

### Explaining the link between agentivity and non-culminating causation

**§1. Introduction.** As Oehrle 1976 observes, while no change of state (CoS) is required by the agentive use of verbs like *teach* or *show*, some CoS has to take place with a causer (inanimate) subject. Martin & Schäfer 2012 identify around fifty French and German verbs showing the same behaviour, cf. e.g. (1). They present several pieces of evidence showing that these verbs, that they label ‘defeasible causatives’, have a causative morphosyntax under both uses (a) and (b), in spite of the fact that the verbally encoded CoS can be entirely denied under the agentive reading (a) (‘zero-CoS reading’). That the possibility to deny the CoS depends on agentive properties of the subject has been shown to hold for bigger sets of causative verbs in languages with productive non-culminating accomplishments, see Mandarin (Demirdache & Sun 2013), Japanese (Tsujimura 2003), and Salish languages (Bar-el *et al* 2005, Jacobs 2011).

- (1) a. Le médecin a soigné Ana, mais elle n’a pas guéri du tout.  
‘The doctor treated Ana, but she didn’t cure at all.’
- b. Ce séjour chez sa soeur a soigné Ana, #mais elle n’a pas guéri du tout.  
‘This stay at her sister treated Ana, but she didn’t cure at all.’
- (2) a. I’m waking up Ana (I’ve already shaken her!), but she drank a lot; there is a good chance that it will take long before she begins to make a little step out of her sleep.
- b. The dishwasher’s noise is waking up Ana, # but she drank a lot; there is a good chance that it will take long before she begins to make a little step out of her sleep.

**§2. Extending the generalization.** Verbs like *wake up* are standard (i.e. non-defeasible) causatives in that the CoS cannot be denied with either agent or causer subjects in perfective sentences. Nevertheless, their interpretation in *progressive* sentences confirms the link between agentivity and CoS deniability, in that applied to these verbs, PROG generally has to scope over the CoS *with causer subjects only*, see (2a) vs (2b) (note the parentheses in (2a) excluding the irrelevant futurate reading of PROG). We provide an account for (1)-(2), based on Varasdi 2014.

**§3. Varasdi on the progressive.** Varasdi’s 2014 analysis of the progressive is *contrastive* in that it assumes that the context  $C$  in which a progressive sentence  $\text{PROG}(\phi)$  is uttered provides a set of relevant mutually disjoint eventuality properties, one of which is the  $\phi$ -property denoted by the event predicate, and that the progressive operator has access to this set  $\Theta_C = \{\theta_1, \theta_2, \dots, \phi\}$ . Another ingredient of his account is Asher’s 1992 idea that the progressive is true of an event  $e$  by virtue of *certain properties*  $\mathcal{F}$  that the event has. Varasdi argues that the event’s properties that make the progressive true are to be found among the set  $\text{Sq}(\phi)$  of properties that contain all sine qua non conditions for an event to culminate into a  $\phi$ -event. The relevant  $\text{Sq}$  conditions are of two kinds. *Sustaining conditions* are simply required for the event to make progress toward the telos. *Indicative conditions* have to do with properties of the event that *single out* a particular type of outcome  $\theta_k$  of the contextually determined set of alternatives  $\Theta_C$ . We generalize Varasdi’s definition of indicative conditions for our purposes as follows:

- (3) *Definition 1.* Given a set of alternatives  $\Theta_C = \{\theta_1, \theta_2, \dots, \theta_n\}$  and an event  $e$ , we say that *the set of properties*  $\mathcal{F} = \{P | P(e)\}$  of event  $e$  indicate  $\theta_k$  w.r.t.  $\Theta_C$  iff  $e$  realizes significantly more sine qua non conditions of  $\theta_k$  than of any other alternative in  $\Theta_C$ :  
 $|\mathcal{F} \cap \text{Sq}(\theta_i)|$  is significantly bigger if  $i = k$  than otherwise (i.e., if  $i \neq k$ )

For example, given a set of alternatives  $\Theta_C = \{\text{Ana wakes up}, \text{Ana does not wake up}\}$ , the set of properties  $\mathcal{F}$  of the event  $e$  of energetically-shaking-Ana is *indicative of* the Ana-wakes-up property wrt  $\Theta_C$  (because  $e$  actualizes significantly more  $\text{Sq}$  conditions of the Ana-wakes-up

alternative than Sqn conditions of the Ana-does-not-wake-up one).

**§4. Proposal.** Let  $\phi$  be a causative predicate and  $\psi$  the property of the CoS encoded by  $\phi$ . The idea is that in order to deny the entire CoS with a causative verb  $\phi$ , the event involving the subject  $e_s$  (the medical act in (1a), the stay in (1b)) must *indicate by itself* the  $\psi$ -property (i.e. **get healthy** in (1)) encoded by  $\phi$  (i.e. *soigner* in (1)). We argue that it is *by default* easier when  $e_s$  is an action than when it is a nonagentive event, because actions are systematically associated with typicality structures (or cognitive frames, or temporal patterns of forces) that make them highly indicative of the type of causation they are part of, even in situations where the CoS has not even been initiated. The CoS is shifted to possible worlds by PROG in (2), and by sublexical modality in (1) (which makes the zero-CoS reading with perfective tenses only available for causatives with a sublexical component, cf. §6).

**§5. Account for data in (2).** In (2a/b),  $\Theta_C = \{\text{Ana wakes up, Ana does not wake up}\}$ . According to the analysis sketched in §3,  $\text{PROG}(\text{wake-up-Ana})$  is true of  $e$  having the set of properties  $\mathcal{F}$  iff (a.o.)  $\mathcal{F}$  indicates the Ana-wakes-up property wrt  $\Theta_C$ . In (2a), the action  $e_s$  itself easily indicates the ‘Ana-wakes-up’ alternative wrt  $\Theta_C$  (a serious attempt to wake up Ana realizes significantly more Sqn conditions of the ‘Ana-wakes-up’ alternative than of the ‘Ana-does-not-wake-up’ one). *In a default context*, the nonagentive event  $e_s$  (the running dishwasher) does not clearly have properties that single out the ‘Ana-wakes-up’ alternative wrt  $\Theta_C$  (running dishwashers have sleep-inducing properties in some situations). Therefore, in order for the actual event  $e$  in (2b) to be indicative of the right alternative,  $e$  has to include a partial CoS besides the event  $e_s$  (since a partial waking up makes  $e$  clearly indicative of the ‘wakes-up’ alternative).

**§6. Account for data in (1).** In line with Koenig & Davis 2001 and Martin & Schäfer 2012, we assume that defeasible causatives have a sublexical modal component that shifts the CoS to possible worlds. However, *contra* Martin & Schäfer who capture the contrast in (1) though the choice of the modal base (which, as Piñón 2014 argues, obliges them to assume that these verbs are lexically ambiguous), we assume that the modal base is kept constant in both uses, and contains all ‘causally successful’ worlds, cf. (4). We account for the contrast (1a/b) through (5), a condition that constrains the possibility to successfully describe a CoS-less event with a defeasible causative.

$$(4) \quad [\text{VP soigner } y] \rightsquigarrow \lambda y \lambda e [\text{theme}(e, y) \wedge \Box_{\text{causal\_success}} \exists e' (\text{cause}(e, e') \wedge \text{get-healthy}(e') \wedge \text{theme}(e', y))]$$

- (5) In order for a defeasible causative verb  $\phi$  with  $\psi = \text{CoS}(\phi)$  to successfully describe an actual event  $e$  having the set of properties  $\mathcal{F} = \{P \mid P(e)\}$ ,  $\mathcal{F}$  has to indicate  $\psi$  rather than  $\neg\psi$  with respect to the set of alternatives  $\Theta = \{\psi, \neg\psi\}$ .

In a default context, the properties  $\mathcal{F}$  of an appropriate medical act actualize significantly more Sqn of the ‘Ana-gets-healthy’ alternative than of the ‘Ana-does-not-get-healthy’ one (therefore, *soigner* successfully applies to this act alone in (1a)). This is not the case of a stay at one’s relative. Given the failure to establish the indicative link, *soigner* cannot successfully apply to the event involving the subject  $e_s$  alone in (1b). However, as soon as the interpreter assumes the existence of the CoS too, the actual event  $e$  can be indicative of the  $\psi$ -CoS property. Hence the tendency to assume the CoS in (1b). (Note that the zero-CoS reading would be acceptable in (1b) if we had *ce traitement médical* ‘this medical treatment’ as causer subject, as expected).

**Selected references.** Koenig & Davis, 2001, Sublexical modality and the structure of lexical semantic representation, *L&P*• Martin & Schäfer, 2012, The modality of *offer* and other defeasible causatives, *WCFFL 30*•Varasdi, 2014, Making progressives: necessary conditions are sufficient, *JoS*.