

# Predicting the causal agent in verbally described social interactions



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Implicit causality in interpersonal verbs (i.e., causal assumptions about the initiator of a social interaction) has been extensively investigated, especially in English and German language (cf. Rudolph & Försterling, 1997). The present study is the first to investigate verb causality in Danish language using a student sample ( $N = 96$ ) while simultaneously examining consensus (i.e., to what extent others besides the grammatical subject treat the object like this) and distinctiveness (i.e., to what extent solely the object person is treated by the subject like this) as predictors of causal attribution to subject or object. A strong verb causality effect in Danish language emerged. Consensus proved to be a better predictor than distinctiveness for causal attribution.

## 1. Introduction

In general, verbs describe actions (e.g., to drink) or states (e.g., to drip). Correspondingly, interpersonal verbs describe actions (e.g., to beat) or states (e.g., to love) taking place between persons. Previous research showed that these interpersonal verbs give rise to causal attributions to the sentence subject or the sentence object even if no further information is provided (cf. Rudolph & Försterling, 1997). This unequal allocation of perceived causality has been shown a stable empirical phenomenon.

### Example 1:

John beats Paul because he is aggressive.  
[subject] [verb] [object] [ambivalent reason]

Question: Who is "he"?

Answer: Majority of respondents says JOHN [i.e., the subject].

### Example 2:

John arrests Paul because he is aggressive.  
[subject] [verb] [object] [ambivalent reason]

Question: Who is "he"?

Answer: Majority of respondents says PAUL [i.e., the object].

Accordingly, interpersonal verbs can be classified into action and state verbs that give rise to either the sentence subject or the sentence object. This classification results in a 2x2 scheme producing 4 verb types (Tab. 1).

**Table 1: The four verb types according to the Revised Action-State Distinction (RASD, Rudolph & Försterling, 1997)**

Verb class	State verb		Action verb	
Lexical definition	to "feel" or to "experience"		to "do"	
Criteria	Mental interaction		Behavioral interaction	
Verb type	SE	ES	AP	AE
Attribution	Stimulus-Experiencer	Experiencer-Stimulus	Agent-Patient	Agent-Evocator
Example	surprise	admire	beat	praise

This phenomenon of unequal allocation of perceived causality has been labeled the verb causality effect and could be detected in several European languages including English, German, Dutch, and Italian. However, most studies were conducted using English or German verbs, thus there is lacking empirical evidence for the verb causality effect in other languages. The present study is the first to examine the verb causality effect in Danish language while simultaneously examining consensus (i.e., to what extent others besides the grammatical subject treat the object like this) and distinctiveness (i.e., to what extent solely the object person is treated by the subject like this) as predictors of causal attribution to subject or object.

## 4. Discussion

- In line with previous research in other languages our study demonstrated the existence of systematic causal attributions to one of the interaction partners in minimal sentences for Danish language. The resulting pattern was totally in line with theoretical predictions of the Revised Action-State Distinction (RASD).
- Using consensus and distinctiveness ratings to predict causal attributions to the grammatical subject or object indicates a higher predictive value of consensus information thus pointing to a potentially stronger influence of social information (compared to individual information) when forming an attribution. Future research should replicate this finding in other languages.

## 2. Method

### Sample

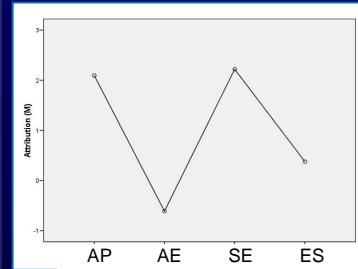
We used a student sample ( $N = 96$ ; 55 female) from the University of Aarhus in Denmark (age: 18-33;  $M = 22.5$ ,  $SD = 3.0$ )

### Stimulus material and procedure

The questionnaire comprised 24 different minimal sentences of the pattern „A [verbs] B“. All 24 verbs were selected according to the Revised Action-State Distinction (six verbs per verb type). Following each sentence attribution direction was assessed on two 11-point scales (one scale for A and one scale for B). Subsequently, *distinctiveness* (i.e., "How likely is it that Person A [verbs] many other persons besides Person B?") and *consensus* (i.e., "How likely is it that many other persons, besides Person A, [verb] Person B?") of the respective interpersonal event were also assessed using 11-point rating scales.

## 3. Results

A difference score (attribution on A minus attribution on B) was computed to assess the resulting *attribution direction* for each of the four verb types. The ANOVA of the difference scores yielded a significant and large effect of verb type,  $F(2.6, 248) = 60.5$ ,  $p < .0001$ ,  $\eta^2 = .39$ . The directions of attribution were in line with previous research and the RASD showing higher subject attributions for AP and SE verbs on the one hand and higher object attributions for AE and ES verbs on the other hand (see Fig. 1).



**Figure 1: Difference scores (A attributions minus B attributions) for the four verb types. Pattern of attribution directions are in line with predictions of the RASD (cf. Table 1)**

In order to examine *consensus* and *distinctiveness* ratings as predictors of attribution directions we conducted regression analyses of the difference scores separately for each verb (i.e., 24 regressions).

Consensus revealed a higher standardized regression weight (beta) in predicting the attribution direction for 18 verbs (for all regressions: Mean beta (abs. value) for consensus  $\beta = .23$ , ranging from .04 to .41). On the other hand, distinctiveness had a higher beta for 6 verbs (for all regressions: Mean beta (abs. value) for distinctiveness  $\beta = .16$ , ranging from .01 to .38). A binomial test confirms that consensus is significantly more often a better predictor than distinctiveness ( $p < .05$ ).