Causatives across Components

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ABSTRACT: The paper divides verbal alternations which, broadly speaking, involve the cognitive notion of Causation into (i) causativization, (ii) decausativization. The latter operation is identical across languages and applies universally in the lexicon. The former is argued to be lexical in some languages; in others, causative verbs are built in the syntax by means of a Cause predicate and an embedded one. The study presents novel empirical evidence, derives the various clusters of properties associated with the alternations, and formulates the precise mechanisms underlying them. The empirical array is drawn mainly from Hungarian and Japanese.

Keywords: causative, unaccusative, external argument, Experiencer verb, lexicon, decomposition

1. Introduction

Constructions with predicates that, broadly speaking, realize the cognitive notion of Causation have been playing a central role in the development of generative syntax throughout its history. Causative constructions and causative verbs have been taken to provide evidence for transformational verb-raising and incorporation operations in the syntax within the GB framework (e.g., Baker 1988 and related work), as well as for highly lexicalist, argument structure-based approaches such as Lexical Functional Grammar (e.g., Alsina 1992) or Head-Driven Phrase Structure Grammar (Manning, Sag and Iida 1999). In recent literature, morphological (affixal) causative constructions of languages such as Malagasy, Japanese, Finnish, etc. have been claimed to provide confirming evidence for the introduction of the external argument by means of a functional head such as "little-*v*" or "voice" head (along lines suggested by Hale and Keyser 1998; Kratzer 1996; and Chomsky 1995), and later for the syntactic decomposition of argument structure (Borer 2005; Harley 1995; Pylkkänen 2002, 2008; Ramchand 2006, Travis 2000, among others). The causative morpheme has been commonly assumed to be the spell-out of that functional head, which gets attached to the main verb as a result of V-raising. On the empirical side, a wide range of constructions and verbal alternations both within and across languages have been construed to be instantiations of the notion "causative". In the current generative literature these are commonly argued to be uniformly derived by merger of a causative head in the syntax, differing only in the "size" of complement of this head, i.e., the number of functional categories above the verbal root (for instance, Harley 1995, 2006; and Pylkkänen 2002, 2008) to be discussed below). In the present study we uncover empirical evidence indicating that only a particular subset of morphological causatives are constructed in the syntax; the rest must be derived before syntactic structure is available, namely, in the lexicon.

We undertake a reassessment of the status and derivation of the various predicates pre-theoretically lumped together under the label "morphological causatives", namely, nonperiphrastic causatives. We take a fresh look at (a) the transitive–unaccusative (also labeled causative-inchoative) alternation available cross-linguistically (as in *John broke*

the vase vs. *The vase broke*), (b) a causative-unergative/transitive alternation, as attested, for instance, in Hungarian, and (c) a causative construction of the type exhibited in Japanese (the so-called *-(s)ase* causatives). We will present empirical evidence that these actually constitute three distinct kinds of linguistic entities, and that each originates from a different type of well-motivated derivational mechanism. The proposal we advance will motivate two distinct lexical arity (valence changing) operations, for alternations (a) and (b) respectively, and for the third type (c), a construction comprising two syntactic heads.

It is important to note that the status of morphology (i.e., word formation) and its relation to the various components of the grammar is not the topic under investigation here. It has already been shown by Baker (1988) and Anderson (1992), among others, that the traditional view that takes word-formation to be necessarily lexical is too restricted. Our proposal is compatible with different current alternative conceptions of morphology, specifically: (a) Word formation is "parallel", i.e., applicable along the whole derivation, thus applying to outputs of the lexicon as well as the syntax (see Borer 1988); (b) Word formation follows the syntactic derivation, i.e., involves "late insertion", as under the Distributed Morphology model (Halle and Marantz 1993), where phonological material fills syntactic terminals only at spell-out. The lexicon we assume is active (operative) to the extent that it allows the application of thematic arity (valence changing) operations. This assumption has nothing to do with issues such as whether the lexicon is needed as a storehouse for words, whether the notion "word" is coherent at all, or whether morphology takes place in one or more components, or involves the same or different operations (see e.g. Marantz 1997 vs. Ackema and Neeleman 2007 on morphology). In sum, the question where morphology takes place is orthogonal to our argumentation and to our model. It is important to stress that if the late insertion of phonological material – as proposed within the framework of Distributed Morphology – is the correct approach (as it may well be; see Anderson 1992; Marantz 1993), this by no means entails a "single generative engine" model. Post-lexical insertion is clearly necessary for a model with a single generative system, but it is fully consistent with an active lexicon model, as argued for here.

Finally, it is important to keep in mind that the decision whether or not a computationally active lexicon, where arity operations apply, is needed is clearly an empirical matter. As Marantz himself emphasizes, correctly, in his defense of a non-computational lexicon (1997, p. 223), "the question is not which theory is simpler or more pleasing; the question is which theory is right." We believe the investigation of causatives presented below provides robust empirical evidence in favor of a model incorporating a computationally active lexicon.

The paper is organized as follows. In section 2, we provide empirical evidence systematically distinguishing the causative alternation from the transitive-unaccusative alternation, and argue that this distinction holds cross-linguistically. Having isolated the causative alternation from the unaccusative one, section 3 explores the former and identifies two consistently distinct types of morphological causatives: one (often referred to as the "biclausal" causative in earlier literature) consisting of two predicates (the Japanese -(*s*)*ase* causative), and one involving a single predicate (the Hungarian -(*t*)*at*/-(*t*)*et* causative). Section 4 presents novel evidence that the Hungarian-type causative must be formed in a locus where no syntactic structure is available, that is, prior to the syntax, while its Japanese counterpart is the output of syntactic merging. Section 5 discusses the

formation of morphological causatives in the syntax (5.1), and the arity operation forming their counterparts in the lexicon (5.2). To complete the discussion of the various alternations pre-theoretically grouped together as causatives, section 6 resumes discussion of the transitive-unaccusative alternation. It briefly explains why we believe that the alternation does not fall in the scope of causativization. Equipped with these findings, section 7 sets out to determine the full set of licit inputs for the operation of causativization introduced in section 5.2 and refines the formulation of the operation. This exploration leads to additional confirmation of the lexical status of causativization. Finally, section 8 discusses alternative approaches to causatives.

2. Two different alternations

Examining verbal pairs whose two members differ basically in that one of them has one more θ-role than the other, Reinhart (1991, 2002) and Levin and Rappaport-Hovav (1995) argue that the pairs split into two distinct alternations: (i) the transitive-unaccusative alternation and (ii) the causative-anticausative alternation. The former alternation is also labeled the causative-inchoative alternation; we use the term transitive-unaccusative (or simply unaccusative) alternation to avoid ambiguity in the course of the discussion. Literature on Japanese causatives provides robust support for this split.[1]

Japanese has a productive operation of causativization. The operation systematically marks the causative alternate with the causative morpheme -(*s*)*ase*.[2, 3]

(1) a. Yosi-wa it-ta.
Yoshi-TOP go-PAST
'Yoshi went.'

b. Hanako-wa Yosi-o ik-ase-ta.
Hanako-TOP Yoshi-ACC go-CAUS- PAST
'Hanako made Yoshi go.'

The outputs of the operation can be shown to include two predicates by a number of diagnostics to be discussed in more detail in section 3 (Dubinsky 1994; Hara 1999; Kitagawa 1986; Kuroda 2003; Shibatani 1990; Terada 1991). For example, an adjoined

[1] As is standard practice, we use the term unaccusative verbs to refer to verbs whose subject is mapped internally (that is, as complement of V), in contrast with unergative verbs, which are intransitives whose subject is an external argument (it is merged as a "specifier"). The subject of the former but not the latter passes tests diagnosing internal arguments (for various diagnostics in a variety of languages, see Baker 2003; Borer and Grodzinsky 1986; Reinhart and Siloni 2004, among others)

[2] -(*S*)ase has an allomorph -(*s*)*as*. Hara (1999) claims that the difference between –(*s*)*ase* and –(*s*)*as* is sociolinguistic, -(*s*)*ase* is considered more formal. Miyagawa (1989) points out that the difference is regional. The initial [s] in both is deleted if the last segment of the base is a consonant.

[3] Notational abbreviations: ACC=accusative, CAUS=causative, DEF=definite, DAT=dative, DO=direct object, INF=infinitive, INSTR=instrumental INTR=intransitive, NEG=negation, NOM=nominative, PERF=perfective, PL=plural, POSS=possessive, PRES=present, REFL=reflexive, SG=singular, SUB=subjunctive, TOP=topic, TRANS= transitive, UNACC= unaccusative.

-te-verbal form (a non-tensed verbal form), which requires subject control, can be controlled either by Hanako (i) or by Taro (ii) (Dubinsky 1994; Harley 2006; Terada 1991). This shows that not only the causer, Taro, but also the Agent of *go*, Hanako, is a subject. If so, then the sentences must involve two predicates: the causative morpheme and the lexical verb it is attached to.

(2) Taroo-wa arui-te Hanako-o ik-ase-ta.
Taro-TOP walk-*te* Hanako-ACC go-CAUS- PAST
i 'Taro made Hanako go, walking.'
ii 'Taro, walking, made Hanako go.'

Alongside this operation, Japanese also has a transitive-unaccusative alternation, which is marked with unpredictable morphology on the transitive and/or unaccusative alternate.[4]

(3) a. Hanako-wa hi-e-ta.
Hanako-TOP cool-UNACC-PAST
'Hanako ('s body) cooled down.'

b. Taroo-wa Hanako-o hi-(y)as-ita.
Taro-TOP Hanako-ACC cool-TRANS-PAST
'Taro cooled Hanako down.'

Control of a *-te*-phrase diagnoses only one subject for the transitive alternate, Taro in (4a). Note that the notion of someone cooling down by getting wet is semantically sensible, as shown by the acceptability of (4b), where the subject of the unaccusative controls the adjunct (Harley 2006). This strongly suggests that the transitive alternate involves only one predicate.

(4) a. Taroo-wa nure-te Hanako-o hi-(y)as-ita.
Taro-TOP wet-te Hanako-ACC cool-TRANS -PAST
'Taro, getting wet, cooled Hanako down'
Impossible reading: 'Taro cooled Hanako down, getting wet'

b. Hanako-wa nure-te hi-e-ta.
Hanako-TOP wet-te cool-UNACC-PAST
'Hanako, getting wet, cooled down'

In the same vein, while negation detects two predicates in the causative examples, only one predicate is available for negation when the transitive alternate of the unaccusative alternation is used. Thus, negation can either follow the causative morpheme -(*s*)*ase* and thus negate the causative predicate (5a) or intervene between the base verb and the causative morpheme, thereby negating the base verb (5b) (Hara 1999). In contrast, when

[4] A variety of affixes can mark the transitive (including the causative morpheme) as well as the unaccusative alternate, unpredictably. The same is true for Hungarian, as is mentioned in section 3.1, and other languages. For more on the morphological variation that the unaccusative alternation shows across languages, see Haspelmath's (1993) study of a sample of 21 languages.

the transitive member of the unaccusative alternation is negated, the position of negation is invariable – it cannot precede the morpheme marking transitivity if there is one – and accordingly it must negate the whole transitive predicate (6).

(5)a. Toru-wa Yoko-o ik-ase-nakat-ta.
Toru-TOP Yoko-ACC go-CAUS-NEG-PAST
'Toru did not make Yoko go.'

b. Toru-wa Yoko-o ik-anaku-sase-ta.
Toru-TOP Yoko-ACC go-NEG-CAUS-PAST
'Toru made Yoko not go.'

(6) Taroo-wa niku-o kog-as-anakat-ta.
Taro-TOP meat-ACC burn-TRAN-NEG-PAST
'Taro did not burn the meat.'

In sum, the transitive-unaccusative alternation exhibits idiosyncratic morphology, unlike the causative alternation that systematically marks the causative by -(*s*)*ase*. Further, while the causative projects a structure involving two predicates, the transitive member of the unaccusative alternation behaves as a single predicate.

Moreover, the transitive-unaccusative alternation is found across languages. In this regard, too, the two alternations differ. French, for instance, does not form morphological causatives. The French causative construction is a periphrastic structure composed of two distinct verbs: the causative verb *faire* ('make') and the causativized, embedded predicate, *marcher* ('walk') in (7). French does exhibit the unaccusative alternation, which is often morphologically encoded on the unaccusative alternate by means of the clitic *se* (8b).[5]

(7) Jean a fait marcher Pierre.
Jean has made walk Pierre
'Jean made Pierre walk.'

(8) a. Le laboratoire a développé un nouveau virus.
the laboratory has developed a new virus
'The laboratory developed a new virus.'

b. Un nouveau virus s'est développé.
a new virus SE is developed
'A new virus has developed.'

So languages differ as to whether they have morphological causatives or not. Reasonably, this is contingent upon the morphological inventory of the language: does it have a

[5] Certain unaccusative verbs are morphologically unmarked and certain others realize *se* optionally (see Labelle 1990, 1992). *Se* appears also on other types of predicates such as reflexive and reciprocal verbs, middles and certain passives. For robust evidence that *se* is a morphological marker (and not an argumental object clitic), see Siloni (2010) and references therein.

causative morpheme allowing the formation of morphological causatives or not? The unaccusative alternation, in contrast, seems to be universal. Further, not only is the causative alternation not universal, but in addition its properties can vary across languages. The next section shows that Hungarian causatives differ in various regards from their Japanese counterparts.

3. The causative alternation across languages: Hungarian versus Japanese

3.1 Hungarian: Setting aside the transitive-unaccusative alternation

In the above section we have shown that what is commonly referred to as causative constructions involve (at least) two distinct alternations: the causative alternation and the transitive-unaccusative alternation. Furthermore, it was noted that the latter alternation is available universally, while the former, the causative alternation, is not.

Hungarian, like Japanese, is a language known to have a fully productive morphological causative construction. It instantiates the causative alternation in a way that at first glance may appear to be parallel to the Japanese causative (-(*s*)*ase*) alternation. It is formed productively by a uniform affix, namely the suffix *-(t)at/-(t)et*, as illustrated in (9).[6]

(9) Az edző ugrál-tat-ja Mari-t.
the coach.NOM jump-CAUS-PRES.DEF.DO Mari-ACC
'The coach makes Mari jump.'

As in Japanese, this alternation is clearly distinguishable from the transitive-unaccusative alternation. First, the morphological encoding of the transitive-unaccusative alternation is not uniform (just like in Japanese); morphological markings occur in an unpredictable fashion on the transitive and/or the unaccusative member of the alternation, as illustrated in (10), in contrast to the uniform morphological realization of causatives (for more on the morphology of the Hungarian unaccusative alternation, see Komlósy 1994).[7]

(10)

	Transitive	Unaccusative
a.	*old*	*old-**ód(-ik)***
	'dissolve'	'dissolve'

[6] The vowel alternation, *a* vs. *e*, in the Hungarian causative affix is a manifestation of the vowel harmony rule of Hungarian. The allomorphism involving the presence vs. absence of the initial segment [t] in the affix, on the other hand, is not fully predictable based on properties of the base. Although there is no known productive phonological process that can determine the choice of the allomorph for each verb, some strong tendencies are detectable: for instance, monosyllabic base verbs tend to take the *-at*/*-et* allomorph, while multisyllabic ones mostly take *-tat*/*-tet.*

[7] The suffix *-ik* in examples (10) is in parentheses as it appears only in (a subset of) 3rd person singular present tense forms (which happens to be the citation form of verbs). It is a not a productive affix; its distribution is synchronically not fully predictable. As noted by an anonymous referee, diachronically it used to mark verbal diatheses with non-agentive subjects. Synchronically, this distinction is no longer regular, as shown by pairs of examples with and without *-ik*, such as *lak-ik* 'live', 'reside' vs. *él* 'live', 'reside' or *alsz-ik* 'sleep' vs. *pihen* 'rest' (all in 3rd person).

b.	*olv-**aszt***	*olv-**ad***
	'melt'	'melt'
c.	fejl-**eszt**	fejl-**őd(-ik)**
	'develop"	'develop'
d.	*szár-**ít***	*szár-**ad***
	'dry'	'dry'
e.	*nyi-**t***	*nyí- **l(-ik)***
	'open up'	'open up'
f.	*fagy-**aszt***	*fagy*
	'freeze'	'freeze'
g.	*zsugor-**ít***	*zsugor-**od(-ik)***
	'shrink'	'shrink'
h.	*tör*	*tör**(-ik)***
	'break'	'break'

Corresponding to the dichotomy of morphological realization, the two alternations display a distinction in interpretation as well, which can be informally paraphrased as follows. While transitive members of the unaccusative alternation exemplified in (10) roughly mean 'α executes the action on β', the causatives mean something like 'α causes β to do the action'. Note that β here, informally speaking, is a causee; the transitive alternate of unaccusatives involves no such argument. An additional striking difference attested between the two alternations involves the external role: causative verbs uniformly assign an Agent role (11a-b), while the external role of the transitive member of the unaccusative alternation is a Cause (11c). A Cause role, in contrast to the Agent, is unspecified with regard to the mental state of the argument realizing it, and can therefore be realized by animate as well as inanimate arguments. Thus, in (11c), not only animates like 'Mari', but also inanimates, such as 'the warm air', can materialize the external argument.[8, 9]

[8] In the English translation of the Hungarian causative we use the verb 'make'. This verb, as noted by an anonymous referee, differs from the Hungarian causative verb in that its external argument can be also inanimate, i.e., it does not require it to be an Agent. The reason why we opt for using 'make' in spite of this difference is that there is no single verb in English expressing causation which has the broad range of meanings covered by the Hungarian causative on the one hand, and assigns an Agent external role (i.e., is limited to animate arguments) on the other. English verbs denoting forms of causation and assigning an Agent external role, e.g. *employ*, *direct*, *order*, etc., cover only specialized subcases of the broad, manner-neutral, meaning of the Hungarian causative. Thus translating it with *make*, in spite of the mismatch in the animacy of the external argument, provides the closest possible approximation for the Hungarian *-tat*/*-tet* causative.

[9] The glossing of the Hungarian data indicates individual morphemes wherever it has any potential relevance, e.g., derivational morphology of the verb, Case morphology, etc. Morphemes are not separately indicated in the data when they have (a) nothing to do with the substance of the discussion and furthermore (b) would create a distraction for the reader, making processing of the example more difficult (as e.g. in certain cases the separation of tense affix from definite object-agreement in verbal inflection). Morpheme

(11) a. Az edző/*az öröm ugrál-tat-ja Mari-t.
the coach.NOM/the joy.NOM jump-CAUS-PRES.DEF.DO Mari-ACC
'The coach/ joy makes Mari jump.'

b. Az edző/*A száraz meleg it-at-ott Mari-val[10]
the coach.NOM / the dry heat.NOM drink-CAUS-PAST Mari-INSTR
két üveg viz-et.
two bottle water-ACC
'The coach/the dry heat made Mari drink two bottles of water.'

c. Mari/A meleg levegő meg-olv-aszt-ott-a a jeg-et.
Mari.NOM/the warm air.NOM PERF-melt-TRANS-PAST-DEF.DO the ice -ACC
'Mari/the warm air melted the ice.'

It is important to note here that the transitive members of the unaccusative alternation are systematically equipped with a Cause role not only in Hungarian but across languages. Observing that, Reinhart (2002) (see also Haspelmath (1993) for a similar observation) argues that this is what defines the set undergoing the alternation. We likewise believe that this is a defining property of the alternation. In section 6, after causativization has been discussed in detail, we resume discussion of the unaccusative alternation and argue that it is not another instance of causativization. We now turn our attention to a comparative study of the causative alternation, examining whether morphological causativization is a uniform operation in languages that instantiate it.

In spite of the superficial parallelism between the Hungarian *-(t)at/-(t)et* causatives and their Japanese counterparts in terms of productivity and morphological uniformity, a systematic comparison of their syntactic and semantic behavior reveals that the Hungarian causative alternation is significantly different from the productive Japanese *-(s)ase* alternation in its structure and derivation. Below we present a variety of phenomena that detect two predicates in the productive *-(s)ase* causative. We apply the same tests to the corresponding productive *-(t)at/-(t)et* causative of Hungarian, and show that they involve a single predicate, unlike their Japanese counterparts.

3.2 Diagnostics: one versus two predicates
3.2.1 Negation

As we saw in section 2 (examples (5)), negation provides clear evidence that the Japanese *-(s)ase* causative construction consists of two predicates. In contrast to Japanese, negation

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boundaries are marked by hyphenation in the Hungarian words and in the corresponding English gloss; when there is no separate morpheme available in the Hungarian data, as with nouns in the morphologically unmarked (null) Nominative case, we mark the name of the grammatical category in the gloss separated by a dot (as e.g. in (11a-b), coach.NOM).

[10] The subject of a transitive base verb bears instrumental case in Hungarian causatives (11b). The subject of intransitive base verbs normally gets accusative case (as in (11a)). The issue of case and its varying realizations, which has been a central topic in the rich literature on causative constructions, falls outside the scope of the present study. (For details on the range and variation of case marking in Hungarian causatives, see Hetzron (1976); Komlósy (2000)).

in Hungarian unambiguously scopes over the causative. It cannot scope over the base-verb (12).

(12) Nem énekel-tet-tem a gyerekek-et.
not sing-CAUS-PAST.1SG the kids-ACC
'I didn't make the kids sing.'
(Narrow scope impossible: 'I made the kids not sing.')

As expected, the Hungarian periphrastic (permissive) causatives, in contrast, pattern with the Japanese *-(s)ase* causative in allowing scope either over the causative (13a) or over the lexical verb (13b).

(13) a. Nem enged-t-em a gyerekek-et énekel-ni.
not let-PAST-1SG the kids-ACC sing-INF
'I didn't let the kids sing.'

b. Enged-t-em a gyerekek-et nem énekel-ni.
let-PAST-1SG the kids- ACC not sing-INF
'I let the kids not sing.'

These facts may suggest that Hungarian morphological causatives consist of a single predicate, unlike their Japanese counterparts. Yet, the unambiguity of scope in (12) may also follow from the fact that the negative morpheme *nem* cannot attach between a stem and its bound morpheme. As negation appears in a verb-external position, it may consequently be forced to rigidly scope over the causative. So negation does not provide decisive evidence as to the nature of Hungarian causatives. We now turn to VP-ellipsis constructions, which like negation detect two predicates in Japanese *-(s)ase* causatives.

3.2.2 VP-ellipsis

As noted originally by Shibatani (1972), VP-ellipsis constructions provide additional evidence that Japanese -(*s*)*ase* causatives include two predicates. VP-ellipsis examples of the type in (14) are ambiguous between the interpretations given in (i) and (ii). If the sentence contains two VPs, then either the higher VP headed by the causative predicate -(*s*)*ase* is copied onto the second conjunct (i) or the lower VP consisting of a base verb and its complement (ii) is copied onto the elided conjunct, whence the ambiguity.

(14) Yoko-wa [musuko-ni [huku-o ki]-*sase*]-ru to Junko mo soo
Yoko-TOP son-DAT clothes-ACC wear-CAUS-NON-PAST and Junko also so
si-ta.
do-PAST
(i) 'Yoko made her son wear clothes, and Junko made her son wear clothes, too.'
(ii) 'Yoko made her son wear clothes, and Junko wore clothes, too.'

In contrast, VP-ellipsis turns out to be unambiguous in the Hungarian *-(t)at*/-(*t)et* causative construction. As shown by the interpretation of (15), VP ellipsis can effect only the causative verb in Hungarian.

(15) Fel-olvas-tat-t-am Mari-val egy vers-et, mert János
up-read-CAUS-PAST-1SG Mari-INSTR a poem-ACC because János.NOM
is azt csinálta.
too that-ACC did
'I made Mari read out a poem because János did so too.'
'I made Mari read out a poem because János made Mari read out a poem too.'
(Impossible reading: 'I made Mari read out a poem because János read out a poem too.)

The lack of ambiguity in (15) could suggest that Hungarian causatives, unlike their Japanese counterparts, consist of a single VP. Importantly, VP-ellipsis in the comparable periphrastic construction (16) does give rise to ambiguity on a par with (14). This is expected as the construction clearly involves two VPs. This reinforces the view that (15) is unambiguous because it contains a single VP.[11]

(16) Enged-t-em Mari-nak fel-olvas-ni egy vers-et, mert János
let-PAST-1SG Mari-DAT up-read-INF a poem-ACC because János.NOM
is azt csinálta.
too that-ACC did
'I let Mari read out a poem because János did so too.'
(i) 'I let Mari read out a poem because János let Mari read out a poem too.'
(ii) 'I let Mari read out a poem because János read out a poem too.'

Thus, VP-ellipsis within periphrastic constructions in Hungarian does exhibit the reading where the elliptical VP refers to the embedded VP, as does the Japanese *-sase* causative. Therefore, the impossibility of this reading in the Hungarian -(*t)at*/-(*t)et* causative can be taken as some indication that the construction consists of a single VP. We now turn to empirical phenomena that provide unequivocal indication that this is indeed the case.

3.2.3 Condition B

Following Miyagawa's (1984) original observation, Hara (1999) shows that the application of Condition B of the binding theory provides evidence that Japanese -(*s*)*ase*

[11] The "do so" VP-ellipsis construction of Hungarian is not very widely used. Yet it clearly shows the relevant contrast between the -(*t)at*/-(*t)et* causative, where the embedded VP reading is unavailable (15) and the periphrastic causative, where it is available (16). For independent reasons, this contrast can be best tested when the elliptical VP ("do so") is in an adjunct clause, such as the "because" clause in (15)-(16). In coordinate structures (e.g. conjunctions), the availability of the embedded reading for the elliptical VP is subject to variation depending on further factors effecting the accessibility of the antecedent VP. As a result, the relevant reading often turns out not to be attested in coordinations even when an embedded VP antecedent is clearly present.

causatives consist of two predicates. Hara assumes Reflexivity (Reinhart and Reuland 1993), but a parallel argument can be made also under the traditional binding theory. Consider the contrast between (17a) and the causative (17b).

(17) a. Toru$_i$-wa Kitahara$_j$-ni kare$_{*i/*j}$-o syookai si-ta.
Toru-TOP Kitahara-DAT he- ACC introduction do-PAST
'Toru introduced him to Kitahara.'

b. Toru$_i$-wa [Kitahara$_j$-ni kare$_{i/*j}$-o syookai s]-*ase*-ta.
Toru-TOP Kitahara-DAT he-ACC introduction do-CAUS-PAST
'Toru made Kitahara introduce him.'

According to Condition B of Reflexivity, a pronominal object of a semantic predicate cannot be co-indexed with any other co-argument if the predicate is not reflexive-marked (i.e., has a SELF-anaphor as an argument).

In (17a) co-indexation of the pronoun with either of the two other arguments of the ditransitive verb *syookai su* 'introduce' results in a Condition B violation, as none of these arguments is a SELF-anaphor. But crucially, the causativized verb *syookais-ase* in (17b) allows co-indexation of the subject *Toru* and the base verb's object *kare* 'he' without any reflexive-marking. It follows that *Toru* is not a co-argument of the base object: the former is an argument of a causative predicate *-(s)ase* and the latter of the base verb, as expected if the construction comprises two predicates (co-indexation between *Kitahara* and *kare* in (17b) is disallowed, as expected, since they are co-arguments of the base verb and neither is a SELF-anaphor).

Compare now a parallel Hungarian causative (18b) with the Japanese (17b). The Hungarian causative turns out to manifest a Condition B violation just like the transitive (noncausativized) verb in (18a).

(18) a. Kati$_i$ le-fotóz-t-a őt$_{*i}$
Kati.NOM down-photograph-PAST-DEF.DO she.ACC
'Kati has photographed her.'

b. Kati$_i$ le-fotóz-tat-t-a őt$_{*i/*j}$ Mari-val$_j$
Kati.NOM down-photograph-CAUS-PAST-DEF.DO she.ACC Mari-INSTR
'Kati made Mari photograph her.'

In (18b), co-indexation of the causer *Kati* with a pronominal argument of the base verb *lefotóz* 'photograph' results in a Condition B violation. This indicates that in Hungarian *-(t)at/-(t)et* causatives, the causer and the arguments of the base verb are co-arguments of a single predicate.[12]

[12] Note that Hungarian permits, in certain discourse contexts, direct object pronoun drop (i.e., null object *pro*). The choice of overt vs. null object pronoun makes no difference with respect to the binding facts observed in the text: coindexation of a *pro* replacing the overt pronoun in (18a-b) would also result in a Condition B violation.

Observe also that as expected, if the pronoun *őt* 'him/her' is replaced by the SELF-anaphor *magát* 'himself/herself' in (18a) and (18b) (see (i) and (ii) respectively), then no Condition B violation arises, and coindexation with the subject in (i) as well as the causer argument in (ii) becomes possible.

Compare (18b) also with the Hungarian periphrastic (permissive) causative (19), involving two distinct predicates: as expected, (19) manifests no Condition B violation.

(19) Kati$_i$ enged-te Mari-nak$_j$ le-fotóz-ni ő$t_{i/*j}$.
Kati.NOM let- PAST.DEF.DO Mari-DAT down-photograph-INF she.ACC
'Kati let Mari photograph her.'

In sum, the behavior of the Hungarian morphological causative with regard to Condition B shows that it consists of a single predicate, unlike its Japanese equivalent.

3.2.4 Agent-oriented adverbials

If Japanese causatives comprise two predicates and Hungarian causatives a single predicate, then we expect that diagnostics of Agenthood would be able to identify two Agents in the former but not in the latter. This is so because thematic relations cannot be instantiated more than once per predicate (as has often been observed, e.g., in Bresnan 1982; Carlson 1998:40; Parsons 1990:73-4; Pesetsky 1995:62; Williams 1981:100 and others). So if Hungarian causatives involve one predicate there is no way they can realize two Agents. As is well-known, Agent oriented adverbials can modify a verb if the latter involves an explicit or implicit Agent. Shibatani (1972) shows that Agent-oriented adverbials detect two Agents in the Japanese causative. That is so as they can modify either the causative head, referring to its subject (the higher Agent) or the base verb, referring to its subject (the lower Agent). This is expected if they involve two predicates (for a similar claim, see also Matsumoto 1998). In (20a) the adverbials 'without hesitation' or 'with pleasure' can either modify the causing event, thus referring to the matrix Agent 'the lawyer' or the caused event, thus referring to the embedded Agent 'John'. In fact, as pointed out by Yoshio Endo (personal communication), two Agent-oriented adverbials can also co-occur in a single causative sentence (20b): one of them referring to the subject of the causative (-(*s)ase*) predicate and the other – to the subject of the embedded predicate ('sign').

(20) a. Sono bengosi-wa {tyuuchonaku/yorokonde} John-ni keiyakusyo-ni
the lawyer-TOP {without hesitation/with pleasure} John-DAT contract-DAT
sain s-ase-ta.
sign do-CAUS-PAST
'The lawyer made John sign the contract {without hesitation/with pleasure}.'
(ambiguous)

(i) Kati$_i$ le-fotóz-t-a magát$_i$.
Kati.NOM down-photograph-PAST-DEF.DO herself.ACC
'Kati has photographed herself .'

(ii) Kati$_i$ le-fotóz-tat-t-a magát$_i$ Mari-val.
Kati.NOM down-photograph-CAUS-PAST-DEF.DO herself.ACC Mari-INSTR
('Kati made Mari photograph herself.')

b. Sono bengosi-wa tyuuchonaku yorokonde John-ni keiyakusyo-ni sain
the lawyer-TOP without hesitation with pleasure John-DAT contract-DAT sign
s-ase-ta.
do-CAUS-PAST
'The lawyer made [John sign the contract with pleasure] without hesitation.'

As predicted, Hungarian causatives, unlike their Japanese counterparts, fail to display such ambiguity of Agent-oriented adverbials (21). It is unambiguously the matrix Agent, the causer, that is detected by the adverbial, not the causee.

(21) Az ügyvéd {készség-gel/habozás nélkül}
the lawyer.NOM {readiness-INSTR/hesitation without}
alá-ír-at-ta János-sal a szerződést.
under-write-CAUS-PAST.DEF.DO János-INSTR the contract-ACC
'The lawyer made [János sign the contract] {readily/without hesitation}.'

It may be important to note here that the failure of Agent-oriented adverbials to detect the causee in Hungarian is not owing to some semantic incompatibility between these adverbials and the causee being compelled into acting. While a subset of these adverbials, like '(un)intentionally' or 'on purpose', indeed may be excluded to begin with as their semantics would be infelicitous, various other Agent-oriented adverbials, such as *készséggel* 'readily', *habozás nélkül* 'without hesitation' are acceptable in complement clauses of various verbs meaning coercion, such as 'force', 'convince', 'order', and thus should have also been compatible with causatives, had they involved two predicates.[13]

Varying the position of the adverb as for instance in (22), where it immediately follows the causee, renders the sentence slightly degraded, but to the extent that it can be judged, the adverbials can also refer only to the causer (the lawyer).

(22) ?Az ügyvéd alá-ír-at-ta János-sal
the lawyer.NOM under-write-CAUS-PAST.DEF.DO János-INSTR
{készség-gel/habozás nélkül} a szerződés-t.
{readiness-INSTR/hesitation without} the contract-ACC
'The lawyer made [János sign the contract] {readily/without hesitation}.'

3.2.5 Control Verbs

An additional set of relevant phenomena, which apparently so far has gone unnoticed, involves the pattern of causativization exhibited by control verbs. Consider first Hungarian subject control verbs, such as *megpróbál* 'try' (23a), *elfelejt* 'forget', *(el)kezd*

[13] This is shown for instance by (i) involving the matrix predicates *kényszerít* 'force, coerce' and *rávesz* 'persuade to': these permit their embedded clause to be modified by the same Agent-oriented adverbials as those used in (21)-(22).

(i) Rá-vet-t-em/Kényszerít-ett-em Mari-t hogy {készség-gel/habozás nélkül}
onto-take-PAST-1SG/force-PAST-1SG Mari-ACC that {readiness- INSTR/hesitation without}
alá-ír-ja a szerződés-t.
under-write-SUB.3SG the contract-ACC
'I persuaded/forced Mari to sign the contract {readily/without hesitation}.'

'begin' (24a) (the latter is homophonous with the raising verb *(el)kezd*, to be discussed in detail in section 4.2). Even though the verbs themselves have a morphologically well-formed causative alternate, as shown for instance by *megpróbál-tat* 'try-CAUS' and (*el)kezd-et* 'begin-CAUS ', only the non-control version (a two-place verb with a DP internal argument) can causativize ((23c), (24c)), not the subject control one ((23b), (24b)).

(23) a. Mari meg-próbál-t [PRO el-énekel-ni egy népdal-t].
Mari PERF-try-PAST.3 SG away-sing-INF a folksong-ACC
'Mari tried to sing a folksong.'

b. *A tanár meg-próbál-tat-ott Mari-val [PRO el-énekel-ni
the teacher.NOM PERF-try- CAUS-PAST.3SG Mari-INSTR away-sing-INF
egy népdal-t].
a folksong-ACC
'The teacher made Mari try to sing a folksong.'

c. A tanár meg-próbál-tat-ta Mari-val a mutatvány-t.
the teacher.NOM PERF-try-CAUS-PAST.DEF.DO Mari-INSTR the trick-ACC
'The teacher made Mari try the trick.'

(24) a. Mari elkezd-ett [PRO zongorázni].
Mari.NOM PERF-begin-PAST play+the+piano-INF
'Mari began to play the piano.'

b. *A tanár el-kezd-et-te Mari-t
the teacher.NOM PERF-begin-CAUS-PAST.DEF.DO Mari-ACC
[PRO zongorázni].
play+the+piano-INF
'The teacher made Mari begin to play the piano.'

c. A tanár el-kezd-et-te Mari-val az előadás-t.
the teacher.NOM PERF-begin-CAUS-PAST.DEF.DO Mari-INSTR the lecture-ACC
'The teacher made Mari begin the lecture.'

Failure to causativize is a general property of the set of subject control verbs in Hungarian. But it is not a property of control verbs per se. Object control is an extremely limited phenomenon in Hungarian, yet such verbs can undergo causativization, as shown in (25).[14]

[14] The set of object control verbs is severely limited in the sense that (a) only a small number of verbs taking infinitival complements are object control ones (see e.g. É. Kiss 2002), and (b) these cases too often become marginal if the complement contains more than just a bare infinitive, or an infinitive with incorporated material in the pre-verbal position, as in (25).

(25) a. Meg-tanít-ott-am a fiá-t [PRO autó-t vezet-ni]
PERF-teach-PAST-1SG the son.his-ACC car-ACC drive-INF
'I taught his son to drive.'

b. János meg-tanít-tat-ta velem a fiá-t
János.NOM PERF-teach-CAUS-PAST.DEF.DO with.me the son.his-ACC
[PRO autó-t vezet-ni].
car-ACC drive-INF
'János made me teach his son to drive.'

What could then be the reason for the failure of subject control verbs to causativize ((23b), (24b))? What distinguishes them from object control verbs (25b) or from the non-control occurrences of the same verbs ((23c), (24c))?

If Hungarian causatives indeed constitute a single predicate, as we argued above, it would be reasonable to expect that the subject of the input verb ceases to be a subject argument after causativization, as a new subject is added, the causer. From that, it can naturally follow that the causative loses the subject control specification of the input.

In contrast to Hungarian, subject control verbs in Japanese do give rise to *-(s)ase* causatives (Yoshio Endo, personal communication). This is expected, given that the Japanese causative comprises two predicates, as shown by the various diagnostics presented above. Thus, the subject of the base verb, *John* in (26b), retains its subject properties under causativization, and consequently can control into the infinitival complement, as in (26b), just as in the non-causative version (26a).[15]

(26) a. John-ga [PRO hon-o yonde] mi-ta.
John-NOM book- ACC read try-PAST
'John tried to read a book.'

b. Mary-wa John-ni [PRO hon-o yonde] mi-sase-ta.
Mary-TOP John-DAT book-ACC read try-CAUS-PAST
'Mary made John try to read a book.'

In sum, VP-ellipsis, condition B, Agent-oriented adverbials and control phenomena provide strong evidence that Hungarian morphological causatives involve a single predicate, unlike their Japanese counterparts. Under traditional approaches, this would have sufficed to conclude that the Hungarian causative is formed in the lexicon, unlike its Japanese counterpart. But under current approaches, single predicates, too, are claimed to be formed syntactically by merger of syntactic heads encoding various event structure properties. So, the question arises: Is there evidence as to the locus of formation of the

[15] Note that the inability to serve as a controlling subject in (23b) and (24b) cannot be simply due to change of Case that the base verb's subject undergoes upon causativization (from nominative to instrumental or accusative). Case is irrelevant for control. This is independently shown, for instance, by English (ia) vs. (ib), where subject control is equally available irrespective of the difference in the Case of the controller:

(i)a. She tried [PRO to play the piano].

b. For her to try [PRO to play the piano] would be a mistake.

The irrelevance of Case is also demonstrated by Japanese (26), where the controlling subject is marked by *-ga* (-NOM) in (26a) and by *-ni* (-DAT) in the causative version (26b).

Hungarian single predicate causative? In the next section, we provide novel empirical evidence indicating that the Hungarian causative must be formed in the lexicon, before syntactic structure is available, while its Japanese counterpart is generated in the syntax.

4. Lexical versus syntactic derivation for the causative alternation

4.1 Evidence from Coordinations

Evidence in favor of the claim that Japanese, but not Hungarian, causatives must be formed in the syntax comes from coordinate structures.

The rationale of the argument is as follows. If a causative is formed in the lexicon, the causative affix cannot attach to coordinations (conjunction or disjunction), since syntactic structure is unavailable in the lexicon, and coordinate structures are built only in the syntax. On the other hand, if the base verb and the causative morpheme are distinct syntactic heads, coordination of the complements of the causative head should in principle be possible; i.e., the causative affix should be able to attach to a coordinated structure, unless some independent factor excludes it (such as some morphological or phonological violation).

Kuroda (2003) observes that Japanese causatives are permitted with disjunction of two (or more) VPs, as shown in (27). This is expected if they are formed in the syntax: the *-(s)ase* causative head can embed the disjunction.[16] Kuroda supplies the following context for (27): Hanako decides that Masao needs to provide some compensation after a long stay in someone's house; Masao has a choice of doing so by either cleaning the house or paying rent.

(27) Hanako-ga [[Masao-ni uti-o soozisuru]-ka [heya-dai-o haraw]]-aseru koto
Hanako-NOM Masao-DAT house-ACC clean-**or** room-rent-ACC pay-CAUS that
ni si-ta.
to do-PAST
'Hanako decided to make Masao clean the house or pay room rent.'
(Reading: -(*s*)*ase* scopes over 'or'; Masao has a choice)
(Kuroda (2003:455)

Hungarian, in contrast, turns out to disallow causativization of coordinations, whether conjunction or disjunction (28a) (compare it to (28b), where the coordination is of two causative verbs):

[16] For independent reasons, Japanese seems to prohibit conjunction in these contexts. This is not directly relevant for our purposes. Unaware of the availability of causativization of disjunctions as well as the novel data presented in the rest of this section, Manning, Sag and Iida (1999) advocate a lexical derivation for Japanese causatives. A considerable set of their arguments shows that the causative verb constitutes a single phonological word. We have no objection to that. However, as we emphasize in the introduction, this by no means entails that the formation is lexical. For reasons of space we do not address their arguments in detail here.

(28) a. *Mari olvas- és/vagy énekel-tet-te az osztály-t.
Mari.NOM read and /or sing-CAUS-PAST.DEF.DO the class-ACC
'Mari made the class read and/or sing.'

b. Mari olvas-tat-ta és /vagy énekel-tet-te
Mari.NOM read-CAUS-PAST.DEF.DO and /or sing-CAUS-PAST.DEF.DO
az osztály-t.
the class-ACC

If Hungarian causatives are formed in the lexicon, the coordination facts would follow automatically, as discussed above. However, there could in principle be some purely morphological or phonological factors that would independently disallow realization of the causative -(*t*)*at*/-(*t*)*et* affix on a coordinated verbal constituent.

Let us then consider whether the reason for the impossibility of (28a) could be that bound morphemes (affixes) in Hungarian must adjoin to lexical heads, i.e., cannot adjoin to coordinate structures. It turns out that no such general morphological prohibition holds, as is demonstrated by the existence of other bound morphemes in the language that do attach to coordinate structures, such as the suffix *-ként* 'as' (29) (for more examples of such affixes and discussion, see Kenesei 2007):

(29) tanár- és barát-ként
teacher and friend-as
'as teacher and friend'

Next the possible relevance of a phonological/prosodic factor should be examined. Given that the causative suffix *-(t)at*/*-(t)et* is subject to vowel harmony, and the domain of vowel harmony is the phonological word (PW) (see Kenesei (2007) citing Vogel (1989)), the causative affix must form a PW with the base it attaches to. Could this PF requirement be what prevents it from attaching to coordinated verbs? Evidence that this cannot be the case is provided by the existence of other suffixes in the language that exhibit vowel harmony and thus must form a PW at PF with what they attach to, but still can occur on coordinate structures. A case in point is for instance the suffix *-szor/-szer/-ször* '-times': e.g. *kilenc- vagy tíz-szer* 'nine-or ten-times' versus. *hat- vagy nyolc-szor* 'six-or eight-times' .

So the inability of the suffix *-(t)at/-(t)et* to occur on coordinations seems to be neither a consequence of a PF property nor the result of being a bound morpheme in any obvious way. It should be observed, however, that tense inflection too fails to take coordinated verbs in Hungarian ((30a) versus (30b)) (as well as in English, for instance), although under current assumptions tense projects a syntactic head.

(30) a. *Mari [lát- és hall]-ott valami-t.
Mari.NOM see and hear-PAST something-ACC

b. Mari [lát-ott és hall-ott] valami-t.
Mari.NOM see-PAST and hear-PAST something-ACC
'Mari saw and heard something.'

This failure then seems to be due to some purely morphological reason specific to verbal stems and/or the particular affix. If so, then the same could in principle also be true for the Hungarian causative.

Thus, the coordination facts (28a) would follow directly if Hungarian causatives are formed in the lexicon. Yet, they may also follow from some morphological property unique to verbal stems or to the causative affix. So, coordination does not provide unequivocal evidence in favor of lexical derivation. As will become clear in the subsequent sections, there is independent evidence that the Hungarian causative verb must be formed lexically, prior to the emergence of syntactic structure.[17]

4.2 Evidence from Raising predicates

Striking evidence from a different empirical domain that directly supports a lexical derivation for Hungarian morphological causatives and a syntactic one for their Japanese counterparts is provided by raising predicates.

Raising predicates take no thematic subject, and select a clause as internal argument. Despite their "meager" argument structure, raising verbs can be causativized in Japanese, as shown by the aspectual verb *owar* 'finish' (31), which is unambiguously a raising verb (see Fukuda 2007, to appear; Matsumoto 1996).[18] If -(*s*)*ase* causatives are formed in the syntax, this is not surprising, as will be explained below.

(31) a. watasi-wa hon-o kaki-owat-ta.
I -TOP book-ACC write-finish-PAST
'I finished writing the book.'

b. anata-wa watasi-ni hon o kaki-owar-ase-ta.
you-TOP I-DAT book ACC write-finish-CAUS-PAST
'You made me finish writing the book.'

Note first that the subject of the raising verb ('I' in (31a)) does not receive its θ-role from the raising verb but from the embedded verb 'write'; that is, it is not part of the θ-grid of

[17] An additional property of Hungarian causative morphology is that it can iterate, e.g., *ír-at-tat* 'write-CAUS-CAUS', as mentioned by an anonymous referee. The actual use of such iterated causative forms however seems uncontroversially felicitous only in case the base causative is one that had undergone semantic drift (as discussed at the end of section 5.2). For instance, the iterated causative form *fel-öltöz-tet-tet* 'up-dress-CAUS-CAUS' is felicitous if the base causative (*fel-öltöz-tet* 'up-dress-CAUS') has the drifted meaning 'dress someone', but not the undrifted one 'make someone get dressed'. In any case, the possibility of (limited) iteration does not provide distinctive evidence favoring either a lexical or a syntactic account.

[18] The aspectual verb *owar* 'finish' cannot be passivized, unlike aspectual control verbs; it rejects the so-called 'long passive' (i.e., matrix passive), confining passivization only to the embedded verb. Further, *owar* does not allow the Subject Honorification affix, while its embedded verb does, again unlike control verbs. These facts strongly suggest that the subject position of *owar* is not thematic (for more discussion, see Fukuda 2007, to appear; Matsumoto 1996). It may be worth mentioning that Fukuda proposes that the distinction between aspectual raising versus control verbs can be captured by a monoclausal analysis that places the former higher in the clause than the latter. Which of these particular analyses is adopted for the data is not directly relevant for our present purposes: under the monoclausal analysis, too, the subject of *owar* is not its argument but that of the lower verb.

the raising verb. It can nonetheless participate in the causative construction as illustrated in (31b), because it occurs in a local configuration with the causativizing head. In the syntax both the raising verb and its derived subject are accessible to the causativizing head: they are in its search domain; thus, causativization is possible.

Let us now turn to Hungarian. The verb *(el)kezd* 'start', which was mentioned in section 3.2.5 among other subject control verbs (which all reject causativization) has also a raising instantiation, similar to its English counterparts *start* and *begin*. The existence of a raising verb *(el)kezd* is clear from (32), as it includes an embedded weather predicate, which diagnoses raising constructions. Let us then try to causativize the raising verb *(el)kezd*. (33b-c) and (34b), which are the causative versions of (33a) and (34a) respectively, turn out to be ungrammatical. This shows that not only the control verb (see section 3.2.5), but crucially, also the raising verb version of *(el)kezd* fails to undergo causativization. (Recall the verb has a causative form, as illustrated by (24c) in 3.2.5).

(32) El-kezd-ett havaz-ni.
PERF-start-PAST.3SG snow-INF
'It started to snow.'

(33) a. Mari (el-)kezd-ett énekel-ni (valami népdal-t).
Mari.NOM PERF-start-PAST.3 SG sing-INF some folksong-ACC
'Mari started to sing some folksong.'

b. *Kati (el-)kezd-et-ett énekel-ni Mari-val valami népdal-t.
Kati.NOM PERF-start-CAUS-PAST.3SG sing-INF Mari-INSTR some folksong-ACC
'Kati made Mari start to sing some folksong.'

c. *Kati (el-)kezd-et-te Mari-t énekel-ni.
Kati.NOM PERF-start-CAUS-PAST-DEF.DO Mari-ACC sing- INF
'Kati made Mari start to sing.'

(34) a. A szobalány el-kezd-t-e porszívóz-ni a szőnyegek-et.
the maid.NOM PERF-start-PAST-DEF.DO vacuum- INF the carpets-ACC
'The maid started to vacuum the carpets.'

b. *El-kezd-et-t-ük porszívóz-ni a szőnyegek-et
PERF-start-CAUS-PAST-1PL.DEF.DO vacuum-INF the carpets-ACC
a szobalány-nyal.
the maid-INSTR
'We made the maid start to vacuum the carpets.'

Why would raising verbs fail to causativize in Hungarian? If Hungarian causatives are formed in the lexicon, the reason for this failure is straightforward. Recall that the subject of the raising verb *(el)kezd* 'start' (e.g. 'Mari' in (33a), and 'the maid' in (34a)) does not receive its θ-role from the raising verb, but from the verbs 'sing' and 'vacuum' respectively; that is, it is not part of the θ-grid of 'start'. In the lexicon, there is no relation between *(el)kezd* 'start' and the verb which will end up embedded under it in the syntax.

Hence, independently of its particular nature, a lexical operation applying to 'start', can absolutely not involve roles of this predicate.

Thus, if Hungarian and Japanese causatives differ in their locus of formation, lexicon versus syntax, respectively, then the above data fall out straightforwardly. Additional evidence for the lexical nature of the causativization operation in Hungarian will be presented in section 7, where we investigate the constraint imposed on the input of causativization.

In the next section, we discuss the formation of morphological causatives in the syntax, and the arity operation deriving their counterparts in the lexicon. Prior to that, a note on the external argument is in order. The conclusion that the Hungarian-type causative ought to be formed in the lexicon provides evidence that the external argument of transitives and unergatives cannot be inserted in the syntax via a little-*v* type head. This is so because for lexical causativization to be able to target transitive and unergative entries, the external role must be present in the θ-grid of the predicate in the lexicon (as argued on independent grounds by Horvath and Siloni (2002), among others).

5. The formation of morphological causatives

5.1 Causatives formed in the Syntax

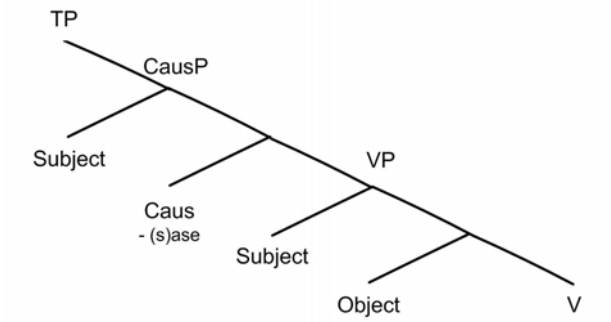
Morphological causatives involving two predicates are formed in the syntax. There is no reason to think that they undergo an operation affecting their base verb or its θ-grid. On the contrary, various tests show that the embedded verb preserves its original θ-grid. Thus, their syntactic structure can involve two Agents, each of a distinct predicate/head.[19] Structurally, these are periphrastic causatives whose causative morphology does not constitute a separate verb, but a bound morpheme. We assume here that the embedded clause is a VP phase that does not project the higher functional categories (TP, CP) (35) but nothing crucial hinges on that (see Harley (2006) for some justification).[20]

[19] The argument added by the Caus head is not limited to Agents. Nonanimate (Cause) arguments also qualify, although they are much less frequent and probably less natural.

The object is depicted in diagram (35) in a complement position preceding the verb, given that Japanese is a verb final language; it is immaterial for the present purposes whether "verb final" is a basic or derived phenomenon.

[20] In the literature, Japanese *-(s)ase* causatives are assigned two alternative structures: an ECM and a Control structure (for a range of syntactic arguments establishing the distinction, see Harley (1995) and references therein). Correlating with their syntactic differences, each subtype has a distinct interpretation, which is reflected in the practice of glossing the ECM predicate as 'make' and the Control one as 'let'. For the sake of simplicity, our data and discussion have systematically been based on the ECM predicate as this subtype parallels more closely the interpretive and Case properties of morphological causatives in Hungarian. Limiting our discussion to the ECM *-(s)ase* has no effect on the validity of the conclusions reached in the paper.

(35)



5.2 Lexical causatives

Morphological causatives formed in the lexicon involve a single predicate. Causativization in the lexicon, then, must causativize the verb it applies to, and add an Agent to the original θ-grid. If so, then causativization forms a new verb, which we can label CAUS-V, with a new θ-grid. The new grid is composed of the new Agent and the roles of the input grid, which now become roles of CAUS-V, as schematized in (36); < α > represents the input grid.

(36) Causativization in the lexicon (to be paraphrased in (37))
V< α > → CAUS-V <[Agent], α>

As already mentioned in section 3.2.4, it is a well-established generalization that thematic relations can be instantiated only once per predicate (see Bresnan 1982; Carlson 1998:40; Parsons 1990:73-4; Pesetsky 1995:62; Williams 1981:100 and others). Call it the uniqueness generalization. This generalization raises an obvious query: If causativization indeed adds an Agent role as schematized in (36), what happens when the input θ-grid already includes an Agent role? If the newly formed θ-grid included two Agent roles, it would violate the uniqueness generalization holding in natural language regarding thematic relations.

Notice that semantically, the Agent of the input verb is clearly not interpreted as the Agent of the output verb, CAUS-V; it is not the argument that causes the event, the added Agent does it. If the Agent of the input verb is not an Agent in the newly formed θ-grid, then the operation of lexical causativization must involve an additional ingredient that adjusts the input's Agent into the newly formed θ-grid.

If θ-roles are grammatical primitives, it is not clear how an operation can adjust a role; what could it mean to adjust an Agent? It is either an Agent or it is not. However, if θ-roles have an internal structure, adjustment will be shown to become possible. We believe that the Agent role, Theme role, etc. are conventionalized labels for feature clusters. Following Reinhart (2002), we assume that the atomic features underlying the set of θ-roles are: *c*, which determines whether or not the argument in question is necessarily responsible for causing the denoted event, and *m*, which determines whether or not the mental state of the argument in question is relevant to the denoted event. Each of these features can be valued for [+] or [−], or left unvalued. Thus, the Agent role is [+c+m], as it

brings about the relevant event or change and must be animate (its mental state is relevant). The Cause, in contrast, is [+c], as it is unspecified with regard to mental state, and can either be realized by an animate argument or not. The Theme role is [-c-m], as it does not trigger the change in question nor is its mental state relevant to the event.[21] The Experiencer role is [-c+m] as it does not cause the change, but its mental state is relevant to the event. The feature clusters are not just translations of the traditional labels. They capture the nature of the roles in a more precise fashion. Thus, the cluster [-c+m], for instance, is not just another label for the Experiencer, but ranges over all arguments that necessarily do not trigger the event in question but whose mental state is relevant to it. For our purposes this short description is sufficient; for more discussion, see Reinhart (2002). The operation of lexical causativization (36) is then paraphrased as follows:

(37) Causativization in the lexicon (to be revisited in (39))
V< α > → CAUS-V <[+c+m], α>

As just mentioned, if the input's grid includes an Agent, the new grid would violate the uniqueness generalization, and therefore some adjustment must take place. Indeed, in section 3.2.4 we have discussed evidence suggesting that the original Agent, [+c+m], becoming a role of the newly formed predicate, loses its Agentive nature. In Hungarian, Agent oriented adverbials identify the added Agent but not the Agent of the input grid as the Agent of CAUS-V ((21-22) repeated as (38a-b) below). (Recall that Agent oriented adverbs detect two Agents in the Japanese causative, as shown in (20) above.)

(38) a. Az ügyvéd {készséggel/habozás nélkül}
the lawyer.NOM {readiness.INSTR/hesitation without}
alá-ír-at-ta János-sal a szerződés-t.
under-write-CAUS-PAST.DEF.DO János-INSTR the contract-ACC
'The lawyer made [János sign the contract] {readily/without hesitation}.'

b. ?Az ügyvéd alá-ír-at-ta János-sal
the lawyer.NOM under-write-CAUS-PAST.DEF.DO János-INSTR
{készséggel/habozás nélkül} a szerződés-t.
{readiness-INSTR/hesitation without} the contract-ACC
'The lawyer made [János sign the contract] {readily/without hesitation}.'

To make things more palpable, consider the verb *olvas* 'CAUS-read', for instance. Its input's Agent, namely the causee, performs the reading event and therefore its mental state is relevant, but it is not the one that triggers or brings about the event of reading. In feature terms, this means that the valuation of its *c* feature becomes negative, as first suggested by Reinhart (2002). If so, then lexical causativization causativizes the event, adding an Agent and applying adjustment, if needed. α' stands for the output grid, which

[21] At the semantic interface, an argument bearing a [+c] cluster, which is unspecified with regard to *m*, can be interpreted either as an Agent (*Dan* in (i)) or as a non-Agent (say, an Instrument, *this key* in (i)) (see Marelj 2004). The mental state of an argument specified -*m*, say [-c-m], *the door* in (i), remains irrelevant at all stages of the derivation, including the semantics.
(i) Dan /This key opened the door.

is slightly different from α in case adjustment applies, and identical to α otherwise. Formulation (39) (like its predecessors) allows any input verb. In section 7 we will define the constraint that the input for causativization must obey.

(39) Causativization in the lexicon (to be revisited in (59))
V < α > → CAUS-V <[+c+m], α'>; if α includes a cluster β with a feature composition [+c+m], +c in β is revaluated to -c.

Applying the operation to the verb entry *sétál* 'walk', we obtain the verb entry in (40), which has two roles: a [+c+m] cluster, the added role, which corresponds to the animate argument that triggers the walking event, and a [-c+m] cluster, the adjusted Agent, which does not bring about the event but executes the actual walking and therefore its mental state is relevant.

(40) walk < [+c+m] > → CAUS-walk < [+c+m],[-c+m] >

Application of causativization to the transitive entry *olvas* 'read' yields the same result, modulo the inclusion of the [-c-m] cluster (Theme) in the grid of both input and output.

(41) read < [+c+m], [-c-m] > → CAUS-read < [+c+m],[-c+m], [-c-m] >

The next question concerns the interpretation associated with CAUS-V events. We adopt the common "neo-Davidsonian" system of the type proposed by Parsons (1990), which relies on θ-roles and an event variable. The event semantic representation of (42a) is shown in (42b).

(42) a. János meg-et-et-te Mari-val az almá-t.
János.NOM PERF-eat-CAUS-PAST.DEF.DO Mari-INSTR the apple-ACC
'János made Mari eat the apple.'

b. ∃e [CAUS-eat(e) & [+c+m](e, János) & [-c+m](e, Mari) & [-c-m] (e, the apple)]

Trivially, the Agent [+c+m] of CAUS-V has the entailments of an Agent. But what are the entailments of being [-c+m] or [-c–m] of CAUS-V? As the addition of (43a) makes (42a) a contradiction, it follows that being [-c+m] of CAUS-eat entails eating (the apple), that is, being [+c+m] of 'eat'. Similarly, extending (42a) with (43b) forms a contradictory sentence, which means that [-c-m] of CAUS-eat has the same entailment as [-c-m] of the input 'eat'.

(43) a. #de nem Mari et-te meg az almá-t
but not Mari.NOM eat-PAST.DEF.DO PERF the apple-ACC
'but it wasn't Mari who ate the apple.'

b. #de Mari nem az almá-t et-te meg
but Mari.NOM not the apple-ACC eat-PAST.DEF.DO PERF
'but it wasn't the apple that Mari ate.'

The above entailment relationships between the roles of CAUS-V and those of its input V are summarized in (44).

(44) i. [-c-m] of CAUS-V has the entailments of [-c-m] of the corresponding V.
ii. [-c+m] of CAUS-V has the entailments of [+c+m] of the corresponding V.

The entailments of all other possible θ-roles of the input are likewise unaffected under causativization. For reason of space, we do not provide the exhaustive list of examples.
Note that CAUS-V and V are two different lexical entries. Hence (44i) is not superfluous. It defines the relationship between two lexical items (CAUS-V and V) with regard to the interpretation of their θ-roles. Further, it is important to stress here that (44ii) does not mean that [-c] is sometimes interpreted as [+c] or that one argument has two different θ-roles. (44ii) defines the relationship between the interpretation of [-c+m] of CAUS-V and [+c+m] of the corresponding V: [-c+m] of CAUS-V is interpreted as [+c+m] of V (not as [+c+m] of CAUS-V).

We can formulate that via a meaning postulate governing the entailment relationship between the two lexical entries CAUS-V and the corresponding V.

(45) The Causativization Meaning Postulate
The θ-roles of the input preserve their entailments under causativization.

Causativization, then, does not affect the entailments of the θ-roles of the input; most significantly, even the adjusted role preserves its entailments.[22]

Finally it is important to mention that in some languages, e.g., English and Hebrew, we find only a small set of lexical causatives, and not the full range attested in Hungarian. In Hebrew, for example, the set is limited to verbs such as *hilbiš* ('dress'), *hin'il* ('put on shoes to someone, put shoes on someone'), *he'exil* ('fed'), *hextim* ('made sign') and some others. Nonetheless, the operation ought to be part of the grammar of Hebrew speakers, because (i) it is operative (and even over-generates) at the acquisition stage and (ii) adult speakers are able to form and comprehend causative neologisms. We tend to think that Hebrew (and languages of the sort) avail themselves of the operation of lexical causativization, but their lexicon idiosyncratically limits the set of causative verbs to certain (frozen) entries, disallowing the productive use of the operation. We are currently investigating this linguistic variation, and therefore postpone a more detailed discussion of the issue. We note nonetheless that lexical causatives in these languages tend to undergo semantic drift from CAUS-V to actually 'execute the action on somebody'. Thus,

[22] The behavior of Instruments provides further support for this entailment pattern: the original Agent of the input can be modified by an Instrument. Instruments have been argued by Reinhart (2002) and Siloni (2002) among others to diagnose the implicit or explicit presence of an Agent (see discussion of (46) in section 6). In Horvath and Siloni (2010), however, this is refined: it is shown that entailment of the type in (44ii) is sufficient for Instrument licensing but not for Agent-oriented adverbs, which require the actual presence of the Agent argument at least at the semantics.

for instance, in Hebrew *he'exil* has drifted from 'CAUS-eat' (make someone exercise eating) to 'feed'. The same is true for *hilbiš* (from 'make someone get dressed' to 'dress someone') and *hin'il* (from 'make someone put shoes on' to 'put shoes on someone'). The semantically drifted nature of these lexical causatives provides further preliminary support for our claim that at present the languages in question do not productively employ the operation of lexical causativization. If they did, why would the automatic interpretation obtained by causativization (CAUS-V) not be available, in addition to the drifted meaning? Hungarian in fact exhibits precisely this state of affairs: pairs of drifted and undrifted causatives coexist in the lexicon for a variety of items, such as *felöltöztet* (i) 'make someone get dressed' (ii) 'dress someone', *etet* (i) 'make someone exercise eating' (ii) 'feed someone'.[23] Finally, note that a small set of drifted lexical causatives with unpredictable morphology is also found in Japanese alongside the productive -(*s*)*ase* causatives.

Before concluding this part, we would like to throw some more light on the partition to lexical versus syntactic causatives. It has been argued recently that certain arity operations are subject to the lex(icon)-syn(tax) parameter, which forces their application in certain languages in the lexicon and in others in the syntax (Reinhart and Siloni 2005). Is causativization an operation subject to the lex-syn parameter? Morphological causatives formed in the syntax do not undergo an arity (valence changing) operation. As discussed earlier, they involve two predicates, each with its own θ-grid. The embedded predicate's θ-grid is preserved intact in the construction, just like its counterpart in periphrastic causatives. The distinction between syntactic morphological causatives and periphrastic causatives is that in the former the causative predicate is a bound morpheme, while in the latter it is a free standing verb. Thus, only lexical causatives are subject to the arity operation of causativization; causatives derived in syntax involve no arity operation, but rather syntactic embedding.[24] In this respect, morphological causatives do not fall in the scope of the parameter as defined by Reinhart and Siloni (2005). Nonetheless, languages do differ as to whether or not they allow (i) the operation of lexical causativization, (ii) the syntactic formation of morphological causatives. This may follow

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[23] As observed by an anonymous referee, Hungarian provides evidence that the drifted and undrifted items are indeed distinct. As is clear from (i-ii), the case array assigned by the two is different.

(i) Meg-et-et-t-em a kenyer-et a gyerekek-kel.
PERF-eat-CAUS-PAST-1SG the bread -ACC the children-INSTR
'I made the children eat the bread.'

(ii) Meg-et-et-t-em a gyerekeket kenyérrel.
PERF-eat-CAUS-PAST-1SG the children- ACC bread-INSTR
'I fed the children with bread.'

[24] Within our approach, this is by no means a coincidence; on the contrary, it is expected. It follows from the fact that causativization is an operation that adds a θ-role, Agent, to the input grid. We assume that the syntactic component must preserve lexical information, in the spirit of the requirement put forth by the projection principle (Chomsky 1981). More precisely, we believe that the syntax cannot manipulate the thematic information that predicates are equipped with upon syntactic merging. The syntax cannot alter θ-grids, as stated by the Lexicon Interface Guideline (Siloni 2002).

(i) The Lexicon Interface Guideline
The syntactic component cannot manipulate θ-grids: elimination, modification, and addition of θ-role are illicit in the syntax.

Thus, causativization of a predicate in the syntax can only happen through the addition of a distinct predicate, a causativizing head, which adds the causation event and the Causer.

directly from the morphological inventory of the language: whether or not it has the morpheme appropriate for the specific construction. We leave further questions on the topic for future research.

In sum, the causative alternation includes (i) causatives derived by a lexical arity operation, (ii) causatives involving syntactic embedding as illustrated in (35). We now resume discussion of the unaccusative alternation, which we set aside at the beginning of the paper owing to its systematically distinct characteristics. The question of direct relevance in the present context is whether or not the unaccusative alternation instantiates (an additional type of) causativization. We argue that it does not.

6. The unaccusative alternation: decausativization

As noted in sections 2 and 3, the main characteristics of the transitive-unaccusative alternation are the following: First, the alternation seems to be universal. We are not aware of a language not exhibiting it. Second, across languages the transitive alternate of unaccusatives systematically behaves as a single predicate, as shown, for instance, by the control and negation diagnostics for Japanese ((4a) and (6) in section 2). Third, the transitive member of the alternation is interpreted as 'α executes the action on β'. And finally, across languages the transitive alternate of unaccusatives has a Cause external role (namely, a [+c] role, unspecified for mental state). Note that the transitive alternate may be missing idiosyncratically in a given language for a few instances, but these instances have a [+c] transitive alternate in earlier stages of the same language or at present in other languages (see Horvath and Siloni 2008, Reinhart 2002).

Studies of the transitive-unaccusative alternation can be roughly divided into two major currents according to their stand regarding the source of the alternation. (i) Causativization (addition of an external role to the unaccusative or to the root) is responsible for the alternation (e.g., Embick 1997; Harley 2006; Marantz 2009; Pesetsky 1995; Pylkkänen 2008; and Ramchand 2006), (ii) Decausativization derives the alternation, taking the transitive alternate as its input and forming the unaccusative output (Chierchia 2004; Grimshaw 1982; Koontz-Garboden 2009 (at least for a subset of cases); Levin and Rappaport-Hovav 1995; Reinhart 1991, 2002; Reinhart and Siloni 2005). We believe that the latter approach is on the right track. Although an exhaustive discussion of the controversy would be beyond the scope of the paper, it is nonetheless important that we clarify our view and the reasons that lead us to advocate it.

We believe (with many others) that unaccusative verbs entail no entity that triggers the eventuality at hand. Thus, while (46b) whose matrix verb is a passive entails that some X melted the ice, its unaccusative counterpart (46a) does not have such an entailment (Roeper 1987 among others). This is why addition of an instrument, for instance, is possible in (46b) but not (46a), as Instruments require the presence of an explicit or implicit Agent (see Siloni 2002; Reinhart and Siloni 2005 and note 21).[25]

[25] Unaccusatives systematically fail tests diagnosing an implicit Agent (see Reinhart 2000). Note that Agent diagnostics also identify a Cause role because the latter can be interpreted as Agent (as mentioned in section 5.2). This is shown, for instance, by (46b), which involves the verb *melt* whose external role is a Cause (as evinced by the fact that it allows a weather factor for subject *the wind melted the ice*). Alexiadou, Anagnostopoulou and Schäfer (2006) among others note that it is possible to add a Cause-like adjunct to

(46) a. The ice melted (*with a candle).
b. The ice was melted (with a candle)

Decausativization, then, would have to reduce the external role of the input altogether. We believe that such reduction is licit in the lexical component, as explained directly.[26]

Lexical information, on our view, includes formal features, semantic features and thematic information (θ-roles). It does not involve (ordered) λ-representations (e.g., *λyλxλe(break(e) & Agent(e, x) & Theme(e, y)*). These representations are read off (composed from) syntactic structure, which is built on the basis of lexical information and syntactic requirements.[27] Eliminating an argument from the semantic representation is logically illicit. But if lexical entries do not involve λ-formulas, as we argue, nothing blocks reduction, which forms a new lexical entry (derivationally related to the input). For concreteness, we assume Reinhart and Siloni's (2005) formulation of decausativization, as given in (47) (abstracting away from details).[28]

(47) Decausativization: Reduction of an external [+c] role
$V\ (\theta_{[+c]}, \theta_j) \rightarrow V\ (\theta_j)$

We are now in a position to explain why we believe that the decausativization approach is superior to causativization in the case of unaccusatives. First, the question arises: why precisely the set of unaccusative verbs has a transitive alternate with a cause role? We

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unaccusatives (i). Crucially, this does not mean that their argument structure bears some information about the existence of such an entity. Note that the addition of such an adjunct is allowed also by verbs that do not participate in any parallel alternation, such as *jump*, *scream,* etc. (ii). As is conspicuous from the comparison with passive verbs, unaccusatives imply no implicit Cause.

(i) The window cracked/broke from the pressure/from the explosion.

(ii) They jumped from joy/screamed from the pain.

[26] Reducing a θ-role post-lexically would violate any version of the principle requiring preservation of semantic information that entries are equipped with when merged. The traditional Projection Principle requires preservation of subcategorization information. See Borer (1984) for a broader formulation. More specifically, the Lexicon Interface Guideline (Siloni 2002) (see note 24) prohibits alteration of θ-grids in the syntax.

[27] We believe not only that lexical entries do not have to involve abstract λ-representations, but that they should not. The reason for that is that the order of the λ-operators in the semantic representation necessarily reflects the order of merging, namely, argument hierarchy. But structural hierarchy is not always dictated by lexical information exclusively. Case considerations, for instance, may affect the order of merging. See Reinhart (2002) for the claim that the Experiencer role can merge both internally and externally, in sensitivity to Case considerations, and Preminger (2006) for the claim that the internal arguments of ditransitives merge in either order modulo Case. Attempting to build the full argument hierarchy into the lexicon would amount to duplicating the syntax in the lexicon.

[28] Although Chierchia (2004) and Koontz-Garboden (2009) are proponents of this direction of derivation, as mentioned earlier, the operation they propose is different to the extent that it reduces syntactic valence but retains the Cause operator in the lexical semantic representation of the output. Koontz-Garboden (2009) discusses that extensively in relation to his Monotonicity Hypothesis, which states that word formation operations cannot remove operators (roles) from lexical semantic representations. For reasons of space, we cannot undertake a comparative discussion of the two variants of reduction. Recall nonetheless that we believe that while syntactic and semantic representations are subject to an information preservation requirement, such a requirement is irrelevant for the lexicon as the latter does not involve semantic formulas, as discussed in note 27.

believe that this follows straightforwardly if the operation responsible for the alternation is a reduction operation. Reinhart's original formulation of the operation (see Reinhart 2000) involves a ban against reduction of a role whose mental state is relevant to the event at hand. It follows that only a Cause role can undergo reduction, as the mental state of Agents (or Experiencers) is always relevant. But why would reduction be constrained this way? We propose that a cognitive principle underlies the ban against reduction of roles involving a mental state. Conceptualization of eventualities triggered by a Cause is possible even in the absence of the Cause. Thus, humans can conceptualize the eventuality *open* abstracting away from the Cause of the opening event (although clearly every opening event is caused by something). In contrast, in conceptualization of eventualities brought about by Agents, humans are unable to disregard the causing entity; they perceive the causing entity as an inherent part of the eventuality. Thus, humans' cognition is unable to envision the eventuality *write* without a writing entity.[29] The cognitive principle we propose is stated in (48).

(48) Conceptualization of eventualities cannot disregard participants (roles) whose mental state is relevant to the eventuality.

Under reduction, it immediately follows from (48) that the transitive alternate of unaccusatives must have a Cause external role [+c], as (48) bans reduction of animate causers (Agents) [+c +m]. The crucial observation here is that the lexical entry (root) must include information about the external role whether it is a Cause or an Agent (otherwise there is no way this information can ban or license the projection of the entry without that role). And if so, then unaccusative formation must involve deletion of this information. (Any attempt to capture the distinction under addition of a role to form the transitive alternate of unaccusatives (causativization) is unnatural if the entry, to start with, contains information about the external role).

Further, reduction, but not addition, allows a natural definition of the set of intransitive unaccusatives. Any transitive entry with Cause and Theme roles has an unaccusative alternate as it can be subject to reduction.[30] If causativization derived the alternation, why would it be that certain Theme verbs can surface as intransitives (*break*) but not others (*write*)?

Finally, under the reduction approach, one would expect any Cause role to be able to be reduced, independently of what the internal role of the verb is. This expectation is

[29] The same phenomenon is conspicuous in the formation of adjectival passives: some adjectival passives entail the existence of an entity that brings about the event (e.g., *The text seems typed*), and some do not necessarily entail it (*The door is broken*) (see Meltzer 2006). The former eventuality involves an Agent, which constitutes an undetachable part of the eventuality, while the latter eventuality involves a Cause, which conceptualization can disregard.

[30] There are very few exceptions, namely verbs that take a [+c] role and do not have a "Causeless" alternate, e.g., *destroy*, which does not have an unaccusative alternate in English (see Reinhart 2002 attributed to Idan Landau, personal communication). The corresponding item in Hungarian, French, and Hebrew does, however, have an unaccusative alternate. Further, as mentioned in the beginning of section 6, the transitive alternate may be missing idiosyncratically in a given language for a few instances (these instances have a [+c] transitive alternate in earlier stages of the same language or at present in other languages). We assume such unaccusatives are derived from a "frozen" entry (namely, unavailable outside the lexicon). For discussion and evidence, see Chierchia (2004), Reinhart (2002), Horvath and Siloni (2008), Fadlon (to appear).

borne out. The reduction approach thus presents an additional advantage. It allows capturing the generalization that any transitive entry with a [+c] role has a corresponding "Causeless" alternate, independently of the type of its internal role(s). Thus, decausativization equally applies to object-Experiencer verbs whose external role is [+c], forming subject-Experiencer verbs, as extensively discussed by Reinhart (2002). The relevant alternation is illustrated below with French examples (49). The external role of *fâcher* ('anger') is [+c]; it is unspecified with regard to mental state, as shown by the fact that it allows both an animate and an inanimate subject (*le bruit* 'the noise' and *Jean* in (49a)).

(49) a. Le bruit / Jean a fâché Pierre.
the noise / Jean has angered Pierre
b. Pierre s'est fâché.
Pierre SE is angered
'Pierre is angry.'

Indeed, subject-Experiencer verbs having a [+c] transitive alternate are morphologically marked in Romance and many other languages by the same morpheme that typically marks unaccusatives; e.g., in French by *se* (compare (49b) with (8b)). This morphology is typical of valence reducing operations, e.g., decausativiztion, reflexivization, reciprocalization, etc. (as observed by Grimshaw 1982; Wehrli 1986, Rappaport-Hovav and Levin 1998; Reinhart and Siloni 2005, among others). Note that universally alongside decausativized subject-Experiencer verbs, there are also non-alternating subject-Experiencer verbs such as *love*, *like*, *understand*, or *hate*, namely, verbs that universally have no [+c] alternate similar to (49a). Reasonably, these verbs are not outputs of decausativization. Indeed, they do not show the reduction morphology (e.g., *aimer* 'love', *comprendre* 'understand' in French).

For the purposes of the subsequent section, it is important to remind the reader that the subject-Experiencer alternates (49b) map their Experiencer role externally, as shown by Pesetsky (1995) and Reinhart (2002), among others, on the basis of various diagnostics of internality in a variety of languages. Following Reinhart (2002), among others, we assume that a role mapped exclusively internally or exclusively externally is specified in the lexicon as inherently internal or inherently external respectively (it is internal or external by definition, see note 32). In contrast, a role that can be mapped either externally or internally is not lexically specified for mapping. Rather, the role is mapped externally when possible, namely, in the absence of a role inherently external (e.g., Agent, Cause), and internally in its presence. Non-alternating (underived) subject-Experiencer verbs, such as *love* and *hate*, always map their Experiencer role externally. Hence, their Experiencer role is specified as external. Alternating Experiencer verbs map the Experiencer internally when instantiating the object-Experiencer alternate, and externally, when instantiating the subject-Experiencer alternate. Hence, their Experiencer role is unspecified with regard to mapping.

Returning to the causativization operation (discussed in section 5.2), section 7 is devoted to determining which entries constitute licit input for the operation. The facts uncovered in the course of the section will provide additional evidence confirming the lexical nature of the causativization operation.

7. The input: further evidence for lexical causativization

Our examples of lexical causatives so far involved an input, transitive or intransitive, with an Agent (i.e., [+c+m]) external role (e.g., examples (11a-b), (18b), (42a), etc.). Below we proceed to investigate a variety of other verb types in order to delineate the set of possible inputs for the operation and assess its consequences for the present account.

First recall that in section 4.2 we found that raising verbs in Hungarian are unable to undergo causativization (see examples (33)-(34)). Raising verbs, as already noted, select a clausal complement and have no external θ-role. Their subject receives its role from the embedded predicate, and is not part of the raising verb's θ-grid at all. It follows that it cannot be targeted by a lexical operation applying to the raising verb, since in the lexicon there is no relation between distinct predicates. Thus the case supports our claim that the causativization operation in Hungarian is indeed lexical. The observation regarding raising verbs directly leads to a more general query: what properties are required for a verb to provide licit input for the causativization operation?

To determine the relevant requirement on the input verb, let us examine first the class of unaccusatives, which also have no external role, but whose internal role (unlike that of raising verbs) is not clausal. Consider the transitive-unaccusative pairs in (50) below. As shown by the right-hand column and by the corresponding sentences in (51), unaccusative members of the transitive-unaccusative alternation fail to causativize.[31]

(50)

	Transitive	Unaccusative	Causative of Unaccusative[32]
a.	fel-ébr-eszt up-wake-TRANS 'wake up'	fel-ébr-ed up-wake-UNACC 'wake up'	*fel-ébr-ed-(t)et up-wake-UNACC-CAUS Intended meaning: 'make X wake up'
b.	meg-erős-ít PERF-strong-TRANS 'strengthen'	meg-erős-öd(-ik) PERF-strong-UNACC 'strengthen '	*meg-erős-öd-(t)et PERF-strong-UNACC-CAUS Intended meaning: 'make X strengthen'

[31] This phenomenon is independent of whether the verb root takes a suffix or not. Clearly, the impossibility of adding the causative *-(t)at/-(t)et* to unaccusatives is not due to its inability to attach to other suffixes. This is demonstrated by its occurrence on transitive suffixed verb forms, as shown by *kinyi-t-tat* 'open-TRANS-CAUS', or the contrasting causativized pair, both derived from an affixed base form *fejl-eszt-et* 'develop-TRANS-CAUS' vs. *fejl-*őd-(t)et* 'develop-UNACC-CAUS'. It is further supported by the impossibility of causativization of non-affixed unaccusative verb forms, such as *fagy* freeze.UNACC (cf. fagy-aszt freeze-TRANS) but **fagy-(t)at* freeze.UNACC-CAUS. Moreover, the causative suffix attaches also to a variety of other suffixed verbs, such as lexically derived reflexives and reciprocals (e.g., *borotvál-koz-tat* shave-REFL-CAUS 'make X shave').

[32] The *-ik* suffix, occurring on some intransitive verbs in the 3rd person present tense form, is irrelevant for the issue at hand (see also note 7). Its addition to the causative examples here leaves them ungrammatical (in fact with *-ik* added they sound even more severely ill-formed.)

c. felold — felold-ód(-ik) — *felold-ód-(t)at
dissolve-TRANS — dissolve-UNACC — dissolve-UNACC-CAUS
Intended meaning: 'make X dissolve'

d. meg-gyógy-ít — meg-gyógy-ul — *meg-gyógy-ul-(t)at
PERF-heal-TRANS — PERF-heal-UNACC — PERF-heal-UNACC-CAUS
'heal' — 'heal' — Intended meaning: 'make X heal'

(51) a. *Mari **fel-ébr-ed-(t)et-i** a gyerekek-et
Mari.NOM up-wake-UNACC-CAUS-PRES.DEF.DO the kids-ACC
két órával az indulás előtt.
two hour-INSTR the departure before
'Mari makes the kids wake up two hours before the departure.'

b. *Az edző **meg-erős-öd-(t)et-te** a játékosok-at.
the coach.NOM PERF-strong-UNACC-CAUS-PAST.DEF.DO the players-ACC
'The coach made the players strengthen.'

c. *A szakács **fel-old-ód-(t)at-ta** a cukr-ot.
the cook.NOM up-dissolve-UNACC-CAUS-PAST.DEF.DO the sugar-ACC
'The cook made the sugar dissolve.'

d. *Az ápolónő **meg-gyógy-ul-(t)at-ta** a beteg-et.
the nurse.NOM PERF-heal-UNACC-CAUS-PAST.DEF.DO the patient-ACC
'The nurse made the patient heal.'

A hypothesis that immediately comes to mind is that causativization of unaccusatives in Hungarian – similarly to causativization of raising verbs – is impossible due to the lack of an external role in the input form. We can formulate this hypothesis as generalization (52).

(52) The input for Causativization must have an externally mapped θ-role; in the absence of such a role in the input θ-grid, Causativization fails to apply.

Further support for the generalization will be provided shortly. Let us first step back for a moment from this first approximation, in order to evaluate the precise nature and proper formulation of the generalization. We hypothesize that causativization can apply only if the input verb has an external role. But this rough generalization can, in principle, be construed in two distinct ways. The alternative interpretations of (52) are given in (53a-b).

(53) a. The base verb must have an argument that *de facto* gets mapped externally.
b. The base verb must have a θ-role specified as external in the lexicon.

Although these options may seem equivalent at first glance, they are empirically distinguishable. This is so because not all roles mapped externally are also specified for externality in the lexicon (i.e., are inherently external). Some roles get mapped externally only in the absence of a role inherently external, as mentioned at the end of section 6 and as will be discussed shortly.

Prior to that, it is important to note that formulation (53b) is compatible only with a lexical causativization operation. Lexical specifications internal to the base verb's θ-grid are accessible to lexical causativization, but obviously inaccessible in the syntax. If contrary to our proposal, Hungarian causatives were built in the syntax, then only formulation (53a) could be relevant: the external argument requirement could only refer to the actual externally mapped argument of the particular base verb. Thus, making an empirically motivated choice between the above alternative formulations is of obvious theoretical significance.

Relevant evidence to settle the issue is provided by subject-Experiencer verbs. As will become clear shortly, subject-Experiencer verbs surprisingly split into two types: those that cannot causativize and those that can. The split matches the partition discussed at the end of section 6 into derived (alternating) versus underived subject-Experiencer verbs. The non-alternating, underived subject-Experiencer verbs, such as *love*, *hate* etc., can undergo causativization, as shown in (54). This is expected under both formulations of (53): the Experiencer role of these subject-Experiencer verbs is uniformly mapped externally; plausibly then, it is lexically specified as external in the verb's θ-grid, just like any other invariant external role.

(54) a. János meg-kedvel-te/meg-utál-ta
János.NOM PERF-like-PAST.DEF.DO/PERF-hate-PAST.DEF.DO
a barátai-m-at.
the friends-POSS1SG-ACC
'János became fond of/hated my friends.'

b. Mari **meg-kedvel-tet-te/meg-utál-tat-ta** János-sal .
Mari.NOM PERF-like-CAUS-PAST.DEF.DO-hate-CAUS-PAST.DEF.DO János-INSTR
a barátai-m-at.
the friends- POSS1SG-ACC
'Mari made János become fond of/hate my friends.'

Let us now consider the derived subject-Experiencer verbs. (55) illustrates pairs of subject-Experiencer outputs (in the right-hand column), and the object-Experiencer alternates which they are derived from (in the left-hand column).

(55) a. meglep meglep-őd(-ik)
'surprise' 'get surprised'
b. megije-szt megije-d
'scare' 'get scared'
c. felvid-ít felvid-ul
'cheer up' 'cheer up(INTR)'

Derived subject-Experiencer verbs illustrated in (56) fail to causativize, as shown by the ungrammaticality of (57a-c) (irrespective of choice of accusative or instrumental case for the causee).

(56) a. A vendégek meg-lep-őd-tek.
the guests.NOM PERF-surprise-INTR-PAST.3PL
'The guests got surprised.'

b. A szülők meg-ije-d-tek.
the parents.NOM PERF-scare-INTR-PAST.3PL
'The parents got scared.'

c. Mari felvid-ul-t.
Mari.NOM up-cheer-INTR-PAST.3PL
'Mari cheered up.'

(57) a. *Mari {**meg-lep-őd-(t)et-te** a vendégek-et/
Mari.NOM surprise-INTR-CAUS-PAST.DEF.DO the guests-ACC/
meglep-őd-(t)et-ett a vendégek-kel}.
surprise-INTR-CAUS-PAST the guests-INSTR
(Intended meaning: 'Mari made the guests get surprised.')

b. *A gyerekek {**meg-ije-d-(t)et-ték** a szülei-k-et/.
the kids.NOM PERF-scare-INTR-CAUS-PAST.DEF.DO the parents-POSS.3PL-ACC/
meg-ijed-(t)et-tek a szülei-k-kel}
PERF-scare-INTR-CAUS-PAST the parents-POSS.3PL-INSTR
(Intended meaning: 'The kids made their parents get scared.')

c. *János {**fel-vid-ul-tat-ta** Mari-t/
János.NOM up-cheer-INTR-CAUS-PAST.DEF.DO Mari-ACC/
fel-vidul-tat-ott Mari-val}.
up-cheer-INTR-CAUS-PAST Mari-INSTR
(Intended meaning: 'János made Mari cheer up.')

Why do subject-Experiencer verbs split this way? A closer look reveals that this contrasting behavior is precisely what we predict under the formulation in (53b). As already mentioned in section 6, derived subject-Experiencer verbs, unlike their object-Experiencer alternates, map their Experiencer role externally. Specifically, in the absence of an inherently external role (owing to *+c* reduction), the Experiencer is mapped externally, as shown by diagnostics of internality (Pesetsky 1995; Reinhart 2002). But in its presence, the role is internally mapped. As mentioned, we believe that roles with realizations alternating between internal and external, depending on the mapping availabilities, can be lexically specified neither as internal nor as external. Thus what we see here is that even though the Experiencer role of the input verbs in (56) is actually mapped externally, it still fails to render the verb a licit input for causativization, because the role is not specified as external, i.e., it is not inherently external. It is mapped

externally due to the absence of an inherently external role. Since these verbs have no role specified as external in their grid, they fail to meet version (53b) of the constraint on the input, and therefore cannot be causativized (57a-c).

In contrast, formulation (53a) of the constraint would incorrectly predict that the externally mapped Experiencer role of alternating subject-Experiencer verbs (56) should satisfy the requirement, and therefore should enable these verbs to undergo causativization, just like the underived (non-alternating) subject-Experiencer verbs do (54b).

In sum, the contrasting behavior of derived versus underived subject-Experiencer verbs shows that it is the lexical specification of a θ-role as external, not its actual mapping, that is crucial for determining whether or not the verb is licit as input for causativization.[33] This finding lends further support to the lexical status of the operation of causativization.[34] Observe that the above constraint on the input verb can only be relevant for lexical causativization. Syntactic causative constructions are not expected to exhibit any parallel constraint on the set of licit base verbs. Although there may in principle be limitations on the type of complement selected by the Caus head of a syntactic causative, the constraint cannot refer to the lexical specification on the θ-grid of the base verb.[35]

Japanese causatives, as anticipated by our analysis, indeed freely permit raising verbs (as shown in section 4.2 (31b)) as well as unaccusatives as base verbs, even though none of these verbs have a role specified as externally mapped in their θ-grid. The occurrence of unaccusative base verbs in the -(*s*)*ase* causative construction is illustrated in (58a). Note that this case is distinct from the transitive (single predicate) alternate of the same

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[33] Reinhart's (2002) theta-system, not designed for this purpose, allows capturing this generalization in an elegant fashion. In the theta system, uniformly negatively valued roles (e.g., the Theme, [-c -m]) are specified as internal. Uniformly positively valued roles (e.g., the Agent ([+c +m]), Cause ([+c]) and the Experiencer role of non-alternating subject-Experiencer verbs, such as *love* and *hate*, which is [+m]) are specified as external. Nonuniformly valued roles, such as the subject of derived subject-Experiencer verbs, which is [-c +m], are not specified for mapping and get mapped according to the mapping availabilities. If so, then what renders an entry licit input for causativization is the presence of a + role, namely, a (uniformly) positively valued role. Of course, the feature composition of roles, just like their traditional labels, is inaccessible to the syntax.

[34] The impossibility of derived subject-Experiencer verbs to causativize is not a matter of a semantically-based functional "blocking" effect caused by an existing transitive alternate with a roughly similar meaning in the language (in the vocabulary). Decausativized subject-Experiencer verbs with no existing transitive alternate in the vocabulary of Hungarian still cannot be causativized: e.g., *csal-ód(-ik)* 'get disappointed', **csal-ód-tat* 'make disappointed' (i).

(i) *Mari csal-ód-(t)at-ta János-t
Mari.NOM disappoint-INTR-CAUS-PAST.DEF.DO János-ACC
(Intended meaning: 'Mari made János get disappointed.')

Interestingly, causatives of underived subject-Experiencer verbs have a tendency to undergo semantic drift (e.g., *tud-a*t 'let x know, announce') and also to permit in some cases inanimate external arguments (e.g., *meg-szeret-tet* 'cause to come to like'), a point noted by an anonymous referee.

[35] Periphrastic causatives in Italian, for instance, are known to prohibit object-Experiencer verbs in their infinitival complement (for a detailed discussion and analysis, see Folli and Harley (2007)). This phenomenon is in no way parallel to the limitations on the input set of causativization observed above for Hungarian. Causatives of the latter kind exhibit a comprehensive prohibition against unaccusative base verbs (51) as well as alternating/derived (but not underived) subject-Experiencer verbs (57); both of these verb classes are permitted in the Italian syntactic (periphrastic) causatives (Folli and Harley (2007)). Thus, the two sets of limitations must be of different origin.

unaccusative (58b); this is shown by the morphologically distinct affixes the two exhibit, and their syntactic behavior (Harley 2006, adapted from Miyagawa 1989:130).

(58) a. Causative (-(*s*)*ase*) of unaccusative 'drop':
Boku-wa kodomo-o gake-kara ot-i-sase-ta.
I-TOP child-ACC cliff from drop-BECOME-CAUS-PAST
'I caused the child to drop from the cliff.'

b. Transitive alternate of unaccusative 'drop':
Boku-wa kodomo-o gake-kara ot-os-ita.
I-TOP child-ACC cliff from drop-TRANS-PAST
'I dropped the child from the cliff.'

The contrast between Japanese causatives and Hungarian causatives established above, provides confirmation that Japanese causatives are derived in the syntax, by Merge of a Caus head, while Hungarian causatives in the lexicon, by the arity operation of causativization.

The facts reviewed so far suggest the following elaboration of the causativization operation formulated in section 5.2 (39) (recall that α' stands for the output grid, which is slightly different from α, in case adjustment applies, and identical to α otherwise.):

(59) Causativization in the lexicon (to be revised in (62))
V < α > → CAUS-V <[+c+m], α'>, where α includes a role specified as external; if α includes a cluster β with a feature composition [+c+m], +c in β is revaluated to -c.

As discussed in section 5.2, Agents undergo revaluation of their +*c* feature to -*c* upon causativization. Owing to the revaluation, the uniqueness generalization on θ-roles is not violated after addition of the new Agent [+c+m]. This procedure was shown to be empirically well-motivated based on the fact that the Agent of the base verb rejects Agent-oriented adverbs under causativization (21)-(22). More generally, the question arises whether revaluation is specific to the Agent or applies to the [+c] feature of any cause, since under causativization the latter ceases to trigger the event in question. Let us consider the verb *megszárít* (dry.TRANS), whose external role is a Cause [+c], unspecified for mental state, as shown by the fact that it allows both an animate and inanimate subject.

(60) János/A nap meg-szár-ít-ja a haj-á-t.
János.NOM/the sun.NOM PERF-dry-TRANS-PRES.DEF.DO the hair-3SG.POSS-ACC
'János/The sun dries his/her hair.'

Applying the test of Agent-oriented adverbs to the causative version, it becomes clear that only the causer (in boldface) can be modified by the adverb.[36]

[36] Given that in the causativized version (61) we apply the Agent-oriented adverb diagnostic, only an animate noun phrase (interpretable as an Agent), *János*, is relevant for the test (and not *a nap* 'the sun'). As

(61) a. **Mari** habozás nélkül meg-szár-ít-tat-ja János-sal
Mari.NOM hesitation without PERF-dry-TRANS-CAUS-PRES.DEF.DO János-INSTR
a haj-á-t.
the hair-3SG.POSS-ACC
'Mari made [János dry his/her hair] without hesitation.'

b. ?**Mari** meg-szár-ít-tat-ja János-sal
Mari.NOM PERF-dry-TRANS-CAUS-PRES.DEF.DO János-INSTR
habozás nélkül a haj-á-t.
hesitation without the hair-3SG.POSS-ACC
'Mari made [János dry his/her hair] without hesitation.'

(61b) is judged marginally acceptable by some owing to the position of the adverb; importantly, however, even in this position, it can refer only to the causer. Thus, in the case of [+c] input verbs as well, only the causer behaves as an Agent according to the diagnostic. This means that revaluation of the *+c* feature to *-c* in the causativization operation is a general procedure, independent of whether the external role of the input verb is an Agent [+c+m] or a Cause [+c]. This is not surprising because Cause and Agent cannot cooccur in the grid of underived lexical verbs either. Since under the lexical derivation of causatives the output is a verb in the lexicon, its grid is expected to obey whatever constraints are exhibited by lexical verbs. The causativization operation should thus be defined as follows.

(62) <u>Causativization in the lexicon</u>
V < α > → CAUS-V <[+c+m], α'>, where α includes a role specified as external; if this role includes a +c feature, the feature is revaluated to –c (otherwise α equals α').

We have presented above decisive evidence that Hungarian causatives constitute a single predicate that must be formed pre-syntactically (sections 3-4 and 7). These findings are incompatible with current approaches that derive causative verbs uniformly in the syntactic component, the so-called constructionist approaches. The next section, therefore, examines and evaluates evidence presented in favor of the syntactic approach.

8. Syntactic Accounts and Syntactic Decomposition

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the base verb's external role however is [+c], it permits either animates or inanimates, as seen in (60). Accordingly, the corresponding causativized form permits an inanimate causee as well:

(i) Mari meg-szár-ít-tat-ja a nap-pal a haj-á-t.
Mari.NOM PERF-dry-TRANS-CAUS-PRES.DEF.DO the sun-INSTR the hair-3SG.POSS-ACC
'Mari has/lets the sun dry his/her hair.'

It is worth noting here that there seem to be some semantic factors that influence the acceptability of inanimate causees in certain cases. But according to our preliminary exploration, these effects involve independent properties of the semantics of causation (possibly, obligation versus permission), and may not be specific to lexically derived causatives (a prima facie similar constraint is discussed regarding Italian periphrastic causatives by Folli and Harley (2007)).

8.1. Representative proposals

Purely syntactic accounts of causatives derive both the unaccusative and causative alternation by syntactic merger of a causative head that differs only in the "size" of the complement it selects, i.e., the number of functional categories above the verbal root. Taking this path, Harley (2006) suggests that the causative alternation is formed by a V_{CAUS} head selecting a phase (*v*P), which is equipped with an external argument. The transitive alternate of unaccusatives, in contrast, involves a V_{CAUS} that selects a bare root (√P), which lacks an external argument. Harley's analysis predicts that causatives will always comprise two predicates: V_{CAUS} and the verb heading the lower phase. The analysis therefore fails to capture the behavior of the Hungarian causative, which on the one hand constitutes a single predicate, and on the other, is freely formed from base verbs taking an external argument, namely, from transitives and unergatives, as demonstrated by examples such as (11a-b), (18b), (42a), etc.

Pylkkänen (2002, 2008) in her study of causatives in Finnish, English, and certain Bantu languages (Luganda, Venda and Bemba), proposes a three-way split among causatives. Under her proposal, three types of syntactic constructions form morphological causatives: (i) V_{Cause} embedding a root (√P), (ii) V_{Cause} embedding a verb (vP), which lacks an external argument, and (iii) V_{Cause} embedding a phase (θ_{Ext}P), which includes an external argument. The transitive counterparts of unaccusatives could then fall into the first category, a root-selecting V_{Cause} (as Pylkkänen seems to analyze them). Hungarian morphological causatives could fall under type (ii), a verb-selecting V_{Cause} (as Pylkkänen analyzes Bemba and Finnish causatives)[37], and the Japanese productive -(*s*)*ase* causatives could be analyzed as category (iii), a phase-selecting V_{Cause} (similar to Luganda and Venda causatives, under Pylkkänen's analysis).

However, as just noted, Hungarian causatives can be formed from transitive and unergative verbs. Why then analyze them as embedding a verbal phrase that lacks an external argument? Pylkkänen (2008) observes that Finnish causatives too can be formed from transitive and unergative base verbs, which are equipped with an Agent role. Noting that "these embedded Agents are not 'agentive enough' to license Agent-oriented adverbial modifiers" (just like in Hungarian (3.2.4)), Pylkkänen (2008, p.107) stipulates that these arguments get introduced in the causative construction in a different way by an extra head, unlike in noncausative structures. Notice that such an account completely misses the straightforward generalization as to when the verb forming a causative has this additional argument introduced by an extra head and when it does not. That is, the account fails to capture the correlation that whenever the input has an external role, its causative counterpart has a corresponding role, whose level of agentivity is decreased (a point discussed in section 5.2).[38]

[37] Indeed, according to data we have collected (thanks to Aviad Eilam, personal communication), Finnish causatives pattern with their Hungarian counterparts.

[38] Note that the Agent of the input verb does not have to be realized syntactically after causativization in Hungarian. Importantly, however, even when it does not surface in the syntax, it is entailed. It follows that this role is part of the causative's θ-grid.

Recall now that we have seen that the Hungarian morphological causative (a) constitutes a single predicate (section 3), and (b) must be formed in the lexicon (sections 4 and 7). Under recent approaches, however, predicates are uniformly formed in the syntax. Generalized syntactic formation of predicates is incompatible with the conclusion we reached that the Hungarian causative is derived in the lexicon. We therefore turn to examining what evidence might be called upon in order to try to maintain that Hungarian causatives are syntactically composed from a causing event (say, V_{Cause}) and a caused event (say, vP). As will become clear below, we do not find the evidence compelling.

8.2 Adverb interpretations: evidence for event decomposition in the syntax?

Single predicates are commonly analyzed in the current syntactic literature as surface manifestations of decomposed syntactic structures that directly encode various semantic (event structure) generalizations. Interpretations of adverbs such as *almost* and *again* have constituted the primary empirical evidence in support of the decomposition of individual predicates into multiple *events* represented each by a distinct syntactic head. The term event is used here in the sense of eventuality, covering both states and events. We start by considering the reasons that led linguists to assume syntactic decomposition for transitive verbs. This is necessary background in order to understand whether a parallel line of argumentation may be applied to lexical causatives.

The interpretations of *again* (see Dowty (1979)) and its counterparts in other languages are commonly used in current literature as important empirical support for syntactic decomposition. The argument is based on the so-called *repetitive* versus *restitutive* interpretations of the adverb *again*, and their syntactic analyses (e.g. von Stechow 1995, 1998; Beck 2005; Pylkkänen 2008).

It is noted that a simple transitive verb such as the achievement verb *open* in (63) manifests the following two interpretations for *again*:

(63) Bill opened the door again.
- i. Bill did it again – Presupposes: he had done it before. (repetitive)
- ii. The door is in an open state again – Presupposes: it had been open before. (restitutive)

The claim advanced by constructionists is that these different readings are due to a *structural ambiguity* that results from the different structural positions that *again* (possessing a single constant meaning) occupies in the decomposed syntactic structure. In (63), syntactic decomposition would mean that we have an outer event of "Bill causing a process of the door opening", and an embedded result state of "the door being open". The attachment of the adverb *again* to the constituent denoting the causing event would result in the repetitive reading; its attachment to the embedded (inner) constituent denoting the result state (see Tenny 2000) would derive the restitutive reading.[39]

[39] Based on the same rationale, the interpretation of the adverb *almost* was mentioned by generative semanticists as evidence for decomposition (McCawley 1972). Like *again*, *almost* seems to be able to modify the Cause meaning component or the Become/Result component. However, the case of *almost* has already been convincingly argued in subsequent literature not to provide the relevant evidence. Contrary to

However, the picture emerging for the interpretations of *again* is in fact far from straightforward. Importantly, it turns out to be qualitatively different from cases of uncontroversial structural ambiguity induced by possible modification of two distinct syntactic domains.

First it must be noted that the accessibility of the repetitive versus the restitutive reading differs sharply and systematically: across the board, the restitutive reading of *again* is much more difficult for speakers to access, and often can be induced only by providing an explicit explanation of the relevant state of affairs. Some speakers we tested for the counterparts of *again* in Hungarian (*megint*, *újra*) fail to accept the restitutive interpretation even after being told what it would be. Other ambiguities of adverb interpretation induced by distinct structural positions do not manifest such a marked and consistent asymmetry in favor of one particular reading versus the other. Thus, both interpretations of *again* (repetitive vs. restitutive) in the periphrastic causative (64) are straightforward, because *again* can be structurally associated with either the matrix or the embedded predicate.

(64) John caused the door to be open again.

An even more serious kind of problem for the syntactic decomposition approach is observed by Chierchia and McConnell-Ginet (1990:359). They note that the expected repetitive versus restitutive ambiguity is in fact not exhibited uniformly by the set of verbs that would be expected to show it, if it were structural. This is shown by the comparison of the behavior of the verb *clean* (65) with the widely used example (63) cited above. The interpretation of *again* in (65) is unambiguous: only the repetitive reading is available.

(65) John cleaned the jacket again.
 i. John did it again. (repetitive)

The restitutive reading "the jacket is clean again" is unavailable with *clean* (65), in contrast to the ambiguity observed with *open* (63). This is brought out most clearly given the following scenario for (65):

(66) John bought a new jacket in a clean state which had never been cleaned before; when it got dirty with use, he cleaned it.

Under these circumstances, it is impossible to use (65). Further, it is observed that the periphrastic (67), unlike (65), does exhibit the repetitive versus restitutive ambiguity, as

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assumptions of generative semanticists, the variation of interpretation that *almost* allows is a case of vagueness, not of ambiguity, and therefore does not motivate two distinct syntactic heads that the adverb modifies. First, the interpretation of *almost* allows plenty of additional "intermediate" readings that do not clearly fall into one of the above interpretations (as shown by Sevi 1998, and Horvath and Siloni 2010). Second, verbs demonstrably lacking any (inner) subevent such as statives still manifest with *almost* a multiplicity of possible interpretations (Sevi 1998, Tenny 2000). For detailed argumentation, we refer the reader to Dowty (1979), Kempson (1977), Sevi (1998), Tenny (2000), and Horvath and Siloni (2010).

expected; this is so because *again* can be structurally associated with either the matrix or the embedded predicate (just like in (64)).

(67) John caused the jacket to be clean again.

So the question for proponents of syntactically decomposed event structure is why a verb such as *clean* would fail to exhibit the same structural ambiguity. Importantly, *clean* is an activity verb, which can become an accomplishment in the presence of an object. It can thus denote a telic eventuality, which involves a RESULT STATE. This is indicated by well-established aspectual diagnostics of the lexical semantics literature, such as the felicitous occurrence of the verb with adverbials denoting finite temporal duration of an event (expressions meaning 'in X amount of time'), as shown for both *open* and *clean* in (68a-b).

(68) a. John cleaned the jacket *in an hour*.
b. John opened the door *in five minutes*.

Importantly, the verb *clean* in (69a), on a par with *open* (70), gives rise to an entailment regarding the result state (69b), reinforcing this telicity diagnostic.

(69) a. John cleaned the jacket in an hour.
b. After that the jacket was clean.

(70) a. John opened the door in five minutes.
b. After that the door was open.

Under syntactic decomposition, the complex event structure of these verbs would be represented by (at least) two distinct syntactic heads, as in (71).

(71) [John CAUSE [√open/clean [the door/the jacket]]
↑_____|

But if this were the structure, we would expect that the (alleged) structural ambiguity of *again* would arise equally with both *open* and *clean*, contrary to fact.

Since *clean* has an activity meaning ingredient, the question might arise whether the availability of the restitutive reading of *again* with the verb *open* but not with the verb *clean* could possibly be due to this aspectual difference between the two (achievement vs. accomplishment, respectively). That this is not the case is demonstrated by the fact that some other accomplishment verbs (verbs with an activity ingredient), such as *dig* in (72a-b), do exhibit the restitutive reading of *again* (73ii) (in addition to the repetitive one (73i)), as shown by the scenario in (74).

(72) a. They dug the cave in an hour.
b. After that the cave was dug.

(73) They dug the cave again.

i. They did it again. (repetitive)
ii. There was a cave again (restitutive)

(74) Story tellers used to meet every year in a huge natural cave in mount Ida for a story telling festival. Ten years ago the cave collapsed. The locals dug it again and intend to renew the tradition.

Recall also that in the periphrastic construction with *clean* (67) *again* does manifest the repetitive/restitutive ambiguity.

The above facts cast serious doubt on the claim that the repetitive and restitutive interpretations of *again* (and its counterparts in other languages) are cases of structural ambiguity. If they are not, then they provide no evidence for the syntactic decomposition of transitive (achievement and accomplishment) verbs into two distinct events. For further conceptual and empirical arguments against the decomposition approach, see Fodor and Lepore (1999), for psycholinguistic evidence, see Fodor, Fodor and Garrett (1975), and a comprehensive summary and discussion in Chierchia and McConnell-Ginet (1990).

Plausible alternatives to syntactic decomposition in fact have been developed for capturing the interpretations of *again*. See, for instance, Fabricius-Hansen (2001), who argues that *again* is lexically ambiguous: one of its meanings involves a counterdirectional action (the restitutive reading), while the other a repetitive one.

In light of the above, we believe that in the case of transitive (achievement and accomplishment) verbs, adverb interpretations do not provide evidence for syntactic decomposition. But what about the behavior of *again* with regard to the Hungarian-type causative? Recall that we have started the discussion by raising the question as to whether adverb interpretation provides any reason to assume syntactic decomposition for the Hungarian causative (into two syntactic heads denoting two events), although there is ample evidence that it constitutes a single predicate that must be formed prior to the emergence of syntactic structure. Let us consider then the interpretation of the Hungarian counterpart of *again*, the adverb *megint*, in causatives.[40].

Sentences (75) and (76) are unambiguous: each can only mean that János did it (caused it) again (call it the cause-repetitive reading). Furthermore, note that the scope of the adverb is unambiguous irrespective of whether it follows the verb (as in (75)) or precedes it (as in (76)).

(75) János ír-at-ott megint egy level-et
János.NOM write-CAUS-PAST.3SG again a letter-ACC
a titkárnő-vel.
the secretary-INSTR
'János made the secretary write a letter again.'
i. János did it again. (cause-repetitive)

[40] In addition to *megint* 'again', Hungarian has another adverb, *újra* 'anew', expressing repetition as well. This morpheme, however, occurs also as a verbal prefix (prima facie parallel to the English *re-* prefix): e.g. *újra-ír* 'rewrite' , *újra-épít* 'rebuild'. To avoid this interfering factor, we will be using the independent adverb *megint* 'again' in our examples testing Hungarian causatives.

(76) János megint énekel-tet-i az osztály-t.
János.NOM again sing-CAUS-PRES.DEF.DO the class-ACC
'János is making the class sing again.'
i. János did it again. (cause-repetitive)

While the causative verb allows only the cause-repetitive interpretation of *again*, periphrastic causatives allow an additional repetitive interpretation of *again*, as shown in (77).

(77) János enged-ett a titkárnő-nek megint ír-ni
János.NOM let-PAST.3SG the secretary-DAT again write-INF
egy level-et.
a letter.ACC
'János let the secretary write a letter again.'
i. János did it again. (permissive (let)-repetitive)[41]
ii. The secretary did it again. (repetitive (writing))

The above facts suggest that in Hungarian morphological causatives, the reading where 'again' modifies the base verb is generally unavailable. It can only occasionally be induced by constructing specific contexts.[42] This is a state of affairs completely different from cases of structural ambiguities, where there are uncontroversially two distinct syntactic domains modified by the adverb, as shown by the Hungarian periphrastic causatives (77), as well as by English (78).

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[41] Another (slightly preferred) version of (77) manifesting unambiguously the permissive (let)-repetitive reading, has the adverb *megint* 'again' in a position preceding the matrix predicate:
(i) János megint engedett a titkárnő-nek ír-ni egy level-et.
János.NOM again let-PAST the secretary-DAT write-INF a letter-ACC
'János again let the secretary write a letter.'

[42] An anonymous referee provided the following example, saying that it exhibits a three-way ambiguity for the scope of 'again'.
(i) János újra fel-épít-tet-te a ház-at.
János.NOM again up-build-CAUS.PAST the house-ACC
'János had someone build the house again.'
But according to the speakers we have consulted, there is no three-way ambiguity exhibited by (i). Only the causing event is accessible uniformly, and in addition, with help from a carefully constructed context, the restitutive reading (meaning that the house stands again) can become accessible. The alleged "intermediate" scope reading, where the event of building the house is repeated (without the causing event) is rejected by our speakers. Unlike this case, and in contrast to examples (75) and (76) in the text, there can be found sporadic cases where presentation of a particular context indeed seems to induce a repetitive interpretation for the base verb of the causative, such as for instance (ii) used in the following context:
The students read out their essays in class last Tuesday.
(ii) Másnap új tanár tart-ot-ta az órát, és
next.day new teacher.NOM hold-PAST.DEF.DO the class-ACC and
az megint fel-olvas-tat-ta vel-ük a fogalmazás-uk-at.
that.one again up-read-CAUS-PAST.DEF.DO INSTR-3PL the composition-POSS.3PL-ACC
'The next day a new teacher taught the class, and he made them read out their essays again.'
Reading: The students did it again. (repetitive (reading out their essays))

(78) The teacher made the class sing again.
i. The teacher did it again. (cause-repetitive)
ii The class did it again. (repetitive (singing))

The failure of 'again' to detect two events (two heads) in the syntactic structure of Hungarian causatives is not unique. Consider next the case of manner adverbs. These normally occur in an immediately preverbal position in Hungarian clause structure, as in the examples below.[43] Note first that adverbs are not interpretable in this preverbal position as sentential, e.g., subject-oriented, adverbs, but only as manner adverbs:

(79) Mari okosan/ravaszul magyaráz-ta meg a terv-et
Mari.NOM cleverly/slyly explain-PAST.DEF.DO PERF the plan-ACC
a gyerekek-nek.
the kids- DAT
'Mari explained the plan to the kids cleverly/slyly.'

If the causative construction involved two events, a causing event and a caused event, represented by two syntactic constituents, then in principle manner adverbs would be expected to be able to modify either event, depending on which constituent they attach to. But in fact only a single interpretation is available here, i.e., that the way of explaining was clever or sly, not the manner of causation.

(80) János okosan/ravaszul magyaráz-tat-ta meg Mari-val
János.NOM cleverly/slyly explain-CAUS-PAST.DEF.DO PERF Mari-INSTR
a gyerekek-nek a terv-et.
the kids-DAT the plan-ACC
'János made Mari explain the plan to the kids cleverly/slyly.'
i. The way of explaining was clever/sly not the way of causing.[44]

Periphrastic constructions, in contrast, allow – and when occurring in the position shown in (81), in fact require – manner adverbs to modify the matrix verb.

(81) János okosan/ravaszul enged-te/kényszerít-ette Mari-t
János.NOM cleverly/slyly let-PAST.DEF.DO/force-PAST.DEF.DO Mari-ACC
meg-magyaráz-ni a gyerekek-nek a terv-et.
PERF-explain-INF the kids-DAT the plan-ACC
'John made [Mary explain the plan to the kids] cleverly/slyly.'

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[43] The particular preverbal position that manner adverbs occupy is a position widely discussed in the literature on Hungarian clause structure. Whether this position is occupied can be diagnosed most clearly by the postverbal placement of the aspectual/resultative verbal particles (see (79)-(80)), which is otherwise preverbal (for recent analyses of the preverbal position, see É. Kiss 2002; Horvath 2005; Kenesei 1998; Surányi 2009).

[44] The reason why it is this particular reading that appears with manner adverbs is an interesting open question that would deserve further study. But in the present context, what is relevant is the fact that manner adverbs too detect no structural ambiguity in the Hungarian causative.

Unlike (81), when there is one predicate, as in the Hungarian causative (80), manner adverbs do not yield the possibility of matrix construal, as would be expected if it involved two syntactic heads.[45]

In conclusion, section 3 has presented evidence that the Hungarian causative constitutes a single predicate. Sections 4 and 7 have offered various arguments that this predicate must be formed pre-syntactically. Finally, section 8 has shown that adverb interpretations do not, in fact, provide convincing evidence for syntactic event decomposition of single predicates, whether transitive (accomplishment) verbs or lexical causatives.

9. Conclusion

In this article we have examined with a fresh perspective the source and status of the various verbal alternations commonly considered as instances of (morphological) causativization. Our investigation focused on exposing and accounting for the thematic and syntactic properties of this set of alternations. In current syntactic literature, it is widely accepted to derive all these alternations uniformly by merger of a causative head in the syntax, attributing variation only to the "size" of the complement selected by the causative head (e.g. Harley (1995, 2006); Pylkkänen (2002, 2008) discussed above). The present study uncovered a range of significant empirical evidence indicating that only a particular subset of morphological causatives, namely those diagnosed by various tests as comprising two predicates, are constructed in the syntax. We have provided novel arguments in favor of deriving the two other alternations commonly referred to as causatives in the lexicon.

The empirical array of morphological causativization phenomena has been sorted and assessed in a comparative perspective. Based on distributional, syntactic and semantic properties, we have identified two distinct dichotomies distributing the set of the alleged causatives: (i) a split between the transitive-unaccusative alternation and causative-anticausative alternation, (ii) a split among causative verbs, namely, between those involving two predicates versus those involving a single predicate. Our investigation of the nature of these dichotomies resulted in an account that makes sense of – and can in fact predict – the particular distinctive properties we uncovered.

Starting with causatives, the study presented robust evidence indicating that (i) certain morphological causatives are indeed formed in the syntax; they involve two predicates each corresponding to a separate syntactic head, e.g., the productive -(*s*)*ase* causative in Japanese, (ii) certain morphological causatives involve a single predicate, e.g., the Hungarian *-(t)at/-(t)et* one; they are derived (a) before any syntactic structure is available (see our evidence in section 4), and (b) in a place where information about properties internal to the verb's θ-grid is accessible (see section 7). These findings led us to the conclusion that the latter type of causatives must be formed in the lexicon.

[45] Time adverbials could seem to provide another obvious test for detecting the number of events. However, they turn out to treat periphrastic causatives as two inseparable domains, i.e., as constituting a single Tense domain. Therefore they cannot serve as a valid diagnostic for deciding whether single predicates can be comprised of more than one syntactic domain.

The transitive-unaccusative alternation (discussed in section 6) was shown to be distinct from the causative alternation. The operation deriving the unaccusative alternation was argued to be a lexical arity operation of Decausativization (Reinhart (2002), among others). Applying to transitive verbs having Cause [+c] and Theme [-c-m] roles, Decausativization reduces the former, thereby deriving the unaccusative alternate. We have argued that reduction of the Cause role of the transitive member of the alternation was superior to the alternative of adding a Cause role both on conceptual and empirical grounds. Advantages of the decausativization hypothesis are that (a) it can properly capture the split among intransitive verbs to unaccusatives and unergatives, (b) it can explain why the transitive alternate has a Cause [+c] external role, and (c) it provides an automatic account for the set of alternating subject-Experiencer verbs, by means of the same lexical arity operation.

Under the approach motivated in this article the following global picture emerges. Languages differ as to whether they allow (i) the operation of lexical causativization, (ii) the syntactic formation of morphological causatives, or (iii) no morphological causatives. Plausibly, this may follow directly from the morphological inventory of the language, i.e., from whether or not it has the morpheme appropriate for the specific construction. In contrast, the transitive-unaccusative alternation (derived by decausativization) occurs consistently across languages. The transitive members of this alternation were shown to be clearly distinct in their properties from causatives.

Our investigation of morphological causatives provides evidence that the model of grammar must include a computationally active lexicon where arity (valence changing) operations can apply. Further, if causativization of the single predicate type (as in Hungarian) and decausativization (across languages) are lexical, it means that the external argument of transitives and unergatives must be present in the θ-grid of the predicate in the lexicon.

References

Ackema, Peter and Ad Neeleman. 2007. Morphology does not equal syntax. In *The Oxford handbook of linguistic interfaces*, eds. Gillian Ramchand and Charles Reiss, 325-353. Oxford: Oxford University Press.

Alexiadou, Artemis, Elena Anagnostopoulou, and Florian Schäfer. 2006. The properties of anticausatives crosslinguistically. In *Phases of interpretation*, ed. Mara Frascarelli, 187-212. Berlin: Mouton.

Alsina, Alex. 1992. On the argument structure of causatives. *Linguistic Inquiry* 23: 517-556.

Anderson, Stephen R. 1992. *A-morphous morphology.* Cambridge: Cambridge University Press.

Baker, Mark C. 1988. *Incorporation: A theory of grammatical function changing.* Chicago: Chicago University Press.

Baker, Mark C. 2003. *Lexical categories*: *Verbs, nouns and adjectives*. Cambridge Studies in Linguistics, Cambridge: Cambridge University Press.

Beck, Sigrid. 2005. There and back again: A semantic analysis. *Journal of Semantics* 22: 3-51.

Borer, Hagit. 1984. The Projection Principle and rules of morphology. In *North East Linguistic Society (NELS) 14,* eds. Charles Jones and Peter Sells, 253–274. Amherst, MA: University of Massachusetts, Graduate Linguistic Student Association.

Borer, Hagit. 1988. On the morphological parallelism between compounds and constructs. In *Yearbook of morphology*, ed. Geert E. Booij and Jaap van Marle, 45-65. Dordrecht: Foris.

Borer, Hagit. 2005. *Structuring Sense.* Volumes I and II. Oxford: Oxford University Press.

Borer, Hagit and Yosef Grodzinsky. 1986. Syntactic cliticization and lexical cliticization: The case of Hebrew dative clitics. In *Syntax and semantics, Vol. 19: The syntax of pronominal clitics*, ed. Hagit Borer, 175-215. New York: Academic Press.

Bresnan, Joan. 1982. The passive in lexical theory. In *The mental representation of grammatical relations*, ed. Joan Bresnan, 3-86. Cambridge, MA: MIT Press.

Carlson, Greg. 1998. Thematic roles and the individuation of events. In *Events and grammar*, ed. Susan Rothstein, 35-51. Dordrecht: Kluwer Academic Publishers.

Chierchia, Gennaro. 2004. A Semantics for unaccusatives and its syntactic consequences. In *The unaccusativity puzzle*: *Studies on the syntax-lexicon interface*, eds. Artemis Alexiadou, Elena Anagnostopolou, and Martin Everaert, 288-331. Oxford: Oxford University Press.

Chierchia, Gennaro and Sally McConnell-Ginet. 1990. *Meaning and grammar: An introduction to semantics*. Cambridge, MA: MIT Press.

Chomsky, Noam. 1981. *Lectures on government and binding.* Dordrecht: Foris.

Chomsky, Noam. 1995. *The minimalist program.* Cambridge MA: MIT Press.

Dowty, David. 1979. *Word meaning and Montague grammar*. Dordrecht: Kluwer Academic Publishers.

Dubinsky, Stan. 1994. Predicate union and the syntax of Japanese causatives. *Journal of Linguistics* 30: 43-79.

Embick, David. 1997. *Voice and the interfaces of syntax*. Doctoral dissertation, University of Pennsylvania, Philadelphia.

Fabricius-Hansen, Catherine. 2001. Wi(e)der and again(st). In *Auditur vox sapientiae: A festschrift for Arnim von Stechow*, eds. Caroline Féry and Wolfgang Sternefeld, 101-130. Berlin: Akademie Verlag.

Fadlon, Julie. To appear. The psychological reality of hidden lexical entries: Evidence from Hebrew. *The Theta System: Argument Structure at the Interface*, eds. Martin Everaert, Marijana Marelj and Tal Siloni. Oxford University Press.

Fodor, Jerry A. and Ernie Lepore. 1999. Impossible words? *Linguistic Inquiry* 30: 445-453.

Fodor, Janet D., Jerry A. Fodor, and Merrill F. Garrett. 1975. The psychological unreality of semantic representations. *Linguistic Inquiry* 6: 515-531.

Folli, Raffaella and Heidi Harley. 2007. Causation, obligation and argument structure: On the nature of little v. *Linguistic Inquiry* 38: 197-238.

Fukuda, Shin. 2007. On the control/raising ambiguity with aspectual verbs: a structural account. In *Studies in complement control*, ed. Barbara Stiebels. ZAS Papers in Linguistics 47: 159-195. Berlin: ZAS.

Fukuda, Shin. To appear. The Syntax of Japanese Aspectual Verbs. In *Proceedings of the 3rd workshop on Altaic in formal linguistics (WAFL 3).* Moscow: Moscow State University.

Grimshaw, Jane. 1982. On the lexical representation of Romance reflexive clitics. In *The mental representation of grammatical relations*, ed. Joan Bresnan, 87–148. Cambridge, MA: MIT Press.

Hale, Ken and Samuel Jay Keyser. 1998. The basic elements of argument structure. In *Papers from the UPenn/MIT roundtable on argument atructure and* aspect, ed. Heidi Harley. MIT Working Papers in Linguistics 32: 73-118. Cambridge, MA: MIT Department of Linguistics and Philosophy.

Halle, Morris and Alec Marantz. 1993. Distributed morphology and the pieces of inflection. In *The view from building 20: Essays in linguistics in honor of Sylvain Bromberger*, ed. Ken Hale and Samuel Jay Keyser, 111-176. Cambridge, MA: MIT Press.

Hara, Masahiro. 1999. *Causatives in Japanese*. Unpublished ms., Truman State University, Kirksville, MO.

Harley, Heidi. 1995. Sase bizarre: The structure of Japanese causative. In *Proceedings of the Canadian Linguistic Society Meeting,* ed. Paivi Koskinen.

Harley, Heidi. 2006. On the causative construction. To appear in *The handbook of Japanese linguistics*, ed. Shigeru Miyagawa and Mamoru Saito. Oxford: Oxford University Press.

Haspelmath, Martin. 1993. More on the typology of inchoative/causative verb alternations. In *Causatives and transitivity*, eds. Bernard Comrie and Maria Polinsky, 87-120. Amsterdam: John Benjamins.

Hetzron, Robert. 1976. On the Hungarian causative verb and its syntax. In *Syntax and semantics, Vol. 6: The grammar of causative constructions*, ed. Masayoshi Shibatani, 371–98. New York: Academic Press.

Horvath, Julia. 2005. Is Focus Movement Driven by Stress? In *Approaches to Hungarian*, eds. Chris Piñon and Péter Siptár, 133-158. Budapest: Akadémiai Kiadó.

Horvath, Julia and Tal Siloni. 2002. Against the little-*v* hypothesis. *Rivista di Grammatica Generativa* 27: 107-122.

Horvath, Julia and Tal Siloni. 2008. Active Lexicon: Adjectival and Verbal Passives. In *Current Issues in Generative Hebrew Linguistics*, eds. Sharon Armon-Lotem, Gabi Danon and Susan Rothstein. John Benjamins Publishing Company.

Horvath, Julia and Tal Siloni. 2010. Licensing Instruments. Unpublished ms., Tel Aviv University.

Horvath, Julia and Tal Siloni. 2010. The Thematic Phase and the Architecture of Grammar. Unpublished ms., Tel Aviv University.

Kempson, Ruth. 1977. *Semantic Theory*. Cambridge University Press. Cambridge.

Kenesei, István. 1998. Adjuncts and arguments in VP-focus in Hungarian. *Acta Linguistica Hungarica* 45: 61-88.

Kenesei, István. 2007. Semiwords and affixoids: the territory between word and affix. *Acta Linguistica Hungarica* 54: 263-293.

É. Kiss, Katalin. 2002. *The syntax of Hungarian*. Cambridge: Cambridge University Press.

Kitagawa, Yoshihisa. 1986. *Subjects in Japanese and English*. Doctoral dissertation, University of Massachusetts, Amherst.

Komlósy, András. 1994. Complements and adjuncts, In *Syntax and semantics, Vol. 27: The syntactic structure of Hungarian,* eds. Kiefer Ferenc and Katalin É. Kiss, 91-178.

New York: Academic Press.
Komlósy, András. 2000. A műveltetés. ('Causativization'). *Strukturális magyar nyelvtan* 3, ed. Kiefer Ferenc. Morfológia, 215–292. Budapest: Akadémiai Kiadó.
Koontz-Garboden, Andrew. 2009. Anticausativization. *Natural Language and Linguistic Theory* 27: 77-138.
Kratzer, Angelika. 1996. Severing the external argument from its verb. In *Phrase Structure and the lexicon*, ed. Johan Rooryck and Laurie Zaring, 109-137. Dordrecht: Kluwer Academic Publishers.
Kuroda, Shige-Yuki. 2003. Complex predicates and predicate raising. In *Formal Japanese syntax and universal grammar: The past 20 years*, ed. Naoki Fukui. *Lingua* 4: 447-480.
Labelle, Marie. 1990. Unaccusatives and pseudo-unaccusatives in French. In *North East Linguistic Society (NELS) 20,* eds. J. Carter, R.-M. Dechaine, B. Philip, and T. Sherer, 303-317. Amherst, MA: University of Massachusetts, Graduate Linguistic Student Association.
Labelle, Marie. 1992. Change of state and valency. *Journal of Linguistics* 28: 375-414.
Levin, Beth and Malka Rappaport-Hovav. 1995. *Unaccusativity: At the syntax lexical semantics interface.* Cambridge, MA: MIT Press.
Manning, Christopher D., Ivan A. Sag and Masayo Iida. 1999. The lexical integrity of Japanese causatives. In *Studies in Contemporary Phrase Structure Grammar*, ed. Robert D. Levine and Georgia M. Green, 39-79. Cambridge: Cambridge University Press.
Marelj, Marijana. 2004. *Middles and argument structure across languages*. Doctoral dissertation, OTS, University of Utrecht.
Marantz, Alec. 1993. Implications of asymmetries in double object constructions. In *Theoretical aspects of Bantu grammar*, ed. Sam Mchombo, 113-151. Stanford: CSLI Publications.
Marantz, Alec. 1997. No escape from syntax: Don't try a morphological analysis in the privacy of your own lexicon. *University of Pennsylvania Working Papers in Linguistics* 4.2: 201-225.
Marantz, Alec. 2009. Phases and Words. Unpublished ms., New York University.
Matsumoto, Yo. 1996. *Complex predicates in Japanese: a syntactic and semantic study of the notion 'word'.* Tokyo and Stanford: Kuroshio and CSLI.
Matsumoto, Yo. 1998. A reexamination of the cross-linguistic parameterization of causative predicates: Japanese perspectives. In *Proceedings of the LFG98 Conference,* eds. Miriam Butt and Tracy Holloway King. Stanford: CSLI.
Meltzer, Aya. 2006. Adjectival passives and adjectival decausatives in Hebrew. In *Proceedings of the Israel Association for Theoretical Linguistics* 22, ed. Yehuda N. Falk. Jerusalem: IATL.
Miyagawa, Shigeru. 1984. Blocking and Japanese causatives. *Lingua* 64: 177-207.
Miyagawa, Shigeru. 1989. *Syntax and semantics, Vol. 22: Structure and case marking in Japanese.* New York: Academic Press.
Parsons, Terence. 1990. *Events in the semantics of English: A study of subatomic semantics*. Cambridge, MA: MIT Press.
Pesetsky, David. 1995. *Zero syntax: Experiencers and cascades.* Cambridge, MA: MIT Press.

Preminger, Omer. 2006. *Argument-mapping and extraction*. Master's thesis, Tel-Aviv University, Tel-Aviv.
Pylkkänen, Liina. 2002. *Introducing arguments*. Doctoral dissertation, MIT, Boston.
Pylkkänen, Liina. 2008. *Introducing arguments*. Cambridge, MA: MIT Press.
Ramchand, Gillian. 2006. *Verb meaning and the lexicon: A first phase syntax*. Unpublished ms., Universitetet i Tromsø.
Rappaport-Hovav, Malka, and Beth Levin. 1998. Morphology and lexical semantics. In *Handbook of Morphology,* eds. Arnold M. Zwicky and Andrew Spencer, 248-271. Oxford: Blackwell.
Reinhart, Tanya. 1991. *Lexical properties of ergativity*. Lecture presented at the conference on Lexical Structure, Utrecht. http://www.let.uu.nl/~tanya.reinhart/personal/
Reinhart, Tanya. 2000. The theta system: Syntactic realization of verbal concepts. *OTS Working Papers in Linguistics*, 00,01/TL.
Reinhart, Tanya. 2002. The theta system: An Overview. *Theoretical Linguistics* 28: 229-290.
Reinhart, Tanya and Eric Reuland. 1993. Reflexivity. *Linguistic Inquiry* 24: 657-720.
Reinhart, Tanya and Tal Siloni. 2004. Against the unaccusative analysis of reflexives. In *The unaccusativity puzzle: Studies on the syntax-lexicon interface*, eds. Artemis Alexiadou, Elena Anagnostopolou, and Martin Everaert, 159-180. Oxford: Oxford University Press.
Reinhart, Tanya and Tal Siloni. 2005. The lexicon-syntax parameter: Reflexivization and other arity operations. *Linguistic Inquiry* 36: 389-436.
Roeper, Thomas. 1987. Implicit arguments and the head–complement relation. *Linguistic Inquiry* 18: 267–310.
Sevi, Aldo. 1998. *A semantics for almost and barely*. Master's thesis, Tel-Aviv University, Tel-Aviv.
Shibatani, Masayoshi. 1972. Three reasons for deriving 'kill' from 'cause to die' in Japanese. In *Syntax and Semantics Vol. 1*, ed. John P. Kimball, 125-137. New York: Academic Press.
Shibatani, Masayoshi. 1990. *The languages in Japan*. Cambridge: Cambridge University Press.
Siloni, Tal. 2002 Active lexicon. *Theoretical Linguistics* 28: 383-400.
Siloni, Tal 2010 Reciprocal Verbs and Symmetry. Unpublished ms., Tel Aviv University.
von Stechow, Arnim. 1996. The different readings of wieder 'again': A structural account. *Journal of Semantics* 13: 87-138.
Surányi, Balázs. 2009. Verbal particles inside and outside vP. *Acta Linguistica Hungarica* 56: 201-249.
Terada, Michiko. 1991. *Incorporation and argument structure in Japanese*. Doctoral dissertation, University of Massachusetts, Amherst, Amherst: GLSA.
Tenny, Carol. 2000. Core events and adverbial modification. In *Events as grammatical objects,* eds. Carol Tenny and James Pustejovsky, 285-334. Stanford: CSLI.
Travis, Lisa. 2000. Event structure in Syntax. In *Events as grammatical objects,* eds. Carol Tenny and James Pustejovsky, 143-185. Stanford: CSLI.
Vogel, Irene.1989. Prosodic constituents in Hungarian. *Acta Linguistica Hungarica* 39: 331-351.

Wehrli, Eric. 1986. On some properties of French clitic *se*. In *Syntax and semantics, Vol. 19: The syntax of pronominal clitics*, ed. Hagit Borer, 263–283. New York: Academic Press.
Williams, Edwin. 1981. Argument structure and morphology. *The Linguistic Review* 1: 81-114.