

Two types of external argument licensing: The case of causers

Florian Schäfer

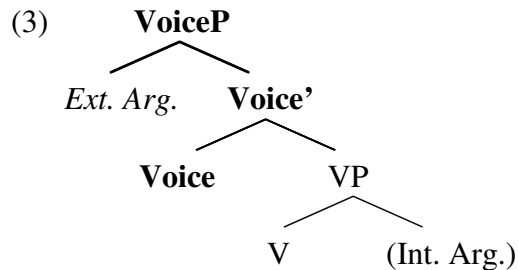
Universität Stuttgart
florian@ifla.uni-stuttgart.de

1. Introduction

- I discuss three types of causer arguments which differ in their morpho-syntactic shape:
 - Nominative causers ... which are subjects of transitive verbs (2a)
 - Oblique/dative causers ... which combine with intransitive verbs (2b)
 - PP-causers ... which combine with intransitive verbs (2c)
 - These three types of causers are introduced by three different syntactic projections. I call these projections “**formal licensers**” of the causer DP.
 - Specifier of *Voice* (section 2)
 - Specifier of an *Applicative Head* (section 3)
 - Complement of a *Preposition* (section 4)
 - Despite this morpho-syntactic difference, all three types of causers have a common restriction: they are only licit if their formal licenser combines with a verbal head that takes a secondary **resultative predicate** as its complement.
 - I argue that the causer theta role is not assigned by semantically annotated verbal heads such as v_{CAUS} or $\text{Voice}_{\text{CAUS}}$. Instead, I propose that the *causer theta role originates from the resultative event structure* which acts as “**thematic licenser**” of causers. The causative semantics (allowing for causer DPs) are read off at LF of the syntactically decomposed resultative structure. Resultative event structure is syntactically composed at the VP-level; in this sense, causers are not VP-external arguments.
- (1) Hans rollte den Ball (**über die Torlinie**)
Hans rolled the ball **across the goal-line**
- (2) a. *Der Wind* rollte den Ball ??(**über die Torlinie**)
the.NOM wind rolled the.ACC ball **across the goal-line**
‘The wind rolled the ball across the goal-line’
- b. *Dem Torwart* rollte der Ball versehentlich *(**über die Torlinie**)
the.DAT goalkeeper rolled the.NOM ball inadvertently **across the goal-line**
‘The goalkeeper inadvertently caused the ball across the goal-line’
- c. *Der Ball* rollte *durch den Wind* *(**über die Torlinie**)
the.NOM ball rolled *through the wind* **across the goal-line**
‘The ball rolled across the goal-line from the wind’
- Identifying one common thematic source for all three causers above does not mean that these causers are exactly identical. Formal licensers have semantics of their own which shape the interpretation of the causers (e.g. direct/indirect causation, human restriction ...).

2. External arguments

- The Voice Hypothesis (Kratzer 1996): External arguments are not coded in the lexical entry of the verb but are introduced by an independent Voice projection on top of VP. In the *active*, the external argument is located in SpecVoice, in the *passive*, it is implicit and can be made overt by an adjoined PP.



- External arguments can bear different thematic roles. This is notably the case with the external argument position of verbs of change-of-state which often license *agents*, *instruments* or *natural forces/causers*.
- (4) a. John broke the window (Agent)
 b. The hammer broke the window (Instrument)
 c. The storm broke the window (Causer)
- In order to capture this generality, it is sometimes assumed that the thematic role of the external argument position (of change-of-state verbs) is underspecified and expresses something like *effector* (Van Valin & Wilkins 1996) or *abstract causer/initiator* (Ramchand 2006).

2.1 The morpho-syntactic independence of agents and causers

- There are arguments that we need to make a morpho-syntactic distinction at least between *agents* and *causers* (cf. Alexiadou & Schäfer 2006 for the integration of instrument subjects). A number of contexts unexpectedly license only one of the two.
 - **EXAMPLE 1 – The Greek passive:** While the Greek active behaves as its English counterpart in (4), the Greek passive licenses *agents* but not *causers* or *causing events* (cf. Zombolou 2004 and Alexiadou et al. 2006).¹
- (5) a. Ta mallia mu stegnothikan apo tin komotria (Agent)
 the hair my dried-Nact by the hairdresser
 ‘My hair was dried by the hairdresser’
 b. ?* Ta ruxa stegnothikan apo ton ilio / apo toaploma ston ilio (Causer)
 The clothes dried-Nact by the sun / by the-hanging-up under the sun
 ‘The clothes were dried by the sun / by hanging them up under the sun’

¹ A similar situation is reported for the Hebrew passive (Doron 2003) and the Icelandic passive (Jonsson 2003).

- (12) a. *Il mare ha mangiato la spiaggia
 the sea has eat.PST the beach
 b. Il mare si é mangiato la spiaggia
 the sea REFL is eat.PST the beach
- (13) a. *Il vento ha ritagliato un pezzo di spiaggia
 the wind has carve.PST a piece of beach.
 b. Il vento si é ritagliato un pezzo di spiaggia
 the wind REFL is carve.PST a piece of beach

Manner of motion verbs: The shift in auxiliary selection indicates a shift from an unbounded to a bounded event in manner of motion events in many languages. In Italian such a shift is possible only with a very restricted number of manner of motion verbs.

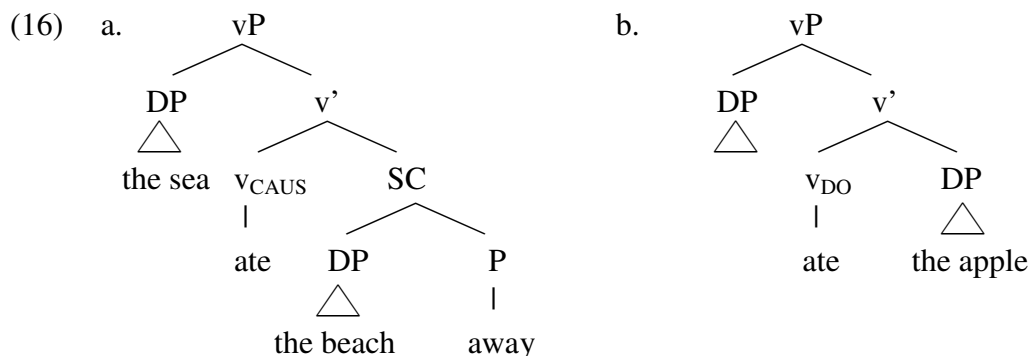
- (14) a. Gianni **ha** corso nel bosco **per ore** (locational)
 John HAS runPAST in the woods for hours
 b. Gianni **è** corso nel bosco **in un secondo** (directional)
 John IS runPAST in the woods in one second

Consumption verbs imply the telicity of the event only if the reflexive is added:

- (15) a. Gianni ha mangiato una mela, ma non l'ha finita
 John has eat.PST an apple but NEG it has finish.PST
 'John ate an apple, but he didn't finish it'
 b. #Gianni si é mangiato una mela ma non l'ha finita
 John REFL is eat.PST an apple, but NEG it has finish.PST
 'John ate an apple up, but he didn't finish it'

ANALYSIS – flavours of v: little v comes in different flavours. These light verbs determine the thematic role of their specifier and can place different restrictions on their complements:

- **Thematic properties**:
 - v_{DO} needs an animate Agent subject.
 - v_{CAUSE} only requires that the subject be a possible Causer.
- **C-selectional properties**:
 - v_{DO} take a nominal (Incremental Theme) as its complement
 - v_{CAUSE} selects a state/SC complement, creating essentially a resultative structure.



- **Note**: In this approach v introduces the external argument AND realizes the verbal event !

- Some further English data:² The phenomenon is not restricted to verbs of consumption.

- (17) a. John pushed the cart (across the parking lot)
 b. The wind pushed the shopping cart ??(across the parking lot)
 c. The wind pushed the dune ??(around/further up the beach)

- (18) a. John rolled the ball (across the goal-line)
 b. The wind rolled the ball ??(across the goal-line)

3. The Oblique Causer Construction

- (19c), (20c) and (21c) illustrate the ‘*oblique-causer construction*’ in three languages.
- This construction is typically exemplified by combining a dative (or genitive) DP with an anticausative verb (i.e. the intransitive version of a verb which undergoes the causative alternation (the a/b-examples)).
- The dative DP is interpreted as the *unintentional/involuntary causer* of the change-of-state event expressed by the anticausative verb (but see Appendix 1).

(19) **German:**

- a. Der Mann zerbrach die Vase (causative)
 the.NOM man broke the.ACC vase
 ‘The man broke the vase’
- b. Die Vase zerbrach (anticausative)
 the.NOM vase broke
 ‘The vase broke’
- c. Dem Mann zerbrach die Vase (oblique causer)
 the.DAT man broke the.NOM vase
 ‘The man unintentionally caused the vase to break’

(20) **Italian:**

- a. Maria ha rotto la finestra (causative)
 Mary.NOM has broken the.ACC window
 ‘Mary broke the window’
- b. La finestra si è rota (anticausative)
 the.NOM window REFL is broken
 ‘The window broke’
- c. A Francesca si ruppe il vaso (oblique causer)
 to Francesca REFL broke.3SG the vase
 ‘Francesca unintentionally caused the vase to break’

² Thanks to Thomas McFadden for his judgements on these examples.

- (21) **Greek:**
- a. O Janis ekapse ti supa (causative)
 the John.NOM burnt.ACT the soup.ACC
 ‘John burnt the soup’
- b. I supa kegete (anticausative)
 the soup.NOM burns.NACT
 ‘The soup is burning’
- c. Tu Ben tu kaike i Supa (oblique causer)
 the.GEN Ben he.GEN burnt.NACT the soup.NOM
 ‘Ben involuntarily caused the soup to burn’

- **Other Indo-European languages** that have the ‘oblique causer construction’: Albanian, Bulgarian, Polish, Serbo-Croatian, Romanian, Slovenian, Spanish, Russian (cf. Cuervo 2003, Rivero 2004, Rivero & Savchenko 2005, Kallulli 2006, Schäfer 2007).

- **Ambiguity:** In all the above languages, the string “*oblique DP + anticausative*” is ambiguous between two or even three readings. Besides the interpretation as a causer, the oblique DP can be interpreted as affected by the change-of-state event (**affectedness reading**) or as the possessor of the theme undergoing the change of state (**possessor reading**). Rivero (2004) gives the following glosses for (3c):

- (i) ‘Ben’s soup burned’ (possessor reading)
 (ii) ‘Ben was affected {pos./neg.} by the soup burning’ (affectedness reading)
 (iii) ‘Ben involuntarily caused the soup to burn’ (oblique-causer reading)

- Here, I concentrate on the causer reading of the oblique DP.³ This reading can be enforced by adding an adverb like ‘*unintentionally*’, ‘*by mistake*’ or ‘*inadvertently*’.⁴

³ See Cuervo 2003, Rivero 2004, Kallulli 2006, or Schäfer 2007 for discussion of the other readings.

⁴ I assume that at least the difference between the ‘affectedness reading’ and the ‘oblique causer reading’ is a case of structural ambiguity, not just a case of vagueness. One argument comes from German anticausatives. As discussed in detail in Schäfer (2007), German (as many other languages) has morphologically unmarked and marked anticausatives and while the former allow both readings, the ‘oblique causer reading’ is blocked in the context of German marked anticausatives. This can be illustrated with an anticausative verb that comes optionally with or without morphological marking as in (i). The version with the reflexive is not compatible with the adverb ‘*versehentlich*’ (unintentionally) which means that it does not allow the causer reading for the dative.

(i) a. Das Badewasser ist ihm (versehentlich) abgekühlt
 b. Das Badewasser hat sich ihm (*versehentlich) abgekühlt
 the bathwater is/has (REFL) him.DAT (by mistake) cooled down

In all other languages mentioned above both morphological classes of anticausatives allow both readings. This difference between German and all the other languages is related in Schäfer (2007) to the different phrase structural status of the anticausative markers (full pronoun in German vs. clitic/verbal head elsewhere).

A further argument pointing to the same conclusion is that the morphological realization of the oblique causer construction in Caucasian languages does not allow for the affectedness reading (cf. fn 11).

3.1 Semantic properties of the ‘oblique causer construction’⁵

- **Non-intentionality restriction:** Nominative agents are compatible with adverbs stating intentionality, non-intentionality as well as purpose clauses. Oblique causers are only compatible with adverbs stating non-intentionality.

- (22) a. Der Mann zerbrach die Vase (absichtlich/ aus Versehen/
the.NOM man broke the.ACC vase (on purpose/ by mistake/
um die Versicherung zu kassieren)
in order to collect the insurance)
- b. Dem Mann zerbrach die Vase (*absichtlich/ aus Versehen/
the.DAT man broke the.NOM vase (*um die Versicherung zu kassieren)
in order to collect the insurance)

- **Human restriction:** The oblique DP, although interpreted as an unintentional causer, must be human. That is, non-human dative DPs are not allowed in this construction although such DPs are not able to have intentions in the first place.

- (23) a. Das Erdbeben zerbrach die Vase
the.NOM earthquake broke the.ACC vase
- b. *Dem Erdbeben zerbrach die Vase
the.DAT earthquake broke the.NOM vase

Q1: What is the correct syntactic and semantic relation between canonical external arguments (19a, 20a, 21a) and oblique causers (19c, 20c, 21c)? How similar is the oblique causer to a prototypical nominative agent/causer-subject in transitive nominative-accusative-contexts?

Q2: What is the relation between the intentionality restriction and the human restriction? If the ‘oblique causer construction’ does not license intentionality, why then are non-human causers which are not capable of intentions in the first place not licensed in this construction?

- In this talk, I cannot discuss Q2. See the Appendix 2 as well as Kallulli (2006), Schäfer (2007, to appear) for discussion.
- I concentrate on the syntactic part of Q1: what is the structural position of oblique causers?

⁵ These properties are illustrated with German examples, but they hold across languages (cf. Cuervo 2003, Rivero 2004, Kallulli 2006, Schäfer 2007).

(26) *Nominative subject causer:*

- a. ??Der Wind rollte den Ball
the.NOM wind rolled the.ACC ball
b. Der Wind rollte den Ball über die Torlinie
the.NOM wind rolled the.ACC ball across the goal-line

(27) *Oblique causer:*

- a. *Dem Torwart rollte der Ball
the.DAT goalkeeper rolled the.NOM ball
b. Dem Torwart rollte der Ball versehentlich über die Torlinie
the.DAT goalkeeper rolled the.NOM ball inadvertently across the goal-line
'The goalkeeper let the ball roll into the goal by mistake'

- Italian 'roll' is similar. A directional PP makes the predicate telic and triggers 'be'.⁶

- (28) a. La palla **ha** rotolato sotto il tavolo per un secondo /*in un secondo
the ball **HAS** rollPAST under the table for one second /*in one second.
'Located motion: The ball rolled under the table for one second/ *in one second.'
b. La palla è rotolata sotto il tavolo in un secondo /*per un secondo
the ball **IS** rollPAST under the table in one second /*for one second.
'Directed motion: The ball rolled under the table in one second/*for one second.'

- Only the telic/resultative version allows oblique causers:⁷

(29) Quel portiere è un incapace.
that goalie is an inept.

- a. Gli è rotolata per sbaglio la palla nella rete
to-himDAT is rolled by mistake the ball.NOM into the goal
b. *Gli ha rotolato per sbaglio la palla
to-himDAT has rolled by mistake the ball.NOM
'The goalkeeper let the ball roll into the goal by mistake'

➔ Oblique causers show the same aspectual restriction as canonical nominative causers.

➔ This fits with the assumption that they are located in the same structural position, v_{CAUSE} which selects for a resultant state.

⬅ **But:** A detailed analysis of the syntax and semantics of the 'oblique causer construction' reveals that such an analysis cannot be correct. This in turn suggests that the proposal that v_{CAUSE} selects a resultant state is not sufficient. The generalization about causers is larger.

⁶ This is a simplification. Folli & Ramchand (2005) argue that the proposition 'sotto' (under) in (28) is always locative and that the ResultP is optionally introduced by the verb itself; this means that 'rotolare' (to roll) is ambiguous between a non-directed and a directed motion interpretation which is reflected by auxiliary choice. I leave this complication aside.

⁷ Thanks to Roberta D'Alessandro, Cinzia Campanini and Giuseppina Rota for their judgements. Unfortunately, Italian 'roll' (rotolare) can (for most speakers) only form periphrastic causatives as in (i) and (ii). These show at best a slight relation between the licensing of causers and resultativity. The topic of this talk is causers/causation in lexical causatives, not in periphrastic causatives, the latter having different properties.

(i) Il vento ha fatto rotolare la palla nella rete (ii) ?Il vento ha fatto rotolare la palla per tre ore
The wind has made roll the ball into the goal The wind has made roll the ball for 3 hrs

3.3 Against oblique causers as canonical external arguments

- A number of observations argue against the view that oblique causers are simply canonical external arguments of reduced intentionality. (These observations hold across languages.)

3.3.1 Non-alternating, unaccusative verbs

- The oblique-causer construction is crosslinguistically possible not only with verbs undergoing the causative alternation but also with unaccusative verbs which have no transitive counterpart. But unaccusatives do not project a canonical subject position (vP/VoiceP, Kratzer 1996).⁸

German:

- (30) a. Das Kartenhaus ist umgefallen *(anticausative/unaccusative)*
the house of cards is toppled down
'The house of cards has toppled down'
- b. *Hans hat das Kartenhaus umgefallen *(transitive/causative)*
Hans has the house of cards toppled down
'John caused the house of cards to topple down'
- c. Das Kartenhaus ist ihm versehentlich umgefallen *(dative causer)*
the house of cards is him.DAT by mistake toppled down
'John unintentionally caused the house of cards to topple down'

Spanish: (Cuervo 2003, Rivero 2004)

- (31) a. A Juan le florecen los árboles
to John.DAT he.DAT bloom.3.PL the trees
'John causes the trees to somehow bloom (i.e. he is a good gardener)'

Italian: (Schäfer 2007)

- b. A Franco sono appassite tutte le piante in giardino (per errore)
to Franco are.3.PL wilted.PL all the plants in.the garden (by mistake)
'Franco accidentally caused all the plants in the garden to wilt'

Romanian: (Rivero 2004)

- c. Lui Jon îi înfloresc pomii
John.Dat him.Dat bloom.3.PL trees.the
'John causes the trees to somehow bloom (i.e. he is a good gardener)'

Bulgarian: (Rivero 2004)

- d. Na Ivan mu izkipja mljakoto
to Ivan he.Dat boiled.3.SG milk.the
'Ivan unintentionally caused the milk to boil'

Greek: (Rivero 2004)

- e. Tu Ben tu anthisan ta triadafila
the.GEN Ben he.GEN blossom the roses.NOM
'Ben (involuntarily) caused the roses to blossom'

⁸ Or, at least, do not project a specifier in this projection.

3.3.2 Auxiliary selection

- In languages with ‘*have-be*’ opposition in the perfect tense, the ‘oblique causer construction’ selects ‘*be*’ (cf. for example German and Italian above). This suggests that the underlying predicate is intransitive/unaccusative which, in turn, is not compatible with the projection of SpecVoice (the canonical subject position).

3.3.3 Instrument licensing

- Canonical causatives can also involve an unintentionally acting human nominative subject. Importantly, even if the subject acts unintentionally, an instrumental phrase can still be licensed (cf. 32). This shows that intentionality is not a prerequisite for the licensing of an instrumental adjunct (cf. Schäfer 2007 for further discussion).

(32) Der Mann zerbrach die Vase versehentlich mit einem Hammer
the.NOM man broke the.ACC vase unintentionally with a hammer
‘The man unintentionally acted with the hammer so that the vase broke’⁹

- With oblique causers, however, instrumental phrases are strongly deviant (cf. 33).

(33) Dem Mann zerbrach die Vase versehentlich (*mit einem Hammer)
the.DAT man broke the.NOM vase unintentionally (with a hammer)
‘The man unintentionally caused (with a hammer) the vase to break’

3.3.4 The interpretative vagueness of the oblique causer

- Crosslinguistically, oblique causers show interpretative underspecification which is never found with arguments projected in the canonical subject position (SpecVoice). See the Appendix 1 and Schäfer (2007, to appear) for discussion.

3.3.5 Conclusion

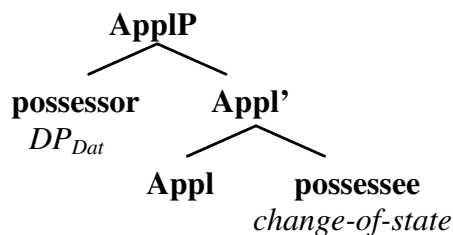
- The relation between the oblique causer and the event is *semantically much less constrained* and *syntactically much less direct* than the relation between canonical causers or canonical agents and the event. From this, it follows that oblique causers cannot be introduced in the same way as canonical causers. **Oblique causers are not introduced by Voice/little v.**
- **Nevertheless:** The observation that both *canonical* and *oblique causers* depend on a telic/resultative syntax suggests two things:
 - a) They are both causers of some kind.
 - b) Since the analysis for canonical causers, which builds on a v_{CAUSE} selecting for a resultant state, cannot be transferred to oblique causers, we should look for an alternative explanation that works for both.

⁹ The sentence is ambiguous with respect to the scope of the adverb ‘*unintentionally*’ but this is the relevant reading for the argument made here.

3.4 An alternative analysis: Oblique causers are projected by applicative heads

- I propose to derive the properties of the ‘oblique causer construction’ from the assumption that the oblique DP is applied to a change-of-state event via an *applicative head* as in (34).
- The underlying predicate is intransitive/unaccusative. The oblique causer is not an argument of the verb (cf. Cuervo 2003, Rivero 2004, Rivero & Savchenko 2004 for such a proposal).
- The applicative head assign inherent case to the DP in its specifier (Anagnostopoulou 2003, McFadden 2004, McIntyre 2006 among many).
- I follow the proposal in Harley (1998, 2002), Cuervo (2003) or McIntyre (2006) that an applicative head itself has very reduced semantics but just establishes an abstract, possessive *have*-relation between its specifier and its complement (here, the change-of-state event).¹⁰
- The construction literally expresses that the oblique causer “has” the change-of-state event.

(34) The structure of the oblique causer construction:



3.4.1 Deriving the semantic restrictions on oblique causers (see Appendix 2)

- All semantic restrictions on the oblique causer can be derived from the assumption that applicative heads express a possessive relation.
 - The *human restriction* follows from the fact that only humans can be *alienable* possessors; non-human entities can only be *inalienable* possessors.
 - The *non-intentionality restriction* and the *no-instrument restriction* follow from the fact that possessive relations are stative; statives do not license instruments or intentionality adverbs. (**He knew the answer on purpose/with the calculator*)

¹⁰ This idea is motivated by the observation that the subject of the English verb ‘*have*’ can carry the same thematic roles as applied datives. The sentences (i)-(iv) give examples of the main interpretations for the subject of English ‘*have*’ (from Harley (1998), cf. also the references there). Notice that in the possessive reading ‘*have*’ takes an entity as its complement, while in the experiencer and causer reading it takes a situation as its complement. In a similar vein, the exact interpretation that the DP in the specifier of an applicative head receives (e.g. affectedness reading, possessor reading, causer reading, ...) derives from the type of structure that it is applied to, i.e. the type of complement of the applicative head (cf. Cuervo 2003, McIntyre 2006, among others).

i) Getafix had a golden sickle (*possession*) iii) Asterix_i has Obelix drop a menhir on him_i (*experiencer*)
 ii) The oak_i tree has a nest in it_i (*locational*) iv) Asterix had Obelix running errands for him (*causative*)

3.4.2 Motivation and Explication: Caucasian languages

- **Tsez** (spoken in western Daghestan), as discussed by Kittilä (2005) and Comrie (2000), provides morphological evidence for this analysis. The oblique causer is morphologically marked with **possessive case**.¹¹

- (35) a. už-ā č'ikay y-exu-r-si (*causative*)
 boy.ERG glass.ABS II-break-CAUS-PAST.WIT
 'The boy broke the glass'
- b. č'ikay y-exu-s (*anticausative*)
 glass.ABS II-break-PAST.WIT
 'The glass broke'
- c. uži-q č'ikay y-exu-s (*oblique causer*)
 boy.POSS glass.ABS II-break-PAST.WIT
 'The boy accidentally broke the glass'

- In **Agul** (spoken in southern Daghestan), possession is expressed with the help of one of the two locative cases, either the *ad-essive* case (originally referring to location near a landmark, to be at a place) or the *post-essive* case (referring to location behind a landmark, to be behind a place). These two cases are used to express actual and permanent possession respectively. Notice that the locative cases are doubled by a prefix on the verb.

- (36) a. za-w nis=na guni fa-a
 I.ADE cheese.ABS=and bread.ABS ADE.be-PRS
 'I have cheese and bread with me. (So, we can take a snack now.)'
- b. za-q ʔu ruš=na sa gada qa-a
 I.POST two daughter.ABS=and one son.ABS POST.be-PRS
 'I have two daughters and one son'

- Ad-relative case is used to express a 'motion from location near a landmark'. Literally, it expresses 'from the possession' or 'from being at a place', i.e. a kind of source.

- (37) cil.i-f-as haḥ-u čuwal!
 wall-AD.ELAT take-away-IMP sack.ABS
 'Take away the sack from the wall!'

- (38) shows a canonical causative construction with an ergative/absolute case-marking.

- (38) baw.a neḥ aḥuzu-ne
 mother.ERG milk.ABS pour-out-PERF
 'The mother poured out the milk'

- (39) shows the corresponding 'oblique causer construction' with the causer argument in the ad-relative case.¹²

¹¹ (35c) is not ambiguous and has only the 'oblique causer' interpretation (p.c. Maria Polinsky). Recall that in the Balkan, Romance and Slavic languages the string [dative + change-of-state predicate] allows for two readings, the *affectedness reading* and the *oblique causer reading*. The fact that in Tsez only the latter reading exists suggests that in the former languages we have a case of ambiguity, not just a case of vagueness (cf. fn. 4).

(39) baw.a-f-as neḱ aḱuzu-ne
 mother.AD.ELAT milk.ABS pour-out-PERF
 ‘The mother accidentally spilled the milk’

- The oblique causer in Agul shows the human restriction (Ganenkov et al. 2008).
 - It is possible with exactly the same class of verbs (verbs of change of state that either have an intransitive version or that are purely intransitive/unaccusative, Ganenkov et al. 2008).
 - It shows the instrument restriction (Ganenkov et al. 2008).
 - It allows exactly the same interpretations (cf. the readings discussed in Appendix 1).
- The construction in Agul shows therefore the same properties and restrictions as the ‘oblique causer construction’ in the Indo-European languages.
 - Its case marking is, however, much more explicit. The construction literally expresses that ‘the change-of-state event comes out of the possession of the oblique argument’.
 - The oblique argument is a “*source*” of the change-of-state event.
- ➔ The oblique DP “*has/possesses* the event which leads to the vase being broken”.

3.4.3 Remaining question: The source of the causative semantics of oblique causer

Q: Why is the possessor of the change-of-state event interpreted as responsible for the coming about of the change-of-state event? What is the source of the causative semantics in the oblique causer construction? And why the resultativity restriction?

4. Causer PPs (and the decomposition of (anti-) causatives)

- Alexiadou et al. (2006) argue that all change-of-state verbs are inherently causative no matter whether they have an external argument or not (cf. also Levin & Rappaport Hovav 1995, Reinhart 2000, Davis & Demirdache 2000).
- Change-of-state verbs are built up by a [Root + Theme] complex expressing a resultant state and a verbal head vCAUS taking the resultant state as its complement.
- vCAUS is taken to introduce *a causal relation* between a causing event (the implicit argument of vCAUS) and the resultant state denoted by the [Root + Theme] complex.
- Causatives and inchoatives/anticausatives differ only in the presence vs. absence of a Voice-projection. Voice introduces the external argument.

(40) (a) inchoatives/anticausatives: (b) causatives:
 [vCAUS(e) [Root + Theme]] [Voice [vCAUS(e) [Root + Theme]]]

¹² Ganenkov et al. (2008) claim that virtually all East Caucasian languages have the ‘oblique causer construction’.

- It is important that causatives and anticausatives have exactly the same event decomposition. **Voice does not introduce an event** but just relates an external argument to an event (this is the original conception of Voice in Kratzer 1996; see also Pytkäinen 2002 and Kratzer 2005 for the perspective that the external argument and the causative event are independent of each other).
- The existence of vCAUS in inchoatives/anticausatives can be detected by the crosslinguistic licensing of Causer-PPs but not agent-PPs (cf. Kallulli 2006, Alexiadou et al. 2006 and references there).

- (41) a. The vase broke from the earthquake/ *from Peter/ *by Peter
 b. The flowers wilted from the heat/ *from Peter/ *by Peter

- (42) a. Die Vase zerbrach durch den Erdstoss/ *durch Peter (German)
 The vase broke through the earthquake/ through Peter
 b. Die Blumen verblühten durch die Hitze/ *durch Peter
 The flowers wilted through the heat/ through Peter

- (43) a. Ta ruxa stegnosan me ton ilio/ *apo ton Petro (Greek)
 the clothes dried-Act with the sun/ *by the Peter
 b. To fito anthise me tin zesti/ *apo ton Petro
 The plant blossomed with the heat/ *by the Peter

4.1 The aspectual licensing of causer-PPs

- **Causer PPs** show the same aspectual restriction as **nominative causers** and **oblique causers**.

German:

- (44) Der Ball rollte *durch den Wind* *(über die Torlinie)
 the.NOM ball rolled *through the wind* **across the goal-line**
 ‘The ball rolled (across the goal-line) from the wind’

Italian:¹³

- (45) a. *La palla ha rotolato per il (troppo) vento
 the ball has rolled for the (too-much) wind
 ‘The ball rolled from the strong wind’
 b. La palla è rotolata nella rete per il forte vento
 the ball is rolled into the goal for the strong wind
 ‘The ball rolled into the goal from the strong wind’

English:¹⁴

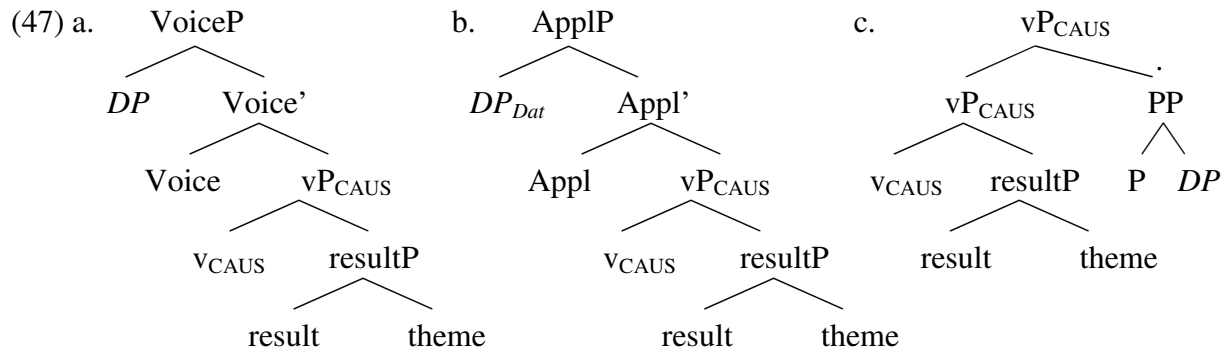
- (46) a. *The ball rolled from the wind
 b. ??The ball rolled across the goal-line from the wind

¹³ p.c. Roberta D’Alessandro, Cinzia Campanini & Giusy Rota.

¹⁴ p.c. Thomas McFadden. Thomas does not like ‘from’ phrases from the very beginning; however, the resultative version improves even for him.

5. Interim conclusion

- The causative semantics is not directly related to the head introducing the external argument, but it is located in the eventive head vCAUS.
- vCAUS selects for a resultant state.
- Voice, Appl and P relate causer DPs to an inherently causative predicate realized by vCAUS.



6. On the relation between resultative syntax and causative semantics

- So far, it was proposed that there exists a semantically annotated verbal head, vCAUS which selects for a resultant state.
- This head occurs in causative predicates, in anticausative predicates and in unaccusative/inchoative predicates. For the latter two types of predicates it was proposed from time to time in the literature, that they are inherently, **i.e. lexically** causative even in the absence of a causer argument (cf. Levin & Rappaport Hovav 1995, Reinhart 2000, Davis & Demirdache 2000, Alexiadou et al. 2006).
- **BUT:** German allows oblique causers as well as causer-PPs even in the context of the eventive copula 'werden' (become) in combination with an adjective expressing the resultant state (but crucially not with the stative copula 'sein' (be)).

(48) a. Dem Chemiker ist (versehentlich) die Säure **heiss geworden**
 the.DAT chemist is inadvertently the.NOM acid **hot become**
 'The chemist inadvertently caused the acid to become hot'

b. Die Säure **wurde** durch die Sonneneinstrahlung **heiss**
 the.NOM acid **became** through the solar radiation **hot**
 'The acid heated from the solar radiation'

(49) a. Die Suppe ist der Mutter (versehentlich) **kalt geworden**
 the.NOM soup is the.DAT mother inadvertently **cold become**
 'The mother caused the soup to become hot'

b. Die Suppe **wurde** durch den Wind **kalt**
 the soup **became** through the wind **cold**
 'The soup cooled from the wind'

- (48) and (49) support the claim that causers can be licensed in the absence of Voice.
- This phenomenon is more restricted in other languages. This, however, is not a restriction on the oblique causer or causer-PPs in these languages, but a restriction on the use ‘*eventive copula + adjective*’, which is blocked in many languages if a corresponding lexical (unaccusative) verb exist.
- If no such verb exists, the use becomes o.k. and the addition of an oblique causer becomes o.k., too.

Italian:¹⁵

- (50) a. Conosco quel chimico.
I-know that chemist.
Per errore gli è **diventato bollente** l'acido
By mistake him.DAT is **become boiling** the acid
‘I know this chemist. He unintentionally caused the acid to become boiling’
- b. L'acido è **diventato bollente** per il (troppo) sole
the-acid is **became too-hot** through the too-much heat
‘The acid became too hot from the strong heat’

- (51) a. Ho conosciuto sua madre.
I have met his mother.
Per errore le è **diventata calda** la zuppa
By mistake to.DAT is **become warm** the soup
‘I met his mother. She unintentionally caused the soup to become too hot’
- b. La stanza **diventerà calda** per il (troppo) sole
the room **became warm** through the (too-much) sun
‘The room became hot from the strong sun’

- Light verb constructions, again, license causer PPs and oblique causers.

- (52) a. Mir ist versehentlich das Radio kaput **gegangen**
me is unintentionally the radio out-of-order **gone**
‘I unintentionally caused the radio to break down’
- b. Das Radio ist durch den Regen/den Sturz kaput **gegangen**
the radio is through the rain/the drop out-of-order **gone**
‘The rain caused the radio to break down’

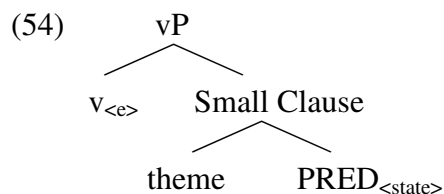
- (53) a. The water on the surface **gets** warm from the sun (google)
b. My problem is that my den **gets** cold from the cold air in the garage (google)

- It is hard to argue that ‘*werden*’ (become) is inherently/lexically causative.
- Should we claim that ‘*werden*’ (become), (as well as ‘turn’ or ‘get’ which actually all select a resultant state) is the spell-out of a vCAUS in these examples ?

¹⁵ p.c. Roberta D’Alessandro, Cinzia Campanini & Giuseppina Rota.

Alternative proposal:

- There is no semantically annotated v_{CAUS} (see Ramchand 2006, Marantz 2006, Hale & Keyser 1993).
- Verbs come just in different eventualities:
 - a) unspecified and unbounded event (process in Ramchand's term)
 - b) state
 - c) ...
- The syntax can built complex event structures out of the atomic parts. Combining a) with b) gives a resultative construction.
- Secondary resultative predicates involve a Small Clause structure (Hoekstra 1988, 1992). (I totally abstract away here from the internal structure of the SC, e.g. from the fact that in goal of motion constructions the PP must be "dynamic in force" (Folli & Ramchand 2005), not just stative.)



- (54) fits actually Higginbotham's (2000) notion of <telic pair formation> (cf. Ramchand's ProcessP-ResultP connection).
 - **This telic pair is the syntactic source of causative semantics.**
- Causative relations are neither lexically not syntactically represented, but are read off of the complex event structure which relates an unbounded event with a state.
- Consider a *Counterfactual Theory of Causation* (Dowty (1979), Lewis (1973)):
 - Let e and c be two distinct actually occurring events in our universe of events E.
 - Then e depends causally on c just in case e wouldn't have occurred if c hadn't.
- > The above syntactic structure in (54) provides two eventualities: an event <e> (vP) and a state <s> predicated of a theme (Small Clause).
- > The above syntactic structure involves a tight syntactic relationship between the two projections realizing the two events: v immediately c-commands the stative projection.
- > At LF, this tight syntactic relationship between vP and the Small Clause is interpreted as a "leading to"-relation; the truth of <s> depends on the truth of <e>; this is a causative interpretation.

6.1 Resultatives and telicity

- Small clause resultatives do not necessarily lead to telicity. Therefore, what is responsible for the causative semantics is not telicity per se, but the complex resultative event structure.¹⁶

- **Pure Path-PPs** make available causers of all three types.¹⁷

(55) a. Der Ball rollte **fünf Sekunden lang** die Linie entlang
the ball rolled **five minutes long** the line along
'The boll rolled for five minutes along the line'

b. *Der Ball rollte **in fünf Sekunden** die Linie entlang
the ball rolled **in five minutes** the line along
'The boll rolled in five minutes along the line'

(56) a. Der Wind rollte den Ball die Linie entlang
the.NOM wind rolled the ball the line along
'The wind rolled the ball along the line'

b. Der Ball rollte durch den Wind die Linie entlang
the ball rolled through the wind the line along
'The ball rolled along the line from the wind'

c. Dem Torwart rollte der Ball (versehentlich) die Linie entlang
the.DAT goal-keeper rolled the ball inadvertently the line along
'The goal-keeper unintentionally caused the ball to roll along the line'

- **Degree achievements** license causers. This suggests that they involve secondary predication of the theme over some kind of state (cf. also Folli & Harley 2005). As with Path-PPs, the secondary predicate *is/can* be unbounded leading to the telicity/atelicity effect known from these verbs (cf. the discussion of open vs. closed scales, Hay et al. 1999, Kearns 2007, Kennedy & Levin (in press), among many).

(57) Das Wasser kühlte (in wenigen Minuten) / (minutenlang) ab
the water cooled in a-few minutes / minutes-long off
'The water cooled in a few minutes / for some minutes'

(58) a. Das Wasser kühlte minutenlang durch den Wind ab
the water cooled minutes-long through the wind off
'The water cooled for some minutes from the wind'

b. Dem Chemiker kühlte das Wasser versehentlich minutenlang ab
the.DAT chemist cooled the water inadvertently minutes-long off
'The chemist caused the water to cool for some minutes'

c. Der Wind kühlte das Wasser minutenlang ab
the wind cooled the water minutes-long off
'The chemist caused the water to cool for some minutes'

¹⁶ Interestingly, Folli & Harley (2006) find the same licensing condition at work in the causative manner-of-motion alternation exemplified in (i) and (ii). What is relevant is the formation of a resultative structure, telicity is just a frequent side effect. I leave it for future work to integrate this construction under the notion of 'causer argument' \approx 'causative event' proposed below.

(i) John ran the dog *(to the park). (ii) John walked Mary along the river all afternoon.

¹⁷ Thanks to a GLOW-reviewer for pointing this out.

6.2 The causer role

- What actually does the causer role express? What is a causer and how does it differ from agents?
- An investigation of the conditions under which instruments are licensed in subject position of change-of-state verbs is illuminating (Alexiadou & Schäfer 2006).
 - DeLancey (1984) observes that (59a) with a pure instrument in subject position is strange; ‘*the axe*’ can be the subject just if it is made clear overtly how it could have the effect: in virtue of some (acquired but independent) (kinetic) energy (as in (59b, c)).

(59) a. #The axe broke the window
b. The axe fell off the shelf and broke the window
c. As I was swinging the axe over my head it hit the window and broke it

- Talmy (1976:53) observes that (60a) “does not fare so badly besides” (60b). He goes on to argue that a sentence like the former “always seems to imply a larger form with a causal event specified”, as in (60b, c).

(60) a. A ball broke the window
b. A ball’s sailing into it broke the window
c. A ball broke the window in/by sailing into it

- This eventive construal becomes even more important with PP-causers:

(61) a. Der #(durch die Luft fliegende) Stein zerbrach die Scheibe
the (through the air flying) stone broke the pane (# _ at least contextually)
b. Die Scheibe zerbrach durch den *(durch die Luft fliegenden) Stein

-> Alexiadou & Schäfer (2006) conclude that instruments become causers if they occur in an eventive construal.

-> The defining property of causers is their **inherent eventivity**. Natural forces are inherently (self-)energetic, i.e. eventive by definition.

→ Causer DPs **name/explicate** the event that leads to the resultant state of the theme (Alexiadou & Schäfer 2006; cf. also Pylkkänen 2002, Folli & Harley 2007). See also the discussion in Solstad (2007, to appear) who calls causers ‘event modifiers’.

→ The oblique causer names a source of the causative event.

6.3 The semantic influence of the formal licenser

- Although the thematic licensing of the causer happens VP-internally, the different formal licensers modify the type of causation and therefore have semantic influence, too. (On direct vs. indirect causation see for example Bittner 1999 or Kratzer 2005).
 - **Voice:** expresses a very tight relation between its specifier and the event in its complement. Causers in Spec Voice are interpreted as direct causers.
 - **Appl:** adds a human restriction (see Appendix 2) and expresses a quite underspecified causative relation between its specifier and the event in its complement (see Appendix 1).
 - **PP:** can express direct or indirect causation. This depends on the individual preposition and the context.
- Greek has two prepositions introducing causers (Alexiadou et al. 2006, Alexiadou & Anagnostopoulou, to appear). Choice of *apo* vs. *me* seems to correlate with *direct* vs. *indirect* causation. In contexts where the causal relation between the causer and the change of state is semantically indirect (the causal chain includes intermediate causes) *me* is favoured and *apo* is dispreferred (in examples (a, b) below *apo* is licensed only in a temporal interpretation corresponding to *since*).

(62) a. *Ta ruxa stegnosan apo / me ton ilio*
the clothes dried-Act by / with the sun
'The clothes dried from the sun'

(63) a. *I times afksithikan me tin krisi tu petreleu / ??apo tin krisi tu petreleu*
the prizes increased with the petrol crisis / by the petrol crisis
'The prizes increased through/from the petrol crisis'

b. *I dimosia sinkinonia alakse me tus Olimpiakus agones /
the public transportation changed with the Olympic games /
??apo tus Olimpiakus agones
by the Olympic games
'Public transport changed through/from the Olympic games'*

- The following transitives suggest that causers in Voice necessarily express direct causation.

(64) a. *O ilios stegnose ta ruha*
the sun dried the clothes
'The sun dried the clothes'

(65) a. *?*I petrelaiki krisi afksise tis times*
the petrol crisis increased the prices
'The petrol crisis let the prices increase'

b. *?*I Olimpiaki agones alaksan to siginoniako sistema*
the olympic games changes the transport system
'The olympic games caused a change in the public transport system'

6.3.1 Two types of Voice?

- It seems that we still need two types of Voice:
 - Voice_{AGENT} provides formal licensing and provides the agent theta role (for proposals about the nature of this thematic role see Alexiadou & Schäfer 2006 or Folli & Harley 2007).
 - Voice_{CAUS} provides formal licensing but does not provide the causer theta role.
 - Alternatively, Voice gives thematic licensing only if necessary. That is, in the case of causer subjects, Voice gives just formal licensing while, in the case of agent subjects, Voice gives both categorial and thematic licensing.
 - (Problem for future research: the external argument in passives is obligatorily felt to be present (even if it is not overtly expressed) and this implicit argument can be a causer. In inchoatives, a causer is felt to be present only if it is overtly expressed. This could be taken as an argument that the implicit argument in passives is syntactically realized by a zero element.)

7. Conclusions

- I have investigated three types of external arguments which all show the same aspectual restriction: they are licit only in resultative contexts.
- I concluded that all three types of external arguments are causers of some kind.
- I discussed theories which assume that causers are thematically licensed by a semantically annotated verbal CAUS-projection.
- These theories must assume that the causative verbal heads c-select a resultative predicate.
- Instead, I argued that *the resultative event structure is the source of the causative semantics*, i.e. thematically licenses causer arguments. The causative semantics are read off at LF of the specific syntactic structure (telic pair, Higginbotham 2000). Causers name the causative event.
- The different causers are syntactically introduced (formally licensed) by different syntactic means (VoiceP, ApplP, PP) which shape the specific causer interpretation.
- Agents are formally and thematically licensed by Voice. Causers are only formally licensed by Voice. The thematic licensing of causers is established inside the VP (below or in the absence of Voice); causers are thematically VP-internal arguments (or modifiers of causative events).
- This difference could be the source of the following contrast between agents and causers in directed motion constructions observed by Folli & Harley (2006): With causers, an accompanying-motion reading is *necessary*; with agents an accompanying-motion reading is *optional*.

(66) a. The tide rolled the log up the beach b. John rolled the ball to the child

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Appendix 1: The interpretative vagueness of the oblique causer

- Crosslinguistically, oblique causers show interpretative underspecification which is never found with causers projected in the canonical subject position (SpecVoice).
- As observed by Ganenkov, Maisak & Merdanova (2008) in their discussion of the counterpart of the oblique causer construction in the Caucasian language Agul, the oblique causer is not necessarily interpreted as *unintentional* causer.
- The construction is compatible with all three readings/contexts in (66). The first involves an unintentional causer, the second an involuntary facilitator, the third an unexpected, but highly intentionally acting causer.

(67) *The possible interpretations of the oblique causer:* (Ganenkov et al. 2008)

- Reading A: The participant affects the patient accidentally, without noticing what s/he is doing.
- Reading B: The participant involuntarily lets something happen by overlooking and not making enough efforts to prevent the situation,
- Reading C: The participant finally (due to effort) succeeds in doing something, although it is not quite expected.

- Below the readings are illustrated with a concrete German example. In addition, I checked the Greek and Italian counterparts of the construction. The existence of the three readings was attested for both languages (p.c. Artemis Alexiadou for Greek, Giuseppina Rota for Italian)

- (68) Als Dem Mädchen die Tür (dann doch noch) aufging
 when the.DAT girl the.NOM door (then after all) open-went
- Reading A: The girl accidentally opened the door (because she pushed it with her elbow while playing with her toys on the floor)
- Reading B: (The mother told the girl to hold the door so that the wind could not open it, but her efforts were not enough) The girl accidentally opened the door / let the door open.
- Reading C: (All the children tried but no one could open the tightly closed door, however it happened so that.) The girl managed to open the door.

Two conclusions:

- The polysemy of the unintentional causer strongly argues against the idea, that the oblique marking of the causer reflects necessarily reduced intentionality (cf. reading C).¹⁸
- The polysemy of the unintentional causer strongly argues against the proposal that the oblique causer DP occupies the canonical subject position, i.e. SpecVoice/little v. The reason is that canonical nominative subjects can express reading A but not readings B and C, as is illustrated with the example in (68) below.

- (69) Das Mädchen hat (versehentlich) die Tür aufgemacht
the.NOM girl has unintentionally the.ACC door opened
- Reading A: The girl accidentally opened the door (because she pushed it with her elbow while playing with her toys on the floor)
- *Reading B: (The mother told the girl to hold the door so that the wind could not open it, but her efforts were not enough) The girl (accidentally) opened the door/let the door open
- *Reading C: (All the children tried but no one could open the tightly closed door, however it happened so that) The girl managed to open the door.¹⁹

- The same situation holds for canonical transitive causatives with non-human causer subjects. The example below can only mean that the rain was so strong that it destroyed the crop (direct causer). It cannot mean some counterpart of the reading B above, that is, an interpretation where the external argument fails to prevent a change of state. A conceivable situation would be that the crop dries up due to the holding off of the rain.

- (70) Der Regen hat die Ernte vernichtet
the rain has the crop destroyed
'The rain destroyed the crop'

Conclusion: The relation between the oblique causer and the event is *semantically much less constrained* and *syntactically much less direct* than the relation between canonical causers or canonical agents and the event. From this, it follows that oblique causers cannot be introduced in the same way as canonical causers. Oblique causers are not introduced by Voice/little v.

Appendix 2: Deriving the semantic restrictions on oblique causers

The human restriction:

- While it is sometimes claimed that there is a general human restriction on applied arguments,²⁰ McIntyre (2006) shows that this general claim is not correct. Non-human

¹⁸ A nice example triggering reading C is the following, provided by Torgrim Solstad (p.c.). 'anspringen' (start up) is a non-alternating, unaccusative verb. Note that the dative DP clearly wants to start the car.

(i) Mir springt der Wagen nie an, aber meiner Frau springt er immer an
me.DAT starts the car.NOM never up, but my wife.DAT starts it.NOM always up

¹⁹ Interestingly, the corresponding NOM-ACC sentence with 'auf-kriegen' (to open-get) conveys exactly this third meaning. See McIntyre (2005) for the claim that English 'get' and German 'kriegen' decompose into *have+become*. This fits with the analysis of the dative as the holder of a *have*-relation as proposed below.

²⁰ E.g. in the discussion about the double object construction:

(i) He sent a letter to (London)/(Mary) (ii) He sent (*London)/(Mary) a letter

entities can show up as datives in the double object construction (cf. 70) and as affected datives (cf. 71).

- (71) a. Sie gaben dem Haus {einen Namen/ eine neue Fassade} (German)
 they gave the.DAT house {a name/ a new façade} (McIntyre 2006)
 ‘They gave the house a name/a new façade’
- b. Pablo le puso azúcar al mate (Spanish, Cuervo 2003)
 Pablo CL.DAT put sugar mate.DAT
 ‘Pablo put sugar in the tee’
- (72) a. Dem Stuhl brachen zwei Beine ab
 the.DAT chair broke two legs off
- b. A la mesa se le rompieron dos patas
 the table.DAT se CL.DAT broke two legs
 ‘Two legs of the table broke’

- However, as McIntyre notes, non-human entities can be applied arguments only if they stay in a relation of **inalienable possession** (a part-whole relation) either with the possessed entity or with the entity undergoing the change of state. (*The house HAS a name / The house HAS a new façade / The tea has sugar in it / The table HAS two broken legs*).
- This is not a necessary condition for human possessors which can also be alienable possessors.
- ➔ It is hard to imagine that a non-human entity (e.g. a natural force) is in an inalienable relation to an entity undergoing a change-of-state and, at the same time, can cause this entity to undergo the change of state. This would mean that the entity could cause the change of its subpart.
- ➔ In the case that oblique causer is [+human] there is no such restriction on the possessive relation.
- ➔ The human restriction is not explicitly written into the unintentional causer construction but derives from one of the building blocks of the construction, namely the possessive relation.

The non-intentionality restriction and the no-instrument restriction:

- The reason why adverbs expressing intentionality are never licensed is once again located in the nature of the possessive relation, especially in the fact that possessive relations are stative.
 - It is a well known fact that stative predicates across languages do not license agentive adverbs of any kind. (Note that the c-example involves a causative ‘have’.)
- (73) a. *John knew the answer intentionally/voluntarily/on purpose
 b. *John had the car intentionally/voluntarily/on purpose
 c. *John had Mary clean the floor intentionally/voluntarily/on purpose

- Nor do stative predicates license instruments:

(74) He knew the answer (*with the calculator)

Q: Why then are adverbs expressing non-intentionality allowed?

- I propose these adverbs (in this context) are not agentive adverbs in the strict sense, i.e. they are not structurally licensed but they are evaluated by pragmatic considerations.
- They are motivated as follows:
 - Oblique causers are necessarily human.
 - Humans causing something can act intentionally or unintentionally by world knowledge; by default they are typically assumed to act intentionally.
 - The oblique causer construction cannot convey this default assumption. It cannot assert intention; i.e. it cannot assert that the default holds.
 - Therefore, the first assumption on encountering an oblique causer is that the default does not hold. Otherwise, the speaker would have used a different construction.
 - That is, we tend to assume that the human causer acts without intention (reading A) or that it renders possible the change-of-state event without wanting to (reading B).
 - But as we saw with the reading C above, the construction itself is not confined to non-intentionality. The non-intentionality of the dative construction, therefore, is just a pragmatic implication of the fact that the construction cannot actively assert intentionality. And, since this implication is pragmatic, it is not obligatory.