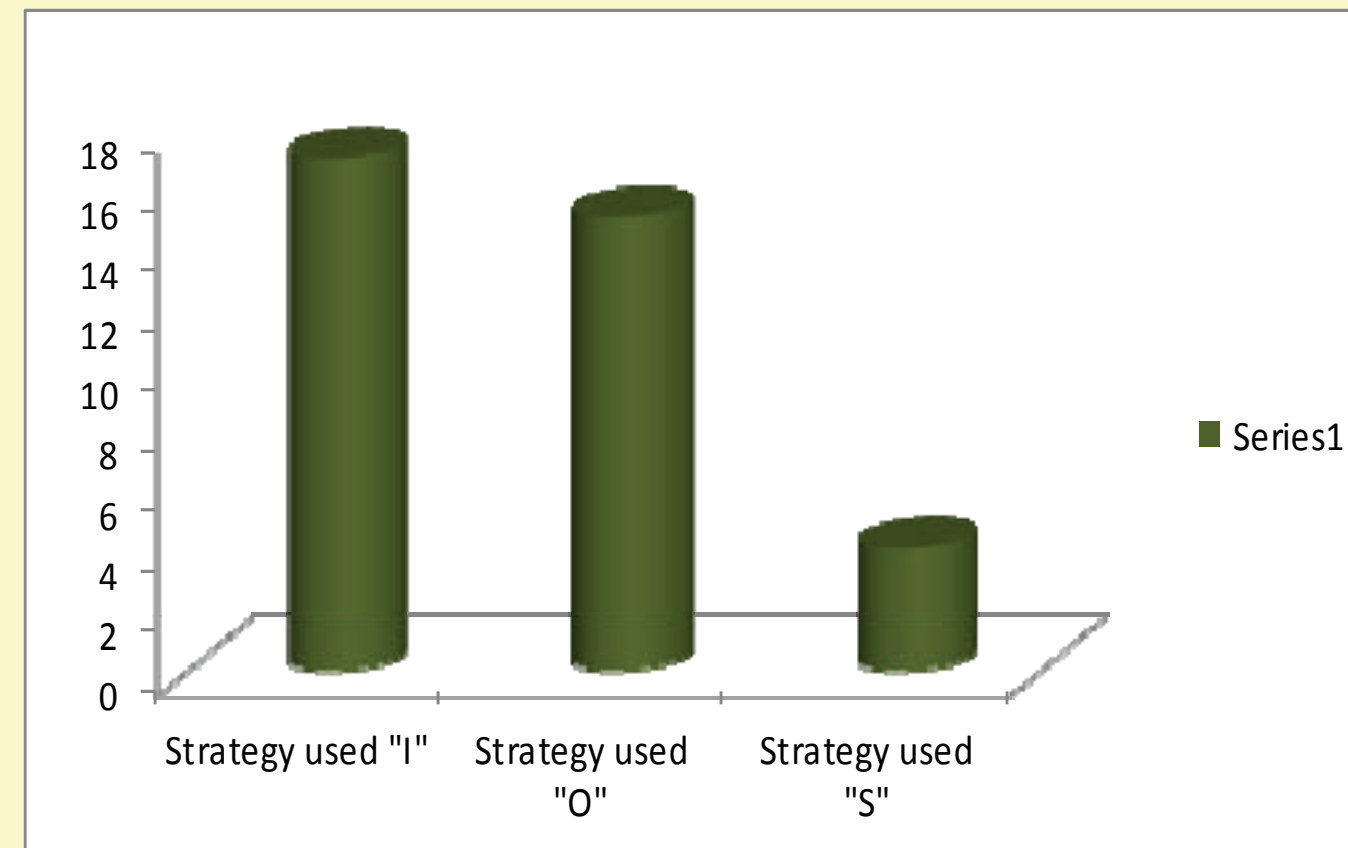
Summary:

Therefore the opposite to the expected/hypothesised structure of (While 'verbing' the direct object... he/she ...) occurred, suggesting that though previous work suggest agent gender to be an inherent feature of the thematic roles generated by verbs, it is not influential in the production of coherent sentences and information about objects or one's own abilities seem dominant.

Conclusions:

This does not suggest that there is a lack of gender information in the features of a verb, only that when it comes to the construction/completion of sentences the gender information in the verb does not influence to a significant degree the direction or strategy people will use when producing language. This illustrates perhaps the inadequacy of sentence completion tasks in illuminating singular features of a thematic role designated by a verb. Nevertheless it must be noted that the fact that two distinctively different strategies were used demonstrates the variability of information one takes from a verb in order to create an adequate completion of a sentence. Thought future research in this area would be encouraged by the findings of this study to use methods of eye-tracking, reading time or ERP tasks as a superior methodological approach within this domain.

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