INTERNALLY CAUSED VERBS OF CHANGE OF STATE

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Abstract: This paper aims at shedding light on the semantics and syntax of internally caused verbs of change of state. Thus, we show that by itself, argued to tell apart externally caused verbs of change of state from internally caused ones, does not behave uniformly with respect to verbs belonging to the internally caused class, leading to the conclusion that the phrase does not modify a cause inherent to the verbs in question. Regarding adjunct causers, Romanian data confirms Levin's (2009) conclusion based on English according to which causative semantics does not represent a necessary condition for licensing causer prepositional phrases (PPs); such adjuncts can also be taken by non-causative verbs like unergatives and statives. In sum, the data under scrutiny does not provide conclusive evidence for the presence of CAUSE in the semantics and syntax of internally caused verbs of change of state.

Keywords: internal versus external causation, by itself, causer PPs, unergative, stative.

1. Introduction

The syntax and semantics of verbs of change of state has been a matter of debate mainly because of the questionable status of the diagnostics employed. In this paper we go over two such diagnostics which, according to us, do not necessarily support a causative analysis of internally caused verbs of change of state.

The paper is organized as follows: Section 2 introduces the notions of external and internal causation drawing on Levin and Rappaport Hovav (1995). In Section 3 we argue that *by itself* does not behave uniformly with respect to verbs belonging to the internally caused class, and should not hinge on a causative semantics of these verbs. In Section 4 we show that, while adjuncts containing emotion noun phrases are not introduced by a preposition that is typical of causers supporting Alexiadou and Anagnostopoulou's (2009) suggestion that emotion noun phrases are not genuine causers in Greek, Romanian does register unergatives (and statives) modified by natural phenomena and events in support of Levin's (2009) conclusion that causer PPs need not point to CAUSE. Section 5 resumes and concludes the paper.

2. Internally versus externally caused events

For starter, consider the pair of sentences comprising the change of state verb *break.* With such dynamic verbs resulting in an end state (i.e. the state of being broken), the change of state can either be contemplated by itself via an intransitive verb (cf. (1a)), or can be presented as a result of a cause via a transitive verb (cf. (1b)). It should be noted that semantically, the subject of the intransitive has the same role as the object of the transitive, i.e. theme/patient/undergoer of the change of state.

(1) a. *The window broke.*
b. *The boy broke the window.*

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While researchers agree that we are not dealing with two lexical entries in that the intransitive and transitive variants participating in such causative alternations[1] are derivationally related, opinions differ as to which variant is basic. For instance, intransitive basicity is argued by Hale and Keyser (2002), and Pesetsky (1995), who claim that the transitive is derived by causativization, an operation which adds the cause argument to the intransitive verb. On the other hand, Chierchia (1989/2004), and Levin and Rapaport Hovav (1995) consider that the transitive form is basic, while the intransitive is derived by decausativization which removes the cause argument from the transitive.

In Levin and Rappaport Hovav (1995, henceforth L&RH), the availability of a transitive variant differentiates between externally caused verbs like *break* that (can) participate in the causative alternation and internally caused ones which do not because they lack transitives.

In the next sections, we go over the main features that L&RH attributed to these categories of verbs.

2.1. Externally caused verbs of change of state

Externally caused verbs "imply the existence of an "external cause" with immediate control over bringing about the eventuality denoted by the verb" (L&RH: 92). In other words, an externally caused event involves a causer ("an agent, an instrument, a natural force or a circumstance" (id.) independently of the entity undergoing the change of state. L&RH entertain bi-eventive lexical causatives comprising a causing subevent and a central subevent (Hale and Keyser 1987 cited in L&RH); the causer argument x is part of the causing event while the patient argument y belongs to the central event. As they involve two arguments, externally caused events have the dyadic lexical semantic representation below typical of transitive verbs.

(2) [[x do-something] cause [y become <STATE>]][2]

Despite exhibiting a transitive lexical semantic structure, externally caused events can give rise to intransitives[3], e.g. (1a), verbs exhibiting a monadic argument structure as a result of "existentially binding" the causer argument in (2) (cf. L&RH). Still, externally caused intransitives can only be derived if the event described by the verb does not specify anything about the causing subevent. For instance, *assassinate* or *murder* denote change of state events brought about by agents and cannot form inchoatives because intentionality cannot be removed.

(3) a. *The terrorist assassinated/murdered the president.*

[1] The core class of verbs participating in the causative alternation is represented by verbs of change of state (*break, close,* etc.). Other verb types engaged in this alternation are left aside in this paper.
[2] While it is possible for the causer to be an event as in *Will's banging shattered the window*, usually the causer is a simple participant representing the entire causing subevent via "metonymic clipping" (cf. Wilkins and Van Valin 1993, cited in L&RH).
[3] See L&RH: 282-283 for various classes of externally caused verbs that participate in the causative alternation.

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b. **The president assassinated/murdered.*

Apart from the semantic arguments employed by L&RH[4], there are also morphological arguments in favour of deriving externally caused verbs of change of state via decausativization (see Haspelmath 1993). For instance, while Romance languages lack causative morphology, they do show the *se/si* morpheme on some intransitives considered to be externally caused (e.g. intransitive "break" exhibits the *se/si* morpheme in Italian, Romanian, and Spanish) as a sign of derivation from a transitive counterpart.

2.2. Internally caused verbs of change of state

By comparison, in the case of internally construed events "some property inherent to the argument of the verb is "responsible" for bringing about the eventuality" (L&RH: 91). With these verbs, the entity undergoing the change is also the cause of change by virtue of its inherent make-up. Since internally caused events are not brought about by an external entity they have the monadic lexical semantic representation in (4) (cf. L&RH), and are also monadic at argument structure.

(4) [y become <STATE>]

Internally caused verbs of change of state are conceptualized as self-controlled either because the change is inscribed in the natural development of the affected entity (*bloom, wither, ferment,* etc.)[5], or simply because the event arises from within the entity (*blush, faint,* etc.). In Romance, such verbs are usually non-*se*-marked precisely because the intransitive is conceptually basic, not derived from a transitive as in the case of externally caused verbs.

As mentioned before, according to L&RH, only externally caused verbs (i.e. conceptually transitive ones) participate in the causative alternation. Internally caused verbs lack transitive variants, and, consequently, do not engage in this alternation.

Nonetheless, against L&RH, McKoon and Macfarland (2000, 2002) and Wright (2001, 2002 cited in Rapapport Hovav and Levin 2012, and Rappaport Hovav 2014) showed that English internally caused verbs of change of state have transitive uses, but their subjects are usually restricted to natural forces and environmental phenomena.

(5) a. *Light will damage anything made of organic material. It rots curtains, it rots upholstery, and it bleaches wood furniture.* (LN)
b. *Salt air rusted the chain-link fences.* (LN)
c. *Bright sun wilted the roses.* (LN)
(Wright 2001: 112, cited in Rappaport Hovav and Levin 2012: 161)

As is generally accepted, lexical causatives, unlike analytical/periphrastic ones, express direct causation. Since humans cannot manipulate natural forces they cannot function as direct

[4] Additional arguments along these lines can be found in their work.
[5] See the list in L&RH: 283.

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causers (cf. Rappaport Hovav and Levin 2012 adopted from Wolff 2003), and do not show up as subjects of transitive *bloom/blossom* (cf. (6b)).

(6) a. *Early summer heat blossomed fruit trees across the valley.* (LN 1999)
(Wright 2002: 341, cited in Rappaport Hovav and Levin 2012: 161)
b. **The gardener bloomed the flowers.*
(Rappaport Hovav 2014: 11)

Romanian also registers transitive variants for counterparts of the internally caused verbs in (5) which we leave aside here for reasons of space. However, it is a pair of verbs that lack a transitive version in this language that is relevant to the diagnostic that we discuss next. Specifically, we believe that the causative alternation that underlies the split between internally and externally caused verbs of change of state cannot do justice in the case of *by itself.*

3. By itself

Following Chierchia (1989/2004), L&RH consider that *by itself* is restricted to externally caused intransitives because it necessarily modifies the CAUSE present in the lexical semantic representation of these verbs. On their reasoning, internally caused intransitives lack the dyadic lexical semantic representation in (4), so they lack the CAUSE responsible for licensing *by itself.*

Although English *by itself* is ambiguous between "alone" as in (7b), and "without outside help" as in (7a), it is the second sense that is of relevance here. Thus, in (7a), this phrase modifies a cause which it identifies as the theme argument itself, i.e. the door causes and undergoes opening.

(7) a. *The door opened by itself.*
b. *Molly laughed by herself.* (Levin and Rappaport Hovav 1995: 88-89)

Arguing for a uniform causative analysis of verbs of change of state, Alexiadou et al. (2006) claimed that, unlike externally caused verbs like *open*, with internally caused predicates *by itself* is marginal or unacceptable because of redundancy.

However, there appears to be variation among such verbs. For instance, blooming for internal reasons is the norm and the addition of *by itself* is redundant in (8) because an externally caused scenario is hard to imagine. By comparison, growing can be facilitated through chemical means or heavy watering, thus, *by itself* is felicitous in (9).

(8) ??*Pomul a înflorit de la sine*
tree.the has blossomed from itself
"The tree blossomed by itself."

(9) *Planta a crescut de la sine.*
plant.the has grown from itself
"The plant grew by itself."

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Both *a înflori* "bloom/blossom" and *a creşte* "grow" lack transitive counterparts in Romanian, so they obviously lack the causative lexical semantic structure in (2).

(10) **Căldura/ Grădinarul a înflorit pomii.*
heat.the gardener.the has blossomed tree.PL.the
"The heat/gardener blossomed the trees."

(11) **Îngrăşămintele/ Grădinarii au crescut plantele.*
fertilizer.PL.the gardener.PL.the have grown plant.PL.the
"The fertilizers/gardeners grew the plants."

Since *a creşte* easily allows *de la sine* "by itself" (lit. "from itself"), we are inclined to believe that this verb has a causative semantics whereas *a înflori* does not. In other words, these verbs exhibit a uniform conceptualization/lexical semantic representation (cf. the lack of transitive), but at the same time do not have a uniform semantics. On L&RH's reasoning, *de la sine* imposes a dyadic lexical semantic representation to a verb like *a creşte*, but the lack of a transitive variant argues against such a dyadic causative structure.

Hence, we consider that with internally caused events *by itself* is licensed by/presupposes the existence and denial of a scenario in which the event is externally caused. As *a înflori* and *a creşte* have an identical lexical semantic representation, we conclude that *by itself* does not hinge on a CAUSE in the semantics of verbs.

The data that we discuss next point in the same direction, making space for an analysis in which causation is linked to the added adjuncts themselves.

4. Causer PPs

Whereas (some) lexicalist accounts (e.g. L&RH, McKoon and Macfarland 2000, 2002) employ lexical semantic representations, syntactic accounts (stemming from Hale and Keyser 1993) allow semantic decomposition to take place in syntax.

Adopting a syntactic approach, Alexiadou and Anagnostopoulou (2009, henceforth A&A) and Alexiadou et al. (2006) posit a causative analysis to transitive and intransitive verbs of change of state alike, internally caused ones included. Such verbs, they suggest, are made up of a root denoting a result state which combines with vCAUS that introduces a causal relation between the causing event and the result state. In transitive verbs, the causing event is introduced by Voice (cf. (12a)), while in intransitives, causer PPs are licensed by vCAUS[6] (cf. (12b)).

(12) a. [Voice [vCAUS [root]]]
b. [vCAUS [root]]

[6] STATE in the lexical semantic representations in (2) and (4) above most likely corresponds to the lexical root within syntactic accounts.

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A&A and Alexiadou et al. (2006) take internally caused verbs of change of state to be causative despite holding (with L&RH) that such verbs lack transitive causative uses. In their opinion, a verb's ability to take a causer PP is sufficient evidence for positing a causative analysis. Thus, an internally caused verb of change of state like Romanian *a înflori* "bloom", which does not manifest a transitive counterpart, can take causer PPs, allegedly, by virtue of exhibiting the structure in (12b)[7].

(13) *Pomii au înflorit de la căldură.*
tree.PL.the have blossomed from heat
"The trees blossomed from the heat."

To secure the architecture proposed for verbs of change of state, A&A consider that *from* prepositional phrases (PPs) constitute genuine causers if they can occur as subjects of a periphrastic sentence headed by (counterparts of) *make* or *cause.* In particular, they argue that *from* PPs should not modify unergatives, and if unergatives take such phrases they should not occur as subjects of periphrastic causatives. Hence, they admit that Greek unergatives can be modified by noun phrases denoting emotions as in (14a), but such noun phrases cannot be subjects of periphrastic causatives, whence the ungrammaticality of (14b).

(14) a. *I Maria xoropidikse apo hara.*
the Maria jumped.ACT APO happiness (A&A: 10, (34))
"Mary jumped from happiness."
b. *?*I hara ekane ti Maria na horopidiksi.*
the joy made the Maria SUBJ jump
(A&A: 10, (36b))
"Happiness made Mary jump."

According to Levin (2009), in English, the analytical causative equivalent to (14b) is also awkward.

(15) a. *She jumped from happiness.*
b. ?? *Happiness made her jump.* (Levin 2009: 8, (19))

Nonetheless, Levin provides attested examples in which English unergatives do take *from* PPs denoting emotions and allow periphrastic causatives.

(16) a. *Family members believe Raymond Pelzer simply ran from fear. An officer shot the unarmed man.*
Fear made him run.

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[7] Although the authors argue that in Greek internally caused verbs are modified by adjuncts headed by *me*, a preposition typical of indirect causers, we should retain that, according to them, both direct and indirect causers are introduced by vCAUS.

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(17) a. *She giggled from embarrassment/nervousness.*
b. *Embarrassment/nervousness made her giggle.*
(Levin 2009: 8, (20), (22))

The Romanian equivalents to (14a)/(15a), (16a) and (17a) are ungrammatical as a result of the prepositional phrase *de la* "from". Apparently, in Romanian, unergatives modified by adjuncts containing emotions are introduced by *de* "of", not by *de la* "from" typical of causers. As the sentences below can constitute answers to *De ce?* "Why?", we hypothesize that emotion phrases introduced by *de* "of" represent reasons rather than causers proper.

(18) a.	*Ea*	*a*	*sărit*	*de/*	**de la*	*fericire*	
	she	has	jumped	of	from	happiness	
b.	*??Fericirea*	*a*	*făcut-*	*o*		*să*	*sară.*
	happiness	has	made	CL.3SG.ACC		SUBJ	jump

(19) a.	*El*	*a*	*fugit*	*de/*	**de la*	*frică.*
	he	has	run	of	from	fear
b.	*Frica*	*l-*	*a*	*făcut*	*să*	*fugă.*
	fear.the	CL.3SG.ACC	has	made	SUBJ	run

(20) a.	*Ea*	*a*	*chicotit*	*de/*	**de la*	*jenă/*	*nervozitate.*
	she	has	giggled	of	from	embarrassment/	nervousness

b.	*Jena/*	*Nervozitatea*	*a*	*făcut-*	*o*
	embarrassment/	nervousness	has	made	CL.3SG.ACC
	să	*chicotească.*			
	SUBJ	giggle			

A&A further claim that adjuncts containing an emotion NP should not be interpreted as causers because natural forces or causing events are banned from Greek unergatives. However, Levin tracked down sentences comprising English unergatives modified by natural forces (cf. (21)) and causing events (cf. (23)). Their translations are acceptable in Romanian as well (cf. (22a) and (24a)). (25a) is a similar example found on the internet. All these sentences allow a periphrastic causative (cf. (22b), (24b), and (25b)) strengthening the causer status of *de la*-adjuncts.

(21) *Leaves rustled from the wind/breeze* (Levin 2009: 9, (26a))

(22) a.	*Frunzele*	*au*	*foşnit*	*de*	*la*	*vânt/*	*briză.*
	leaf.PL	have	rustled	from		wind	breeze

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b. *Vântul/ Briza a făcut să foşnească. frunzele*
wind.the breeze.the has made SUBJ rustle leaf.the
"The wind/breeze made the leaves rustle."

(23) *The dog yelped from the blow.* (Levin 2009: 9, (27a))

(24) a. *Câinele a scheunat de la lovitură.*
dog.the has yelped from blow

b. *Lovitura l- a făcut pe câine să scheaune.*
blow.the CL.3SG.ACC has made PE dog SUBJ yelp
"The blow made the dog yelp."

(25) a. *Am urlat şi am sărit în sus de la sperietură.*
have yelled and have jumped in up from fright
"I yelled and jumped from the fright."
http://laraducu.wordpress.com/2009/07/

b. *Sperietura m- a făcut să urlu şi să sar.*
fright.the CL.1SG.ACC has made SUBJ yell and SUBJ jump
"The fright made me yell and jump."

We agree with Levin that unergatives can take *from* PPs when neither volition nor control is involved in bringing about the event. For instance, highly agentive unergatives like *work* do not take such phrases:

(26) *He worked *from….*

That unergatives can accommodate *from* PPs proves that the addition of causer PPs is not conditioned by the causative semantics of verbs. Furthermore, Levin (citing Koontz-Garboden) notes that *from* PPs are also found with stative predicates in English, as in *Her face was red from embarrassment.* Romanian statives can also take adjuncts headed by *de la* as in (27) provided that the nominals do not denote emotions.

(27) *Plantele erau veştejite de la secetă.*
plant.PL.the were wilted from drought
"Plants were wilted from the drought."

Since *from* PPs can introduce causers to structures that lack a causative semantics, *from* PPs should not be taken as evidence for an inherent causative analysis of internally caused verbs of change of state neither in English (cf. Levin) nor in Romanian.

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5. Conclusion

The diagnostics reviewed in this paper do not warrant a causative analysis of internally caused verbs of change of state in English and Romanian. The fact that internally caused verbs lacking transitive counterparts in Romanian accept *by itself* leads us to the conclusion that this phrase does not hinge on the causative semantics of verbs. Moreover, the addition of *from* PPs to non-causative unergative and stative verbs in the languages under discussion constitutes indirect evidence against a compulsory vCAUS in internally caused verbs of change of state. From these, we can conclude that *by itself* and causer PPs are added, rather than licensed by CAUSE.

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