# Sublexical modality in defeasible causative verbs\*

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### 1. Verbs at study

As Oehrle (1976, 25) observes, with an agentive subject, offer necessitates only that the possessor is willing to give the internal argument's referent up to somebody: no uptake is required on the latter's part. However, the uptake seems more strongly taken for granted with causer subjects, cf. the contrast in (1). Similarly, Oehrle observes that while no change of state is required by the agentive use of teach, some learning has to take place with a causer subject, cf. the contrast in (2). The contrasts in (3) and (4) illustrate the same phenomenon in French and German.

- (1) a. Peter offered us a bed. But we didn't want to lie there.
  - b. Leaves, mingled with grass, offered us a bed.<sup>2</sup> #But we didn't want to lie there.
- (2) a. Ivan taught me Russian, but I did not learn anything.
  - b. Lipson's textbook taught me Russian, # but I did not learn anything.

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<sup>&</sup>lt;sup>1</sup>Kamp (2013) observes that English offer differs from French offrir in that the contrast between the agentive vs. non-agentive use seems to be much less prominent. He also more generally suggests that for the English counterparts of verbs listed below, the inference that the result takes place seems to be cancellable with causer subjects, too, although it is much stronger than the inference with agentive subjects. He suggests that this may have to do with the fact that English is much more tolerant than French on the point of using primarily agentive verbs with non-agentive subjects. We have to leave these cross-linguistic variations aside in this paper, but we hope to come back to them in future research.

<sup>&</sup>lt;sup>2</sup>Ovid, *Heroide*, V. Oenone to Paris.

(3) a. Pierre m'a offert une nouvelle vie, mais je n'en voulais Pierre me has offered a new life but I NEG-of it wanted pas.

NEG

'Pierre offered me a new life, but I didn't want it.'

b. Ce livre m'a offert une nouvelle vie, #mais je n'en voulais this book me has offered a new life, but I NEG-of it wanted pas.

NEG

'This book offered me a new life, but I didn't want it.'

(4) a. Hans schmeichelte Maria, aber sie fühlte sich überhaupt nicht Hans flattered Marie but she felt REFL absolutely NEG geschmeichelt.

flattered

'John flattered Mary, but she felt absolutely not flattered.'

b. Dieses Detail schmeichelte Maria, #aber sie fühlte sich überhaupt this detail flattered Marie but she felt REFL absolutely nicht geschmeichelt.

NEG flattered

'This detail flattered Mary, but she felt absolutely not flattered.'

This paper is dedicated to verbs displaying the same ambiguity as *teach* in French and German. With agentive subjects, these verbs are used to denote an act performed with the intention of triggering a certain change of state (CoS). But this CoS does not have to occur for the sentence to be true, as shown by the non-contradictory continuation in (3a)-(4a). This is why we call these verbs 'defeasible causatives'. With causer subjects, the same verbs implicate much more strongly (and even often seem to entail) the occurrence of the CoS, cf. the contradictory continuations in (3b)-(4b). The question raised is how one should handle this ambiguity in the semantics of these verbs.

Following Gropen et al. (1989) and Beavers (2010), we call 'prospective component' the subevent that does not need to obtain for the predicate to be satisfied and 'non-prospective component' the subevent that must obtain for the predicate to be satisfied. Besides, adopting the typology of non-culminating construals proposed in Demirdache and Martin (under review), the reading which strongly implicates the CoS will be called the 'culminating' reading, and the reading under which the CoS is entirely denied 'zero-CoS non-culminating reading' ('zero-CoS NC reading' for short).<sup>3</sup>

<sup>&</sup>lt;sup>3</sup>Note that what we call the 'zero-CoS non-culminating reading' roughly corresponds to the *failed* attempt non-culminating reading of Tatevosov and Ivanov (2009). Under this reading, the expected CoS does not take place at all, even partially. This reading has also been described for some speech act verbs by Austin (1962), who labels it the 'proleptic' reading (from Greek prolepsis, 'anticipation'). Under what Tatevosov and Ivanov call the partial success non-culminating reading (labelled partial-CoS non-culminating reading in Demirdache and Martin), the expected CoS takes place, although partially only.

It has been claimed that for English verbs of transfer, the 'double object variant' triggers the culminating reading, while the to variant does not, cf. e.g. Green (1974, 157). However, Oehrle (1976, 129f.) shows that many give verbs have the culminating reading on either variant, while with agentive subjects, verbs of future having like offer fail to entail caused possession in either variant. That the meaning of the specific verb plays a critical role in the availability of the inference is also argued for in Rappaport Hovav and Levin (2008a, section 5).

Defeasible causatives are found in different semantic classes listed below. For some of them, the ambiguity has already been observed in the literature (e.g. Oehrle 1976 for verbs of caused possession/perception, Hacquard 2006 for permettre 'allow/enable', Ruwet 1994, 1995, Martin 2006, 397-398 and Mari and Martin 2009 for psych-verbs). In order to arrive at a (more) complete list of verbs, we automatically extracted from the searchable version of the Lexique des verbes français (Bédaride 2012) all verbs which allow animate and inanimate subjects (around 5.000 verbs) and identified manually those which alternate between a culminating and zero-CoS NC reading (around 60 verbs). Examples are given in French and German as it turns out that the German counterparts of most French verbs identified show the same behavior. These can be further divided in six semantic verb classes. We list some French and German verbs for each subclass. Roughly the same set of verbs give rise to the same ambiguity in many other languages, like Greek (A. Alexiadou, p.c.), Bulgarian (R. Pancheva, p.c.), Spanish, Rumanian (G. Iordachioaia, p.c.) or Hebrew (N. Boneh, p.c.)

- 1. Agentive object experiencer psych-verbs and verbs of social interaction: encourager/ermutigen 'encourage', décourager 'discourage' flatter/ schmeicheln 'flatter', provoquer/ provozieren 'provoke', offenser/ beleidigen 'offense', pousser à/ ermuntern 'push to', rassurer/beruhigen 'reassure', embêter/ belästigen 'tease', insulter/ beleidigen 'insult', humilier 'humiliate' (cf. Martin 2006, 397-398, Mari and Martin 2009).
- (5) a. Pierre l'a provoquée, mais cela ne l'a pas touchée du Pierre her has provoked but this NEG her has NEG touched at tout.
  - 'Pierre provoked her, but this didn't touch her at all.'
  - b. Cette remarque l'a provoquée, #mais cela ne l'a pas this remark her has provoked but this NEG her has NEG touchée du tout.

    touched at all

    'This remark provoked her, but this didn't touch her at all.'
- 2. Verbs of communication: annoncer/vorhersagen 'predict', attester/bestätigen 'attest', contredire/widersprechen 'contradict', expliquer/ erklären 'explain', prédire/ vorraussagen 'predict', prévenir/warnen 'warn', questionner 'question', rappeler/ erinnern 'remind', avertir 'inform', suggérer/suggerieren 'suggest'.
- (6) a. Hans suggerierte ihnen, dass er ein Genie ist, aber sie haben es Hans suggested to them that he a genius is but they have it keinen Moment lang geglaubt. NEG-INDEF.SG moment long believed 'Pierre suggested to them that he is a genius, but they didn't believe it for any moment.'

<sup>&</sup>lt;sup>4</sup>The CoS denoted by these verbs is *not* the event described in the internal argument, but a psychological CoS in the addressee of the speech act. For instance, annoncer la fin du monde à y 'predict the end of the world to y' can roughly be analysed as cause y to know the end of the world in advance.

b. Sein Verhalten suggerierte ihnen, dass er ein Genie ist, #aber sie his behavior suggested to them that he a genius is but they haben es keinen Moment lang geglaubt. have it NEG-INDEF.SG moment long believed 'His behavior suggested to them that he is a genius, but they didn't believe it for any moment.'

Note that (non-)licensing of the German Konjunctiv or French subjunctive in the sentence related to the result further illustrates the phenomenon (and approves the above judgments).

- (7) a. Pierre m'a suggéré que des renseignements sont/
  Pierre me has suggested that some information be.3.PL.INDIC
  soient fournis aux transporteurs aériens.
  be.3.PL.SUBJ provided to the carriers aerial
  'Pierre suggested to me that information are/should be provided to air carriers.'
  - b. Cette situation m'a suggéré que des renseignements this situation me has suggested that some information sont/??soient fournis aux transporteurs aériens. be.3.PL.INDIC be.3.PL.SUBJ provided to the carriers aerial 'This situation suggested to me that information are/should be provided to air carriers.'
- 3. Influence verbs Under their agentive reading, these verbs describe an action to induce or to allow someone to perform an action, cf. Sag and Pollard 1991; these verbs are analysed as causative verbs (meaning 'causing an other to act') by e.g. Koenig and Davis 2001 and Rau 2010: appeler à/appellieren 'call for', demander/verlangen 'ask', exiger/fordern 'demand', inciter/anstacheln 'incite', inviter 'invite', pousser/drängen 'push', permettre/erlauben 'allow' (cf. Hacquard 2006, 41&202), presser/antreiben 'urge', réclamer/verlangen 'urge', solliciter 'to urge, call upon', exhorter 'exhort, urge'.
- (8) a. Pierre leur a demandé beaucoup d'argent, mais personne ne lui Pierre them has asked a lot of money but nobody NEG him en a donné.

  some has given

  'Pierre asked them a lot of money, but nobody gave him some.'
  - b. Ce projet leur a demandé beaucoup d'argent, #mais personne this project them has asked a lot of money but nobody n'y a consacré un centime.

    NEG to it has devoted a penny 'This project asked them a lot of money, but nobody devoted a penny to it.'
- **4.** Verbs of caused perception: interpeller 'to shout at, to question', montrer/zeigen 'to show' (cf. Oehrle 1976, 68-113), manifester 'to indicate', dévoiler 'reveal', révéler 'reveal', témoigner 'show'.

(9) a. Marie zeigte ihm die Schwächen der Analyse, aber er hat sie Marie showed him the weaknesses of the analysis but he has them nicht gesehen.

NEG seen

'Marie showed him the weaknesses of the analysis, but he didn't see them.'

b. Diese Tatsache zeigte ihm die Schwächen der Analyse, #aber er this fact showed him the weaknesses of the analysis, but he hat sie nicht gesehen.

has them NEG seen

'This fact showed him the weaknesses of the analysis, but he didn't see them.'

- **5.** Verbs of caused possession: attribuer/zuweisen 'to allocate, grant', destiner 'to design to s.b., to destine', léguer 'bequeath', enseigner/lehren 'to teach' (cf. Oehrle, id.:76), envoyer 'to send', offrir/bieten 'to offer'.
- (10) a. Der Professor lehrte sie Russisch, aber sie haben kein Wort the professor taught them Russian but they have no word gelernt.

learned

'The professor taught them Russian, but they didn't learn a word.'

b. Der Aufenthalt lehrte sie Russisch, #aber sie haben kein Wort the stay taught them Russian but they have no word gelernt.

learned

'The stay taught them Russian, but they didn't learn a word.'

- **6. Epistemic verbs**: vérifier/verifizieren 'verify', assurer/ zusichern, versichern 'assure/ensure', authentifier/bestätigen 'authenticate', garantir/garantieren 'guarantee', certifier/bestätigen 'certify', justifier 'justify', excuser 'justify', attester 'attest', démentir 'contradict'.
- (11) a. L'expert a vérifié le résultat, et il était incorrect. the expert has verified the result and it was incorrect 'The expert verified the result, and it was incorrect.'
  - b. Ce fait a vérifié le résultat, #et il était incorrect. this fact has verified the result and it was incorrect 'This fact verified the result, and it was incorrect.'
- 7. Others: soigner 'cure, treat', imperméabiliser 'waterproof', chasser 'chase away', réparer 'repair/mend' (cf. Ryle, 1949)<sup>5</sup>, nettoyer 'clean' (cf. Levin and Rappaport Hovav, 2014), anesthésier 'anaesthetize', aromatiser 'flavour', cacher 'hide', aider 'help'.
- (12) a. Ils ont réparé mais cela ne fonctionne toujours pas. they have repaired but this NEG works still NEG 'They repaired but it still doesn't work.'6

<sup>5, &</sup>quot;mend" [...] is sometimes used as a synonym of "try to mend" (Ryle, 1949, 132).

<sup>&</sup>lt;sup>6</sup>fr.board.bigpoint.com/drasaonline/showthread.php?t=660463

b. Le choc l' a réparé mais #cela ne fonctionne toujours pas. the shock it has repaired but this NEG works still NEG 'The shock repaired it but it still doesn't work.'

It is important to underline that the non-culminating (NC) reading which appears to require agentivity on the part of the subject is the one where the occurrence of the *whole* CoS is denied, which we call after Demirdache and Martin (under review) the 'zero-CoS' NC construal. As Demirdache and Martin observe, the 'partial-CoS' NC reading, where the occurrence of a final proper part of the CoS only is denied, is available with verbs associated with a multi-point scale (those whose past participle can be successfully modified by a completion adverbial),<sup>7</sup> and this even in the context of a causer subject. For instance, the following sentence is unproblematic:

(13) Sa réaction m' a découragée, quoique pas complètement. His reaction me has discouraged, althought not completely 'This reaction discouraged me, although not completely.'

The difference in the continuations in (3a)-(12a) vs (3b)-(12b) might suggest that these sentence pairs differ in terms of event structure. The a-examples seem mono-eventive, while the b-examples seem bi-eventive since they describe a CoS besides the causing event. In section 3, we show however that for most of the listed verbs, this solution is not tenable: many arguments, including standard event structure tests, show that defeasible causatives are bi-eventive under both their culminating and zero-CoS NC readings. The ambiguity should therefore be handled without assuming different event structures. Before this, we show in the next section that contrary to what happens with modal verbs (cf. among others Hacquard 2006), perfectivity is not required for the culminating reading to be triggered.

The rest of the paper is structured as follows. In section 4, we sketch our analysis of defeasible causatives, which assumes a sublexical modal component in their semantics both with agent and causer subjects. In section 5, we show that the zero-CoS NC reading of these verbs is available either with 'intentional' agents or with 'non-intentional' agents. In section 6, we investigate the conditions under which the the zero-CoS NC reading becomes acceptable even with inanimate subjects. Section 7 concludes.

## 2. The role of outer aspect

It has been claimed that perfective morphology is required for the so-called implicative reading to be triggered with modal verbs like *pouvoir* 'can' or *permettre* 'allow' (cf. e.g. Bhatt 1999, Hacquard 2006 on the 'actuality entailment' of modal verbs). For instance, *permettre* is said to be implicative under what Hacquard calls the 'goal-oriented reading' with a perfective, cf. (14), but not with an imperfective, cf. (15).

<sup>&</sup>lt;sup>7</sup>See e.g. Beavers (2006) and Rappaport Hovav (2008) on verbs that lexicalize a multi-point scale vs. those that lexicalize a two-point scale. Two-point scales have only two values to attribute: to have or not to have the attribute (see e.g. *die*). In contrast, multi-point scales have more than two values for the attribute lexicalized in a complex scale.

<sup>&</sup>lt;sup>8</sup>We come back to monoeventive verbs showing the same contrast as defeasible causatives in the conclusion. Potential candidates are *demander/verlangern* 'ask', *exiger/fordern* 'demand'.

<sup>&</sup>lt;sup>9</sup>French has two perfective forms, the *passé simple*, which is almost only used in written texts and cannot appear in a range of contexts (like epistemic modals, past subjunctive conditionals), and the *passé* 

(14) La carte m' a permis d' entrer dans la bibliothèque, #mais je ne the card me allow.PERF to enter in the library but I NEG suis pas entrée.

be NEG entered.

'The card enabled me to enter the library, but I didn't enter.'

NEG be NEG entered.

'The card enabled me to enter the library, but I didn't enter.'

The so-called 'actuality entailment' does not arise in perfective sentences under the deontic reading, cf. (16):

(16) Le professeur m' a permis d' entrer dans la bibliothèque, OK mais je the professor me allow.PERF to enter in the library but I ne suis pas entrée.

NEG am NEG entered

'The professor allowed me to enter the library, but I didn't enter.'

This contrast is similar to ours since the 'implicative' reading always has an agent subject, and a causer subject always triggers an implicative reading (in perfective sentences at least).

Despite of this similarity, we claim that the perfective is not necessary for the contrast with defeasible causatives to arise. We have three arguments in favour of this claim. Firstly, the correlation between the culminating reading and the presence of the causer is also found with the German Simple Past, which does not entail completion or perfectivity, in contrast to the German Present Perfect (cf. Reyle et al. 2007). In fact, the result inference arises with a causer no matter what reading the German Simple Past has, including the progressive reading induced by the particle *gerade*, cf. (17):

- (17) a. Sie zeigte ihm gerade die Schwächen der Analyse, aber er she show.SP him PROG the weaknesses of the analysis but he erfasste sie nicht.

  understood them NEG
  - 'She was showing her the weaknesses of the analysis, but he didn't understand them.'
  - b. Diese Tatsache zeigte ihm gerade die Schwächen der Analyse, this fact show.SP him PROG the weaknesses of the analysis #aber er erfasste sie nicht.

but he understood them NEG

'This fact was showing her the weaknesses of the analysis, but he didn't understand them.'

composé, which is the unmarked perfective form. The passé composé can be either used as a perfective or a present perfect. Throughout the examples, we only consider its perfective use, since we do not know yet, at that point, if the passé composé licenses exactly the same range of non-culminating readings for a same predicate when used as a present perfect or a perfective.

Secondly, with multi-point scale verbs (e.g. enseigner 'teach', soigner 'cure'), the causer blocks the zero-CoS NC reading in imperfective sentences too (in this case, of course, only a proper subpart of the result is entailed). This is the case when the progressive reading of the imperfective is selected, so that the generic and counterfactual readings of the imperfective are discarded. The progressive construal en train de V 'V-ing' univocally selects the progressive reading.  $^{10}$ 

- (18)a. Ce voyage était en train de lui enseigner le russe.#Et pourtant,this trip the russian and was **PROG** him teach  $il \quad n'$ apprenait du tout. rienhe NEG learn.IMPERF. nothing at all 'This trip was teaching him Russian. And yet, he wasn't learning anything.'
  - b. Ce séjour dans la nature était en train de la soigner. #Et this stay in the nature was PROG her treat and pourtant, elle ne guérissait pas du tout.

    yet she NEG cure.IMPERF. NEG at all 'This stay in the nature was treating her but she wasn't curing at all.'

Thirdly, with some of our French verbs, causers tend to trigger the result inference contrary to agents with the *futur simple*, which does not encode perfectivity:

- (19) a. Pierre lui enseignera le russe, mais elle ne l'apprendra pas.

  Pierre her teach.FUT the russian but she NEG it learn.FUT NEG

  'Pierre will teach her Russian, but she won't learn it.'
  - b. Ce voyage lui enseignera le russe, #mais elle ne l'apprendra this trip her teach.FUT the russian but she NEG it learn.FUT pas.

'This trip will teach her Russian, but she won't learn it.'

In conclusion, we assume that perfective outer aspect is not necessary for the contrast between the culminating and zero-CoS NC reading to appear with defeasible causatives.

## 3. A First Analysis in Terms of Event Complexity

#### 3.1. Introduction

Let us return to the question of whether the two readings differ in event complexity. This would mean that the verbs under discussion productively have two event construals. Two ways of implementing this are imaginable. Either these verbs have two different lexical entries, a solution which does not look attractive to us, given that verbs show up the same ambiguity language after language. Alternatively, these verbs could basically be result verbs, which, however, can be coerced into mono-eventive (manner) verbs. Such an ambiguity between a mono-eventive (manner) and a bi-eventive (result) reading has already

 $<sup>^{10}</sup>$ For obvious reasons, with two-point scale verbs like of frir 'offer' however, no partial event is entailed with the progressive reading of imperfective tenses, since these verbs cannot be used to denote a partial change of state.

been proposed for potential counter-examples of what has been called the 'manner/result complementarity', cf. Rappaport Hovav and Levin (2008b), Levin and Rappaport Hovav (2013) and Levin and Rappaport Hovav (2014). In Martin and Schäfer (2012), we spelled out into details how this second hypothesis could be implemented with the framework of Levin and Rappaport Hovav (1995). However, several arguments repeated below show that an analysis along these lines cannot explain the behavior of defeasible causatives. The conclusion will be that the verbs at hand do not differ in event structure under their culminating and zero-CoS NC readings. We will begin with a first battery of tests suggesting that with most of our verbs, causers and agents can occur in a resultative structure. We will then present arguments showing that agents have to occur in a resultative structure even under the zero-CoS NC reading.

#### 3.2. Event Structure Tests

The tests presented below show that not only causers but also agents can trigger a result implication with defeasible causatives and, therefore, can occur in a bi-eventive structure. Firstly, not only causers but also agents can license the restitutive reading of *again* (if the result state is reversible and can hold without previous causation). Observe that in (21), the *with*-clause ensures that the animate subject is an agent rather than a causer.

- (20) Dieses Gespräch hat mich endlich wieder ermutigt. this conversation has me finally again encouraged 'Finally, this conversation encouraged me again.'
- (21) Hans hat mich mit seiner Rede endlich wieder ermutigt.

  Hans has me with his discourse finally again encouraged 'Finally, Hans encouraged me again with his talk.'

Secondly, verbs like rassurer 'calm/reassure' allow time frame adverbials to measure the change of state. Both causers and agents are compatible with this interpretation of frame adverbials. For instance, (22) can be true if it is the psychological state of state that took five minutes; Pierre's action might have taken more time to be completed.

(22) Pierre l'a rassurée avec ses mots doux en cinq minutes. Pierre her-has reassured with his sweet words in five minutes 'Pierre reassured her with his sweet words in five minutes.'

Observe that again, the *avec* adjunct ensures that Pierre is an agent rather than a causer in (22). Thirdly, with some of our verbs, durative adverbials can measure how long a reversible result state holds. This is possible with causers and agents.

(23) Hans ermutigte ihn einige Minuten entlang, aber dann verlor er seinen Hans encouraged him some minutes long but then lost he his Mut wieder.

courage again

'Hans encouraged him for some minutes, but then he lost his courage again.'

Fourthly, most of the German defeasible causatives form *ung*-nominalizations with both agents and causers as external arguments, cf. (24). But Roßdeutscher and Kamp (2010) extensively argue that *ung*-nominalizations can only be formed from bi-eventive, i.e. resultative verbs (cf. (25a) vs. (25b)).

- (24) die Ermutigung der Kinder durch den Lehrer/ durch das Ereignis the encouragement of-the children by the teacher/ by the event 'the encouragement of the children by the teacher/by the event'
- (25) a. Sperr-ung (clos-ing); Warn-ung (warn-ing) b. \*Tanz-ung (danc-ing); \*Ess-ung (eat-ing)

We conclude that not only causers but also agents *can* occur in a bi-eventive construal. But there are also arguments which point to the stronger conclusion that, in the context of defeasible causatives, agents *must* occur in a bi-eventive structure just as causers.

Firstly, German *ung*-nominalizations do not necessarily have a culminating interpretation, cf. (26). If they indeed depend on a bi-eventive event structure, the lack of a result implication cannot be explained by the absence of a result sub-event.

(26) Er schickte ihnen eine Warn-ung, aber sie haben sie nicht verstanden. he send them a warn-ing but they have it not understood 'He send them a warning, but they did not understand it.'

Secondly, many of the defeasible causatives are poly-morphemic and have the makeup of denominal (location) or deadjectival verbs or involve resultative prefixes (27a-c).

- (27) a. en-courage<sub>N</sub>-er [ $v_{oice}$  subj.  $v_{oice}$  [ $v_{p}$  v<sub>cause</sub> [ $v_{p}$  obj. enP [DP courage]]]
  - b. er-mutiga-en [Voice subj. Voice vP vcause [AdjP obj. mutigPA]]]
  - c. anpref-regen [voiceP subj. Voice [vP vcause [PrefP obj. anprefix]]]

The zero-CoS NC uses of these verbs show, of course, the same morphological complexity (and observe that in languages like Hebrew, overt causative morphology shows up with the zero-CoS NC reading of defeasible causatives too, Nora Boneh, p.c.). If there is a strict mapping from form to interpretation and a meaningful composition of the meaning of the complex word from the meanings of its subparts, then even the zero-CoS NC uses must build on a bi-eventive composition. Otherwise, we would have to assume morphologically complex roots acting as manner modifiers. But it is not clear where these complex roots should come from.

Thirdly, many of the verbs at study are ditransitives. Within the proposal that indirect objects are not lexical arguments of verbal constants but are introduced by (low) applicative heads or stative/possessive event predicates (Pylkkänen 2008, Rappaport Hovav and Levin 2008b, among others), it is not clear how an indirect object could be licensed in a mono-eventive structure (recall that the presence of an indirect object does not necessarily make the sentence culminating).

Fourthly, defeasible causatives with agent subjects also do not show other properties of non-core transitive verbs such as resultative formation (28); cf. Levin (1999).

(28) \*Er ermunterte die Kinder zuversichtlich. he encouraged the children confident

'He caused the children to be confident by encouraging them.'

The hypothesis that the zero-CoS NC use of defeasible causatives involves a mono-eventive event structure is thus hardly tenable: defeasible causatives are bi-eventive with causers and agents.

In the next section, we briefly summarize our analysis of defeasible causatives. It makes use of the sublexical modal component of Koenig and Davis (2001).

### 4. Defeasible causatives as sublexical modal verbs

### 4.1. Sublexical modality

Some defeasible causatives like offer, urge and require are addressed by Koenig and Davis (2001), who introduce modality in their semantics. They propose to divide the semantics of verbs into two components. The situational core component categorizes types of relations between participants in situations and the roles the participants play in them (i.e. argument and event structures). The sublexical modal component (a modal base) evaluates these relations at various world indices. Koenig and Davis (2001) assume that while in the case of plain modal verbs like must, the selection of the modal base is contextually determined, for verbs like offer or require, etc. the modal base is lexically specified. 12

Most of our defeasible causative verbs are what Koenig and Davis call *energetic modals*: the modal base contains all worlds in which the action of the agent achieves her/his goal, see the paraphrases (29b) of (29a).

- (29) a. Susan offered Brenda 10 euros.
  - b. 'Susan caused Brenda to have 10 euros in all worlds where the goal of her offer is achieved.'

Introducing modality in the semantics of these verbs nicely allows to keep a bi-eventive decomposition for these verbs (as (29b) show, the event structure of offer involves a cause relation, cf. also (32) below), without having to assume that they entail a result in all of their uses. Given the conclusion adopted here that verbs at hand are bi-eventive on both uses, this is what we need. Note in passing that in adopting Koenig & Davis' sublexical modal component, we depart from the often adopted implicit premise (cf. e.g. Rappaport Hovav and Levin 2008b) that the event with which the root is associated has to be entailed by the verb in the actual world  $w_0$ : a verb's root can be associated to a result even if this result is not entailed in  $w_0$ .

Koenig and Davis (2001) focus on the agentive use of defeasible causatives, and therefore do not address the ambiguity between the culminating and zero-CoS NC readings. The same is true of Rappaport Hovav and Levin (2008a) and Beavers (2010), who also adopt their sublexical modality component. In order to capture the difference in interpretation of verbs at hand with causer and agent subjects, one could at first sight assume a lexical ambiguity with a sublexical modal component present with agents but not with causers. However, this is not the right way to go, because as it will be shown below in section 6, in some contexts, it is possible to cancel the inference that the result takes place even with causer subjects. This can only be accounted for if the modal base can be at play with both types of subjects.

<sup>&</sup>lt;sup>11</sup>Under the assumption that linking constraints (for direct arguments) only depend on the situational core component and are insensitive to the sub-lexical modality, this allows them to explain that verbs like *give* and *offer* have the same linking pattern, although only the former entails a result in the actual world.

 $<sup>^{12}</sup>$ As e.g. the circumfix ka...-a lexically encodes circumstantial modality in Salish languages, cf. Davis et al. (2009)). See Vander Klok (2012) for a cross-linguistic semantic typology of modals with respect to the lexicalization of the modal force and/or the modal base.

#### 4.2. Proposal

In Martin and Schäfer (2012), we argue that defeasible causatives are bi-eventive and involve a modal base on any use, and lexically encode the modal force of necessity. An argument in favour of positing a sublexical modal component for these verbs relates to scopal ambiguities. If defeasible causative verbs have a modal operator in their lexical representation, we indeed predict ambiguities to occur in the presence of other quantifiers. Scopal interactions between pure modal verbs and quantifiers have e.g. been observed by von Fintel and Iatridou (2003, 175) for deontic modals, Huitink (2008), and Wolf for epistemic modals. In Martin and Schäfer (2012), we could not report any ambiguity of this type with defeasible causatives, conjecturing that this might be related to the type of modality involved. But Kratzer (2013) observes that existential quantifiers do indeed trigger an ambiguity with defeasible causatives. As she notices, if I offer you a bench, either there is no bench there I offer you (the indefinite direct object is in the scope of modality) or there is such a bench in the base world (the existential quantifier outscopes the modal component).<sup>13</sup>

In Martin and Schäfer (2012), we captured the differences between the culminating and zero-CoS NC readings through the choice of the modal base:

- With agent subjects, the modal base is typically energetic (or goal-oriented): it contains those worlds where the goal of the agent is achieved. Since the world of evaluation is not necessarily included in the modal base, the result does not have to take place in the actual world. The verb therefore triggers a 'result implicature' rather than a 'result implication'.
- With causer subjects, the modal base is typically circumstantial. The world of evaluation is therefore not filtered out and, thus, necessarily quantified over. However, in some contexts, defeasible causatives with causer subjects are evaluated with respect to a stereotypical modal base. In that case, the verb does not have its culminating reading.

We casted this proposal in the way illustrated below, through the lexical representation associated to the VP offrir  $y \ a \ z$  in (32).  $\rho$  in (32) is a free variable for the modal base, where a modal base is viewed as a function from worlds to sets of worlds. So, for example,  $\rho(w)$  is the set of worlds that are  $\rho$ -compatible with w.

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(30) [v_{P} \text{ offrir } y \text{ à } z] \rightsquigarrow  (to be revised) \lambda y \lambda z \lambda e[\text{offer}(e) \wedge \text{theme}(e,y) \wedge \text{recipient}(e,z) \wedge  \Box_{\rho} \exists e'(\text{cause}(e,e') \wedge \text{have}(e') \wedge \text{possessee}(e',y) \wedge \text{possessor}(e',z))] = _{def} \lambda y \lambda z \lambda e[\text{OFFER}(\rho,e,z,y)] Conditions: (i) \forall e \forall z \forall y (\text{OFFER}(\rho,e,z,y) \wedge \exists x (\text{agent}(e,x)) \rightarrow \rho = \text{energetic}) (the existence of an agent implies an energetic modal base)
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<sup>&</sup>lt;sup>13</sup>In fact, Kratzer (2013) observes that existential transportation even fails with a subset of non-defeasible causative verbs, e.g. *give* (vs. *hand*), that she consequently treats as involving sublexical modality too. Her argument runs as follows. Let us assume that Ede sells 75 balls to Mats, gives him 25 balls for free, and puts 100 balls in a box. In that case, it is not true that there are 25 balls such that Ede gave them to Mats. However, existential transportation is insured with English *hand* or French *passer* 'pass', as the reader may check.

```
(ii) \forall e \forall z \forall y (\mathbf{OFFER}(\rho, e, z, y) \land \exists x (\mathbf{causer}(e, x)) \rightarrow \rho = \mathbf{circumstantial} \lor \rho = \mathbf{stereotypical}) (the existence of a causer implies a circumstantial or a stereotypical modal base)
```

The representation ensures that in all uses, offrir  $y \ a \ z$  entails the occurrence of an event which is an offer, has y as its theme and z as its recipient. But since the caused possession is within the scope of the modal operator, it takes place only in those worlds which are contained in the modal base. The verb is furthermore associated with two conditions. The first ensures that the existence of an agent implies an energetic modal base, while the second ensure that the existence of a causer implies a circumstantial or a stereotypical modal base. The truth conditions for  $\Box_{\rho}$  are standard, with respect to a model M, an assignment function g, and a world w:

(31) 
$$\llbracket \Box_{\rho} \varphi \rrbracket^{M,g,w} = 1$$
 iff for all  $w' \in \rho(w)$ ,  $\llbracket \varphi \rrbracket^{M,g,w'} = 1$ .

Piñón (2014) points out that this analysis raises a problem though. In Martin and Schäfer (2012), we suggested that the analysis sketched above does not oblige to postulate that defeasible causative verbs are lexically ambiguous. However, Piñón argues that it actually does, because the choice of agent or causer is mutually exclusive (and the choice of modal base depends on this choice). Moreover, since it is not clear how to relate agents and causers, it is also not clear how to relate the two senses of defeasible causative verbs.

Additionally, Martin (2015) shows that standard (i.e. non-defeasible) causatives like réveiller/ aufwecken 'wake up' also confirm the link between agentivity and result deniability, although in progressive sentences. We therefore need for a unified account for the two phenomena, which made us give up our original hypothesis that the contrast between the culminating and zero-CoS NC construal of defeasible causatives has to be captured through the choice of the modal base. Finally, the account sketched in Martin and Schäfer (2012) redescribes the facts rather than explaining them, since the question of why the modal base is typically energetic with agents and typically circumstantial with causers is left unanswered.

Under our current account, the sublexical modal causative structure encodes a modal base that contains what we call 'causally successful' worlds under both their agentive and nonagentive uses, cf. (32). We define causally successful worlds as those worlds that have duplicates of the event described by the verb, where the encoded result is obtained, and where the conditions of success that are possibly associated to the event described by the verb are fullfilled. For offer, the encoded result is a change of possession, and the conditions of success are that the offer is accepted by the beneficiary and honored by the offerer. Conditions of success are very prominent for those defeasible causatives that are performative verbs, like offer. For other verbs like soigner 'treat' or enseigner 'teach', conditions of success are much less salient, and perhaps even inexistent. Therefore for these purely descriptive (i.e. non-normative) verbs, causally successful worlds trivially

<sup>&</sup>lt;sup>14</sup>This is very much in the spirit of Kratzer's 2013 definition of the modal domain of transfer of possession verbs like *offer* or *bequeath*, that she defines as containing those worlds 'that have duplicates of the event described by the verb, where whatever obligations were established by that event are honored, where whatever rights were conferred by that event are exercised.'

<sup>&</sup>lt;sup>15</sup>Those verbs can be used in explicit performative sentences, like e.g. *I hereby offer you to come*. On these verbs, see e.g. Searle (1989) and Condoravdi and Lauer (2011). There is a huge literature on the conditions of success of performative verbs in the tradition initiated by Austin and Searle, which could help to define more precisely, for each verb, what exactly are the conditions that make the speech act successful.

amount to those worlds in which the result takes place. We therefore assume a single lexical entry for defeasible causatives, both with agent and causer subjects, given in (32) below.

```
(32) [VP \text{ offrir } y \text{ à } z] \rightsquigarrow \lambda y \lambda z \lambda e[\text{offer}(e) \wedge \text{theme}(e,y) \wedge \text{recipient}(e,z) \wedge \Box_{\text{causal\_success}} \exists e'(\text{cause}(e,e') \wedge \text{have}(e') \wedge \text{possessee}(e',y) \wedge \text{possessor}(e',z))] = _{\text{def}} \lambda y \lambda z \lambda e[\text{OFFER}(e,z,y)]
```

In this paper, we do not offer an account for the difference of interpretation of these verbs with agent vs. causer subjects. We refer the reader to Martin (2015), which offers an analysis that explains the variation in the interpretation of these verbs through an extra-lexical pragmatic principle that has to do with the conceptualization of agentive vs. nonagentive causal events. This principle accounts for why the base world is typically within the modal base with causers, and under which particular conditions it can be filtered out even with such inanimate subjects. What we do in the next sections is investigating the relation between agentivity and intentionality, in order to clarify under which conditions the result implication can be cancelled with an agent (section 5) and looking at cases where the inference that a result takes place can be cancelled with inanimate subjects (section 6). The data presented in section 6 are crucial in that they justify our proposal illustrated in (32) according to which defeasible causatives have a modal component with both agent and causer subjects.

### 5. Defeasible causatives with animate subjects

The observation reported in this section is that the result inference can be cancelled as soon as the subject's referent performs an action which coincides with the description of the VP, no matter whether the *intention* pursued through this action coincides this description or not.

Prima facie, in the context of an animate subject, we would expect the result implication not to be cancellable as soon as the VP is modified by an adverbial like sans le faire exprès 'without doing it on purpose', sans le vouloir 'without wanting it' or non-intentionnellement 'unintentionally'. Indeed, 'non-intentional' agents seem at first sight to be identifiable with causers. However, the data below show that this is a wrong move. They illustrate that it is sometimes possible to cancel the inference that a result takes place with animate subjects even in presence of these adverbials.

(33) a. Marie lui a montré sans le vouloir les problèmes de son Marie him has showed without it want the problems of his analyse, mais il ne les a pas du tout perçus.

analysis but he NEG them NEG has at all perceived 'Marie showed him without wanting it the problems of his analysis, but he didn't perceive them.'

<sup>&</sup>lt;sup>16</sup>Control morphology in Salish languages also suggests that agentive readings are not systematically intentional, cf. e.g. Demirdache (1997), Jacobs (2011) and references therein. On a typology of external arguments distinguishing agentivity, intentionality and control, see also Martin and Schäfer (2014).

b. Il les prévenus sans le faire exprès de sa visite he them has told make intentionally of his visit without it voulait garder heureusement ils l' ont secrète, maisnepasthat wanted keep fortunately they NEG it have NEG secret but réalisé.

realized

'He told them unintentionally about his visit that he wanted to keep secret, but fortunately they didn't take notice of it.'

The result inference can thus be cancelled, although, as these adverbials indicate, the agent's intention does not coincide with the description of the VP.

This does not mean that any animate subject licenses the zero-CoS NC reading. In order to cancel the inference that the result takes place, we need a context which makes clear that the subject's referent *performs an action* which coincides with the description of the VP (although the intention motivating this action might not coincide this description). If, on the contrary, the context indicates that the subject's referent, although animate, does not perform any action, the result implication is triggered. For instance, the result inference is systematically triggered in presence of the adverbial *without doing a thing* (on a related point, cf. Oehrle, 1976, 84):

- (34)a. Sans rienfaire, Pierre lui a montré les problèmes de without nothing do Pierre her has showed the problems # mais elle ne lesl'analyse, pasvus. the analysis but she NEG them has NEG seen 'Without doing a thing, Pierre showed her the problems of the analysis, but she didn't see them.'
  - b. Sans prévenus faire,illesde sa visite qu' il awithout nothing do he them has told his visit that he voulait garder secrète, # mais heureusement ilsneontwanted keep fortunately secret but they NEG it have NEG réalisé.

realized

'Without doing a thing, he told them about his visit that he wanted to keep secret, but fortunately they didn't take notice of it.'

In conclusion, in the context of an animate subject, the result inference cannot be cancelled if the subject's referent does not perform an action, and it can be cancelled as soon as the action performed coincides with the description of the VP, no matter whether the intention pursued through this action coincides with this description too or not. In the typology of Dowty (1972, chapt.5) and Kamp (1999-2007), sentences (33) are examples of the non-intentional agentive reading (the act performed verifies the description provided by the VP, but not the intention of the agent), while (34) are examples of the non-agentive reading (the causing event is not an act, under any description).

## 6. Defeasible causatives with inanimate subjects

With an inanimate subject, there are at least two types of contexts where defeasible causatives allow to cancel the inference that the result takes place, which we review in the next subsections.

#### 6.1. Causers vs Instruments

Firstly, with some defeasible causatives at least, the result implicature is more easily cancellable if the subject's referent can be conceived as the instrument of an implicit agent, cf. the a-examples vs. the b-examples below.

- (35)a. Le discours vraiment flatté durecteur l' plusieurs the discourse of the dean him has really flattered on several reprises, mais cela l' laissé complètement indifférent. athis him has left completely indifferent 'The speech of the dean really flattered him on several occasions, but it left him totally unmoved.'
  - b. Ce détail l' a vraiment flatté, # mais cela l' a laissé this detail him has really flattered but this him has left complètement indifférent.

    completely indifferent

    'This detail really flattered him, but it left him totally unmoved.'
- (36) a. Ce traitement médical l' a soigné, et pourtant ça n' a this therapy medical him has treated and yet this NEG has rien changé à son état.

  nothing changed on his state

  'This medical therapy treated him, and yet it didn't change his state at all.'
  - b. Ce séjour chez ma soeur l' a soigné, #et pourtant ça n'
    This stay at my sister him has treated, and yet this NEG
    a rien changé à son état.
    has nothing changed on his state
    'This stay at my sister's place treated him, and yet it didn't change his state at all.'

An indication that the subject of the a-examples is more naturally conceived as an Instrument than the subject of b-examples is that the paraphrase of the subject in (35)-(36) by an *avec/with*-adjunct, as the reader may easily check. Why instruments enable to cancel the result inference is accounted for in Martin (2015).

#### 6.2. Abnormal reactions

With an inanimate subject, it is also possible to cancel the result inference in a context making clear that the reaction of the internal argument's referent to the eventuality involving the causer is abnormal and/or unexpected. For example, in the a-examples in (37)-(38), the context indicates that the object's referent reacts in an unexpected, absent-minded, crazy or stupid way to the event involving the subject's referent.

(37)a. Objectivement, la chute de pierres les beletbien prévenus objectively the fall of stones them has well and truly warned qu' $\acute{e}t\acute{e}$ biendanger! Il faut vraimentilsaientof the danger it must be really that they have-SUBJ been well s'enétourdis rendre compte. pour ne pasabsent-minded for NEG NEG REFL of it render account

- 'Objectively, the stone fall well and truly warned them of the danger! They must have been really absent-minded for not realizing it.'
- chute de pierre les prévenus du danger. #Mais ils of the danger the fall of stones them has warned but they nesont pas renducompte.enNEG REFL of it be NEG rendered account 'The stone fall warned them of the danger. But they didn't realize it.'
- (38)a. Clairement, cette situation leur abeletbien montré le clearly this situation them has well and truly showed the problème! C' est fou qu'ilsneaientpascrazy that they NEG it have-SUBJ NEG seen it is 'Clearly, this situation well and truly showed them the problem! It is crazy that they didn't see it!'
  - b. Cette situation leur a montré le problème, #mais il ne l' this situation them has showed the problem but they NEG it ont pas vu. have NEG seen

'This situation showed them the problem, but they didn't see it.'

Interestingly, this inference is much easier to cancel in presence of the evidential adverb objectivement 'objectively' and clairement 'clearly'. Often, the suspension of the inference is even easier in the presence of the discourse marker bel et bien 'well and truly' or tout de même 'nevertheless'. In a similar way, in German, the result inference becomes cancellable in such abnormal contexts and in presence of evidential adverbials like objektiv betrachtet and klar und deutlich and discourse markers like zwar...aber or doch:

(39)a. Diese Situation hat ihnen doch klar und deutlich das Problem situation has them after all well and clearly the problem verrückt, dass sie es trotzdem nicht gesehen showed it is crazy that they it nevertheless not seen haben!

have

'This situation showed them after all well and truly the problem. It is crazy that they didn't see it nevertheless!'

b. Diese Situation hat ihnen das Problem gezeigt, #aber sie haben es the situation has them the problem showed but they have it nicht gesehen.

not seen

'This situation showed them the problem, but they didn't see it.'

We again refer the reader to Martin (2015) for an account of the reason why evidential adverbials objectivement/objektiv betrachtet/clairement/klar und deutlich help to cancel the result inference.

### 7. Conclusions

We started from the observation that the interpretation of defeasible causatives like offer varies with the nature of the external theta-role. We adopted the hypothesis argued for in Martin and Schäfer (2013) that the two uses do not differ in event complexity – even the zero-CoS NC reading involves a bi-eventive structure. We argued that these verbs involve a sublexical modal base both with agent and causer subjects, but gave up Martin and Schäfer (2012)'s proposal to capture the difference between the culminating and zero-CoS NC readings through the choice of the modal base. Nevertheless, we do not account for the role of the external argument on the interpretation of these verbs, and do not explain why the zero-CoS NC construal systematically available with an agent subject and sometimes available only in the context of a causer subject. <sup>17</sup>

The analysis sketched throughout this paper leaves several other questions opened. Firstly, we have not investigated into details the aspectual shifts that seem involved by the switch from an agent subject to a causer subject (also noticed for some of our verbs by Piñón, 2014). Often, what looks like an accomplishment with an agent suddenly exhibit some characteristic properties of an achievement verb with a causer: adverbials tend to scope lower in the event structure, etc. In other cases, what looks eventive with an agent seems stative with a causer. We deliberatly left these aspectual differences aside because the aspectual switch is not consistent through the whole class of defeasible causatives. But we will have to investigate these differences to check whether they do not undermine our proposal that we only need one lexical entry for these verbs. A second question concerns verbs of desire like vouloir 'want', demander 'ask' or exiger 'demand', which raise two problems. For some reasons that we do not understand, they invariably trigger a result implication with causer subjects, even in presence of evidential adverbials like objectivement, clairement 'objectively, clearly', and contrastive adverbials like bel et bien 'well and truly', which should help to license a zero-CoS NC reading.

(40) Objectivement, ce projet a bel et bien demandé beaucoup d'argent! # Mais contre toute attente, personne n'y a accordé un centime! 'Objectively, this project well and truly asked a lot of money! But against all expectations, nobody devoted a single cent to it!'

Furthermore, contrary to 'typical' defeasible causatives, these verbs seem mono-eventive: they do not form -ung nominalizations in German and look mono-morphemic, cf. Mar-

<sup>&</sup>lt;sup>17</sup>Martin (2015)'s answer to this question to which we refer above builds on the recent analysis of the progressive by Varasdi (2014). Very briefly, her idea is twofold. Firstly, she argues on the basis of new observations that standard (i.e. non-defeasible) causatives also confirm the link between agenthood and result deniability when used in *progressive sentences*, at least when the verb denotes a causation such that the causing event begins before the CoS starts. Secondly, she argues that the zero-CoS NC construal is possible in progressive and perfective sentences if and only if the 'CoS-less causation' has a property which is 'indicative of' the complete causation type (in Varasdi's sense). The advantage of the account proposed is that it provides a unified explanation for zero-result NC interpretations of causative verbs in perfective *and* progressive sentences, even if the modality does not have the same source in both cases: in progressive sentences, the CoS is shifted to possible worlds by outer aspect (PROG), while in perfective sentences, this job is done by the sublexical component (which explains why in perfectives sentences, the zero-CoS NC reading is lexically restricted).

 $<sup>^{18}</sup>$ Note that we can capture both the eventive and stative readings of a causative verb through one semantic representation if we assume that its Davidsonian argument can have dynamic events or states in its range, cf. e.g. Kratzer (2000) for such an approach applied to verbs like obstruct.

tin and Schäfer (2013).<sup>19</sup> If they are indeed mono-eventive, how should we handle the difference between their culminating and zero-CoS NC readings? Interestingly, Martin and Schäfer (2014) show that *laver* 'wash', a mono-eventive verb conventionally associated with a result state (i.e. *get cleaner*), also sees its interpretation varying with the theta-role of the external argument: while 'agent' *laver* easily allows the denial of the result (cf. Talmy 2000 for *wash*), 'causer' *laver* does not. So it seems that the contrast at study extends to a subset of monoeventive verbs that can take either an agent or a causer subject.

Finally, it remains to be seen whether the connection explored here between agentivity and zero-CoS non-culmination can be extended to similar predicates in other languages. Demirdache and Martin (under review) showed that in many languages with productive non-culminating construals, like Mandarin (cf. Demirdache and Sun, 2013) and Salish languages (cf. Bar-el et al., 2005, Jacobs, 2011), whenever an accomplishment (and particularly a causative accomplishment) admits a nonculminating construal, this is the case only when some agentive properties are ascribed to the subject (crucially, they leave open the possibility that the relevant agentive properties are instantiated by inanimates in particular contexts). Demirdache and Martin refer to this correlation as the AGENT CONTROL HYPOTHESIS (ACH). Importantly, they show that languages differ wrt the type of non-culminating reading requiring agenthood. On one hand, Mandarin resembles French and German in that only 'zero-CoS' NC construals require an agentive subject. On the other hand, in Salish languages, even 'partial-CoS' NC seem to require agenthood properties (through control morphology). The question, then, is to see how these crosslinguistic differences can be accounted for.

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<sup>&</sup>lt;sup>19</sup>This problem arises also for verbs like *enseigner/lehren* 'teach'; for instance, *lehren* does not have a *-ung* nominalization and the durative adverbial cannot scope on the resultant state only (*Cela m'a enseigné le russe pendant trois ans* 'This taught me Russian for three years' cannot mean that I got to know Russian for three years (while the teaching event finished before).

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