

Event structure of the anticausative and unaccusative

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It has long been assumed that **(unmarked) unaccusatives** and **(marked) anticausatives** are different morphological realizations of the same intransitive configuration (Lakoff 1968, 1970; Dowty 1979; Levin and Rappaport Hovav 1995; Reinhart 2000, 2002; Chierchia 2004:56; Kalulli 2005, 2006; Koontz-Garboden 2009; Levin 2008). Recently, Schafer (2008) building on Alexiadou & Anagnostopoulou 2004, Alexiadou *et al.* 2006, and others has argued for two distinct **syntactic configurations**, with and without the projection of Voice, associated with anticausatives and unaccusatives, respectively. In this paper, I contribute to this line of inquiry by investigating **systematic semantic differences** between unaccusatives and anticausatives in Russian, where both can be derived from the same verb stem, (1). I argue that evidence from Russian supports an event-based analysis of unaccusatives and anticausatives whereby their semantic difference is reduced to event-structural considerations.

- (1) *soxnu-t'* *suši-t'* — *suši-t'-sja*
dry, intr., **unaccusative** dry, tr. dry, intr., **anticausative**

The phenomenon. In Russian, the intransitive members of the triple in (1), *soxnut'* and *sušit'sja*, exhibit a number of similarities: both refer to a change of state of the theme argument, disallow agentive adjuncts and *by*-phrases, (2), license *from*-PPs, (3), and pass Chierchia's (2004:42-44) "da se" diagnostic, (4). Following Chierchia, I take (4) to indicate that both unaccusatives and anticausatives are associated with the causative event structure.

- (2) *Bel'je vy-sox-l-o || vy-suši-l-o-s' Vas-ej. *By*-phrases
linen PRF-dry-PST-N REFL PRF-dry-PST-N-REFL V.-INSTR
'The linen dried (unacc.) || dried (anticaus.) by Vasja.'
- (3) Ot žary bel'je bystro vy-sox-l-o || vy-suši-l-o-s'. *From*-phrases
from heat.GEN linen quickly PRF-dry-PST-N PRF-dry-PST-N-REFL
'The linen dried (unacc.) || dried (anticaus.) quickly from the heat.'
- (4) Bel'je samo vy-sox-l-o || vy-suši-l-o-s'. "Da se" 'by itself' test
linen by.itself PRF-dry-PST-N PRF-dry-PST-N-REFL
'The linen dried (unacc.) || dried (anticaus.) by itself.'

There is, however, a crucial meaning difference between verbs like *soxnut'* and *sušit'sja* summarized in (5):

- (5) Eventualities anticausatives and unaccusatives denote are distinct.

The evidence for (5) comes from examples like (6), where a process described by the anticausative can occur in the actual world without a corresponding process referred to by the unaccusative being part of the actual world, too; imperfective anticausative sentences thus do not entail imperfective unaccusative sentences.

- (6) Bel'je uže celyj čas suš-it-sja, no soveršenno ne soxn-et.
linen already whole hour dry.IPFV-PRS.3SG-REFL but at.all NEG dry.IPFV-PRS.3SG
Lit. 'The linen has been drying (anticaus.) for an hour, but is not drying (unacc.) at all.'

If events in the extension of anticausative and unaccusative predicates were the same, (6) would have been a logical contradiction, but it is not. Intuitively, what the first clause of (6) says is: The linen is being exposed to factors that should bring about a change in the degree of dryness. The second clause indicates that despite those factors, no amount of change has (yet) occurred.

The proposal. My account for the distribution of the unaccusative and anticausative consists of the following ingredients.

1. Event structure. I assume that both anticausatives and unaccusatives are based on a complex event structure consisting of two subevents connected by the relation of immediate causation, (7).

- (7) $\lambda x \lambda e \lambda e' \exists \theta [\theta(x)(e) \wedge \text{cause}(e')(e) \wedge \text{dry}(e') \wedge \text{theme}(x)(e)]$

One subevent, e' , is a process of getting dry. Another subevent (underspecified for descriptive content), e , is a subevent that brings about e' . The supplementary assumptions, which (7) inherits from Chierchia 2004:55-57, are: first, both subevents share a participant; secondly, the variable over thematic relations between individuals and causing subevents, θ , is existentially bound. Among other things, this allows for

a certain flexibility as to the precise nature of the θ relation. Specifically, θ can be identified as the causer relation, hence both unaccusatives and anticausatives can pass the “da se” test. Other similarities shown in (2)-(4) follow from (7) as well (the detailed argumentation to be given in the full version of the paper).

2. Externalization. I hypothesize that the unaccusative externalizes the caused change of state subevent, existentially binding the causing one. Unaccusatives thus denote subevents, externally caused, in which the change in the theme is happening. The anticausative, the other way around, externalizes the causing subevent, yielding a description of events that bring about an individual’s becoming dry:

- (8) a. $\| [\text{VP dry (unacc.) linen}] \| = \lambda e \exists e' \exists \theta [\theta(\text{linen})(e') \wedge \text{cause}(e)(e') \wedge \text{dry}(e) \wedge \text{theme}(\text{linen})(e)]$
 b. $\| [\text{VP dry (anticaus.) linen}] \| = \lambda e \exists e' \exists \theta [\theta(\text{linen})(e) \wedge \text{cause}(e')(e) \wedge \text{dry}(e') \wedge \text{theme}(\text{linen})(e')]$

3. Lack of entailment. I argue that (8a-b) supplemented with reasonable assumptions about semantics of the imperfective operator and CAUSE relation accounts straightforwardly for (6). Specifically, I assume the imperfective operator in (9) along the lines of Langman 1992, whereby events from the original extension of a predicate are mapped to their stages. The CAUSE relation has a straightforward characteristic in (10). (10) guarantees that if two events are causally related, either the cause or at least some of its non-final parts temporally precede the effect.

- (9) $\| \text{PROG}(P)(e) \|^{w,g} = 1$ iff $\exists f \exists v: \langle f, v \rangle \in \text{CON}(g(e), w)$ and $\| P \|^{v,g}(f) = 1$
 where $\text{CON}(g(e), w)$ is the continuation branch of $g(e)$ in w .

- (10) If an event e causes an event e' , then no part e'' of e' temporally precedes e .

Application of the imperfective operator to the anticausative in (8b) results in (11):

- (11) $\| \text{IPFV} [\text{VP dry (anticaus.) linen}] \| = \lambda e'' [\text{PROG}(\lambda e \exists e' \exists \theta [\theta(\text{linen})(e) \wedge \text{cause}(e')(e) \wedge \text{dry}(e') \wedge \text{theme}(\text{linen})(e')])](e'')$

(11) is a set of stages e'' of events e that cause the linen to become dry. Due to the meaning of the imperfective, complete causing events e need not exist in the base world. According to (10), subevents e' of becoming dry temporally follow (some part) of e . Therefore, the set of events e'' in (11) can contain, in the base world, precisely those stages of complete causing subevents e at which they have not yet brought about any change of state e' . The lack of entailment in (6) follows.

The analysis makes a number of further predictions. Specifically, from (8a), (9) and (10) it follows that the imperfective unaccusative in (12) does entail the imperfective anticausative.

- (12) $\| \text{IPFV} [\text{VP dry (unacc.) linen}] \| = \lambda e'' [\text{PROG}(\lambda e \exists e' \exists x \exists \theta [\theta(\text{linen})(e') \wedge \text{cause}(e)(e') \wedge \text{dry}(e) \wedge \text{theme}(\text{linen})(e)])](e'')$

(12) is a set of stages of events e of the linen’s becoming dry (due to a causing event e'). Complete events e of becoming dry need not exist in the base world. Yet, in no world any part of the effect e can temporally precede the cause e' . Hence, no stage of an event e of becoming dry can occur in the base world without some stage of a causing subevent e' occurring in the base world, too. Hence, imperfective unaccusatives must entail imperfective anticausatives. The prediction is borne out precisely:

- (13) *Bel’je uže celyj čas soxn-et, no soveršenno ne suš-it-sja.
 linen already whole hour dry-PRS.3SG but at.all NEG dry-PRS.3SG-REFL
 Lit. ‘The linen has been drying (unacc.) for an hour, but is not drying (anticaus.) at all.’

4. Compositional derivation. I propose that unaccusative and anticausative predicates are all based on the same VP denotation, which is a relation between two events based on (7). Differences emerge at later stages of syntactic derivation, when v is merged. Following, e.g., Folli & Harley 2005, I propose that v can come in different ‘flavors’ that differ as to what event argument gets externalized. Evidence supporting this conclusion comes from the distribution of idioms, to be presented in the full version of the paper.

SELECTED REFERENCES. Alexiadou, A., E. Anagnostopoulou. 2004. Voice morphology in the causative-inchoative alternation. In *The unaccusativity puzzle*, 114-136. Alexiadou, A., E. Anagnostopoulou & F. Schafer. 2006. The properties of anticausatives crosslinguistically. In *Phases of Interpretation*, M. Frascarelli (ed.), 187-211. Chierchia, G. 2004. A semantics for unaccusatives and its syntactic consequences. In *The unaccusativity puzzle*, A. Alexiadou, E. Anagnostopoulou & M. Everaert (eds.), 22-59. Koontz-Garboden, A. 2009. Anticausativization. *NLLT* 27:77-138. Schafer, F. 2008. The syntax of anticausatives.