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# The Relationship Between Implicit Causality and Implicit Consequentiality

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## Introduction

Implicit causality is a property associated with a particular set of verbs which influences the way in which a reader integrates causally related clauses (Garnham, Traxler, Oakhill & Gernsbacher, 1996).

- (1) John amused Mary because he was incredibly funny.
- (2) John amused Mary because she was easily entertained.

The verb 'amuse' is classed as an NP1 biasing verb. The locus of cause underlying the described event is associated with the character occupying the first Noun Phrase. Sentence (1) contains a continuation consistent with this bias while sentence (2) contains a continuation inconsistent with the bias. Sentences containing continuations congruent with a verb's bias are preferred over sentences which are incongruent (Garnham, Oakhill & Cruttenden, 1992). This preference is reflected in a number of different tasks and is independent of the actual plausibility of the described events (Stewart, 1998). In the same way there are verbs biasing toward the first Noun Phrase, there are also verbs such as 'blame' which bias toward the second Noun Phrase. Verbs possessing implicit causality biases can be classified as NP1 or NP2 biasing. In this poster we examine whether it is correct to talk about biasing verbs possessing a single bias or whether it is the case that a particular verb possesses other biases, each realised only under the appropriate conditions. Stewart (1998) reports another type of bias similar to implicit causality but focusing on an implied locus of consequence rather than an implied locus of cause.

- (3) Because John amused Mary, she couldn't stop laughing.
- (4) Because John amused Mary, he was considered entertaining.

Implicit consequentiality biases exert a processing influence in a manner similar to implicit causality. Sentences containing continuations consistent with a particular verb's implicit consequentiality bias are read more quickly than sentences that are inconsistent with the bias (Stewart, 1998). The key question we address in this poster is one of whether there is a clear relationship between a particular verb's causal and consequential bias. If the relationship between the two is not clear then a more fine grained classification scheme must be adopted in order to characterise each type of bias.

## Experiments

Two written language production studies were run. Experiment 1 examined implicit causality while Experiment 2 examined implicit consequentiality.

## Method

Twenty-two subjects drawn from the University of Glasgow student population were run in each experiment. They were presented with a number of sentence fragments such as 'Because John amused Mary,' (Experiment 1) and 'John amused Mary because' (Experiment 2) and were required to provide written continuations to the fragments. Fifty verbs were examined in each experiment. Continuation responses were scored on the basis of whether the first word of the continuation referred to the first or second Noun Phrase. The full table of results can be found in Stewart (1998).

## Results and Discussion

For the full set of verbs, we performed a correlation between the two experiments, i.e. between implicit causality biases and the implicit consequentiality biases. We found a significant negative correlation between causal and consequential biases. Although significant, the correlation is not perfect. Some NP1 causal biasing verbs are also NP1 consequential biasing while others are NP2 consequential biasing. There is no obvious way of determining a verb's consequential bias on the basis of simply knowing what type of causal bias is associated with it. We propose that referring to a particular verb's processing bias must be qualified with additional information which captures the semantic characteristics of that bias.

## References

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