CROSSLINGUISTIC VARIATION IN EVENT CONCEPTUALIZATION: EVIDENCE FROM THE CAUSATIVE ALTERNATION

Björn Lundquist (University of Tromsø), Gillian Ramchand, Mai Tungseth (University of Tromsø), Martin Corley and Antonella Sorace (University of Edinburgh)
bjorn.lundquist@uit.no

What is the semantic relation between causative (C: *John melted the butter*) and anticausative (AC: *the butter melted*) descriptions? And is the semantic relation between C and AC the same across different languages? Although many languages overtly mark the alternation in one way or another (either marking C, AC or both, see Haspelmath 1993), the effect that such morphological markings might have on the semantics of causation is not well understood. There are two broadly competing hypotheses for expressing the semantic relationship between the C verb and its AC alternant:
The Causational Hypothesis: The AC verb is the C minus either a causer, or an entire cause predicate (Grimshaw 1982, Levin and Rappaport 1995, Reinhart and Siloni 2005).
The Reflexive Hypothesis: The AC (or at least overtly marked ACs) are literally reflexive versions of Cs (Chierchia 2004, Koontz-Garboden 2009), where the sole argument of AC is associated both with a theme/patient role and a cause role.

In addition, researchers disagree on whether there should be a language-general answer to the question (the Universalist stance, e.g., Horvath & Siloni, 2011) or whether languages can differ in how the semantic relation between A and AC is instantiated (the Language-specific stance), with a possible correlation to morphological marking.

The Causational Hypothesis predicts that C always entails AC since AC is semantically a less specified version of C. An entailment test is often used to support this hypothesis: *John melted the butter, #but the butter didn't melt.* By contrast, according to the Reflexive Hypothesis, C doesn't entail AC, because AC in this case contains semantic information not present in C; more specifically, that the sole argument is not only undergoing change, but is also responsible for the initiation of the event. However, despite the lack of entailment relation between A and AC, the two descriptions could felicitously describe the same event or state: the sentences, (a) *the barber on the corner cut my hair yesterday* and (b) *I cut my hair yesterday* could both be used to describe the same event. The felicity of the (b) description is predicted to be influenced by a number of factors, if the reflexive hypothesis is correct:(i) is the external argument in (b) enough involved in the event to qualify as a "cause" and (ii) is the direct causer (here, 'the barber') peripheral enough to leave out? The reflexive hypothesis thus predicts that negating AC while claiming C should not be contradictory (e.g, *the door didn't open – I opened it*). However, it has proved difficult to secure consistent judgements of entailment because of interference from pragmatic factors such as metalinguistic negation (see Schäfer & Vivanco for a recent review).

Experiment. In the present experiment, we use video clips to directly pair event depictions with linguistic representations, thus avoiding confounds such as negation. 42 Norwegian and 44 English informants watched short video sequences, in which causative events were depicted (e.g., a woman rolling a ball across the road). Each sequence was followed by an AC question (e.g., *did the ball roll across the road*), and response (yes or no) was logged. In Norwegian, 7 of the video sequences were based on verbs that had form-identical C and AC forms (e.g., *rulle* 'roll', *smelte* 'melt'). The remaining 7 sequences were based on verbs which require the simple reflexive pronoun *seg* in the AC frame (e.g., *åpne seg* 'open', *dele seg* 'split'). Under the Causational Hypothesis, uniform 'yes' responses are expected. Under the Reflexive Hypothesis, a *Yes* answer is not uniformly expected, but it is important to note that *No* answers across the board are not expected either. Rather, responses should be sensitive to manipulations involving degree of agent-involvement/saliency of theme involvement. Therefore, to further test the Reflexive Hypothesis, two video sequences were made for each verb: one where the agent acted intentionally and was active throughout the event (Agent Focus), and one where the focus was on the theme rather than the agent (for example, where the agent was only involved at the

starting point of the event, or caused the event by accident: Theme Focus).

All videos were also tested with a causative question (e.g. *did the woman roll the ball across the road*) with a separate group of speakers ($n = 20$, giving over 93% 'yes' responses) to make sure that the verbs correctly described the depicted events. Further, the anti-causatives were checked with native speakers and against corpora, to make sure that the verbs in question could in principle be used in an anti-causative frame. In English, the same 28 videos were used, corresponding to 14 verbs which are all unmarked. Each informant in each language saw only one version of each video, and thus saw 14 video sequences in all, balanced between Agent-Focus and Theme-Focus contexts, and (for Norwegian) marked and unmarked anti-causatives. An additional 22 filler videos with questions were also presented, and order of presentation was randomised. *The Causational hypothesis predicts that informants will answer 'yes' to all questions, while the Reflexive hypothesis predicts that 'yes' responses will be variable, depending on degree of agent-involvement.*

Results. English-speaking informants were almost at ceiling, giving 'yes' responses 90.5% of the time (numbers in table 1). The effect of context was very small, but significant, in English (6.8%, $p < .05$), with the effect located to only 2 of the 14 predicates. We conclude that, with possible lexical exceptions, AC descriptions of caused events are licit in English even when the focus is on the Agent, just as Hypothesis 1, but not 2, predicts. The Norwegians' total of 'yes' responses was significantly lower the the English (64.4% of trials $p < .001$). The effect of context was very strong in Norwegian: 20.8% ($p < .001$) more 'yes' responses in the Theme focus condition. Norwegian informants showed an effect of *seg* marking and a marking-by-context interaction ($p < .05$), such that context effects were stronger for verbs which don't take *seg*, but the overall proportion of 'yes' responses were bigger for them. A closer look at the materials suggests that reflexive-marked verbs require the agent to be highly peripheral (accidental cause) for the AC interpretation to be felicitous. This suggests that the Reflexive hypothesis is correct for Norwegian, both for unmarked and for marked ACs.

Our experiment thus shows that a universalist position on the analysis of the causative-inchoative alternation across languages is untenable. We have to conclude that natural languages can make use of either "anti-causative" strategies, *or* a reflexive strategy. We suggest that the difference between the two languages has its origin in the fact that AC verbs in Norwegian often carry the same morphological marking as reflexive verbs, which has led speakers to impose the argument structure of reflexive verbs onto AC verbs quite generally. However, the specific factor of reflexive marking does not itself appear to be criterial, since the non-reflexive alternators in Norwegian also showed a sensitivity to the contextual manipulation not displayed by English. The results suggest that speakers' conceptualization of events may be influenced by the *overall shape of the linguistic system.* They also show that fine-grained semantic differences between translational equivalents are easy to overlook in linguistic descriptions. Direct experimental testing of nonlinguistically presented events is necessary to uncover these differences.

Table 1: Percent 'yes' responses, by context

	Eng. total	Nor. total	Nor. unmarked	Nor. refl. marked
Agent Focus	87%	54%	63%	45%
Theme Focus	93%	75%	90%	59%