VERB INCORPORATION AND CAUSATION TYPES

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1. Introduction[1]

Causatives of transitive eventive verbs like *eat*, as in *Alice made Don eat some cabbage*, are invariably ambiguous between the interactive and circumstantial causation readings (see also Belvin this volume). The interactive reading is defined by the interaction between the causer and the causee. In this case, Alice acts on Don by either coercing or persuading him to eat the cabbage. This interaction is missing in the circumstantial reading, where the causer only sets up the situation, and lets the causee respond. In this case, Alice brings about the event of Don's eating some cabbage by merely manipulating the circumstances, and without acting on him in any way. For example, she might place small quantities of cabbage in his favorite meal, or she might tell him about some study that shows that eating cabbage lowers cholesterol.[2]

This ambiguity might appear to be purely pragmatic, but it is not. Each reading is blocked in a well-defined syntactic context: The interactive reading is blocked when unaccusative verbs like *arrive* and *appear* are causativized in languages that form causatives by affixation on a root verb, such as Turkish and Hungarian. In the following examples, the causer may not have forced the causee to arrive on time, nor may the magician have forced the sun to appear in the sky, a somewhat unusual but otherwise perfectly imaginable situation given that the subject is a magician.

(1) Turkish:
Ahmet Ayşe-yi toplantı-ya   zaman-ı-nda   var-dır-dı
A.-NOM A.-ACC meeting-DAT time-3SG-LOC arrive-CAUSE-PAST-3SG
'Ahmet made Ayşe arrive on time for the meeting'

(2) The more familiar terms 'direct' and 'indirect' causation are confusing in cases of multiple causatives. In a causal chain containing intermediate causees that are omitted in the clause, the relation between the initial causer and the final element would be quite indirect even if each link is a case of interactive causation. For example, a situation where A causes B to cause C to eat D can be expressed as *A eat-cause-caused D to C* in Turkish, in which the relation between *A* and *C* is a case of indirect causation regardless of whether the intermediate links between A and B, and B and C are interactive or circumstantial.

(2) Hungarian:

A   varázsló   megjelentette   a   napot   az éjszakai égbolton
the magician-NOM PERF-appear-CAUSE-PAST the sun- AC the nightly sky-LOC
'The magician made the sun appear in the night sky'

These causers may only create the circumstances in which the causee arrives on time or appears in the sky. In (1), Ahmet may give Ayşe a ride or let her leave early, but he cannot issue an order. In (2), the magician may create an illusion, but cannot act on the sun itself.

The causative predicate, abstractly represented here as CAUSE, forms a single word with the causativized verbs in the examples above. By contrast, CAUSE remains a separate predicate in the periphrastic causatives of English and Greek, where unaccusative verbs allow the interactive reading. In the sentences below, the causer can act directly on the causee and force them to arrive on time or appear on stage.

(3) English:
Sue made Bill arrive on time for the meeting

(4) Greek:
O   maghos ekane   na emfanisti   to kouneli sti   skini
the magician made-3SG SUB appear-3SG-SUBJ the rabbit   at-the stage
'The magician made the rabbit appear on stage'

It will be argued in section 3 that the availability of the interactive causation reading is determined by whether the incorporation of the lower verb into the higher CAUSE is overt (morphological causatives) or covert (periphrastic causatives).

The circumstantial reading, on the other hand, is not available in the null causative construction where verbs like *run* and *march* are transitivized in English. This can be seen in the examples below, which have only the interactive reading, i.e., the causer must act directly on the causee to force them into running, jumping, or marching.

(5)   a. Bill ran the horses around the corral
      b. Sue jumped the lions through the hoop
      c. The commander marched the soldiers to the stadium

It is not possible in (5) that Bill runs the horses around the corral by creating a running path and then scaring the horses, neither can Sue jump the lions through the hoop by starting a fire in their cage and placing the hoop in front of the gate, nor can the commander march the soldiers to the stadium by giving them some incentive or pleading with them. All these would be instances of circumstantial causation, which is allowed in the periphrastic construction with *make*.

(6)   a. Bill made the horses run around the corral
      b. Sue made the lions jump through the hoop
      c. The commander made the soldiers march to the stadium

As will be shown in section 4, the distribution of the circumstantial reading is determined by whether or not CAUSE has phonetic content.

This paper is organized as follows. Section 2 derives both the interactive and circumstantial readings by associating the Patient role of CAUSE with different constituents. Section 3 shows how the syntactic level of verb incorporation into CAUSE determines the availability of the interactive causation reading, while section 4 establishes the same type of connection between the null versus overt morphology of CAUSE and the availability of the circumstantial reading. The discussion ends in section 5 with a brief note on the implications of this analysis in terms of verb typology.

2. The Causative Architecture and the Patient Role

Causation is a relation between a causer (an individual or an event) and a caused event. It is mediated by the predicate CAUSE, which is assumed here to be semantically and syntactically constant across languages although it varies with respect to its particular morphological realization in a given language. It surfaces as an affix in the cases of Turkish -DIr- and -t-,[3] Hungarian -tEt-, and Japanese -(s)ase-, but as a free-standing verb in the cases of English *make*, Greek *kano*, and French *faire*. In both types, the causativized verb is incorporated into CAUSE in the LF representation in order to form the verbal complex V-CAUSE, which allows the causation and the caused event to be interpreted as a single unified (complex) event. In morphological causatives, this verb incorporation takes place in the overt syntax, but it is covert in periphrastic causatives.

The predicate CAUSE takes a DP or a CP specifier depending on whether the causer is an individual or an event. Crucially, it selects different complements in different languages, determined by the ability of structures with multiple causatives to duplicate a Case. Turkish prohibits any instance of Case duplication, restricting the occurrence of nominative, accusative, dative, and *by*-phrase arguments to one per clause, regardless of the number of CAUSE predicates the clause might contain.

(7) Ahmet Ayşe *tarafından* Ali-ye Suna-yı koş-tur-t-tur-du
A.-NOM A *by* A.-DAT S.-ACC run-CAUSE-CAUSE-CAUSE-PAST-3SG
'Ahmet made Ayşe make Ali make Suna run'

Having exhausted all suitable Cases and postpositions, the clause in (7) would fail to support a fifth overt argument when another causative layer is added into the structure.[4] This means the complement of CAUSE in Turkish is a phrase that is small enough to exclude all Case licensing projections, i.e., it is a VP. The situation is very different in English, where each iteration of CAUSE (*make*) provides an additional accusative Case.

(8) Bill made *them* make *him* make *us* eat some cabbage

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(3) Capital letters indicate segments with phonological alternates due to voicing assimilation and vowel harmony. The distribution of -DIr- and -t- is phonologically determined: -t- immediately after vowels and the liquids /r/ and /l/, and -DIr- elsewhere. The irregular forms -Ar- and -Ir- occur only with a limited number of verbs that are lexically specified.

(4) It would, however, tolerate as many causative morphemes and null (pro) causees as one is willing to add.

The duplication of the accusative indicates that CAUSE takes a complement that contains the accusative licensor AgroP in English.[5]

Apart from the causer and the caused event, it is not clear whether CAUSE requires a third argument that corresponds to the causee. The interactive reading clearly demands a prominent causee in the structure, suggesting that CAUSE may be a three-place predicate. On the other hand, the circumstantial reading is strictly a relation between the causer and the caused event that does not involve any causee, and this suggests that CAUSE may be a two-place predicate. Alsina (1992) resolves this conflict by assigning the same lexical frame to both CAUSEs and derives these two readings by associating its Patient role with alternating arguments. He argues that CAUSE is a three-place predicate that takes an Agent, a Patient, and a predicative argument that stands for the caused event. The Agent role associates with the causer, and the Patient role 'fuses' with one of the arguments inside the predicative category.

(9)   CAUSE < *ag, pat*, PRED <...θ...>>

If Patient fuses with the external argument of PRED, i.e, the causee, the result is the interactive causation reading (Alsina's 'variant 1'). If it fuses with the internal argument of PRED, the interpretation is similar to the circumstantial causation reading (Alsina's 'variant 2').

The appealing aspect of Alsina's (1992) proposal to associate the Patient of CAUSE with alternative consituents is that it makes use of the affectedness component of the Patient role in deriving these distinct readings. The Agent of CAUSE initiates the causation by acting on the constituent that becomes the Patient of CAUSE in both readings. It appears, however, that a more accurate interpretation of the formulation in (9) is that it depicts a two-place predicate rather than a three-place predicate, since it provides only the Agent and Patient roles, and crucially, the Patient role itself does not introduce any novel argument. Instead, it associates with some argument that is already generated inside the predicative category. So (9) is a combination of two frames: a thematic frame where the Patient has no corresponding argument, and a subcategorization frame in which the predicative element PRED has no corresponding thematic role. The divergence between the categorial selection and thematic licensing in the interactive reading creates the illusion of CAUSE being a three-place predicate.
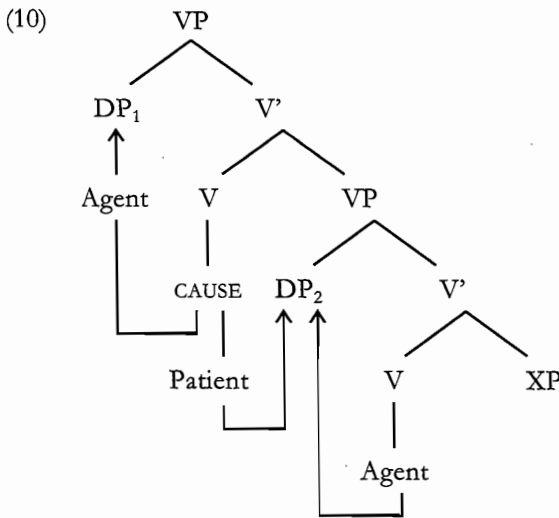
Although it is an unconventional move, Alsina's separation of categorial selection and thematic licensing is fully compatible with frameworks that treat thematic relations as purely interpretive phenomena, such as Gruber's (1965) original work, and especially, Jackendoff's (1972, 1990) theory (for related ideas see some of the papers in this volume, e.g. Belvin, Davis, Demirdache and Minkoff).[6] This paper

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(5) Some languages provide intermediate options. For example, French can duplicate dative and *by*-phrase licensors, but not the accusative, while Nweh (Grassfield Bantu) duplicates nominative phrases. It appears that the unmarked option for CAUSE in the UG is a VP complement, and language learners posit a larger constituent when they encounter overt evidence in the form of clauses with multiple causatives.

(6) The theory of thematic relations in the mainstream Government and Binding literature, as well as its more recent offshoots, originates from Fillmore's (1968) Case Grammar, where arguments are admitted into the (deep) structure by virtue of their thematic roles. The traditional θ-criterion (Chomsky 1980) preserves this aspect of Fillmore's theory in the classical GB. By contrast, Gruber and Jackendoff treat categorial selection as a structure-

follows their line of research, and recognizes the split between categorial and thematic licensing. It assumes that CAUSE subcategorizes for a predicative complement, the VP (or a Case licensing projection that contains the VP), and specifies only the Agent and Patient roles. The Agent uniformly associates with the specifier of CAUSE,[7] but the Patient can associate with different constituents, which leads to the alternative readings discussed above.

Given that CAUSE is a two-place predicate that takes a VP complement, the causee must be generated inside the complement VP as its specifier. In the interactive reading, where *Alice made Don eat some cabbage* means Alice coerced or persuaded Don, it is the causee, *Don*, that is affected by the act of the causer, *Alice*. The association of the causee with the Patient role establishes an interaction between the causer and the causee. Patient association across a VP boundary is illustrated in the schematic D-structure representation in (10).[8] Note that this paper follows Stowell (1981) in assuming that thematic role association is a case of coindexation between the position of an argument and the corresponding slot in the thematic frame in the lexical representation of the predicate.

(10)

$$
\begin{array}{c}
\text{VP} \\
\diagup \quad \diagdown \\
\text{DP}_1 \quad\quad \text{V'} \\
\end{array}
$$

To simplify the discussion, the complement of CAUSE is given as a VP in (10) instead of some larger constituent. XP stands for whatever complement the lower V may have, i.e., *some cabbage* in the current example, and the causee DP_2 is arbitrarily given as the Agent of the lower V. In this configuration, the causee acquires a composite role that combines Agent and Patient roles, thus capturing the dual nature of the causee in this reading as the argument that is acted on by the causer while simultanously performing the act denoted in the lower VP, e.g., the act of eating when the lower verb is *eat*.

Patient association across an XP boundary is not unique to interactive causation. Presumably, this procedure is used in the other cases of secondary predication (small clause structures) as well. This is most visible in the resultative construction.

(11)   a. Bill pounded the metal flat   b. Sue licked her plate clean

The objects in (11), *the metal* and *her plate*, are the Patient arguments of the main predicates *pound* and *lick*, and they are thematically linked to the secondary predicates, *flat* and *clean*.[9] Likewise, the specifiers of the AP and VP complements of perception verbs associate with the Neutral role across their small clause boundary instead of the Patient.[10]

(12)   a. I saw Bill angry   b. I heard Sue sing in the shower

In (12a), *Bill* is both the Neutral argument of the perception verb *see* and the Experiencer argument of *angry*, while *Sue* in (12b) is the Neutral of *hear* and the Agent of *sing*.[11]

Crucially, Patient association across the VP boundary in causatives must remain a local phenomenon. It should not extend to the XP complement of V in (10), or any other constituent lower than the causee DP_2. This is especially important in cases of iterated causatives that have three or more layers of VPs (for related discussion see Belvin this volume.)

(13) $[_{VP} \ DP_1 \ \text{CAUSE}_1 \ [_{VP} \ DP_2 \ \text{CAUSE}_2 \ [_{VP} \ DP_3 \ V \ DP_4]]]$

Abstracting away from the Case licensing positions, (13) would be a rough representation of the VP embeddings of a sentence like *Alice made Bill make Don eat some cabbage* at D-structure. Without any locality requirement on Patient association, arguments inside the lowest VP in (13), DP_3 and DP_4, would be able to associate with the Patient of CAUSE_1, just as the XP complement of the lower V would with the Patient of CAUSE in (10). Thus, a relatively straightforward structure like (13) would yield numerous combinations of Patient association that are not attested. For example,

(9) The object does not associate with a role across the XP boundary in all instances of the resultative construction. Unergative verbs like *laugh* also take resultative objects, as in (i), but they do not provide any thematic role for them, just as they do not provide any role for their cognate objects, as seen in (ii).

(i) We laughed Bill out of the room   (ii) Sue laughed a hearty laugh

(10) Originally defined by Rozwadowska (1988), Neutral is the unaffected version of the traditional Patient role.

(11) It would be reasonable to speculate that the same procedure is operative in the serial verb construction and the Larsonian double-layered VP structures with three-place predicates like *give*. The latter case is presented and argued for in Kural (1996).

DP_3 would be able to associate with the Patient of CAUSE$_2$, and DP_4 with the Patient of CAUSE$_1$, which would be describing an event where Bill acts on Don, Alice acts on the cabbage, and Don eats some cabbage as a result, e.g., Bill forcing Don to eat the cabbage while Alice is cutting it up in little pieces. However, this is not an interpretation one can plausibly ascribe to *Alice made Bill make Don eat some cabbage.*

The kind of locality needed to block such unwanted readings is a familiar type of minimality condition reminiscent of Aoun's (1985) Generalized Binding, Rizzi's (1990) Relativized Minimality, and Chomsky's (1991) Economy Principles.

(14) The Intervention Effect:
An XP may not associate with a thematic role R provided by a predicate P if there is a YP such that P c-commands YP, and YP c-commands XP.

According to (14), an argument cannot associate with the Patient of CAUSE across another argument position, which means only the highest specifier position is accessible for this Patient role. Since it prevents the internal argument of a V from associating with the Patient of CAUSE, it also effectively eliminates Alsina's (1992) derivation for circumstantial causation, i.e., the reading of *Alice made Don eat some cabbage* in which Alice only creates the circumstances for Don's cabbage eating, perhaps by eating everything else in the refrigerator or by placing the cabbage in his favorite meal. The specifier *Don* intervenes between the object of the lower VP, *some cabbage*, and CAUSE. However, there is a much closer target for the Patient role that is not excluded by (14), and that is the root node of the entire complement VP. After all, it is the internal argument of CAUSE, and therefore, a natural candidate to associate with the Patient role. This VP contains all the relevant components of the caused event, i.e., the arguments and the predicate, so it encompasses the event as a whole, which is what is being affected in this reading. When a VP becomes the Patient of CAUSE, it is interpreted as the causer creating the caused event by manipulating the circumstances, without interacting with any participant of the caused event. The following is a schematized diagram of the D-Structure thematic relations under the circumstantial interpretation.

(15)
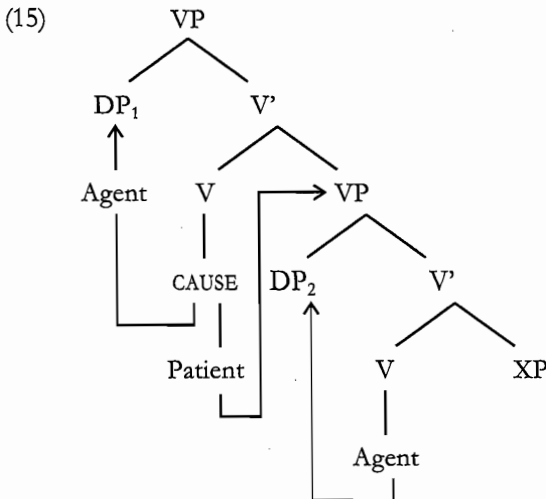
In *Alice made Don eat some cabbage*, the lower VP that associates with the Patient of CAUSE represents Don's cabbage-eating event. Subcategorization and thematic licensing converge in this reading, so CAUSE is correctly perceived as a two-place predicate.

The distribution of the Patient of CAUSE plays a key role in accounting for the facts mentioned in the beginning: (1) Unaccusative verbs like *arrive* do not allow the interactive reading in languages that have overt verb incorporation. It will be argued in section 3 that this is due to the position of the causee at the level that the verb incorporates into CAUSE. (2) Null causatives, which are used in transitivizing verbs like *run*, disallow the circumstantial reading. This will be derived in section 4 from the type of syntactic operation that produces a null causative, as opposed to an overt causative. Each account will rely on assumptions that are novel in some respects, but essentially well-motivated within the representational view of the syntax, or a more constrained version of the derivational view that discards rule reordering effects and adopts the guideline that syntactic principles cannot be satisfied between levels.

3. The Absence of Interactive Causation

3.1. The Phenomenon

Unaccusative verbs can be causativized in Turkish, but only with the circumstantial causation reading, excluding interactive causation.

(16) a. Ahmet   Ayşe-yi   toplantı-ya   zaman-ı-nda   var-dır-dı
          A.-NOM   A.-ACC   meeting-DAT   time-3SG-LOC   arrive-CAUSE-PAST-3SG
          'Ahmet made Ayşe arrive on time for the meeting'
      b. *[Al-dı-ğ-ı   emir]   Ayşe-yi   toplantı-ya   zaman-ı-nda
          get-PAST-COMP-3SG   order-NOM   A.-ACC   meeting-DAT   time-3SG-LOC
          var-dır-dı
          arrive-CAUSE-PAST-3SG
          'The order she got made Ayşe arrive on time for the meeting'

(17) a. Ali   Ahmet-i   hastalan-dır-dı
          A.-NOM   A.-ACC   be.sick-CAUSE-PAST-3SG
          'Ali made Ahmet become sick'
      b. *Salmonella   Ahmet-i   hastalan-dır-dı
          salmonella-NOM   A.-ACC   be.sick-CAUSE-PAST-3SG
          'Salmonella made Ahmet become sick'

As mentioned earlier, Ahmet can make Ayşe arrive on time only by creating the right circumstances in (16a), such as giving her a ride or letting her leave early. Likewise, Ali can cause Ahmet to become sick by having him eat bad food in (17a).[12] The causative becomes ungrammatical if the causer is the type of thing that, in the speakers' understanding of the world, can work only by acting on the causee, such as the order that Ayşe receives in (16b), or the actual agent of the sickness, *salmonella* in (17b).

(12) I have trouble interpreting (17a) as Ali being infected with some contagious disease and passing it on to Ahmet. This should not be very surprising since it would be a form of the interactive reading in (17b). The subject initiates the sickness in both cases, in a way that is if not medically accurate, certainly a linguistically relevant conception of the world.

There are two factors that contribute to the absence of the interactive reading in (16) and (17): the unaccusativity of the causativized verb and the morphological nature of the causative. These elements can be isolated as follows. The interactive interpretation is available with an unergative verb in the lower VP.

(18) a. [Al-dı-ğ-ı   emir]   Ayşe-yi toplantı-ya
          get-PAST-COMP-3SG order-NOM A.-ACC meeting-DAT
          yönel-t-ti
          move-CAUSE-PAST-3SG
          'The order she got made Ayşe move towards the meeting'
      b. Salmonella   Ahmet-i kus-tur-du
          salmonella-NOM A.-ACC vomit-CAUSE-PAST-3SG
          'Salmonella made Ahmet vomit'

The causers still operate by directly acting on the causee: the order forces Ayşe to move towards the meeting, and salmonella is the agent that causes Ahmet to vomit. The difference between these examples is that *var* 'arrive' and *hastalan* 'become sick' are unaccusative verbs,[13] while *yönel* 'move towards' and *kus* 'vomit' are not.[14]

The other factor is the morphological nature of the causative. Unlike the causative in (17b), a corresponding sentence in the light verb construction with *et* 'do/make' in (19) allows *salmonella* as an interactive causer.

(17) b. *Salmonella   Ahmet-i hastalan-dır-dı
           salmonella-NOM   A.-ACC be.sick-CAUSE-PAST-3SG
           'Salmonella made Ahmet become sick'

(19)   Salmonella   Ahmet-i hasta et-ti
          salmonella-NOM   A.-ACC sick   do-PAST-3SG
          'Salmonella made Ahmet sick'

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(13) Deadjectival verbs derived with -*lAn*- are always unaccusative, which sharply contrasts with those that are derived with -*lAş*-.

    (i)   Ekleme kumaş   pantolon-u bol-laş-tır-dı/* bol-lan-dır-dı
          additional fabric pants-ACC   loose-LAŞ-CAUSE-PAST-3SG/loose-LAN-CAUSE-PAST-3SG
          'The additional fabric made the pants loose'
    (ii) Çamaşır suyu çarşaflar-ı beyaz-laş-tır-dı/* beyaz-lan-dır-dı
          bleach   sheets-ACC white-LAŞ-CAUSE-PAST-3SG/white-LAN-CAUSE-PAST-3SG
          'The bleach made the sheets white'

The causative forms *bollandır* and *beyazlandır* are alright with a human subject, which would not be acting directly on the pants or the sheets.

(14) The most reliable test for unaccusativity in Turkish is whether the verb allows specific event reference when passivized. Unaccusative passives have the generic interpretation, which is only optional with the passives of unergatives and transitives (Baker, Johnson, and Roberts 1989; Özkaragöz 1986; Sezer 1991). The passives of *var* 'arrive' and *hastalan* 'become sick' cannot describe a specific event, but the passives of *yönel* 'turn towards' and *kus* 'vomit' can.

    (i)   Şu   an-da   toplantı-ya   yönel-in-iyor/*var-ıl-ıyor
          that   moment-LOC meeting-DAT   move-PASS-PRES-3SG/arrive-PASS-PRES-3SG
          'At the moment, one is/people are moving towards/arriving at the meeting'
    (ii) Şu   an-da   doğ-u-da   kus-ul-uyor/*hastalan-ıl-ıyor
          that   moment-LOC east-LOC   vomit-PASS-PRES-3SG/be.sick-PASS-PRES-3SG
          'At the moment, people are vomiting/becoming sick in the east'

The passive morpheme is an -*(I)n*- after vowels and the liquid /l/, and an -*(I)l*- elsewhere.

The range of readings allowed in the light verb construction in Turkish is the same as what is observed in the periphrastic causatives of English and Greek.

(20) English:
    a. Sue made Bill arrive on time for the meeting
    b. The magician made the rabbit appear on stage

(21) Greek:
    a. [I apili   tou   Nikou]   mekane   na
        the threat the-GEN Nikos-GEN 1SG.ACC.CL-made-3SG SUBJ
        ftaso   stin   ora   mou
        arrive-1SG-SUBJ at-the time   1SG.GEN.CL
        'Nikos' threat made me arrive on time'
    b. O   maghos ekane   na emfanisti   to kouneli sti   skini
        the magician made-3SG SUB appear-3SG-SUBJ the rabbit at-the stage
        'The magician made the rabbit appear on stage'

Morphological affixation is absent in both the Turkish light verb construction and the periphrastic causatives of English and Greek, where the verb incorporation is delayed until LF.[15] The generalization that emerges here is the following.

(22) The Restriction on Interactive Causation:
    The causative of an unaccusative verb V does not allow the interactive causation reading if V is incorporated into CAUSE at S-structure.

It will be argued below that this restriction follows from the interaction between the syntactic levels of verb movement and thematic role association.
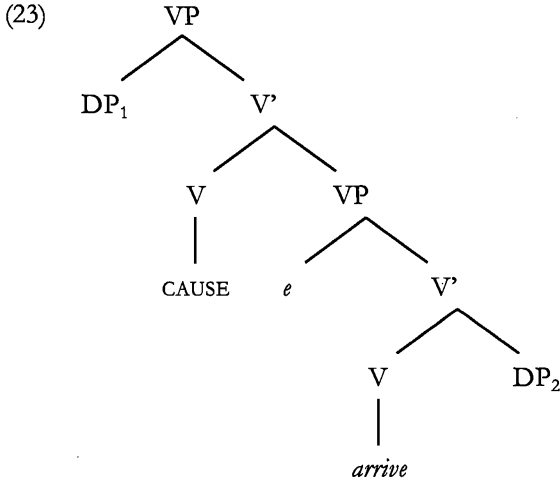

3.2. The Account

The defining characteristic of unaccusative verbs is that their surface subjects start out as internal arguments (Perlmutter 1978, Burzio 1986). The D-structure illustrated in (23) shows the basic architecture of a VP headed by an unaccusative verb, *arrive*, embedded under CAUSE (see also Davis this volume). It is a schematized representation that leaves out potential Case licensing positions between VPs.

The interactive reading requires the Patient of CAUSE to associate with the causee DP_2, generated as the complement of the lower V in (23). The Intervention Effect in (14) qualifies the specifier of the unaccusative VP as an intervener with respect to its internal argument.[16] As a result, the DP2 in (23) is not accessible for the Patient

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(15) It is assumed in this work that verb incorporation into CAUSE is motivated by the need to create a complex predicate that corresponds to the complex event that is being described. This procedure is also required by the widely accepted view that LF representations are constant across languages.

(16) The status of the vacant specifiers is a complicated issue that cannot be resolved within the confines of this paper. There are various proposals in the literature, most recently by Kayne (1994) and Chomsky (1994), that produce the specifier position only by attaching a constituent to an X', which naturally disallows vacant specifiers. However, none of these theories ban syntactic placeholders from producing the specifier position before being replaced by some other constituent after movement. This is, in fact, more or less the way expletives function at the nominative Case position. From this perspective, the vacant specifier in (23) may well be such a semantically

of CAUSE, which means the interactive causation reading can never be established at D-structure, i.e., the tail ends of chains, with an unaccusative verb in any language.

(23)

```
                    VP
                   /  \
               DP₁      V'
                       /  \
                      V     VP
                      |    /  \
                   CAUSE  e    V'
                             /  \
                            V    DP₂
                            |
                          arrive
```

The internal argument of an unaccusative verb becomes accessible for the Patient role of CAUSE at S-structure by moving up to or passing through the specifier of the complement VP. The result is schematically represented in (24). Note that CAUSE, DP_1, and DP_2 may have moved to some higher positions at this level, in which case the corresponding constituents in (24) would be traces or copies.

(24)

```
                    VP
                   /  \
               DP₁     V'
                      /  \
                     V    VP
                     |   /  \
                  CAUSE DP₂  V'
                            /  \
                           V    DP₂
                           |    |
                         arrive t₂
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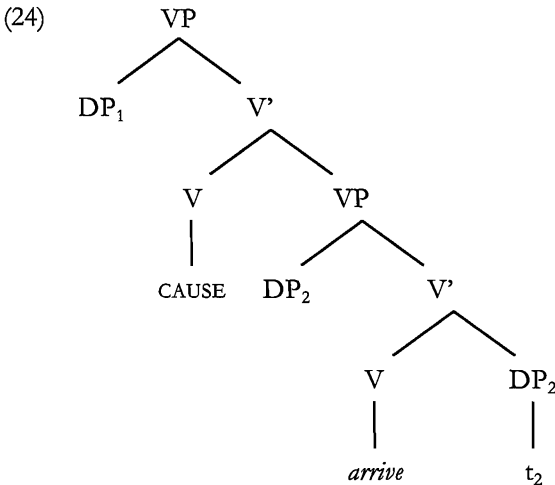
empty placeholder that is later replaced by DP_2 during the derivation. Alternatively, the Intervention Effect in (14) can be reformulated in a way that makes reference to a closer governor or intervening head in the spirit of Chomsky (1986) rather than an intervening specifier.

Once DP_2 is raised to the highest specifier inside the complement of VP, it becomes viable for the Patient of CAUSE. This is essentially the procedure that licenses the interactive reading with unaccusative verbs in languages like English and Greek. Crucially however, Patient association at S-structure must be blocked in languages like Turkish and Hungarian, where the morphological causatives disallow the interactive reading. What separates languages of this type from those like English and Greek is the surface position of the causativized lower verb. The S-structure of morphological causatives is schematized in (25), where the lower verb has incorporated into CAUSE. As in (24), the constituents *arrive*-CAUSE, DP_1, and DP_2 may have moved further up at this level, leaving behind traces or copies in (25).

(25)
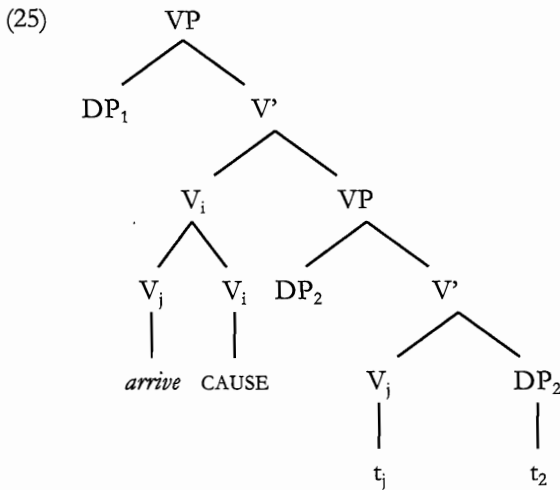
Since verb incorporation is the only substantial diference between these two structures, it seems plausible to suggest that DP_2, or its trace or its copy, fails to associate with the Patient of CAUSE in (25) precisely because *arrive* has adjoined to CAUSE. Intuitively, this is due to a general constraint on thematic role association, according to which an argument can only associate with the role of a simplex predicate. That is, it can receive the appropriate thematic index from a predicate as long as it is not a part of a complex predicate. Once *arrive* adjoins to CAUSE, the result is *arrive*-CAUSE, which is neither *arrive* nor CAUSE. This constraint is stated below as an opacity condition.

(26)   Opacity of Role Association:
        For a predicate P, argument A, and thematic relation R, A bears the relation R with respect to P iff A bears the relation R with some subpart of P.

As mentioned for *arrive*-CAUSE, the verbal complex V-CAUSE is composed of the parts V and CAUSE, and it is neither V nor CAUSE. According to the Opacity Condition, an argument bears the Patient-of-CAUSE relation with the complex predicate V-CAUSE only if it already bears the Patient-of-CAUSE relation with CAUSE. In other words, it may not become the Patient of CAUSE at a level where CAUSE

becomes part of the complex predicate V-CAUSE. As a result, an argument must associate with the Patient of CAUSE at a level before V incorporates into CAUSE.[17]

Verb incorporation takes place at S-structure in morphological causatives, so Patient association must be complete at D-structure. At this level, however, the sole argument of the unaccusative verb is too low to become the Patient of CAUSE across the intervening specifier, which leaves the VP as the only viable candidate for the Patient role, and circumstantial causation as the only possible reading. This contrasts with periphrastic structures, where the verb incorporation that produces a unified complex event is delayed until LF, leaving S-structure as a viable level for the causee to associate with the Patient of CAUSE. As a result, although D-structure universally fails to establish the thematic relations that yield interactive causation with unaccusative verbs, periphrastic causatives can tap into the option of Patient association at S-structure to produce this reading.[18]

Finally, note that no major point has been compromised by the simplified view of the periphrastic structures of English, where all intermediate projections between VPs are omitted. As mentioned earlier, the ability of causatives to duplicate the accusative Case indicates that CAUSE selects a larger constituent that contains the accusative licensor AgroP in English.

(8)　Bill made *them* make *him* make *us* eat some cabbage

Thus, a more accurate representation would have an AgroP lying between each VP layer.

(27)
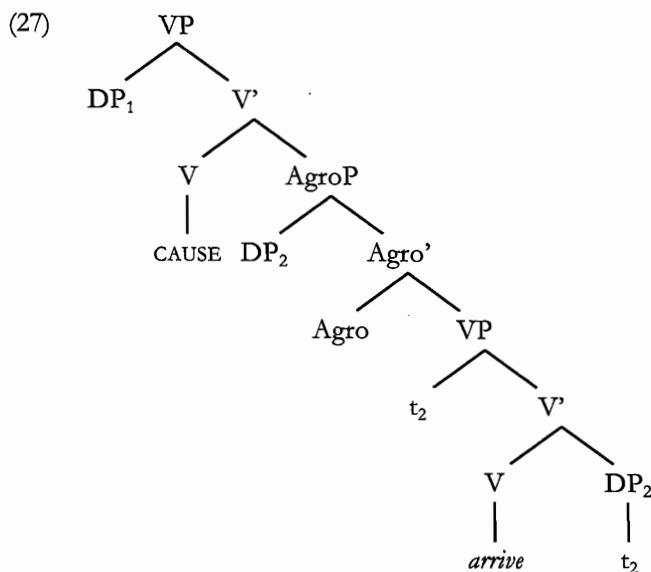
(17) Under a loose version of the derivational view, one can move DP$_2$ first, associate it with the Patient of CAUSE, and then move the lower V. For this reason, the account proposed here requires syntactic principles (or features) to be checked only at the relevant levels, disregarding all intermediate stages. This is provided by both the representational view and a highly constrained version of the derivational view.

(18) Word formation is clearly a factor in the complex predicate formation. Whether or not this paradigm can be reduced entirely to word formation remains to be seen.

The fronting of the DP$_2$ in (27) is evident in the word order of *Sue made Bill arrive (on time)*, where *Bill* precedes *arrive* even though it is generated as its internal argument. The determination of whether this argument moves to [Spec, VP] or to [Spec, AgroP] requires data that is more elaborate than what is being considered here. Nevertheless, it might be reasonably conjectured that the DP$_2$ in (27) moves to [Spec, AgroP] in these structures, where it can successfully associate with the Patient of CAUSE.[19] As a general rule, the interactive reading becomes available in periphrastic structures when the DP$_2$ reaches the highest specifier inside the complement of CAUSE at S-structure.

3.3. An Apparent Exception

It was explicitly claimed above that morphological causatives of unaccusative verbs should not yield the interactive reading in any language. At first, Japanese and Korean appear as counterexamples to this generalization, since it is possible to interpret the following as describing interactive causation between the causers and the causees.

(28)   Korean:
        Mapepsa-ka   thaokki-lul   mutay-ey   nathana-key   hay-ess-ta
        magician-NOM   rabbit-ACC   stage-LOC   appear-CAUSE   do-PAST-INDIC
        'The magician made the rabbit appear on stage'

(29)   Japanese:
        Taroo ga   Hanako o   zikan-doori-ni   tuk-ase-ta
        T.   NOM   H.   ACC   on.time   arrive-CAUSE-PAST
        'Taro made Hanako arrive on time'

Unlike the comparable Turkish and Hungarian sentences given in (1) and (2), the magician can directly act on the rabbit to make it appear on stage in the Korean (28), and Taro could be forcing Hanako to arrive on time in the Japanese (29).

However, this is not a genuine discrepancy. There is a substantial difference between the properties of the causative morphology in Turkish and Hungarian on the one hand, and Korean and Japanese on the other. The ability of the causative morpheme to duplicate is quite robust in Turkish, and it is also possible to an extent in Hungarian, whereas Korean and Japanese do not allow any such duplication. They allow only a single morpheme to be overt even when the situation that is described in the clause requires multiple layers of causative VPs. Therefore, a clause with a single causative morpheme is always ambiguous in these languges with respect to the number of causative layers it has.

---

(19) Taking this position one step further, it seems equally plausible that objects uniformly move to [Spec, AgroP] at S-structure in English. This would explain why shifted indirect objects occur in the same position (immediately postverbal) as direct objects.

        (i) Bill gave Mary a present   (ii) Bill gave a present to Mary

This would suggest that the verb moves to a position higher than the AgroP, though it remains lower than the TP, as suggested by facts regarding VP-deletion and *do*-support.

(30) Korean:
      Bill-i   Mary-lul   talli-key   hay-ess-ta
      B.-NOM   M.-ACC   run-CAUSE   do-PAST-INDIC
      'Bill made Mary run'

(31) Japanese:
      Hanako   ga   Taroo   o   hasir-ase-ta
      H.   NOM   T.   ACC   run-CAUSE-PAST
      'Hanako made Taro run'

The immediate reading of (30) and (31) involves only two inividuals, the causer
and the runner. However, these sentences may also describe situations with three
individuals where the causer acts on some unnamed third party, say Sue or Ziro, that
forces Mary and Taro to run. This particular interpretation is not possible in Turkish
as long as the clause has a single causative morpheme. For example, the causation in
(32a) below can involve only two participants, the causer and the runner. A third
individual is involved only if there is a second causative morpheme, as in (32b).[20]

(32) a. Ahmet   Ali-yi   koş-tur-du
          A.-NOM   A.-ACC   run-CAUSE-PAST-3SG
          'Ahmet made Ali run'
      b. Ahmet   Ali-yi   koş-tur-t-tu
          A.-NOM   A.-ACC   run-CAUSE-CAUSE-PAST-3SG
   'Ahmet made someone make Ali run'

The causative layers are quite transparent in Turkish due to the ability of the
alternating morphemes -DIr- and -t- to iterate. Likewise, Hungarian can combine fut
'run' with the causative morphemes to produce futtat 'run-CAUSE' and futtattat 'run-
CAUSE-CAUSE', though the phonological repetition after the second -tat- starts
degrading the sentences.

The ability of the causative morpheme to duplicate is significant in this
discussion because of an interesting effect it has in Turkish. The interactive reading
becomes possible with unaccusative verbs when the causative morpheme is doubled.

(33) a. [Al-dı-ğ-ı   emir]   Ayşe-yi toplantı-ya   zaman-ı-nda
          get-PAST-COMP-3SG   order-NOM A.-ACC   meeting-DAT   time-3SG-LOC
          var-dır-t-tı
          arrive-CAUSE-CAUSE-PAST-3SG
          'The order she got made Ayşe arrive on time for the meeting'
      b. Salmonella   Ahmet-i   hastalan-dır-t-tı
          salmonella-NOM   A.-ACC   be.sick-CAUSE-CAUSE-PAST-3SG
          'Salmonella made Ahmet become sick'

(20) The strict correlation between the causation event and the causative morpheme fails only when the act
of the intermediary participant is completely predictable. If I wanted my supervisor to sign some form, I could
hand it to the secretary and describe the situation with a single causative morpheme on imzala 'sign' (imzala-t)
because the secretary's act of passing the forms along to the supervisor would be deemed automatic. It is very
likely that the secretary is conceptualized as an extension of the supervisor in such situations (see the discussion
on instrument phrases in Kural 1996).

This is the only instance in Turkish where a causative layer does not overtly or covertly increase the number of participants in an event. It would, therefore, be consistent with the characteristics of Turkish causatives to posit an additional argument in these cases, albeit a covert one that does not introduce a new referent, i.e., a PRO. It would also be reasonable to assume that the unaccusative nature of the lower VP is not altered by adding a second layer of causative VP. Therefore, the argument that can freely associate with the Patient of CAUSE for the interactive reading must be generated as the specifier of the intermediate VP, i.e., the lower CAUSE in (34). Because of the way PRO-control operates, the overt internal argument must be generated as the specifier of the intermediate VP, headed by the lower CAUSE, and the sole argument of the unaccusative verb must be the PRO that it controls. The structure of vacuous causatives in Turkish is schematically represented in (34) below.

(34)
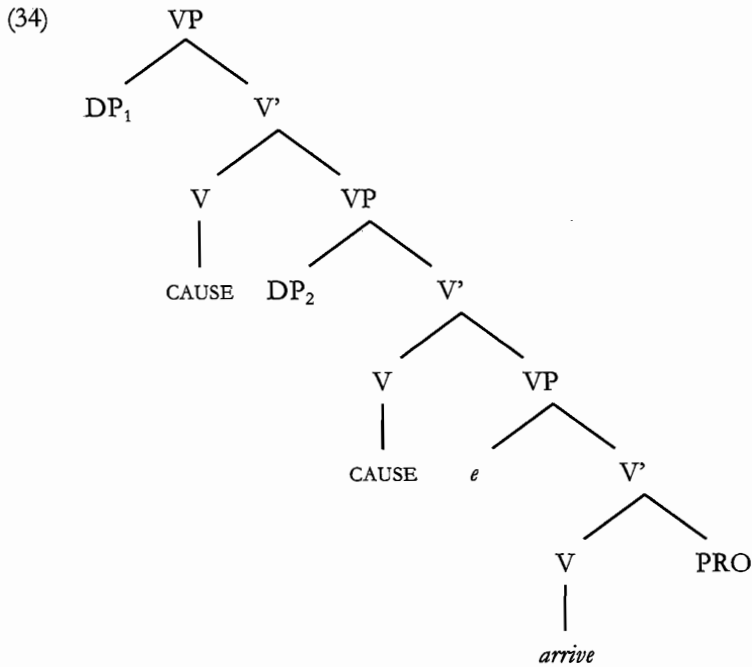
DP_2 is generated high enough to associate with the Patient of the higher CAUSE, and the PRO argument of the unaccusative verb is controlled by the DP_2.

The exact nature of the vacuous causatives is unclear at present. However, they provide a frame in which the interactive causation reading may obtain with unaccusative verbs in Korean and Japanese. The causative morpheme cannot be duplicated in these languages, so (30) and (31) are structurally ambiguous in terms of the number of causative layers they have. As long as the mechanism responsible for the interactive reading in the vacuous causatives of Turkish is also at work in the concealed causatives of Korean and Japanese, (30) and (31) would not be

violating the generalization made above.[21] For reasons that will be apparent in the following section, this reading is derived from structures where the lower CAUSE is the overt morpheme that introduces the overt causee, and the higher CAUSE is the phonetically null form that introduces the Agent.

4. The Absence of Circumstantial Causation

4.1. The Phenomenon

Recall that in the circumstantial reading of causative clauses like *Alice made Don eat some cabbage*, the causer, *Alice*, does not act on the causee, *Don*. Instead, she brings about the caused event by manipulating the circumstances of the participants introduced in the lower VP, i.e., *Don* and *some cabbage*. For example, Alice may place the cabbage in Don's favorite meal or leave newspaper articles around the house that discuss how eating cabbage prevents hair loss. This reading arises when the Patient role of CAUSE associates with its predicative complement, a VP or a Case licensing projection that contains the relevant VP. It essentially obtains under the traditional head-complement relationship, so it is not surprising that it is sensitive to the morphological properties of the head, i.e., CAUSE.

The circumstantial reading is notably missing in the transitivized versions of the verbs of motion in English, such as *run, march, walk,* and *jump*.[22]

(35) a. The horses ran around the field
      b. The tigers jumped through the hoop
      c. The soldiers marched towards the stadium

(36) a. The clown ran the horses around the field
      b. The lion tamer jumped the tigers through the hoop
      c. The commander marched the soldiers towards the stadium

The transitivized sentences in (36) do not have the same range of readings as the periphrastic causatives in (37) or the Turkish morphological causatives in (38) below.

(37) a. The clown made the horses run around the rink
      b. The lion tamer made the tigers jump through the hoop
      c. The commander made the soldiers march towards the stadium

(38) a. Palyaço atlar-ı   saha-nın   çevre-si-nde
        clown   horses-ACC field-GEN circumference-3SG-LOC
        koş-tur-du
        run-CAUSE-PAST-3SG
        'The clown made the horses run around the field'

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(21) An anonymous reviewer points out that this predicts (29) should mean something like *Taro forced Hanako to cause the circumstances to be such that she arrived on time* rather than *Taro forced Hanako to arrive on time*. The point is well-taken, though the difference may be too subtle to judge with any certainty, which is true for the Turkish equivalent in (33a), since the former reading entails the latter, as in the case of *Hanako arranged her circumstances such that she arrived on time* entailing *Hanako arrived on time*.

(22) Whatever I say about verbs of motion in this paper also holds for verbs like *freeze, close, sink,* and *break* that display a similar transitivity alternation. Those verbs are not discussed here in order to avoid other unrelated issues regarding their VP architecture.

    b. Aslan terbiyecisi kaplanlar-ı çember-den atla-t-tı
       lion   tamer   tigers-ACC hoop-ABL   jump-CAUSE-PAST-3SG
       'The lion tamer made the tigers jump through the hoop'
    c. Komutan   askerler-i   stad-a   doğru yürü-t-tü
       commander soldiers-ACC stadium-DAT towards walk-CAUSE-PAST-3SG
       'The commander made the soldiers march towards the stadium'

The interactive reading, with the causer forcing the causee, is readily available in all the sentences in (35) through (38). However, only the English periphrastic structures of (37) and the Turkish morphological causatives of (38) allow the circumstantial reading where the causer simply sets up the circumstances and lets the events run their natural course. For example, the clown may make the horses run around the field by starting a fire in their corral, the lion tamer may make the tigers jump through the hoop by placing their meal on the other side, or the commander may make the soldiers march towards the stadium by just telling them that marching is optional, but then promising an early furlough for those who march. The transitivized versions of *run*, *jump*, and *march* in (36) above do not allow these readings. In fact, they are typically interpreted as *the clown*, *the lion tamer*, and *the commander* actively forcing *the horses*, *the tigers*, and *the soldiers* to *run*, *jump*, and *march*. This generalization can be stated as follows.

(39) The Restriction on Circumstantial Causation:
     Null causatives do not allow the circumstantial causation reading.

A plausible account for this restriction requires a detailed analysis of null causatives.

The increase in the valency of motion verbs follows the causative pattern in which the subject of the monadic *run* corresponds to the object of the diadic *run*. Assuming CAUSE is the only predicate that can increase the valency of a verb, and especially in this manner, it can be concluded that the diadic *run* in (36a) is derived by combining the monadic *run* with CAUSE. The combination produces a single word, parallel to the morphological causatives of Turkish in (38), and unlike the isolated verbs of the periphrastic structures in (37). Even though they are similar in their morphological complexity, the transitive *run* differs greatly from the Turkish *koştur* 'make run' in terms of its morphological composition. The causative form *koştur* is phonologically distinct from the base form *koş* 'run', but the phonetic content of transitive *run* is identical to its base form, the intransitive *run*. These two types are distinguished in this paper by using the term 'segmental causatives' for the Turkish type, e.g., *koştur* and *koş*, and 'null causatives' for the English type, e.g., *run* and *run*.
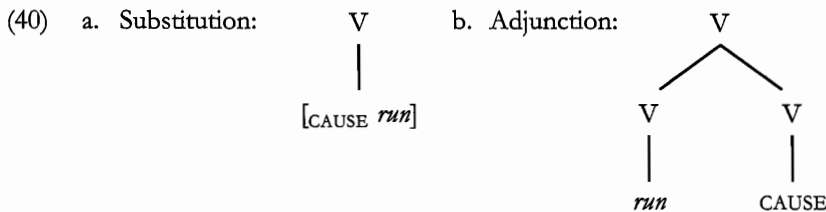
The circumstantial reading is available in the periphrastic and segmental causatives of (37) and (38), and blocked in the null causatives of (36). Clearly, these structures are differentiated by the phonological content of CAUSE, and the phonological properties of CAUSE is a determining factor in the thematic relations in a clause. It will be argued below that this connection is indirect, and that it is mediated by morphology and head movement: The phonologically null character of the causative indicates a particular morphological bracketing of the V-CAUSE complex, which is produced by the substitution type of head movement. The sub-

stitution operation, in turn, places restrictions on what can associate with the Patient of CAUSE, and excludes VP from the list of possible candidates.

4.2. The Account

In the absence of any phonological evidence, the increase in the valency is the only clue for the language learner to conclude that the transitive *run* is a complex predicate that is composed of the intransitive *run* and CAUSE. Otherwise, no phonological marking distinguishes it from ordinary transitive verbs like *hit* and *kiss*, which lack the semantics of causativized verbs. One could plausibly argue that the semantic evidence for the presence of CAUSE clashes in the learner's perception with the lack of any phonological evidence, and this conflict is resolved by positing a type of morphology that accommodates for both facts. This morphology would have to maintain a complex internal structure for the transitivized *run*, while combining the predicates in a way that makes them appear as a single unit externally. Suppose that this is done by having CAUSE and *run* form a union that is not separated by any bracketing, and merging them as [*run* CAUSE]. By contrast, the conventional bracketing [[*run*] CAUSE] is reserved for cases of overt causative morphology, where CAUSE and *run* can be identified as segments that are distinct, but not necessarily agglutinating. The language learner makes the choice between [*run*-CAUSE] and [[*run*] CAUSE] on the basis of phonological evidence. The nonsegmental [*run*-CAUSE] is posited in cases of null causatives, like the transitivized *run*, and [[*run*] CAUSE] is posited when CAUSE has overt phonetic content, as in the Turkish *koştur* 'make run'.

Assuming that morphological affixation must always have a corresponding head-movement in the syntax,[23] the syntactic correlate for the nonsegmental bracketing [*run*-CAUSE] would be the nonbranching attachment of *run* to CAUSE, and for the segmental bracketing [[*run*] CAUSE], it would be the branching type. Nonbranching structures are produced in the syntax by substitution, and branching structures, by adjunction. In terms of head movement, substitution and adjunction create the following structures.

(40)   a. Substitution: V   b. Adjunction: V
                                | /\
                        [CAUSE *run*]   V   V
                                                               | |
                                                              run   CAUSE

The merged predicates form a single unified head under V in the nonbranching structure created by substitution. The terminal node of V is CAUSE at D-structure, but after the substitution, the intransitive *run* replaces CAUSE and becomes the terminal node of V at S-structure. The procedure of replacement presumably eliminates the phonetic content of CAUSE, whose lexico-semantic properties remain on the V node,

(23) Regardless of whether heads pick up morphology during movement or simply check off features, there would still be a one-to-one correlation between syntax and morphology.

and transitivizes *run*. Crucially, V adopts the identity of *run* at S-structure, which by that point has become its terminal node. By contrast, the branching structure in (40b) has a more conventional interpretation. The lower V, *run*, is adjoined to CAUSE to form a multilevel head complex where each V remains a distinct node. The original terminal node of the higher V remains intact in this configuration, so the index of CAUSE is presented in this structure.

Indexation is a practical way for keeping track of the identity of constituents that have moved in the syntax. The convention in (41) below preserves the identity between heads and terminal nodes. It is not intended as a primitive of the theory, but as a corollary of the basic tenets of the X'-theory and lexical insertion (Chomsky 1970, 1980, 1994).

(41)   The Indexation Convention I:
        A head must bear the same index as its terminal node.

The main function of (41) in this context is to force the host V to adopt the index of the substituted V in the nonbranching structures.

(42)   a.   b.
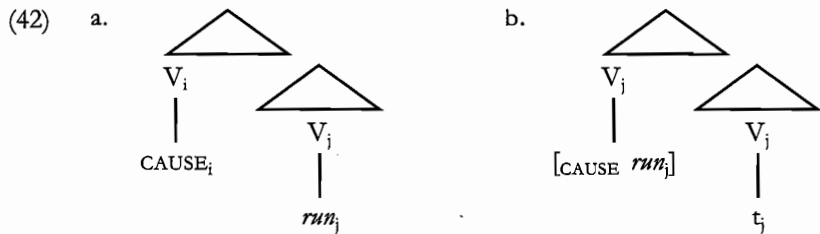
Once the lower verb *run* replaces the terminal node CAUSE, the V of CAUSE acquires the characteristics of *run*, while retaining those of CAUSE. In the circumstantial reading, the Patient of CAUSE associates with its complement VP, projected from the intransitive *run*.3

(43)
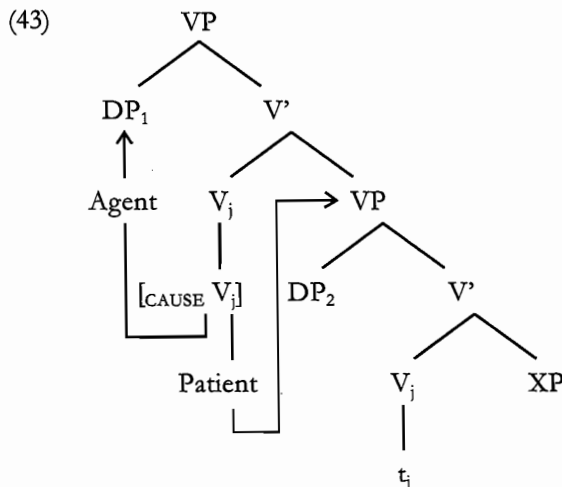
A basic axiom of the X'-theory is that all bar levels projected from an X-head are identical to X in every respect except for the bar level.[24] This is what enables the use of the X'-theory as a schema that merely provides the format in which lexical and functional elements appear in the structure, without contributing anything substantial. Assuming that indexation is an appropriate way to encode identity, the uniformity between the X-head and the X'-projections would be captured by making it compulsory for XPs to bear the same index as their heads, which actually follows from the fundamentals of the X'-theory.

(44) The Indexation Convention II:
      All bar level projections of a head X must bear the same index as X.

This convention dictates that the lower VP in (43) must have the same index 'j' as its head, V_j, i.e., a VP_j. When V_j substitutes for CAUSE to form $[_{CAUSE} run]$, the V_i of CAUSE adopts the index 'j' because of the Indexation Convention I in (41), and eventually passes it along the bar levels up to its VP by the Indexation Convention II to convert it to a VP_j. This series of reindexation leads to an S-structure configuration where the predicate V_j, i.e., $[_{CAUSE} run_j]_j$ takes its own maximal projection, the lower VP_j as its thematic (Patient) argument, which is a circularity that should be enough to rule out the circumstantial reading in null causatives.[25]

There is no such circularity problem when the specifier of the lower V, the causee, associates with the Patient of CAUSE for the interactive reading, because the index of the argument in the specifier position does not percolate up to the VP node.

(45)

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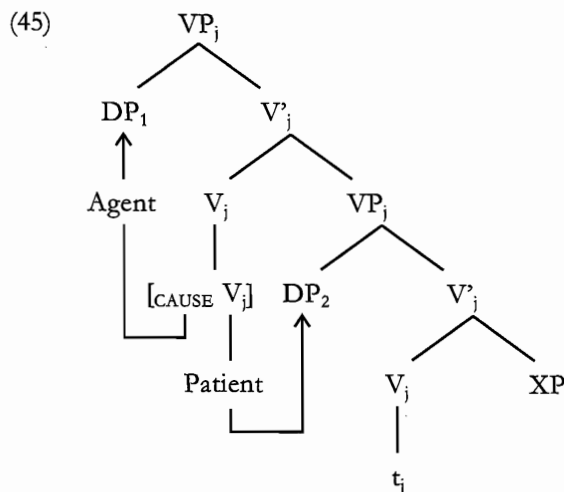
(24) Clearly the difference between an XP and an X is not trivial. XPs contain specifiers and complements, as well as heads, they have very different distribution, and they form distinct chains. Although the bar levels make XP a different object than an X, my claim is that they have the same identity as their head Xs.

(25) This restriction is comparable to the principle invoked by Stowell (1991), which states that a constituent cannot be an argument and a predicate simultaneously.

The lower VP has the index 'j', and the higher V is reindexed as a V_j after the lower V run_j substitutes for it. However, the argument that associates with the Patient of the CAUSE is the specifier of the complement VP_j instead of the VP_j itself. As a result, the interactive reading is allowed in null causatives.

The situation is altogether different when the lower verb adjoins to the higher verb. The branching structure resulting from head adjunction preserves the distinctiveness of the heads and the terminal nodes. After adjunction, CAUSE remains as the terminal node of the lower segment of the higher V and run as the terminal node of the moved V. The upper segment of the host V dominates both terminal nodes run and CAUSE, and it is forced by the Indexation Convention I to acquire both the indices 'i' and 'j'.

(46)   a.

V_i

CAUSE$_i$

V_j

run_j

   b.

$V_{(i, j)}$

V_j V_i

V_j

run CAUSE

t_j
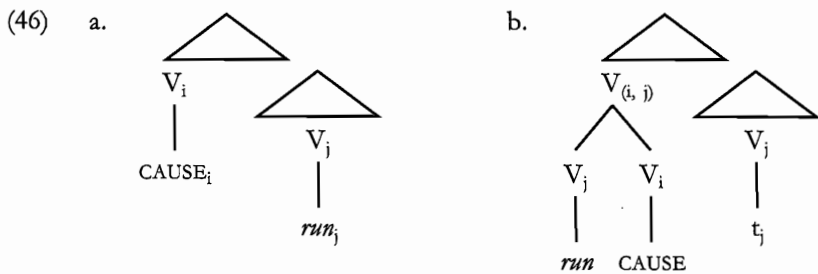
The branching structure keeps the indices distinct, so the adjunction operation does not create the environment of thematic circularity when the complement VP associates with the Patient of CAUSE. This holds for all types of causatives where CAUSE has phonetic content, and its parts CAUSE and V are bracketed separately in the form of segmental morphology, corresponding to the branching structure derived by head adjunction.

5. Conclusion

The paradigm cases discussed in this paper have plausible and straightforward accounts under the basic assumption that the Patient of CAUSE can associate with either its complement VP or the specifier of that VP. These options are available because of the separation between subcategorization and thematic licensing, which is consistent with Gruber's (1965) and Jackendoff's (1972, 1990) theories that treat thematic relations as interpretive phenomena that do not by themselves generate structures.

Perhaps the most significant consequence of the analysis presented in this paper is that it forbids unaccusative verbs from participating in the type of transitivity alternation observed with motion verbs like run and $march$. The Restriction on Interactive Causation in (22) bars the Patient of CAUSE from associating with the unaccusative argument, and the Restriction on Circumstantial Causation in (39) bars it from associating with the VP complement in null causatives. Together, these two restrictions ensure that the Patient of CAUSE has no argument to associate with

when an unaccusative verb participates in the null causative construction. This conclusion is supported by the following.

(47) a. *The police appeared the defendant before the court
          'The police made the defendant appear before the court'
      b. *The air traffic controller occurred an accident at the LAX
          'The air traffic controller made an accident occur at the LAX'
      c. *God existed fossils of sea animals in the Himalayas
          'God made fossils of sea animals exist in the Himalayas'
      d. *Bill arrived the messanger with good news
          'Bill made the messanger arrive with good news'

However, there are quite a few verbs that are traditionally classified as unaccusative, such as *sink, melt, break* and *burn*, that display the transitivity alternation brought about by incorporation into null CAUSE.

(48) a. The ship sank in the harbor
      b. The ice melted in the bay
      c. The window broke into pieces
      d. The house burned during the riots

(49) a. The enemy sank the ship in the harbor
      b. The volcano melted the ice in the bay
      c. The kids broke the window into pieces
      d. The angry mob burned the house during the riots

Like the transitivized motion verbs of the *run* variety, the transitivized verbs in (49) allow only the interactive reading.

The availability of null causatives in (49) is significant because it makes a very specific claim about the VP architecture of inchoative verbs like the intransitive *sink*. Null causatives are formed at S-structure, so their sole arguments must be high enough at D-structure to associate with the Patient of CAUSE. This association can take place only at the topmost specifier of the VP complement of CAUSE, which is clearly not the unaccusative structure defined in Burzio (1986), and displayed by *arrive* and *appear*.

Thus, this paper concludes not by neatly tying up all the loose ends, but by calling aspects of the traditional verb typology into question. Intransitive verbs of the *sink, burn,* and *break* type act like unaccusatives in many respects (auxiliary selection, passivization, etc.), but the evidence from causatives suggests that their arguments are generated as specifiers. Evidently, the classic dichotomy between unaccusatives and unergatives is not fine grained enough to establish these verbs as an intermediate category, although they seem to be sharing properties with both classes.[26] This and

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(26) Based on evidence regarding null causatives and passivizability, Kural (1996) argues for a four-way classification instead of the traditional two-way distinction that recognizes only the unaccusative and unergative verbs.

other consequences of the analyses presented in this paper raise complex questions that are best addressed in a separate work.

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