

Two types of external argument licensing – the case of causers*

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Abstract

This article argues that the thematic licensing of causer arguments is not a strictly lexical property but depends on the event configuration within the verbal phrase. The central observation leading to this conclusion is that three morphosyntactically different types of causer-DPs are subject to the same licensing condition: they are licit only in the context of a bi-eventive, resultative event structure. This licensing constellation is not only provided by lexically bi-eventive verbs, but also by overt syntactic composition of a mono-eventive verb with a secondary result predicate where the mono-eventive verb does not license causers on its own. The latter constellation argues against coding causer-roles in a verb's lexical entry. Instead, it argues for an account that assumes event decomposition of lexically resultative verbs and some version of a configurational θ -theory. Concentrating on existing syntactic versions of such an account, it is shown that they need to be updated to cover the set of data presented in this paper. A central claim put forward is the need to dissociate the verbal layers introducing causative-resultative event structure (which acts as *thematic licenser* of causers) from those layers introducing external arguments syntactically (*formal licensers*). Concerning the latter, it is shown that causers, although thematically external arguments, are not necessarily introduced by a Voice projection on top of the verbal predicate.

1. Introduction

The argumentation in this paper builds on a discussion of the following three types of causer-DPs: nominative causers, as in (1a), which are canonical subjects of transitive verbs, causers marked with oblique case, as in (1b), which optionally co-occur with inchoative verbs and PP-causers, as in (1c), which also optionally co-occur with inchoative verbs. The languages of investigation will be mainly German (as in (1)), English, Greek and Italian.

- (1) a. *Der Sturm* zerriß das Segel (canonical, nominative causer)
the.NOM storm tore the.ACC sail
'The storm tore the sail.'
- b. *Dem Peter* zerriß das Segel (oblique causer)
the.DAT Peter tore the.NOM sail
'Peter unvolitionally tore the sail.'
- c. Das Segel zerriß *durch den Sturm* (PP-causer)
the.NOM sail tore through the storm
'The sail tore from the storm.'

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I will argue that these three types of causer-DPs are introduced by three different syntactic means/projections as is already suggested by their morphosyntactic dissimilarity. I call these projections “formal licensers” of the respective DPs. Formal licensers provide a syntactic position for a DP to be merged. Nominative causers are canonical external arguments introduced in the specifier of *VoiceP* which occurs on top of a verbal phrase (vP), oblique causers are non-canonical external arguments introduced in the specifier of an *applicative phrase*, again on top of a verbal vP and PP-causers are introduced as the complement of a *preposition* which adjoins to vP.

I will show that despite these morphosyntactic differences, all three types of DPs in (1) have a common event-semantic restriction: they are only licit if their formal licenser combines with a resultative vP expressing a change of state; this I call the *resultative restriction*. I propose that the three types of external argument DPs in (1a-c) share the resultative restriction exactly because they are all causers of some kind. Causers differ thereby from other external arguments, in particular from (human) agents, which are not subject to a similar restriction. Specifically, I propose that the causer θ -role arises from the resultative event structure which acts as the “thematic licenser” of causers. Thematic licensing is necessary to integrate a DP interpretatively into an event.

Further inspection of the resultative restriction suggests that the availability of causers cannot be fixed once and for all in a verb’s lexical entry (as assumed, for example, in the work by Reinhart 2000, 2002 and Reinhart & Siloni 2005) but that it is configurationally determined. The reason is that the resultative restriction is not only fulfilled by lexically resultative verbs but also by resultative structures composed in the syntax by the combination of a verb with a secondary resultative predicate.

Besides illustrating the resultative restriction on three morphosyntactically different causers, I will also propose an implementation of this restriction within a syntactic framework of word formation. The phenomena discussed support the dissociation of those layers of structure introducing causative semantics from those layers introducing external arguments, a perspective also proposed in Pylkkänen (2002/2008), Kratzer (2005), Alexiadou, Anagnostopoulou & Schäfer (henceforth *AAS*) (2006) and Harley (2007); while the causative semantics (and in turn, the causer θ -role) are determined inside the resultative verb phrase, causer arguments are introduced by projections on top of this verbal core. As a consequence, causers are vP-external arguments with respect to formal licensing but vP-internal arguments with respect to thematic licensing.

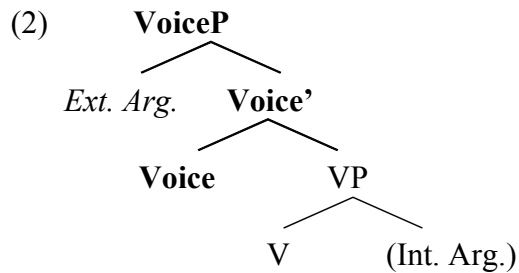
Identifying one common thematic source for all three causers above does not mean that these causers are necessarily interpretatively identical. Formal licensers have semantics of their own which shape the interpretation of the causers, for example whether they are interpreted as direct or indirect causer of the event.

The discussion is organized as follows. In section 2, I show that different types of external arguments (agents, causers and instruments) should not be subsumed under a generalized thematic role such as *originator* or *effector* of an event; a distinction at least between agents and causers is necessary at a morphosyntactic level. In section 3, I review the account by Folli & Harley (2005) who first observe the resultative restriction on canonical nominative causers and implement it in a system of syntactic word formation. In section 4, I discuss the syntax and the semantics of oblique causers and in section 5, I review the analysis of PP-causers in *AAS* (2006). Both types of non-canonical causers ask for some modification of Folli & Harley’s analysis. Building on and updating the theory of the causative alternation in *AAS* (2006), I propose, in section 6, an implementation for the central observation in this paper, namely that the three causers differ in their morphosyntax but, nevertheless, obey the same resultative restriction. In section 7, finally, I suggest that the syntactic decomposition of causative verbs should not make use of semantically annotated verbal heads such as v_{CAUSE}

but that the causative semantics (determining the thematic licensing of causers) is read off at the Conceptual-Intentional Interface from the syntactically composed resultative event structure. In section 8, I conclude my discussion.

2. Canonical external arguments and the distinction between Agents and Causers

According to the *Voice-hypothesis* (Kratzer 1996), canonical external arguments are not coded in the lexical entry of the verb itself, but they are introduced by a (semi-)functional head called *Voice* on top of the verbal phrase as in (2). This head projects a specifier to merge the external argument and, in addition, assigns a θ -role to it, i.e. *Voice* acts as a *formal/syntactic* as well as a *thematic licenser* of the external argument.¹



External arguments can bear different thematic roles. This is notably the case with the external argument of verbs of change-of-state which often license *agent subjects*, *instrument subjects* or *causer subjects*, the latter prototypically exemplified with *natural forces*. (3a-c) illustrates this with the change-of-state verb *break*.

- (3) 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 variability, it is sometimes proposed that the thematic role of the external argument position of change-of-state verbs is underspecified and expresses something like an *effector* (Van Valin & Wilkins 1996) or *abstract causer/initiator* (Ramchand 2008). There are, however, arguments that we need to make a morphosyntactic distinction at least between *agents* and *causers*.²

As discussed by Zombolou (2004) and AAS (2006), lexical change-of-state verbs in Greek allow the same types of external arguments in the active as English does, i.e. agents and causers (as well as causing events) as illustrated in (4a, b). The Greek passive, however, can only have agents as implicit external argument but not causers (or causing events) as the *by*-phrases in (5a, b) illustrate. (Greek forms synthetic passives with a *non-active* (Nact) suffix.)

- (4) a. I komotria stegnose ta malia (Agent)
 the hairdresser dried the hair
 'The hairdresser dried the hair'
 b. O ilios / to aploma ston ilio stegnose ta ruxa (Causer)
 the sun / the hanging-up under-the sun dried the clothes
 'The sun/ hanging them up under the sun dried the clothes'

¹ In the *active*, the external argument is located in Spec,VoiceP, in the *passive*, it is implicit but can optionally be taken up in a *by*-phrase. I remain agnostic about how exactly the implicit external argument of passives is represented in the syntax.

² See section 6 for some discussion of instrument subjects.

- (5) a. Ta malia 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 to aploma 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’

A similar situation is reported for the passive in Icelandic (e.g. Jónsson 2003, 2009) and Hebrew (Doron 2003). Craig (1976) reports a comparable phenomenon for active constructions in Jacaltec, a Mayan VSO-language spoken in Guatemala (see 6a-c). While subjects of intransitive verbs may be animate as well as inanimate, subjects of transitive verbs are restricted to animate agents. Inanimate causers must be introduced via a PP modifying the inchoative version of the verb.³

- (6) a. speba naj te’ pulta (Agent)
 close he cl. door
 ‘He closed the door’
- b. *speba cake te’ pulta (Causer)
 close wind cl. door
 ‘The wind closed the door’
- c. xpehi te’ pulta yu cake (Causer-PP)
 closed cl. door by wind
 ‘The wind closed the door’(lit.: The door closed by the wind)

The deeper reasons for such asymmetric thematic restrictions are not well understood. The phenomenon is, however, hard to capture in lexical frameworks (see AAS 2006 for discussion). The Voice-hypothesis, on the other hand, allows at least an implementation of such restrictions if we assume that different “flavours of Voice” exist. That is, UG provides different Voice heads which assign different θ -roles to the argument they introduce and which, in addition, come in an active and in a passive version (cf. fn. 1). Variation between individual languages resides in the functional vocabulary chosen. Greek, for example, selects the active version of Voice_{AGENT} and Voice_{CAUSE} but only the passive version of Voice_{AGENT} (AAS 2006). Similarly, we can propose that Jacaltec selects only the active version of Voice_{AGENT} but no Voice_{CAUSE} (see also fn. 3).

Ideally, such an analysis should be supplemented by a formal definition of agent and causer arguments. Such definitions have been notoriously difficult to make. I will not try to provide any definite definitions here but will restrict myself to some aspects relevant for the restricted goals of this paper.

Agents of causative verbs such as in (3a) - (6a) name *participants in the causing event*, more concretely instigators of such events. In addition, agents are often assumed to be (intentionally acting) humans while causers are then non-human. Recent studies have, however, argued against the claim that agents are necessarily [+human] or [+animate] (or have to be [+intentional]; see Alexiadou & Schäfer 2006, Folli & Harley 2008, Schäfer 2008). These studies suggest that non-animate entities acting as canonical external argument are not necessarily causers but they can also, in specific contexts, behave grammatically as agents.⁴

³ I will discuss constructions such as (6c) where a causer-PP combines with an inchoative verb in detail in section 4.

⁴ Non-animate agents typically occur as subjects of unergatives (i) but also of transitives as in (ii). That these subjects are agents is, for example, suggested by the fact that they can occur in the *by*-phrase of the Greek passive (Alexiadou & Schäfer 2006) which, as discussed above, does not license causers.

Since such non-animate agents are not relevant for this article, I assume the simplification that agents are [+human].⁵ But, as will be discussed in section 4, human agents do not necessarily have to act with intention.

Causers, on the other hand, are traditionally assumed to be [-human]. Prototypical instances of causers are natural forces (e.g. storm, earthquake ...). I will argue in section 6 that the defining property of causers is that they are inherently eventive and, therefore, can modify (or stand in for) the causative verbal sub-event. Levin & Rappaport Hovav (1995:84) express a similar idea when they say that causers “correspond to the entire causing subevent”. Similarly, Pykkänen (2008:93) proposes that a causer “does not name a participant of the causing event, but rather names the causing event itself”. The integration of oblique causers illustrated in example (1b) above turns out to be difficult; as we will see in section 4, these are necessarily [+human] and (typically) [-intentional]. While the human restriction seems to qualify them as agents, I will, nevertheless, argue that they are better analyzed as a kind of causer. The central argument in favour of this view is that they crucially depend on an event leading to a secondary result, a restriction that applies to prototypical causers but not to prototypical agents.

3. The resultative restriction on canonical causers

Folli & Harley (2005) identify an aspectual restriction on the licensing of canonical nominative causer: these can only occur in resultative contexts.⁶ They show this for English and Italian by comparing lexical causative verbs expressing a change-of-state (e.g. *destroy*) with verbs of consumption. While the external argument of lexical causative verbs can be either a (non-human) causer (7a/8a) or a (human) agent (7b/8b),⁷ verbs of consumption license only human agents as their subjects, not causers (9a/10a vs. 9/10b).

- (7) a. The sea destroyed the beach
 b. The groom destroyed the wedding cake
- (8) a. Il mare ha distrutto la spiaggia
 the sea has destroyed the beach
 b. Lo sposo ha distrutto la torta nuziale
 the groom has destroyed the cake nuptial
- (9) a. *The sea ate the beach
 b. The groom ate the wedding cake
- (10) a. *Il mare ha mangiato la spiaggia
 the sea has eaten the beach
 b. Lo sposo ha mangiato la torta nuziale
 the groom has eaten the cake nuptial

(i) The train whistled (ii) The jukebox played a famous Jazz song

⁵ That is, canonical subjects which are [+human, +intentional] are clearly agents and can serve as reference point for this thematic role.

⁶ Travis (2005) identifies a similar restriction on the licensing of non-volitional external arguments in Malagasy and arrives at a quite similar conclusion about the origin of their θ -role as I do here. She proposes that the availability of causers (and non-volitional agents) depends on a telic inner aspect which is implemented by an aspect-projection on top of VP. I will argue in section 7.1 that, instead of telicity, resultativity is the correct characterization of the licensing condition on causers, at least in the languages discussed in this paper.

⁷ Of course, there are lexical causative verbs such as ‘*murder*’ which allow only intentional subjects. See, for example, Folli & Ramchand (2005) or AAS (2006) for a filtering mechanism on possible external arguments which is driven by encyclopaedic knowledge associated with verbs/verbal roots.

Lexical causative verbs expressing a change-of-state involve a resultative, i.e. bi-eventive event structure while verbs of consumption are mono-eventive activities (e.g. Rappaport Hovav & Levin 1998). Folli & Harley observe that if verbs of consumption are overtly combined with a secondary resultative predicate, thereby forming a bi-eventive event structure overtly in the syntax, they suddenly allow causers in their subject position, too. For English, they provide examples where verbs of consumptions combine with a result state expressed by a particle such as *away* or *up* (11b, 12b); these particles, they argue, project a small clause thereby expressing secondary predication over the theme argument.

- (11) a. *The sea ate the beach
 b. The sea ate *away* the beach

- (12) a. *?The wind carved the beach
 b. The wind carved *away* the beach

In Italian, verbs of consumption allow causer subjects if a reflexive clitic *si* is added, as in (13b) and (14b).

- (13) a. *Il mare ha mangiato la spiaggia
 the sea has eaten the beach
 b. Il mare si è mangiato la spiaggia
 the sea REFL is eaten the beach

- (14) a. *Il vento ha ritagliato un pezzo di spiaggia
 the wind has carved a piece of beach
 b. Il vento si è ritagliato un pezzo di spiaggia
 the wind REFL is carved a piece of beach

Note that the insertion of the reflexive clitic in (13b, 14b) goes along with a shift in auxiliary selection from *avere* (have) to *essere* (be). Folli & Harley argue that both phenomena, insertion of the reflexive clitic as well as selection of the auxiliary *essere* reflect a resultative structure.⁸ In the context of manner-of-motion verbs the shift in auxiliary selection is connected to an aspectual shift from an unbounded to a bounded event in many languages. While manner-of-motion verbs are, by themselves, unbounded, they can be bounded by the addition of a directional PP.⁹ Below in (15), the PP *nel bosco* can either be interpreted as locational (within the woods) or as directional (into the woods); in the latter case the verb still expresses the manner of motion and the PP provides the end point of this motion. Importantly, under the latter interpretation *essere* must be used to express the perfect tense.

⁸ For details about how the reflexive clitic and the verb are syntactically integrated into this resultative structure, I refer the reader to Folli & Harley (2005). See Campanini & Schäfer (2010) for an alternative analysis of examples as in (13b/14b). These authors analyze *si* as a reflexive clitic merged in the specifier of a low applicative head where it receives the thematic role of a possessor/incorporator and is bound by the subject. Crucially, this alternative analysis also assigns a resultative event structure to (13b)/(14b). However, it does not relate the auxiliary shift observed in (13/14) to the resultative structure but to the binding relation between the subject and the possessor.

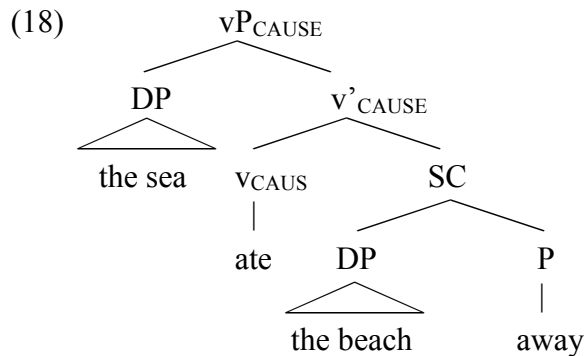
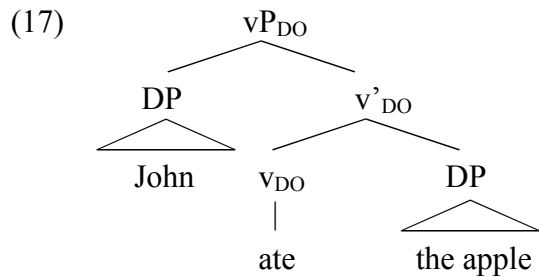
⁹ In Italian, such a shift from unbounded manner-of-motion constructions to bounded goal-of-motion constructions is possible only with a very restricted number of manner-of-motion verbs. See Folli (2002), Folli & Harley (2005) or Folli & Ramchand (2005) for further discussion.

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

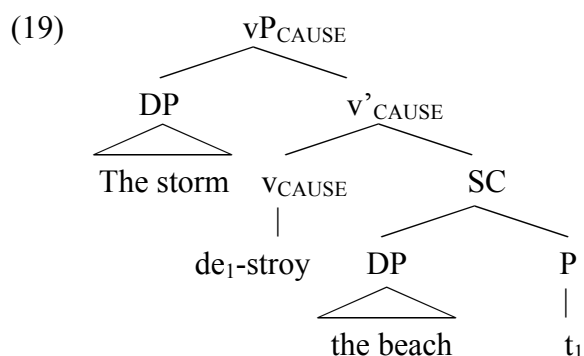
The examples below indicate that, in the context of verbs of consumption, the insertion of the reflexive clitic *si* (accompanied by the shift in auxiliary selection) leads to a resultative interpretation; while the example (16a) without the reflexive is compatible with a continuation which negates that a culminating end state is reached, in (16b) with the reflexive clitic such an end state cannot be denied.

- (16) a. Gianni *ha mangiato una mela, ma non l'ha finita*
 John has eaten an apple but NEG it has finished
 'John ate an apple, but he didn't finish it'
 b. #Gianni *si è mangiato una mela ma non l'ha finita*
 John REFL is eaten an apple, but NEG it has finished
 'John ate an apple up, but he didn't finish it'

Folli & Harley propose a constructionalist-type analysis for the effect illustrated in (11)-(14). Verbs do not restrict the interpretation of their external argument lexically. Instead, the event structure of verbs is syntactically composed by a combination of the verb and different functional projections (flavours of *v*) on top of it and this functional structure in which a verb is inserted determines the event role of the external argument. They do, however, refrain from a radical constructionalist account and assume that there is a residue of lexical specification. The functional vocabulary building event structure comes with specific selectional restrictions. This, they argue, is necessary to keep structural variation limited and to avoid overgeneration. In the case at hand, it is necessary in order to derive that plain activity verbs such as consumption verbs or plain manner-of-motion verbs do not allow causer but only agent subjects while resultative structures allow causer subjects. Concretely, they propose two different flavours of light verbs, causative v_{CAUSE} and agentive v_{DO} which place different restrictions on their subjects as well as on their complements. On the one hand, these light verbs determine the thematic interpretation of their specifier: v_{DO} needs an animate agent subject, v_{CAUSE} only requires that the subject be a possible causer; since, in Folli & Harley's conception, a possible causer can be either [+human] or a [-human], the v_{DO} head allows a subset of the subjects that v_{CAUSE} allows. On the other hand, the two *v*-heads place different c-selectional restrictions on their complements: v_{DO} takes a nominal (an Incremental Theme) as its complement as illustrated in (17). v_{CAUSE} , on the other hand, selects a stative Small-Clause complement, creating essentially a resultative structure as in (18). Note that with these trees there remains the question how the lexical verb (here *eat*) enters the structure. Folli & Harley propose that these either modify the functional verbal heads (v_{DO} or v_{CAUSE}) via a process of manner incorporation (see also section 5) or that they project a further process *vP* (as in Folli & Ramchand 2001) below v_{DO} or v_{CAUSE} . The trees below are meant to give a simplified version of a manner incorporation; that is *eat* does not project but just modifies v_{DO} or v_{CAUSE} .



The data discussed by Folli & Harley argues for a decomposition of lexical change-of-state verbs. If verbs of consumption allow causer subjects as soon they combine with a resultative secondary predicate (a Small-Clause in their conception), and if verbs that lexically express a change of state are the verbs that prototypically allow causer subjects, then it makes sense to assume that the latter class of verbs also decomposes at some level into an event and a resultant state. Within a syntactic framework of verb formation, this means that the structure of change-of-state verbs such as *destroy* or *break* is basically the same as in (18), i.e. it also involves a bi-eventive, resultative structure. The only difference is that in lexical change-of-state verbs the resultant state is not projected by a free but by a bound morpheme which moves and incorporates into v_{CAUSE} . For de-adjectival change-of-state verb such as *red* the resultative predicate would be provided by the adjective *red* which moves and incorporates into a v_{CAUSE} which is phonologically realized as *-en*. For a verb like *destroy*, it was proposed that the particle *de* spans a Small-Clause and incorporates into the phonological overt v_{CAUSE} *stroy* as illustrated in (19) (Alexiadou 2003, Marantz 2003).¹⁰



The resultative restriction on causers identified by Folli & Harley is problematic for the traditional idea that the thematic role of a verb's external argument is once and for all coded in the verb's lexical entry (the most prominent recent adherents to this assumption are

¹⁰ More concretely, *stroy* acts as a manner modifier of v_{CAUSE} .

Reinhart 2000, 2002, Reinhart & Sioni 2005). The data in (11-14) suggest that this is wrong for consumption verbs. Whether these verbs allow for causer-subjects or not is determined by the event-configurational context. Folli & Harley propose that the lexical properties of the functional heads v_{DO} and v_{CAUSE} bring about this correlation between event structure and the event role of the external argument. The resultative restriction on causers holds because v_{CAUSE} selects for a causer in its specifier and a Small-Clause expressing a result state as its complement. Under a decomposition approach to lexical causatives the same explanation can work, i.e. these verbs are resultative and allow causer-subjects because they involve v_{CAUSE} (but see fn. 7).

Before I turn, in the next section, to a different type of causer argument, let me quickly illustrate that the licensing of causer subjects via the addition of overt secondary resultative predicates is not restricted to verbs of consumption. The same point can be made with manner-of-motion verbs such as English *roll* in (20). This verb is basically atelic and expresses just a manner of motion without specifying any path or telos of this motion. As already seen above for Italian, such a manner-of-motion verb can be combined with a goal-PP leading to a resultative interpretation. And, as with the consumption verbs above, the external argument of such a manner-of-motion verb can be a causer once the resultative goal-PP is present. I will come back to manner-of-motion verbs below where I show that the Italian and German counterparts of the examples in (20) show exactly the same behavior. For the time being, such data could be seen as confirmation of the generality of Folli & Harley's proposal.

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

A reviewer points out that while the data discussed in this section argue against coding a verb's external θ -role once and for all in the verb's lexical entry, the resultative restriction on causers can, in principle, be handled in a lexicalist theory of word formation if this allows making reference to event decomposition. I agree that the above data as well as related data to be presented in later sections are, in principle, amenable to a lexicalist approach. I also agree with the reviewer's view that while Folli & Harley provide an implementation of the resultative restriction within a syntactic approach to verb meaning, they do not provide an explanation as for why the resultative restriction on causer subjects holds. (As the same reviewer correctly points out such an explanation will ultimately be semantic.) Concerning the latter point, my contribution in the following sections will also be modest. While an ultimate explanation of the resultative restriction on causers is desirable, it is simply beyond the scope of the present paper. Instead, I will argue that Folli & Harley's syntactic implementation of the resultative restriction on causers needs to be modified in order to capture the whole set of facts. I will, therefore, propose an alternative syntactic implementation of the resultative restriction on causers and an alternative syntax of change-of-state verbs in general.¹¹ In the next section, I turn to oblique causers which, once analyzed in detail, ask for an update on Folli & Harley's account.

4. Oblique Causers

In this section, I introduce a different type of external argument, so called *oblique causers* which have been reported to exist in many Indo-European languages (e.g. Albanian, Bulgarian, German, Greek, Italian, Polish, Romanian, Serbo-Croatian, Slovenian, Spanish; cf.

¹¹ See von Stechow (1995, 1996) for an argument that the event decomposition of change-of-state verbs, and, as an indirect consequence, also the resultative restriction on causers, should be handled in the syntax.

Cuervo 2003, Rivero 2004, Kallulli 2006, Schäfer 2008) and in many East-Caucasian languages (Ganenkov et al. 2008).

Below, I illustrate the oblique causer in German (21), Italian (22) and Greek (23). Oblique causers are typically exemplified in the context of anticausative verbs, i.e. the intransitive version of verbs undergoing the causative alternation. In the a-examples, we find canonical transitive sentences involving causative verbs in these three languages, in the b-examples, we find the corresponding anticausative uses and in the c-examples, we find the oblique causer constructions where an oblique DP (marked dative in German and Italian and genitive in Greek) is added to the anticausative uses in the b-examples.¹² These oblique DPs are interpreted as the *unintentional/involuntary causer* of the change-of-state event expressed by the anticausative verb (but see below for important refinement).

- (21) 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’
- (22) 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 rompe il vaso (oblique causer)
to.DAT Francesca REFL broke the.NOM vase
‘Francesca unintentionally caused the vase to break.’
- (23) 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’

Note that in most languages which have oblique causers the string “*oblique DP + anticausative*” is ambiguous between two and sometimes even three readings. Besides the interpretation as a causer, the oblique DP can be interpreted as affected by the change-of-state

¹² The Italian anticausative in (22b, c) is formed with a reflexive clitic and the Greek anticausative in (23b, c) is formed with non-active morphology. Both languages also have a class of morphologically plain, i.e. unmarked anticausatives which can also combine with oblique causers. The German anticausative verb chosen in the examples (21 b, c) is unmarked. See below on German anticausatives marked with the reflexive pronoun ‘*sich*’.

event (affectedness reading) or, in some languages, also as the possessor of the theme undergoing the change of state (possessor reading). Rivero (2004) gives the following three glosses for the Greek example in (23c):

- (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)

Different contexts can enforce one of the above readings. The causer reading is enforced by adding adverbs such as *unintentionally*, *by mistake* or *inadvertently*. So while the German string in (21c) actually has two readings, one where the dative is interpreted as (negatively) affected by the breaking event and a one where the dative is understood as the causer of the breaking event (the possessor reading is absent in German, or at least not very prominent; see McIntyre 2006 for some discussion), the following example involving the adverb '*versehentlich*' (by mistake) only has the causer reading.

- (24) Dem Mann zerbrach versehentlich die Vase (oblique causer)
 the.DAT man broke by-mistake the.NOM vase
 'The man unintentionally caused the vase to break'
 '*The vase broke and the man is (negatively) affected by this'

The affectedness reading, on the other hand, is enforced if a DP different from the oblique DP is necessarily interpreted as the causer of the event. This is the case in the context of the transitive version of '*break*' in (25) where the dative can only be interpreted as affected by the verbal event. The reason is that the nominative subject is necessarily interpreted as the causer of the event, and since an event can only have one causer, the dative is forced to shift to its affectedness interpretation.

- (25) Die Katze zerbrach dem Mann die Vase
 the.NOM cat broke the.DAT man the.ACC vase
 'The cat broke the vase and the man is (negatively) affected by this'
 '*The cat broke the vase and the man caused the vase to break'

In the following sections, I will only be concerned with the causer reading of oblique DPs.¹³ However, before I turn to a more detailed discussion of this reading, it is important to stress that the difference between the 'affectedness reading' and the 'oblique causer reading' is a case of ambiguity, not just a case of vagueness (see also Kallulli (2006) for this point). One argument comes from German anticausatives. German (as many other languages) has morphologically unmarked anticausatives and anticausatives marked by a reflexive pronoun. As discussed in detail in Schäfer (2008), these two types of anticausatives behave semantically the same but differ just in the interpretations they make available for a dative DP. While datives in the context of unmarked anticausatives can have both the 'affectedness reading' and the 'oblique causer reading', the latter reading is blocked in the context of reflexively marked anticausatives. This can be illustrated with an anticausative verb that comes optionally with or without reflexive marking as in (26). The version with the reflexive is not compatible with the adverb '*versehentlich*' (by mistake) which means that it does not make available the causer reading for the dative but only the affectedness reading.

¹³ See Cuervo 2003, Rivero 2004, Kallulli 2006, or Schäfer 2008 for detailed discussion and analyses of the other readings. See also fn. (27).

- (26) 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
 ‘The bathwater cooled and he is affected by this’
 ‘The bathwater cooled and he unintentionally caused this to happen’

While other languages such as Italian in (22) or Greek in (23) also have marked and unmarked anticausatives, they do not restrict oblique causers to unmarked anticausatives. For reasons of space, I must refer the interested reader to Schäfer (2008) for further discussion and a proposal how to derive this difference.¹⁴ But note that the disambiguation seen in (26b) strongly suggests that the difference between the causer reading and the affectedness reading is not just a case of vagueness but, instead, must be a case of ambiguity.¹⁵ In a similar vein, we will see in section 4.4.1 that Tsez, a Northeast Caucasian language, has oblique DPs which only get the causer reading but lack the affectedness reading altogether; once again, this strongly suggests that the two readings are independent from each other.

4.1 Semantic properties of oblique causers

Oblique causers show two semantic restrictions. These are illustrated below with German examples, but they hold across languages (cf. Cuervo 2003, Rivero 2004, Kallulli 2006, Schäfer 2008, Ganenkov et al. 2008).

In contrast to nominative agents which are compatible with adverbs stating intentionality, non-intentionality as well as purpose clauses (27a), oblique causers are only compatible with adverbs stating non-intentionality (27b). I call this the *non-intentionality restriction*.

- (27) 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)
 (on purpose/ by mistake/
 in order to collect the insurance)

Furthermore, although the oblique DP is (typically) interpreted as an *unintentional* causer, it must be [+human] (cf. 28a, b).¹⁶ That is, non-human oblique DPs are not allowed although such DPs are not able to have intentions in the first place. I call this the *human restriction*.

¹⁴ In Schäfer (2008), I try to relate this difference between German and languages such as Italian or Greek to the different phrase structural status of the anticausative marker (a full reflexive pronoun in German vs. a reflexive clitic in the Romance languages and a verbal head in Greek).

¹⁵ Crucially, German marked and unmarked anticausatives do not show any further semantic differences such as the presence vs. absence of an implicit causer argument or other causative meaning aspects. As shown in Schäfer (2008), a number of tests sensitive to the presence vs. absence of a (implicit) causer argument or other causative meaning aspects give exactly the same result for both types of German anticausatives. Therefore, the disambiguation seen in (26b) is very different from the one seen in (25). While the one in (25) is semantically driven (an event can only have one causer), the one in (26b) is driven by a formal property of the clause, i.e. the presence of the non-thematic reflexive pronoun.

¹⁶ German allows also animals as oblique causers. This suggests that the correct generalization is [+animate] but I have not investigated this in any detail across languages.

- (28) 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

4.2 On the relation between nominative and oblique causers: Oblique causers as canonical external arguments of reduced intentionality?

These semantic restrictions pose at least the following two sets of questions: First, what is the correct syntactic and semantic relation between canonical external nominative arguments (21a, 22a, 23a) and oblique causers (21c, 22c, 23c)? How similar is the oblique causer to a canonical agent or causer subject in nominative-accusative contexts? More specifically, what is the structural position of oblique causers? Second, what is the relation between the intentionality restriction and the human restriction? If oblique causers do not license intentionality, why then are non-human entities which are not capable of intentions in the first place not licensed as oblique causers?

One possible view on the latter question would suggest that ‘non-intentionality’ is a key defining feature of oblique causers. (I will show later on that this proposal is untenable). This would mean that the use of an oblique causer is an explicit way to stress that the causer acts without intention. If this were the case, then the oblique causer would presuppose the oblique DP’s capacity for intentionality (i.e. [+human]); the human restriction would derive from the non-intentionality restriction as it does not make sense to stress that an entity not capable of intentions causes something without intention. Such an effect can already be observed with canonical nominative causers as is illustrated in (29).

- (29) Der Sturm hat (#absichtlich / #ohne Absicht) das Segel zerrissen
 the.NOM storm has intentionally / without intention the.ACC sail torn
 ‘The storm tore the sail (#on purpose / #without intention)’

This proposal about the relation between the human condition and the non-intentionality restriction is therefore a functional one: non-canonical subject-marking of oblique causers would be a sign to mark the distance from a default, i.e. to highlight the low degree of agency of a highly agent-worthy entity.

Building on this idea that the human restriction derives from the non-intentionality restriction, one could go on and hypothesize that oblique causers are syntactically quite similar to canonical causers or agents. That is, despite their oblique case-marking they could be located in the canonical external argument position. Such an account has been formulated by Kallulli (2006). She proposes that canonical nominative subjects and oblique causers are located in the same structural position, Spec,vP (or Spec,VoiceP in the sense of Kratzer (1996)). The thematic properties of the element in the specifier of v are determined by features on v (i.e. she proposes a version of the flavours of v account). In the case of the oblique causer, v has the same specification as with canonical causers (i.e., it is of the type v_{CAUSE}) but, in addition, it has a feature signalling reduced intentionality. Although this is a simplification of Kallulli’s account, one could assume that the oblique case marking is the reflex of this feature of reduced intentionality. While I will show in section 4.3, that Kallulli’s analysis of oblique causers is problematic, let us turn first to an interesting prediction it makes.

4.2.1 The resultative restriction on oblique causers

The proposal that oblique causers - as canonical causers - appear in the specifier of v_{CAUSE} (which, in addition, has a feature of reduced intentionality) makes an interesting prediction.

Recall, that Folli & Harley (2005) proposed that v_{CAUSE} c-selects a resultant state. It seems, therefore, that we have a test case. The above analysis suggests that oblique causers, like canonical causers, should be possible only in resultative contexts.

The prediction is not easy to test as oblique causers are mainly found with verbs that undergo the causative alternation and most of these verbs express a change of state, i.e. they lexically involve a resultant state. However, there are exceptions which suggest that the above prediction is indeed borne out. At the end of section 3, I showed that the manner-of-motion verb *roll* allows canonical causer subjects only if it combines with a secondary resultative predicate. Since this verb (and its counterparts in other languages) alternates between a causative, transitive use and an intransitive use (i.e. it undergoes the causative alternation; see Levin 1993 for English), it can serve as a test case for oblique causers. Below, this is done for German and Italian.¹⁷

The alternation of the German verb *rollen* (roll) between a transitive and an intransitive use is illustrated in (30). (Note that in its intransitive use *rollen* behaves as an unaccusative verb: It selects *sein* (be) in the perfect, allows the formation of a pre-nominal past participle and refrains from (impersonal) passive formation.)

- (30) a. Hans rollte den Ball
 John.NOM rolled the.ACC ball
 ‘John rolled the ball’
 b. Der Ball rollte
 the.NOM ball rolled
 ‘The ball rolled’

As in English, German *rollen* is basically mono-eventive and atelic (31a). Addition of a resultative Goal-PP as in (31b) leads to telicity.

¹⁷ Levin (1993) lists *bounce*, *drop*, *float*, *move*, *slide* and *swing* as manner-of-motion verbs similar to *roll*. In German, *bewegen* (move) and *rutschen/gleiten* (slide) clearly do not lexically involve a result state (as the addition of the adverb *wieder* (again) does not yield an ambiguity between a restitutive and a repetitive reading). They should, therefore, license causers only in the context of a secondary resultant predicate, a prediction that turns out to be basically correct. However, there is the complication that, for independent reasons, these verbs are compatible only with two of the three types of causers discussed in this paper. German *bewegen* undergoes the causative alternation but its anticausative use is formed with the reflexive pronoun ‘*sich*’ which makes oblique causers impossible (see the discussion of 26a, b). Nominative causers and PP-causers (the latter discussed in section 5) are indeed possible only in the context of result phrases.

- i) Der Wind bewegte den Vorhang ??(hin und her)
 the.NOM wind moved the.ACC curtain (back and forth)
 ‘The wind moved the curtain back and forth.’
 ii) Der Vorhang bewegte sich durch den Wind ??(hin und her).
 The.NOM curtain moved REFL through the wind (back and forth)
 ‘The curtain moved back and forth from the wind.’
 The closest translation to *slide* does not allow a transitive/causative use but only an unaccusative use. Again, oblique causers and PP-causers are possible only in the presence of a resultative PP.
 iii) Dem Mann rutschte versehentlich der Wagen *(von der Strasse)
 the.DAT man slid inadvertently the.NOM car (off the street)
 ‘The man caused inadvertently that the car slid off the street.’
 iv) Der Wagen rutschte durch die hohe Fliehkraft ??(von der Strasse)
 the.NOM car slid through the high centrifugal force (off the street)
 ‘The car slid off the street from the high centrifugal force.’

- (31) a. Hans rollte den Ball (*in fünf Minuten / fünf Minuten lang)
 Hans rolled the ball (in five minutes / five minutes long)
 ‘John rolled the ball *in/for five minutes’
- b. Hans rollte den Ball (in fünf Sekunden / *fünf Sekunden lang)
 Hans rolled the ball (in five seconds / five seconds long)
 über die Torlinie
 across the goal-line
 ‘John rolled the ball across the goal-line in/*for five minutes’

Crucially, canonical nominative causers and oblique causers behave the same; they are only possible if the predicate is resultative.¹⁸ That is, the *resultative restriction* holds for both, canonical as well as oblique causers.

- (32) *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

- (33) *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 *rotolare* (roll) is similar. While the verb is basically atelic, a directional PP makes the predicate telic. This is illustrated here with its intransitive use.¹⁹

- (34) a. La palla **ha** rotolato sotto il tavolo
 the ball **HAS** roll.PAST under the table
 per un secondo/*in un secondo
 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
 the ball **IS** roll.PAST under the table in one
 secondo /*per un secondo
 second /*for one second
 ‘*Directed motion*: The ball rolled under the table in one second/*for one second.’

¹⁸ Note that *rollen* is a verb that (in its basic, unmodified use) excludes causer subjects and, nevertheless, has an unaccusative counterpart. It is therefore a counterexample to the strong, but just not perfect generalization in Levin & Rappaport Hovav (1995) or Reinhart (2002) that only transitives that select an underspecified external argument (agent OR causer OR instrument) can detransitivize.

¹⁹ This might be a simplification. Folli & Ramchand (2005) argue that the proposition *sotto* (under) in (34) is always locative and that a ResultP is optionally introduced by the verb itself; this means that *rotolare* is ambiguous between a non-directed and a directed motion interpretation which is reflected by auxiliary choice. I leave this complication aside as it does not threaten the general point of my argumentation.

Note that Italian *rotolare* differs from German *rollen* in that it selects *essere* (be) only in its telic/resultative use. This might suggest that *rotolare* is not unaccusative but unergative in its atelic, intransitive use. Be it as it may, the crucial observation is that if and only if *rotolare* is combined with a resultative goal-PP are oblique causers possible:^{20/21}

- (35) Quel portiere è un incapace.
 that goalie is an inept.
 a. Gli è rotolata per sbaglio la palla nella rete
 him.DAT is rolled by mistake the.NOM ball into-the goal
 b. *Gli ha rotolato per sbaglio la palla
 him.DAT has rolled by mistake the.NOM ball
 ‘The goalkeeper let the ball roll (into the goal) by mistake.’

To conclude, oblique causers show the same restriction as canonical causers. They are only possible in resultative contexts. This seems to fit with the hypothesis that they are quite similar to canonical causers and, therefore, are located in the same structural position, i.e. in the specifier of v_{CAUSE} . If this functional head selects for a resultant state as proposed by Folli & Harley (2005) we can understand why both causers show the same resultative restriction.

However, a more detailed analysis of oblique causers reveals that such an analysis cannot be maintained. As the next section will show, oblique causers are not located in the same position as canonical external arguments. This in turn suggests that the proposal that v_{CAUSE} selects a causer as its specifier and a resultant state as its complement is not sufficient as it accounts only for the resultative restriction on canonical nominative causers but not for the fact that oblique causers show the very same restriction. Further, if we believe that this parallelism between canonical and oblique causers is not just an accident then we have to conclude that the explanation is not even correct for canonical causers. Since the restriction holds for different types of causers introduced by different syntactic means, its explanation must be formulated in a different, broader way than proposed by Folli & Harley.

4.3 Against oblique causers as canonical external arguments

A number of observations about the syntax and the semantics of oblique causers argue against the view that these are simply canonical external arguments of reduced intentionality. (These observations are illustrated mainly with German data, but they hold across languages; see Schäfer 2008, Ganenkov et al. 2008).

First of all, oblique causers are possible not only with verbs undergoing the causative alternation but also with change-of-state unaccusatives which lack a transitive counterpart.²² The phenomenon is illustrated below for German. (36a, b) show that the verb *umfallen* (topple down) is a pure unaccusative verb which does not combine with a canonical external argument. (36c), on the other hand, shows that an oblique causer is possible in the context of this verb. If we assume that (36b) is out because pure unaccusatives do not project a canonical

²⁰ Many thanks to Roberta D’Alessandro, Cinzia Campanini and Giuseppina Rota for their judgements on the Italian data in this paper.

²¹ Unfortunately, Italian *rotolare* (to roll) can (for most speakers) only form periphrastic causatives as in (i) and (ii) but not lexical causatives. Periphrastic causatives show at the very best a slight relation between the licensing of causers and resultativity. The same holds for periphrastic causatives in German.

(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 three hours

²² Such pure unaccusatives are labelled “internally caused” in Levin & Rappaport Hovav (1995) (see also AAS 2006 for discussion). The question why these verbs do not transitive is beyond the scope of the present paper. Since these verbs combine with oblique causers and with PP-causers (see section 5) we have to conclude that they do not reject causation per se (see also McKoon & Macfarland 2000 and Wright 2002).

subject position (Spec,vP or Spec,VoiceP), then we have to conclude that the oblique causer in (36c) is also not located in this position.

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

Below, I list three further examples from Spanish (37a), Italian (38b) and Greek (39c) where a pure unaccusative verb combines with an oblique causer. The Spanish example is from Rivero (2004), the Italian and the Greek examples are from Schäfer (2008).

- (37) a. A Juan le florecen los árboles
 to.DAT John he.DAT bloom the.NOM trees
 ‘John causes the trees to somehow bloom (i.e. he is a good gardener).’
- b. A Franco sono appassite tutte le piante in giardino
 to.DAT Franco are wilted all the.NOM plants in-the garden
 ‘Franco accidentally caused all the plants in the garden to wilt.’
- c. Tu Ben tu sapisan ta triandafila
 the.GEN Ben he.GEN wilted the.NOM roses
 ‘Ben (involuntarily) caused the roses to wilt.’

Auxiliary selection also suggests that an oblique causer combines with the predicate in a way that does not alter its status as an unaccusative verb. In languages with ‘have/be’ opposition in the perfect tense, the auxiliary remains ‘be’ in the context of oblique causers (cf. for example German (36c) and Italian (37b) above). But if the predicate remains unaccusative this is not compatible with the projection of the canonical subject position Spec,VoiceP/vP.

Furthermore, constructions with oblique causers differ from canonical causatives in their possibility to license instruments. 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 (38). This shows that actual intentionality is not a prerequisite for the licensing of an instrumental adjunct.

- (36) Der Mann zerbrach versehentlich mit einem Hammer die Vase
 the.NOM man broke unintentionally with a hammer the.ACC vase
 ‘The man unintentionally acted with the hammer so that the vase broke’²³

With oblique causers, however, instrumental phrases are strongly deviant as (39) shows. I call this the *no-instrument restriction* on oblique causers.²⁴

²³ The sentence is ambiguous with respect to the scope of the adverb ‘unintentionally’ but this is the relevant reading for the argument made here.

²⁴ Besides the resultativity restriction on oblique causers, the no-instrument restriction is a further reason why I think that oblique causers should be classified as causers and not as agents.

- (37) 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’

Finally, oblique causers show interpretative underspecification which is never found with arguments projected in the canonical subject position. As observed by Ganenkov et al. (2008) oblique causers are not necessarily interpreted as *unintentional* causer. This is illustrated in (40) for German. Oblique causers can be interpreted in three ways, either as *unintentional causer* (reading A), or as *involuntary facilitator* (reading B), or as *unexpected, but highly intentionally acting causer* (reading C). Note that even under the third reading, adverbs like ‘on purpose’ are still impossible.²⁵

- (38) 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.

This interpretational variance of the oblique causer illustrated in (40) leads to two conclusions. First, it strongly argues against the idea, that the oblique marking of the causer reflects necessarily reduced intentionality (cf. reading C).²⁶ Second, it also argues against the proposal that the oblique causer DP occupies the canonical subject position. The reason is that canonical nominative subjects can express reading A but not readings B and C, as is illustrated with the example in (41) below.

- (39) 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.

The same 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

²⁵ 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).

²⁶ The following example triggering reading C was provided by Torgrim Solstad (p.c.). The verb *anspringen* (start up) is a non-alternating, unaccusative verb. Note that the dative DP clearly intends 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
 ‘I never manage to start the car but my wife always manages it.’

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.

- (40) Der Regen hat die Ernte vernichtet
 the.NOM rain has the.ACC crop destroyed
 ‘The rain destroyed the crop’

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

Nevertheless, both canonical nominative causers and oblique causers are subject to the resultative restriction. Since the analysis for canonical causers which builds on a v_{CAUSE} selecting for a resultant state cannot be transferred to oblique causers, we must either assume that this parallel between the two types of causers is an accident or we have to look for an alternative explanation that works for both. Below I will argue for the second strategy. In order to come closer to this alternative explanation, I will first discuss my alternative proposal for how oblique causers are syntactically integrated and how to derive their semantic restrictions.

4.4 Oblique causers as introduced by an applicative head

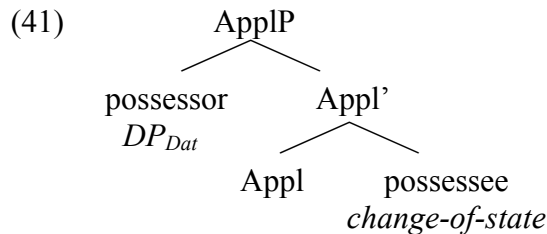
I propose that the oblique causer is not an argument of the verb and that it is also not combined with the verb via a Voice-projection as canonical external arguments are. Instead, I will derive the properties of oblique causers within an analysis where these DPs are introduced in the specifier of an applicative phrase where they are assigned inherent (oblique) case (cf. 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.²⁷ In principle, such an applicative head can occur in different syntactic contexts. The idea is that the basic semantics of an applicative head is always the same (i.e. abstract possession) but that the syntactic context in which the applicative head occurs influences the exact interpretation of the applied argument. In the double object construction, for example, the dative argument is applied to a theme-DP which occurs in the complement position of the applicative head. A sentence such as ‘*John gave Mary a book*’ literally means under such an account ‘*John caused Mary to have a book*’. But applicative heads can also take events as their complement (cf. the discussion of low vs. high applicatives in Pykkänen (2002, 2008) or the distinction between entity and event related applicatives in Cuervo (2003), McIntyre (2006), and Schäfer (2008) among others). I

²⁷ 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 Ritter & Rosen 1993, 1997). 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. possessor reading, affectedness 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, Schäfer 2008 among others).

- | | |
|---|---|
| i) Getafix had a golden sickle (<i>possession</i>) | iii) Asterix _i has Obelix drop a menhir on him _i (<i>experiencer</i>) |
| ii) The oak _i tree has a nest in it _i (<i>locational</i>) | iv) Asterix had Obelix running errands for him (<i>causative</i>) |

assume that in the case of the oblique causer the complement of the applicative head is an unaccusative change-of-state event. The structure is given in (43) (cf. Cuervo 2003, Rivero 2004, and Rivero & Savchenko 2005 for exactly this analysis of the syntax of oblique causers). If we follow the idea that applicative heads always express a possessive relation between their specifier and their complement, examples involving oblique causers literally express that the oblique causer “has/possesses the change-of-state event”.²⁸



Before I further motivate these semantics and comment on why they should lead to a causative interpretation, I will discuss first how the restrictions on oblique causers, (i) the human restriction, (ii) the non-intentionality restriction and (iii) the no-instrument restriction can be derived within this proposal.

While it is sometimes claimed that there is a human restriction on all applied arguments,²⁹ McIntyre (2006) shows that this general claim is not correct. As the German and Spanish examples below illustrate, non-human entities can show up as datives in the double object construction (where the dative is applied to a theme DP (44a, b) and as so-called affected datives where the dative is applied to a resultant state (45a, b).

- (42) 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 mate-tea’
- (43) a. Er schlug dem Wagen eine Delle in den Kotflügel
 He beat the.DAT car a dent in the fender
 ‘He beat a dent in the car’s fender’
- 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 (and others before him, e.g. Harley 1998, Brandt 2003) notes, non-human entities can be applied arguments only if they stay in a relation of inalienable possession (a part-whole relation) either to the complement of the applicative head itself or to an entity embedded in the complement of the applicative head. In case of entity-related applicatives, the DP acting as complement of Appl must be inalienably possessed (*The*

²⁸ Affected datives (see (25) above or (45) for examples) can also be derived within the assumption that all applicative heads express a possessive relation. Cuervo (2003) (see also McIntyre 2006, Schäfer 2008) proposes that with affectedness datives the oblique DP is applied to the resultant state of the theme, not to the change of state of the theme as in the case of oblique causers.

²⁹ E.g. in the discussion about double object constructions:

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

building HAS a new façade, cf. 44a). In the case of affectedness datives where Appl takes a resultant state as its complement, an inalienably possessed DP must be embedded in the complement (*The car HAS a dent in its fender*, cf. 45a). This is not a necessary condition for humans which can also be alienable possessors.

To understand the human restriction on oblique causers, recall the proposal that the structure in (43) above abstractly expresses that the oblique DP “possesses or has a change-of-state event of a theme” (and that this relation finally leads to a causative interpretation in a way to be discussed below). If oblique causers could be non-human, this possessive relation would have to involve aspects of inalienable possession. However, 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 would cause the change of its subpart. In the case that the oblique causer is [+human], on the other hand, there is no such restriction on the possessive relation. On this view then, the human restriction is not explicitly written on the oblique causer but it derives from one of the building blocks of the construction, namely the possessive relation expressed by the applicative head.

The other semantic restrictions on oblique causers can be derived as a side-effect of the structure in (43), too. The observation that adverbs expressing intentionality are never licensed can also be related to the nature of possessive relations, specifically to their *stativity*. It is well known that stative predicates never license agentive adverbs of any kind. This is illustrated with the examples in (46).

- (44) 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

The c-example is especially telling as it involves the causative use of English ‘*have*’ and thereby comes structurally quite close to sentences involving oblique causers.³⁰ Observe first that (46c) as a whole is clearly not stative; the same is of course the case with sentences involving oblique causers which do not express a state but a caused change-of-state event. Nevertheless, I argued that sentences with oblique causers involve a stative sub-event, the applicative head expressing a possessive relation. And (46c) involves such a stative sub-event, too, introduced by the causative ‘*have*’. The example makes it clear that, despite its overall eventivity, the stative subevent cannot be targeted by agentive adverbs. The adverbs ‘intentionally’, ‘voluntarily’ and ‘on purpose’ cannot modify *John*, the subject of *have* in (46c) but only *Mary*, the subject of the embedded cleaning event. Note that despite the fact that *John* cannot be modified by agentive adverbs, it is nevertheless the default interpretation of the example that John acted with high intentionality. That is, the causative reading of *have* in this example is the reading C observed with oblique causers in (41).³¹

The stativity of the possessive relation can also explain the no-instrument restriction; stative predicates in general (and as a special sub-case causative *have*) do not license instruments (47a, b).³²

³⁰ I would like to thank Heidi Harley (p.c.) for pointing the following out to me.

³¹ It should be mentioned, however, that the parallelism between causative *have* and oblique causers is not perfect. On the one hand, causative *have* can embed transitive structures while oblique causers combine only with unaccusative structures. On the other hand, causative *have* is not subject to the resultativity restriction; example (i) is totally perfect under a causative reading although the caused event does not involve a result state.

(i) John had Mary read a book.

³² As a reviewer notes, oblique causers do not license control into purpose clauses. This can, once again, be derived from the stativity of the sub-event introducing the oblique causer. Control into purpose clauses

- (45) a. He knew the answer (*with the calculator)
 b. (*)John had Mary clean the floor with a knife

Why then are adverbs expressing non-intentionality allowed with oblique causers? (Note that such adverbs would be out in the stative contexts in (46)). I would suggest that these adverbs (in the context of oblique causers) are not agentive adverbs in the strict sense, i.e. they are not structurally licensed but they are licensed by pragmatic considerations. I propose that they are motivated as follows: Oblique causers are necessarily human. By world knowledge humans causing something can act intentionally or unintentionally. As a default, they are 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 explicitly confined to non-intentionality. The non-intentionality, 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.

To conclude, I argued that the human restriction, the non-intentionality restriction as well as the no-instrument restriction on oblique causers derive independently from the nature of the applicative head that introduces these causers, specifically from the assumption that this head introduces a stative relation of possession. In the next section, I give further evidence for and explication of this concept of possession which underlies oblique causers.

4.4.1 Motivation and Explication: Caucasian languages

Caucasian languages give further motivation for the proposal that oblique causers relate to the change-of-state event by some kind of possessive relation. These languages mark their oblique causers not with dative or genitive case but with case morphology which is also involved in or related to apparent possessive uses.

The first language to be discussed is Tsez (spoken in western Daghestan). The data are taken from Kittilä (2005) and Comrie (2000). (48a, b) show the causative alternation in this language, (48c) is an example where the anticausative predicate combines with an oblique DP which is interpreted as an accidental causer. As indicated by the glosses, the oblique causer in Tsez is morphologically marked with explicit possessive case.³³

- (46) a. uŷ-ā č'ikay y-exu-r-si (causative)
 boy.ERG glass.ABS II-break-CAUS-PAST.WIT³⁴
 'The boy broke the glass'

presupposes intentionality and we have already seen that (explicit) intentionality is excluded for oblique causers due to the stativity of the applicative *have*-relation. Similarly, we know that the external argument of stative verbs such as the subject of 'know' in (i) do not license control even if they are associated with intentionality.

(i) #He knew the answer in order to impress the teacher.

³³ (48c) is not ambiguous and has only the 'oblique causer' interpretation (p.c. Maria Polinsky). Recall that in many languages the string [oblique DP + change-of-state predicate] allows for two or even three readings, the *oblique causer reading*, the *affectedness reading* and a pure *possessive reading*. The fact that in Tsez only the *oblique causer* reading is possible suggests that we encounter in the other languages a case of ambiguity not just a case of vagueness (cf. the discussion of (26a, b) above).

³⁴ WIT is a marker of evidentiality (witnessed).

- 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'

The second language discussed is Agul (spoken in southern Daghestan). The relevant aspects of this language are discussed in Ganenkov et al. (2008) from where all information below is taken. Plain possession is expressed in Agul with the help of one of the two locative cases, *ad-essive* case (originally referring to location near a landmark, i.e. 'to be at a place') or *post-essive* case (referring to location behind a landmark, i.e. '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, i.e. the possessive relation is arguably introduced by a functional head in the extended verbal domain.

- (47) 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 □u 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 described to express a 'motion from location near a landmark'. Literally, it expresses therefore 'from being at a place', i.e. a kind of source.

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

(49) shows a canonical causative construction involving a transitive verb in Agul which appears with an ergative/absolutive case-marking.

- (49) baw.a neḱ aṯuzu-ne
 mother.ERG milk.ABS pour-out-PERF
 'The mother poured out the milk'

(52), finally, shows the corresponding construction with an oblique causer. The theme is marked with absolutive and the causer is marked with *ad-relative* case.

- (50) baw.a-f-as neḱ aṯuzu-ne
 mother.AD.ELAT milk.ABS pour-out-PERF
 'The mother accidentally spilled the milk'

The oblique causer in Agul shows exactly the same semantic and syntactic restrictions as in the languages discussed above. It is possible with exactly the same class of verbs (anticausative and purely unaccusative verbs expressing a change of state), it shows the human restriction and the no-instrument restriction and it allows exactly the same range of interpretations (the readings A, B, C above; see Ganenkov et al. (2008) for illustration). The case marking of the oblique causer in Agul is, however, much more explicit. It literally

expresses that something *comes from* the oblique argument, i.e. that the oblique argument is a kind of locational source. We can also understand this source relation in terms of a Figure–Ground relation (Talmy 1985). In the basic use of ad-elative case in the example (50) *the wall* is the Ground and *the sack* is the Figure. In case of the oblique causer, I propose that the Ground is the oblique DP and the Figure is the whole change-of-state event. The example in (52) literally expresses then that “the change-of-state event comes from the location of the oblique argument” i.e. the oblique argument is the “*source*” of this event. Obviously, if the Figure is an event, a strictly locational interpretation of the Figure-Ground relation is no longer possible. In this case, the source relation must be interpreted more abstractly; somehow this leads to a causative interpretation (see below for further discussion).

I propose that languages which mark oblique causers with dative or genitive case work quite similar. This is strongly suggested by the fact that their oblique causers show exactly the same restrictions and properties. Above, I argued that in these languages the oblique causer is introduced by an applicative head which expresses a possessive relation between the oblique DP and the change-of-state event. We can relate this proposal involving an abstract possessive relation with the proposal for Agul involving an abstract source relation if we recall the close connection between possession and location in natural languages. As is well known, possession is expressed in a locational way in many languages; languages lacking a possessive verb ‘*have*’ express the proposition ‘X has Y’ as ‘Y is at X’ (e.g. Benveniste 1966, Freeze 1992, Kayne 1993). Plain possession in Agul is a case in point as the examples in (49) showed. In a parallel fashion, we can reinterpret a locational source (Y comes from being at X) as ‘coming out of possession’ (Y comes out of X’s possession). Literally, then, the oblique causer expresses that the change-of-state event “comes from the oblique DP” or “out of the possession of the oblique DP”. I admit that this proposed literal interpretation of oblique causers is quite metaphorical and not everyone might be happy with the idea that our ontology should include concepts such as “source of an event” or even “possession of an event”.³⁵ The case marking in Agul suggests, however, that such a proposal is at least on the right track. In order to give it more substance we still have to answer a number of questions, however. Why should the ‘source’ or the ‘possessor’ of a change-of-state event be interpreted as responsible for the coming about of this event, i.e. what is the origin of the causative semantics? And why do we find the resultativity restriction with oblique causers as well as with canonical causers?

4.5 Conclusion: oblique causers

We saw that oblique causers show the same restriction as canonical nominative causers: both need a resultative structure to combine with. Folli & Harley suggested that the resultative restriction on canonical causers results from the selectional properties of the functional head introducing them; v_{CAUSE} c-selects a resultant state. Since oblique causers show the very same restriction, I investigated the hypothesis that they are syntactically similar to canonical causers and differ only in their non-intentionality property and case morphology. If this were the case then oblique causers could be introduced by the same v_{CAUSE} -head as canonical causers; this would explain why both show the resultative restriction.

It turned out, however, that this hypothesis is not tenable; oblique causers differ from canonical causers in a number of syntactic and semantic properties that are incompatible with the assumption that they are located in the canonical external argument position. Therefore, I followed the alternative proposal that canonical and oblique causers are syntactically introduced by different syntactic means. I proposed that while canonical causers are introduced by v/Voice , oblique causers are located in the specifier of an applicative head

³⁵ However, that *have* can relate an entity to an event has been proposed before. See for example Belvin (1993), Harley (1998), Ritter & Rosen (1997) or McIntyre (2005) for discussion; see also fn. 27.

which takes an unaccusative change-of-state predicate as its complement. This proposal, I argued, derives the morphosyntactic properties of and the semantic restrictions on oblique causers across languages. Two questions, however, remain: Where do the causative semantics of oblique causers originate and why do we find the resultative restriction with both, canonical and oblique causers?

The fact that verbs such as *eat* or *roll* do not allow canonical causer subjects in their basic use but do so as soon as they combine with a secondary resultative predicate suggests that possible external argument θ -roles cannot be coded once and for all in a verb's lexical entry. For oblique causers, this conclusion is even stronger. Oblique causers clearly have a θ -role (a thematic relation to the event expressed by the verb) but since these DPs occur only optionally and even with purely unaccusative verbs, their θ -role cannot be coded in the lexical entry of the verbs they combine with.³⁶

In constructionist approaches, the semi-functional head *v/Voice* provides a θ -role for the external argument. In order to make a difference between agents and causers, two flavours of *v/Voice* can be assumed. From our discussion of oblique causers we must note, however, that there are causers that are not introduced by *v/Voice*. Instead, I proposed that oblique causers are introduced by an applicative head. Of course, one could stipulate a special applicative head that assigns a causer θ -role to its specifier (i.e. *Appl_{CAUSE}*). Such a proposal is, however, not very illuminative. It would stipulate the differences between canonical causers and oblique causers and it would also undermine the theoretically attractive idea that an applicative head introduces just a possessive relation between its specifier and its complement while the exact interpretation of the applied argument derives from the bigger syntactic context. Such an account would also have to stipulate that all causers need a resultative syntax; we could assume that this *Appl_{CAUSE}* selects as its complement a resultant state just as Folli & Harley did for their *v_{CAUSE}*. But again, this move would run counter to the idea that all applicative heads are basically similar and it would also leave it unexplained why two causers which are syntactically introduced by different means show the same resultative restriction.

In the next section, I will turn to a further type of causer which is formally licensed by a preposition. As we will see, such PP-causers also show the resultative restriction. Investigating these causers will shed more light on the origin of the causative semantics, specifically on the relation between causative semantics and resultative syntax.

5. PP-Causers and the decomposition of (anti-)causatives

AAS (2006) argue that all change-of-state verbs are inherently causative, no matter whether they have an external argument or not (cf. Levin & Rappaport Hovav 1995, Reinhart 2000, 2002, Davis & Demirdache 2000 or Koontz-Garboden 2009 for related claims within lexicalist frameworks). They propose that such verbs are built up by a [Root + Theme] complex expressing a resultant state and a verbal head *v_{CAUS}* taking the resultant state as its complement. *v_{CAUS}* is taken to introduce a *causal relation* between a causing event <e> (the implicit argument of *v_{CAUS}*) and the resultant state <s> denoted by the [Root + Theme] complex. Transitive causative verbs differ from anticausatives (as well as pure unaccusatives) only in the presence of a Voice-projection which introduces the external argument. This decomposition for (anti-)causatives is illustrated below.³⁷

³⁶ See fn. 52 for a discussion of lexical theories that assume that even pure unaccusative verbs have a transitive lexical entry which is, however, frozen and never surfaces in syntax as such.

³⁷ I abstract away here from the difference between morphologically marked and unmarked anticausatives (see AAS 2006 and Schäfer 2008 for discussion).

- (51) a. inchoatives/anticausatives:
 [$v_{CAUS} <e>$ [Root + Theme $<s>$]]
 b. causatives:
 [ext.arg. Voice [$v_{CAUS} <e>$ [Root + Theme $<s>$]]]

Under this conception, causatives and anticausatives have exactly the same event decomposition.³⁸ Voice does not introduce an event but just relates an external argument to an event via the mechanism of event identification as proposed in Kratzer (1996). (See also Pylkkänen (2002, 2008), Kratzer (2005) and Harley (2007) for the perspective that the projection introducing the external argument and the projection introducing the verbal event are independent of each other.) Note that this account differs thereby from the one by Folli & Harley whose v_{CAUSE} -head not only acts as a verbalizer introducing the verbal event but, in addition, also introduces the external argument.

The presence of v_{CAUS} even in anticausatives and pure unaccusatives expressing a change of state is motivated by the observation that, crosslinguistically, these verbs optionally allow PPs introducing causers (but not PPs introducing agents) (AAS 2006, Kallulli 2006, Schäfer 2008). This is illustrated below with examples from English (54), German (55) and Greek (56). The a-examples involve anticausative verbs which also have a causative counterpart; the b-examples involve pure unaccusative verbs which have no transitive counterpart.³⁹

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

- (53) 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

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

³⁸ Traditionally, it is assumed that anticausatives decompose into two and causatives into three subevents as in (i) and (ii) (cf. Dowty 1979).

- (i) a. The door opens b. [BECOME [the door OPEN]]
 (ii) a. He opens the door b. [he [CAUSE [BECOME [the door OPEN]]]]

However, the ambiguity of *again* in change-of-state contexts (Dowty 1979, von Stechow 1995, 1996) suggests that the number of eventive heads is the same in both cases. Change-of-state verbs give rise to two interpretations for adverbs such as *again*, a restitutive and a repetitive reading. Since the availability of these readings is also influenced by overt word order, von Stechow proposes that these two readings are the effect of the adverb scoping over different subevents in the syntax; the restitutive reading emerges if *again* scopes just over the resultant state and the repetitive reading emerges if *again* scopes over the highest event. But the decomposition of transitive change-of-state verbs in (ii) suggests that a third reading should be available where *again* scopes over BECOME but below CAUSE. Crucially, this third reading is empirically not motivated across languages (cf. also Pylkkänen 2002, 2008). This suggests that causatives and anticausatives have (at least in the syntax) the same number of eventive layers. AAS (2006) follow a proposal in Kratzer (2005) that the BECOME operator is not necessary if external arguments are introduced by Voice. That CAUSE is present even in anticausatives is suggested by the licensing of causer-PPs discussed immediately below.

³⁹ Not all unaccusative verbs license PP-causers. In particular, change-of-state unaccusatives do while, in most languages, verbs of appearance do not.

AAS conclude from these data that agentivity and causation must be represented in different layers of the verbal decomposition. While transitive verbs and passives license agents as well as causers, inchoative verbs license only causers but not agents. This suggests that Voice is responsible for the agent θ -role, but the causer θ -role can be licensed in the absence of Voice. AAS propose that the causer role is licensed by v_{CAUS} and Causer-PPs are adjoined to v_{CAUS} . Note that these authors do not assume that v_{CAUS} introduces an implicit causer argument. Instead, v_{CAUS} introduces a causative event leading to the resultant state of a theme. Causer-PPs differ under this conception from passive by-phrases in that they do not take up an implicit argument but they *modify a causative event* (see section 6 for further elaboration).⁴⁰

Let me shortly touch on an alternative account to the data under discussion, namely the hypothesis that not v_{CAUS} but the prepositions themselves are responsible for the thematic licensing of these causers. This would lead to the expectation that these prepositions have a causative meaning even in contexts where v_{CAUS} is arguably not present. If, however, causers are thematically licensed by v_{CAUS} , we predict that the prepositions have a different meaning where this head is not available (e.g. in noun phrases or in unergatives). As discussed in Alexiadou & Anagnostopoulou (2009), the Greek prepositions *apo* and *me* which introduce causers in inchoative contexts never have a causative interpretation in other contexts.⁴¹ The same holds for the German preposition ‘*durch*’ and, at least to some extent, for English ‘*from*’ (but see also Levin (2009) for some examples which suggest that ‘*from*’ introduces causative

⁴⁰ An alternative to this proposal has been provided by Kallulli (2006, 2007). She assumes that anticausatives are structurally close to passives in that they involve the same functional layer v /Voice that introduces the implicit external argument in passives. Anticausatives differ from passives only in the thematic role that the implicit argument can have; while passive v /Voice licenses implicit agents or causers, v /Voice in anticausatives can only license implicit causers but not agents. This accounts for the a-examples in (54-56). There are, however, a number of arguments against this proposal.

First of all, PP-causers are, as we saw in the b-examples above, possible in the context of pure unaccusatives that have no transitive counterpart. If these predicates, as typically assumed, do not involve a thematic v /Voice projection, PP-causers cannot depend on such a projection. We will see later on that PP-causers are also licensed in the context of the eventive copula *become*, once again a context where v /Voice should not be present.

Furthermore, the claim that PP-causers and canonical external arguments origin in the same projection is challenged by the observation that canonical agents and PP-causers can co-occur (as long as our knowledge of the world makes it possible that the agent can control the causative event expressed in the PP.) This is illustrated in (i)-(iii) for German (cf. AAS for English and Greek examples). Anticausatives license PP-causers but not PP-agents (ia). Passives (ib) and actives (ic), however, license canonical agents and, in addition, causer-PPs. Since in Kallulli’s account v /Voice either licenses an agent or a causer, this co-occurrence cannot be captured.

- (i) a. Die Vase zerbrach (durch heftiges Schütteln)/(**durch Peter*)
 The vase broke (through strong shaking) / through Peter
 b. Die Vase wurde von Peter (durch heftiges Schütteln) zerbrochen
 The vase was by Peter (through strong shaking) broken
 c. Peter zerbrach die Vase (durch heftiges Schütteln)
 Peter broke the vase (through strong shaking)

Finally, there is a strong argument that anticausatives do not involve an implicit argument in the sense that passives do. It is well known that passives as well as transitives do not license the phrase ‘*by itself*’ and its counterparts across languages while anticausatives do (cf. (iia-c)) (Chierchia 1989, 2004, Levin & Rappaport 1995, Reinhart 2000, 2002, AAS 2006).

- (ii) a. John broke the vase (**by itself*)
 b. The vase was broken (**by itself*)
 c. The vase broke (by itself)

Importantly, passives differ thereby from anticausatives no matter whether the implicit argument of the passive is understood to be an agent or a causer. This suggests that plain anticausatives do not involve an implicit external causer and, in turn, that causer-PPs do not take up an implicit argument but modify an event, as proposed by AAS (2006).

⁴¹ Note in this connection that Greek *apo* introduces in passives only agents and in anticausatives only causers (AAS 2006).

semantics on its own). The following subsection will provide further evidence that the prepositions under consideration cannot themselves be the source of the causer θ -role.

5.1 PP-causers and the resultative restriction

PP-causers show the same resultative restriction as nominative and oblique causers. This can be demonstrated again with the intransitive use of manner-of-motion verbs such as ‘roll’ (see fn. 17 for further examples). The data below show that PP-causers are possible only if such a verb combines with a secondary resultative predicate. (57) illustrates this for German, (58) for Italian, and (59) for English. Note that English ‘from-phrases’ are, for many speakers, often only marginally possible. Importantly, however, they clearly improve in resultative contexts.

(55) 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’

(56) 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’

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

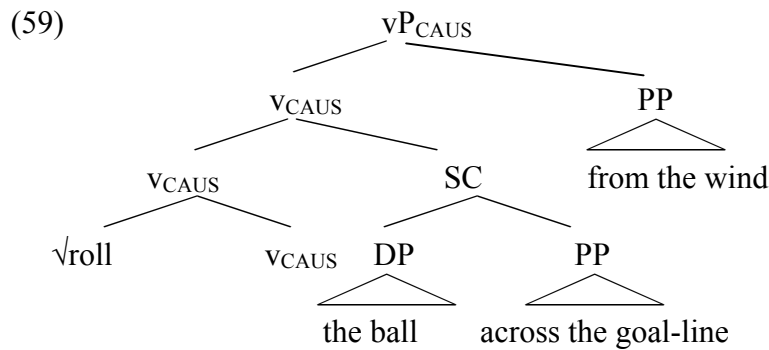
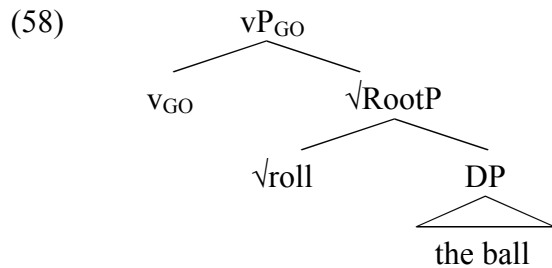
Such data are incompatible with the assumption that the prepositions which introduce the causers syntactically also introduce the causer θ -role, i.e. they argue for a dissociation of formal and thematic licensing.⁴² We can account for this data if the addition of the secondary goal-PP licenses the presence of v_{CAUS} . Recall that AAS claim that v_{CAUS} selects for a resultant state in its complement position. Therefore, v_{CAUS} can be present only in the b-examples but not in the a-examples above. The presence of v_{CAUS} , in turn, makes PP-causers available. For the specific implementation we can follow the proposal in Embick (2004) or McIntyre (2004) that verbal roots can enter the structure in two ways. The root can first combine with the internal (undergoer) argument and the resulting rootP merges as the complement of a categorizing v-head (labelled here v_{GO} for descriptive reasons). This leads to the mono-eventive structure in (60). Or the root combines with a v-head to form a complex head as in the resultative structure in (61) where the complement position of the v-head (v_{CAUS}) is filled by the secondary predicate (labelled Small Clause) which introduces the internal argument. In the latter case, the root acts as manner-modifier of the verbal event.^{43/44}

⁴² Recall that there is, per se, nothing wrong with the causation of atelic manner-of-motion events; this is shown by periphrastic causatives.

(i) Der Wind ließ den Ball rollen
 The wind made the ball roll

⁴³ This proposal is close to the one by Folli & Harley (2005) that verbal roots can undergo manner incorporation into v_{CAUSE} .

⁴⁴ As an alternative to (61), one could assume a complex predicate analysis so that the internal argument is not introduced in the specifier of a Small Clause as in (61) but in the specifier of the verbalizer, here Spec, vP_{CAUS} (see Hale & Keyser 1993, Embick 2004 or Alexiadou & Schäfer 2011).



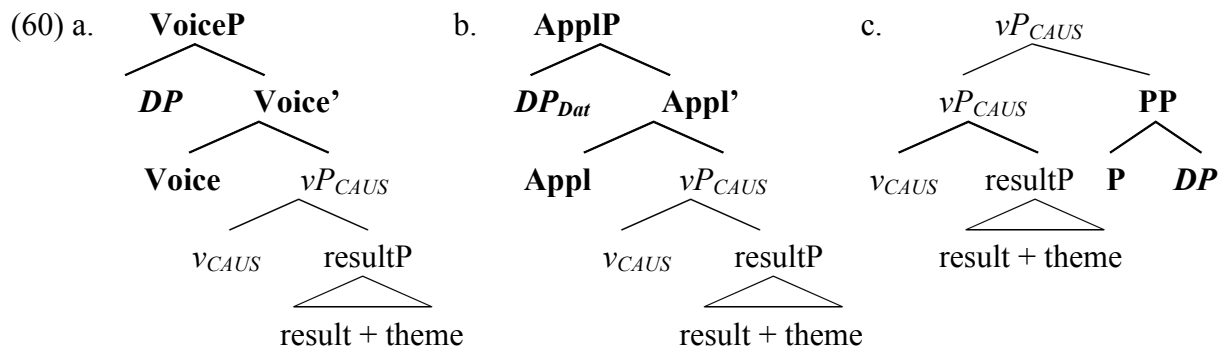
6. Interim summary: syntactic vs. thematic licensing of causer DPs

In the previous sections, I investigated three morphosyntactically different types of causers. I concluded that these are introduced by three different syntactic means: Canonical nominative causers are located in Spec, VoiceP, oblique causers are located in Spec, ApplP and PP-causers are complements in a prepositional phrase. I call (the heads of) these three projections *formal licensers*; they provide syntactic slots where the respective causer-DPs can merge. In addition, these formal licensers have influence on case marking. PP-causers and oblique causers are realized with inherent case, canonical causers are structurally case-marked.⁴⁵

Despite these morphosyntactic differences, all three causers are subject to the resultative restriction. This restriction is fulfilled in the context of verbs which lexically express a change of state but it can also be fulfilled by overt syntactic composition of a basically mono-eventive verb with a secondary resultative predicate. Following the constructionist approach to verb formation, I assumed that lexical change-of-state verbs are also syntactically decomposed into an eventive layer taking a resultative layer as its complement. Specifically, I followed the account by AAS (2006) that dissociates the projection introducing the causative semantics from the projection introducing canonical external arguments. While the latter are introduced by Voice, there exists an extra verbal layer v_{CAUS} which introduces a *causative event* and selects a resultant state as its complement. Since v_{CAUS} is the locus of resultativity which turned out to be a precondition for the availability of causer-DPs, I propose that v_{CAUS} acts as the *thematic licenser* of causer-DPs. But v_{CAUS} never combines with causer-DPs directly but, instead, the relation between v_{CAUS} and causer-DPs is mediated by one of the three syntactic licensers identified above. The structures that I propose for the three types of causer-DPs discussed in this paper are given in (62a-c).⁴⁶

⁴⁵ The traditional term for “formal or syntactic licensing” would be ‘case marking’ in order to pass the “Case Filter” (Chomsky 1981). See Sigurðsson (2009) and the references there for the argumentation that Case itself is not responsible for formal licensing.

⁴⁶ I call the complement of v_{CAUS} “resultP” with the intention to generalize over “lexically resultative” (anti-)causatives (e.g. *flatten*) and overtly constructed resultative structures (e.g. *roll across the line*).



In (62a-c), I introduce the theme within the result phrase, i.e. I assume some version of the Small Clause analysis of resultatives (Kayne 1985, Hoekstra 1988, 1992, Hoekstra & Mulder 1990 among others). I do this just for simplicity but nothing at all hinges on this and alternatives to this analysis would work, too. That is, one could alternatively assume a more complex Small-Clause analysis as proposed by Bowers (1993, 2002) where the theme is introduced in the specifier of the verb (here Spec, vP_{CAUS}) and binds a PRO in the specifier of the Small Clause (here resultP). A slight alternative to this theory would follow ideas in Ramchand (2008) and assume that the theme A-moves from Spec, resultP to Spec, vP_{CAUS} . Finally, we could also follow a version of the complex predicate analysis of resultatives as proposed, among many, by Hale & Keyser (1993), Embick (2004), McIntyre (2004), or Williams (2005); under this assumption the theme would not be introduced inside of the resultative phrase but in the specifier of the verbalizing projection (vP_{CAUS}) (see Alexiadou & Schäfer (2011) for a recent argument in favor of the latter analysis). All these proposals are compatible with the role of v_{CAUS} assumed here, namely to introduce a causative event leading to/selecting a resultant state held by the theme DP.

A number of questions arise about the interplay of syntactic and thematic licensing of causer-DPs. The first question is why thematic and syntactic licensing is dissociated, i.e. why v_{CAUS} cannot project a specifier with a causer-DP merged there? A possible answer would eventually depend on the question just mentioned where the internal argument is located; if this is located in Spec, vP_{CAUS} then this position simply does not qualify for the introduction of an external argument. Alternatively, one could hypothesize that it is a general property of events that they combine with their participants only by mediation of (semi-)functional heads.

A further question is how thematic licensing exactly works, i.e. what does it mean to be thematically licensed by v_{CAUS} ? In a slight reformulation, one could ask what is exactly licensed or what qualifies a DP as a causer?⁴⁷

Semantically, v_{CAUS} introduces an event $\langle e \rangle$ and states that $\langle e \rangle$ stands in a causative relation to a state $\langle s \rangle$.⁴⁸ Following AAS (2006) and Alexiadou & Schäfer (2006), I assume that this is the only semantic contribution that v_{CAUS} is actually making and that the central property of causer-DPs of any kind is it to take up this event $\langle e \rangle$ and to specify it further. Specifically, I propose that prototypical causers are inherently eventive; that is, although causers such as natural forces are syntactically DPs (a property relevant for formal licensing),

⁴⁷ Recall from section 2 that I do not try to define the agent θ -role, i.e. what property qualifies a DP as an agent. See Alexiadou & Schäfer (2006) and Folli & Harley (2008) for some further discussion.

⁴⁸ Within a counterfactual conception of causation a causative relation between two events is defined as follows (from Kratzer 2005:28, following Levis 1973 and Dowty 1979):

“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.”

If, as proposed, BECOME is not part of causatives then e must be understood as the resultant state.

they involve semantically an event. They are, thereby, sortally identical to the event introduced by v_{CAUS} .

That ‘inherent eventivity’ is a crucial property of causers in natural language is also suggested by the conditions under which instruments can be licensed in the canonical subject position of change-of-state verbs. It is often claimed in the literature that many change-of-state verbs license three different θ -roles, agents, causers or instruments in subject position (e.g. Levin & Rappaport Hovav 1995, Reinhart 2000, 2002). However, instruments as subjects are topic to specific restrictions (cf. Alexiadou & Schäfer 2006 and the references there for more detailed discussion). DeLancey (1984) observes that (63a) with a pure instrument in subject position is strange; ‘*the axe*’ can be the subject just if it is made clear (either overtly or contextually, the latter indicated by the #-sign) how it could have the effect to bring about the change-of-state event: namely in virtue of some (acquired but independent) (kinetic) energy as in (63b, c).

- (61) 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

Similarly, Talmy (1976:53) observes that (64a) “does not fare so badly besides” (64b). 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 (64b, c). That is, even if the eventive construal is not syntactically manifested, it is, nevertheless, always salient, contextually or as a presupposition.

- (62) 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 as in (65).⁴⁹

- (63) Die Scheibe zerbrach durch den #(durch die Luft fliegenden) Stein
the pane broke from the (through the air flying) stone
‘The pane broke and the stone which flew through the air caused this.’

Alexiadou & Schäfer (2006) conclude that instruments can get an interpretation as causers if they occur in an eventive construal. This, in turn, suggests that a defining property of causers is their inherent eventivity. This definition is also reasonable in the case of natural forces such as storms or earthquakes which are inherently (self-)energetic, i.e. eventive.

So how does formal and thematic licensing interact? Formal licensers provide a slot for a DP to merge and relate it syntactically to a local eventive layer. The eventive layer makes available a causative event. A DP qualifies as a causer if it can further specify this causative event. Canonical causers and PP-causers are sortally quite similar; they name or explicate the (force behind the) causative event (cf. Levin & Rappaport Hovav (1995), Alexiadou & Schäfer (2006) and Pylkkänen (2002, 2008) for proposals along these lines; see also the discussion in Solstad (2009) who proposes that causers are not arguments but event

⁴⁹ The reason why it is even more important for instruments in PPs is probably that instruments in subject position can not only be coerced into eventive causers but also into non-human agents (cf. Alexiadou & Schäfer 2006); as mentioned, this second interpretation as an agent is never possible for DPs introduced by PPs into inchoative contexts.

modifiers). Oblique causers are sortally quite different from canonical causers and PP-causers; in particular, they are not inherently eventive. Nevertheless, I argue that they also further modify the event introduced by v_{CAUS} . In section 4, I proposed that oblique causers denote the abstract possessor or the source of a change-of-state event. We can see now more clearly why this relation makes them being interpreted as causers. The reason is that the change-of-state event is inherently causative due to the presence of v_{CAUS} . This means, oblique causers denote the abstract possessor or the source of a causative event.

To conclude, all three types of causers derive their causative semantics from the presence of v_{CAUS} which selects a resultant state. Since v_{CAUS} and the resultant state span what is traditionally called the ‘verbal phrase’, the thematic origin of causers is VP-internal; in this sense, causers are not VP-external arguments. Although thematic licensing of all causers happens VP-internally by v_{CAUS} , the different formal licensors modify or shape the way how the individual causers enter the causative chain and, therefore, they have semantic influence, too. This is immediately clear for oblique causers which come with specific semantic restrictions discussed in section 4 (the human restriction, the non-intentionality restriction and the non-instrumental restriction). As discussed, these restrictions can be derived from general properties of applicative heads, i.e. the syntactic licensor of oblique causers. That is, while the causative semantics, under my proposal, originates in the VP and not in the applicative head, the latter, nevertheless, has influence on the specific interpretation of oblique causers. In a similar vein, Voice and P have influence on the exact interpretation of the causers they introduce. While, as mentioned above, the causers introduced by Voice and causers introduced by P are ontologically similar, they differ, nevertheless, in the directness of the causative relation that they enter. Voice defines a very tight relation between its specifier and the event in its complement leading to an interpretation of causers in Spec, VoiceP as necessarily direct causers.⁵⁰ PP-causers can be direct or indirect causers.⁵¹ This depends on the individual preposition and the context. German ‘*durch*’ (as well as English ‘*from*’) can introduce either direct or indirect causers. Greek, on the other hand, has two prepositions introducing causers, *apo* vs. *me* (cf. 56 above) whose choice correlates 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 over *apo* (AAS 2006, Alexiadou & Anagnostopoulou 2009).

7. On the relation between resultative syntax and causative semantics: is there a v_{CAUS} ?

So far, I proposed that there exists a semantically annotated verbal head v_{CAUS} which selects a resultant state and which occurs in transitive, causative verbs, anticausative verbs as well as in pure unaccusative verbs expressing a change-of-state. For the latter two types of verbs it was proposed from time to time in the literature, that they are inherently causative even though they have no causer argument (cf. Levin & Rappaport Hovav 1995, Reinhart 2000, Davis &

⁵⁰ More has to be said about the role of Voice. Recall that the θ -role of canonical external arguments is written on the Voice-head in proposals along the line of Kratzer (1996). This cannot be correct for the causer θ -role if it originates in the VP. It seems, therefore, that we still need two types of Voice-heads: Voice_{AGENT} provides formal licensing and provides the agent θ -role. Voice_{CAUS} provides formal licensing but does not provide a θ -role. Alternatively, Voice provides 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 formal and thematic licensing. An interesting problem which I must leave for further research pertains to the role of Voice in passives: 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.

⁵¹ The three readings of oblique causers discussed in section 4 also differ in the directness of the causative relation expressed; under reading B, the oblique causers is a more indirect causer than under reading A and C.

Demirdache 2000, AAS 2006, Koontz-Garboden 2009, though the details differ a lot). Furthermore, v_{CAUS} occurs in structures where a basically atelic verb overtly combines with a resultative predicate. Technically, I followed the proposals by Embick (2004) and McIntyre (2004) that in this case the verbal root forms a complex head with v_{CAUS} so that the root is interpreted as providing a manner component for the causative event (see structure (61) above). This proposal differs from lexicalist theories in that the thematic role of causer-DPs is not coded in the lexical entry of individual verbs. However, there is still a lexical residue; the lexical entry of the head v_{CAUS} is annotated with semantics. In this final section I want to argue for a possible alternative implementation of the relation between causative semantics and resultative syntax. This alternative is motivated by the following observation. So far we have looked at causers in the context of lexical verbs. These were either “lexically” resultative or they were basically mono-eventive and combined with a secondary resultative predicate in the syntax. But German allows oblique causers as well as PP-causers 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)). This is illustrated below.

- (64) 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’
- (65) 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’

This phenomenon is more restricted in other languages. This, however, is not a restriction on oblique causers or PP-causers in these languages but it is a restriction on the use of the complex ‘*eventive copula + adjective*’ which is blocked in many languages if a corresponding lexical verb exist. If no such verb exists, the use of the copula becomes possible and the addition of an oblique causer or a PP-causer becomes possible, too. (I have no explanation as to why German is less restrictive). My informants provided the following Italian examples:

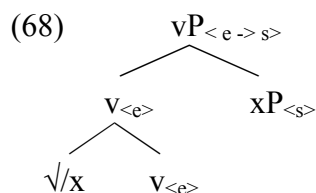
- (68) a. Per errore gli è **diventato bollente** l'acido
 By mistake him.DAT is **become boiling** the.NOM acid
 ‘He unintentionally caused the acid to become boiling.’
 b. L'acido è **diventato bollente** per il (troppo) sole
 the.NOM acid is **become boiling** through the too-much heat
 ‘The acid became too hot from the strong heat.’
- (69) a. Per errore le è **diventata calda** la zuppa
 By mistake her.DAT is **become warm** the.NOM soup
 ‘She unintentionally caused the soup to become hot.’
 b. La stanza **diventerà calda** per il (troppo) sole
 the.NOM room **became warm** through the (too-much) sun
 ‘The room became hot from the strong sun.’

Light verb constructions also license PP-causers and oblique causers as illustrated below for German and English.

- (66) a. Mir ist versehentlich das Radio kaputt **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 kaputt **gegangen**
 the radio is through the rain out-of-order **gone**
 ‘The rain caused the radio to break down’
- (67) a. The water on the surface **gets** warm from the sun
 b. My problem is that my den **gets** cold from the cold air in the garage

The examples above support the claim that causers are possible in the absence of Voice (or, less theory specific, in the absence of the canonical external argument position).⁵² But we must also ask how the copula or the light verbs should combine with the thematic licenser v_{CAUS} .

The first option, that they form a complex head with v_{CAUS} as proposed for lexical verbs/roots above in (61) is not very plausible; copulas and light verbs are probably both semi-functional verbs themselves, i.e. they are the Spell-Out of functional v-heads, not lexical verbs/roots. This leaves the other alternative that *become* is (or can be) the Spell-Out of a bare v_{CAUS} . But this would mean that *become* as well as *turn* or *get* (which actually all select a resultant state) are (or can be) inherently causative. This would be logically possible as it would give the right result, but it seems counterintuitive to me. While I cannot provide any decisive argument in favour or against this proposal, I will, nevertheless, discuss an alternative which seems more plausible to me in light of the data in (66-71), namely that there are no semantically annotated little v-heads, and specifically no v_{CAUS} (see also Hale & Keyser 1993, Higginbotham 2000, Marantz 2006, Ramchand 2008 for such a view). Instead, v-heads and other heads building event structure express just different types of basic eventualities. v can express an unspecified and unbounded event (a *Process* in Ramchand’s 2008 terms) or a state. Adjectives and prepositions also introduce states. Syntax can build complex event structures out of these atomic parts. For the examples discussed here this would mean that the verbal head introducing a simple unbounded event is combined with a secondary resultative predicate as in (72).



I assume that in “lexical resultatives” the head x of the secondary predicate head-moves and incorporates into v, while in “composed resultatives” the verbal root is directly merged with v

⁵² Some theories assume that all unaccusatives are derived in the lexicon from a transitive lexical entry. If an unaccusative verb does not have, in addition, a transitive use then it is assumed that the basic transitive entry is “lexically frozen” (Reinhart 2000, 2002, Chierchia 1989/2004). Within these theories, it could be argued that oblique causers and PP-causers somehow take up this lexically suppressed external argument (e.g. Reinhart 2006 who hypothesizes that PP-causers depend on the transitive-causative *concept* of the basic lexical entry). It is hard to argue that something like this can be going on in the context of light verbs like *get* or the copula *become*.

to build a morphologically complex head (cf. 61 above). If $v_{\langle e \rangle}$ does not find a root with phonological matrix to combine with, it is spelt-out as a light verb (*become, go, turn ...*). As mentioned, it does not matter for my purposes how exactly the internal argument is related to this complex resultative predicate, i.e. whether it is introduced inside an xP Small-Clause or whether it is introduced in the specifier of vP.

The structure in (72) fits Higginbotham's (2000) notion of a telic pair (cf. Ramchand's ProcessP-ResultP connection). Higginbotham proposes that this syntactic formation of a telic pair (an $\langle e \rangle$ leading (->) to an $\langle s \rangle$ in (72)) is the source of causative semantics. And if causer-DPs are modifiers of causative events, this structure can also act as the thematic licenser of causer-DPs. Under this alternative proposal, causation is seen as a consequence of the syntactic structure rather than the force that drives structure building (cf. the selection of a result state by v_{CAUS} in the approaches by Folli & Harley or AAS discussed above). The causative relation between events is neither lexically nor syntactically represented, but it is read off of the complex event structure post-syntactically at the Conceptual-Intentional Interface (CI-interface, Chomsky 1995). In order for this to work formally we have to stipulate an interpretative strategy or rule which takes the structure in (72) and returns the semantic formula so that $\langle e \rangle$ and $\langle s \rangle$ stand in a causative relation. A version of this rule has been formulated by von Stechow 1995 (see also Beck & Snyder 2001 who label it Rule R; see also Wunderlich (1997) or Rothstein (2001) for slightly different perspective on this interpretative strategy.) Note that since this interpretative enrichment happens post-syntactically, the correlate of the traditional thematic role 'causer' exists only at a post-syntactic level, i.e. at the CI-interface. Note furthermore, that at this level further information is available which might prohibit that a resultative structure can combine with a causer; as discussed, for example, in AAS (2006) or Folli & Harley (2006) encyclopaedic knowledge might filter out combinations that would be formally available (e.g. *The storm murdered the president).

7.1. Resultativity, (a)telicity and the thematic licensing of causers

Travis (2005) identifies a telicity restriction on the licensing of causers in Malagasy while I proposed in this article a resultative restriction on causers. The two proposals differ in their predictions because resultative/bi-eventive structures do not necessarily lead to telicity (and the other way around) as I will shortly discuss in this final section. It turns out that, at least for the languages discussed in this article, the resultative restriction is the correct generalization; atelic structures license causers as long as they involve secondary resultative predication.

The decisive data are provided by manner-of-motion verbs which license causers not only if they combine with a telic Goal-PP but also if they combine with a Path-PP. As (73a, b) show, the latter combination leads to atelicity. And the examples in (74) show that all three types of causers discussed in this article are possible in such an atelic context. (75) gives comparable English examples.

- (69) 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'

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

- b. Der Ball rollte durch den Wind die Linie entlang
 the.NOM 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.NOM ball inadvertently the line along
 ‘The goal-keeper unintentionally caused the ball to roll along the line.’

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

It remains to be shown that the above examples qualify as resultatives. In contrast to the standard view in the literature, Folli & Harley (2006) argue that resultatives are not necessarily telic (see also Goldberg & Jackendoff 2004). Specifically, they show for Italian, Dutch and English that Path-PPs combining with manner-of-motion verbs are not adjoined to the vP but that they occupy the vP-internal complement position of the manner-of-motion verb.⁵³ This means that these verbs combine with Path-PPs exactly as in the structure in (72) which I proposed is at the heart of the thematic licensing of causer DPs. For reasons of space, I refer the reader to this work for details and provide below only two of their tests.

A number of tests used by these authors show that Path-PPs pattern with Goal-PPs (the latter are clearly complements) and not with locative PPs (which are clearly adjuncts). Besides the ordering of these PPs relatively to other prepositional phrases (not illustrated here), Folli & Harley use *do-so* VP-elision to illustrate this. VP-adjoined elements can occur outside the domain of elision as in (76a). VP-internal PPs, such as the *to*-PP in the ditransitive construction in (76b), cannot. Crucially, the behaviour of the Path-PP in (76c) suggests that it occurs VP-internally, too.

- (70) a. Mary kissed John in the park and Sue did so in the bedroom
 b. *Sue gave a book to John and Mary did so to Bill
 c. *John pushed the cart towards N.Y. and Bill did so towards Washington

Another test that suggests that Path-PPs are not adjoined to the vP but are complements concerns A'-extraction. As is well known, only arguments/complements but not adjuncts allow extraction out of weak islands (77a vs. b). The data in (78) show that locative PPs behave as adjuncts while goal-PPs and Path-PPs behave as complements.

- (71) a. *When_i do you wonder whether Snow White will eat an apple t_i?
 b. ?What_i do you wonder whether Snow White will eat t_i on Thursday?
 (72) a. *[At which party]_i do you wonder whether Sue will dance t_i?
 b. ?[To which house]_i do you wonder whether Sue will walk t_i?
 c. ?[Towards which tree]_i do you wonder whether Sue will walk t_i?

I conclude, following the detailed discussion in Folli & Harley (2006), that bounded Goal-PPs as well as unbounded Path-PPs span a bi-eventive/resultative structure in the context of manner-of-motion verbs. This, in turn, allows maintaining the resultativity restriction on causers. Note, finally, that the conclusion that resultativity and telicity must be kept apart allows also a correct integration of degree achievements (Dowty 1979). These verbs express a

⁵³ Some of these tests have originally been developed by Tungseth (2004) who applies them to Norwegian, arriving at exactly the same results.

change of state, but they show variable behaviour with respect to telicity. Importantly, even under their atelic reading such verbs license causers of all types (cf. 79a-c).

- (73) a. Das Wasser kühlte minutenlang durch den Wind ab
 the water cooled minutes-long through the wind of
 f
 ‘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 of
 f
 ‘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 of
 f
 ‘The chemist caused the water to cool for some minutes’

We can analyze degree achievements in a way similar to manner-of-motion verbs combining with Path-PPs (cf. also Folli & Harley 2006). The licensing of causers is explained if degree achievements are resultative/bi-eventive. Similar to the unbounded Path-PPs, the secondary predicate of degree achievements is, however, inherently unbounded. As discussed in the recent literature, degree achievements are basically atelic because they are derived from adjectives that denote an open scale which can only contextually be bounded (Hay et al. 1999, Kennedy & Levin 2008, Rappaport Hovav 2008 among others). It is this open-scale adjective that appears as the complement of the verbal head in (72) (cf. also Ramchand 2008).

8. Conclusions

In this article, I investigated three types of DPs that behave semantically as external arguments of an event; these are *nominative causers*, *PP-causers* and *oblique causers*. I showed that these three types of DPs differ not only in their morphological shape but also in that they are introduced by three different syntactic means which I called the *formal licensers* of the respective DPs. Only nominative causers are located in the canonical subject position Spec, VoiceP. The other two combine with structures that do not involve Voice. I proposed that oblique causers are located in the specifier of an applicative head on top of an unaccusative predicate and that PP-causers are located in a prepositional phrase adjoined to an unaccusative predicate. Furthermore, I showed that, despite their morphosyntactic differences, all three types of external arguments are subject to the same event-semantic restriction: they are licit only in a bi-eventive, resultative context. Since this *resultativity restriction* could hardly be related to the three different formal licensers, I suggested that it relates to the thematic integration of these DPs. I proposed that the three types of DPs are all causers of some kind and that the resultative structure acts as their *thematic licenser*. Specifically, I proposed that the resultative structure comprises a causative event leading to a result state and that causers can be thematically integrated into this structure because they further specify the nature or the origin of the causative event; nominative causers and PP-causers are inherently eventive (they typically denote natural forces) and give, thereby, further information about the nature of the causative event; oblique causers literally denote possessors or sources and thereby give further information about the origin of the causative event. I also discussed different proposals about the relation between the causative semantics and the resultative structure. The existence of oblique causers and PP-causers makes it necessary to separate the origin of the causative semantics from the projection introducing canonical external arguments. That is, the causative semantics originate inside of what is traditionally called

the VP and, since causers are thematically modifiers of causative events, causers originate thematically inside the VP. Causers differ thereby from agents in that the latter are VP-external arguments which are formally but also thematically licensed by Voice. The proposal that the causative semantics originate VP-internally still leaves different ways of implementation available. One option is that there exists a semantically annotated verbal head V_{CAUS} which introduces a causative event and selects for a resultative secondary predicate. I tentatively argued against this option because, across languages, even copulas and light verbs combining with a secondary resultative predicate can act as thematic licensers of causers. I argued that this favours an account where the causative semantics are read off post-syntactically from a syntactic structure where an unbounded eventive layer combines with a resultative secondary predicate. Finally, I showed that the licensing of causers is indeed restricted by resultativity and not by telicity: causers are licit in atelic contexts as long as these are bi-eventive/resultative.

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