(Anti-)Causativity and the Morpho-Phonology-Semantics Tension

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Abstract: In this paper I will analyze the causative-anticausative opposition from the point of view of semantic construal, and how syntax builds structures following semantic instructions that convey that information, without adding or deleting information. I will use causativity to analyze the tension that arises when a putatively universal semantic construal, (narrow-)syntactically instantiated, is to be materialized using limited, language-specific resources. This will touch on the subject of language typology, and its importance to describe the observable effects of this tension between semantics and morpho-phonology, already noticed by Tesniére (1959). Our theoretical proposal will take mutually consistent elements from Conceptual Semantics, Relational Semantics, Lexical Decomposition, and Minimalism, in the search for the simplest (yet, empirically adequate) theory of the syntax-semantics interface. Consequences for comparative linguistics will be suggested, with particular emphasis on Slavic, Germanic, and Romance languages.

Keywords: causativity, conceptual primitives, syntax-semantics interface, cycles

1. Introduction

The phenomenon of causativity has been analyzed from various perspectives: purely syntactic, as the projection of certain functional heads (little v and Voice), purely semantic, following a logical approach to natural language semantics (within neo-Davidsonian semantics and Montague grammar), purely morpho-phonological (focusing on the affixal expressions of causative meanings and alternations), and mixed, interface explanations. Interface explanations involve more than one of the aforementioned components, and, unlike single-system accounts, they tend to resort to less intra-theoretical stipulations – like feature valuation operations, and approach the problem from the convergence of two or more systems, thus more in tone with Minimalist desiderata (see, e.g., Marantz 1995:380–381). For instance, Shibatani and Pardeshi (2001) focus on the syntax-morphology interface, refining a previous classification of causative constructions in (a) lexical or synthetic kind (in which the root is causative per se), (b) morphological kind (in which there is a morpheme that determines causative alternancies, as in Japanese affix –sase), and (c) syntactic or periphrastic kind (e.g., make/cause + V), all three configuring stages of a single functional continuum, following Givón (1980). This account takes into consideration the Lexicon-Morpho-phonology road and functional-typological variables, but tends to neglect the Logical Form (LF) of causatives, as well as semantic considerations in a broader sense (for instance, the role roots play in causative constructions, and whether causativity is part of the meaning of the root or of the whole construal, as I will try to problematize below). Schäfer (2008), to whom I will return below, takes a different stance, taking into account semantic issues from a syntactic perspective. His focus is set on the causative-anticausative alternation (with which I will deal here) from a syntactic point of view, using data from a number of languages. The same perspective, although focused mostly on applicatives (Appl), is adopted by Pylkkänen (2002, 2008), partly based on previous neo-Davidsonian LFs proposed by Kratzer (1996): while distinguishing neo-Davidsonian semantics from neo-Davidsonian syntax (such that a neo-Davidsonian approach to LF does not entail a neo-Davidsonian approach to narrow syntax), Kratzer introduces a new head, Voice, which Pylkkänen takes instead of Chomsky's (1995) v ("little v"), the latter being also present in Marantz (1984) – a foundational work of the VP-internal subject hypothesis in which v comprises broader values, related to any verbal suffixation including derivational suffixes – as a head comprising the LF-interpretable dimension causativity and introducing an external argument, besides hosting φ-features and signaling phase boundaries in more recent work (for example, Chomsky 2008).
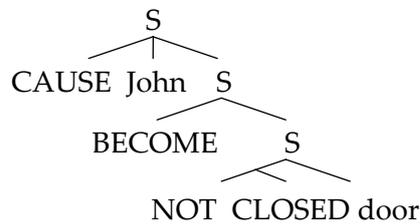
The distinction between VP and a higher functional node introducing causativity and an external argument, an initiator of the event denoted by VP, has also been advocated for from a Generative Semantics perspective, which is quite close in spirit to the one I argue for in the present paper. Culicover and Jackendoff (2005:96) mention works by McCawley, Ross, and Lakoff, arguing that causative constructions involve an underlying structure containing a CAUSE primitive which, after successive instances of a transformation dubbed Predicate Raising, CAUSE, and event-related primitives (e.g., BECOME), are lexicalized and surface as a single item. The derivation Generative Semantics proposed for a sentence like [John opened the door] goes along the lines of (1), taken from Culicover and Jackendoff (2005:97), in turn borrowing it from Shibatani (1976):

(1) a.

```
                          S
                     ⌢
              CAUSE  John   S
                          ⌢
                  BECOME       S
                            ⌢
                        NOT       S
                                ⌢
                          CLOSED     door
```

⇓ (Predicate Raising)

b.

```
                        S
                     ⌢
              CAUSE  John   S
                          ⌢
                  BECOME       S
                            ⌢
                    NOT  CLOSED door
```

⇓ (Predicate Raising)

c.

```
                        S
                     ⌢
              CAUSE  John  S
                        ⌢⌢
            BECOME NOT CLOSED door
```

⇓ (Predicate Raising)

d.

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                        S
                   ⌢⌢
        CAUSE  BECOME NOT CLOSED  John  door
```

⇓ (Lexicalization)

open
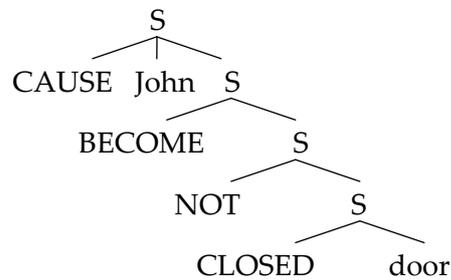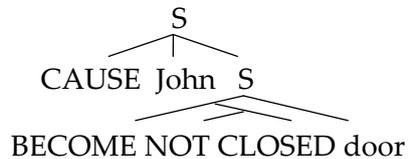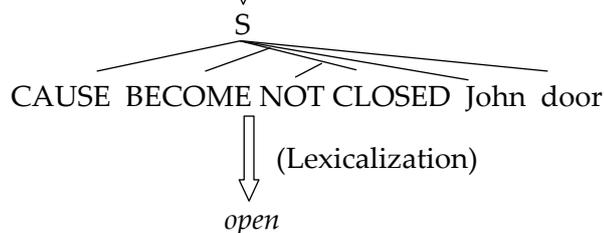
Notice that in Generative Semantics there were no constraints as to the kind of complex structures that could be lexicalized: we have here a causative primitive, an eventive, change-of-state primitive, and a result predicate plus a negative operator (CAUSE + BECOME + NOT + CLOSED) all materialized by a single lexical item. As argued by Lakoff and Ross (1973), conditions apply to a set of derivational steps, not to a single representation level, which means that conditions apply all throughout the lexical derivation, not to the final product. Generative Semantics was deeply derivational, and assumed a syntactic structure for semantic construal, an idea I will develop in my own way in the rest of the present work. At this respect, it is useful to compare this perspective with that of Culicover and Jackendoff (2005:20, fn. 8):

> Algebraic combinatorial systems are commonly said to "have a syntax". In this sense, music has a syntax, computer languages have a syntax, phonology has a syntax, and so does Conceptual Structure. However, within linguistics, "syntax" is also used to denote the organization of sentences in terms of categories such as NP, VP, and the like. These categories are not present in any of the above combinatorial systems, so they are not "syntax" in this narrower sense. (Culicover and Jackendoff 2005:20, fn. 8)

In this paper, and in general within my theory, "syntax" is used in the wider sense, for two main reasons: to begin with, there is no compelling evidence that the "syntactic mechanisms" taken alone (without considering the elements involved, just the combinatory algorithm) vary from one system to another, except that the properties of the units affect the algorithm, in case that actually happens; and also, an adequately wide formalization of syntactic mechanisms could reveal deep facts about the structure of more than a single cognitive system. Moreover, there is recent evidence that syntax, in the sense in which I take it here and in previous publications, is not only evolutionarily previous to, but also simpler than, other forms of combination (Collier, Bickel, van Schaik, Manser and Townsend 2014). Therefore, semantic construal is syntactic in nature (as is a musical phrase; or an equation), insofar as it is structured, but syntax is to be understood independently of both sounds and concepts.

From a stance compatible with (and in fact related to) Generative Semantics, Mateu Fontanals (2000, 2002, 2005) claims that VP is a purely transitional node between a causative node that licenses an external argument (which he calls R) and a locative node (which he calls r), and that VP takes no arguments. All arguments are selected by R and r, roughly equivalent to Mainstream Generative Grammar's (MGG) vP and PP (notice the similarity between Mateu Fontanals' proposal and Jackendoff's 1987 Conceptual Semantics in which the dynamic primitive GO, corresponding to VP, takes a locative structure [PATH [PLACE]] as its complement and is in turn the complement of a causative primitive CAUSE). The importance of distinguishing an eventive projection from a causative projection at the syntax-semantics interface will be obvious

throughout the paper, and has also been stressed by the aforementioned authors. Separating cause from event is essential in order to account for alternations in which causative meaning is involved (e.g., alternating ergatives) with or without a materialized agent. R takes an initiator as its specifier and an event (VP, in Mateu Fontanals' terminology, a transitional node T) as its complement, and r takes two arguments as well, in localist terms, a figure and a ground. Those roles, as in Hale and Keyser's (2002) strongly componential theory (adopted by Chomsky 2004), are read off the syntactic configuration at LF, which is partly a function of syntactic structure. Causativity, in this paper, will be seen as a phenomenon to be analyzed from the syntax-semantics interface.

2. Towards a Classification of Events (and Roots)

My point of departure will be the theory outlined in considerable depth by Kosta (2011:287, 2014), who follows Schäfer (2008:142) – in turn, using terminology of Levin and Rappaport Hovav (1995) – and Alexiadou, Anagnostopulou and Schäfer (2006) in distinguishing four kinds of causative events (taking into account causative alternations of non-causative roots, like ergative roots):

- Agentive (murder, assassinate, cut…)[1]
- Externally caused (destroy, kill, slay…)
- Internally caused (blossom, wilt, grow…)
- Cause unspecified (break, open, melt…)

Schäfer (2008:142) assumes that "the encyclopedic information associated with Roots is now the factor which decides whether a verb undergoes the causative alternation or not", and Kosta (2014) also proposes that the content of the root determines the availability of a causative alternation for unaccusatives (thus refining the typology of uncaused verbs to include the potentiality of allowing a causative construal) without the need to resort to featural specifications on lexical items (as HPSG does, among other frameworks). It is to be noticed that this stance implies distancing from traditional Distributed Morphology (DM) approaches (Halle and Marantz 1993; Embick and Noyer 2005), in which the encyclopedia (called "C-List") is distinguished from the set of roots ("A-List") insofar as roots are made up of formal U(niversal) G(rammar)-given features (Embick and Noyer 2005; Panagiotidis 2013).

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[1] A reviewer has pointed out, correctly in my opinion, that *cut* might not be causative in the same sense as *murder*, given different specifications for their respective subjects. I share that objection, which applies to Schäfer's examples (which I have reproduced here).

Like Schäfer (2008), Borer (2013), Panagiotidis (2011), and Kosta (2011, 2014), among others, I will assume that roots are indeed interpretatively underspecified semantic substance, but, contrarily to Schäfer (2008:142), I will not claim that this semantic substance determines the availability of alternations (which would mean constraining the lexicon a priori without principled reasons), but that alternations are, in principle, always available for all roots[2] (cf. Panagiotidis 2005), and coinage processes (including factors of socio-historical nature) are not to be confused with system-internal conditions: a root's categorial and further semantic properties in a specific sentence are determined by their local relation with distributionally specified semantically interpretable functional-procedural heads[3] (see Borer 2013 for a related perspective; and Krivochen 2012:90 ff. for a development of this idea within Radical Minimalism). My proposal, as will be obvious below, is closer to Kosta's (2011) full development, more componential and interface-oriented than Schäfer's (2008): I would like to propose an alternative semantic classification of cause functors, which only partially overlaps with Kosta/Schäfer/Alexiadou's:

• External cause (CAUSE_EXT): particularly noticeable in [let]/[make] light V structures, includes an initiator and an affected object (prototypical transitivity).
• Internal cause (CAUSE_INT): there is no affectedness. It corresponds roughly to the 'Activity' Aktionsart (atelic, durative, intransitive).
• Environmental cause (CAUSE_ENV): there is affectedness but no initiator in the sense of 'specific, definite sortal entity' (cf. Van Valin and Wilkins 1996:341–315). The event is licensed by stative conditions of the environment[4].

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[2] The idea was already present in earlier work by Beth Levin and Malka Rappaport Hovav (e.g. 2003, 2008), but there are major differences, one of which is the existence of a level of event structure, as well as a more specified root semantic template, closer to Schäfer's (2008) account than to my own. Their lexical semantic representations are also closer to neo-Davidsonian semantics than to Conceptual Semantics/Relational Semantics, the latter of which I follow in the present paper.

[3] In other words, as Boeckx (2010:26) puts it, "[t]he complex whole is the output of simple processes and interactions, rather than the result of complex specifications." As should be obvious, compositional semantics is precisely an example of this tendency: simple, atomic semantically interpretable elements combine in such a way that complex meaning is an emergent result (see Goldberg, forthcoming, for a very recent overview), a 'function' (Partee 1984:153) of elements – which can be as simple as one wants – and relations, optimally kept to a minimum. Boeckx's attempt, and my own, is to eliminate *ad hoc* elements from both syntax and semantics, including, for instance, specific features to trigger particular syntactic operations with no reference to the interface systems of sound and meaning.

[4] It is important to distinguish *environmental cause* from *natural force* (Schäfer 2012), which is limited to NPs denoting natural events (e.g., storms, earthquakes). In the sense I work with, those NPs would correspond to external causes, since volition is, in this account, not a necessary condition to be an external initiator, quite in the line of Holinsky (1987). I will come back to this below.

Crucially, this does not mean I propose three v projections, rather, as the mentions of overall construal in each of the types suggest, I argue for inferential enrichments of the interpretation of the v node at LF, when building a full propositional form. In other words, there are no diacritics or multiplication of syntactic projections, but rather inferential processes in the construction of an explicature (Sperber and Wilson 1995; Wilson and Sperber 2004) which take into account the construal in which v appears and the semantic contribution of co-appearing nodes, in terms that will be clearer below after introducing Mateu Fontanals' (2000, 2002, 2005) semantic primitives. I will propose that the semantics of causativity is not directly mapped to the morpho-syntax of transitivity, in a related claim to Kratzer (1996), insofar as there is no uniform mapping between syntax and semantics, or semantics and morpho-phonology (a situation I have referred to in past works as "opaque interfaces"). Consider, for example:

(2) a. The telephone moved. (because it has an internal device that allows vibration)

　　b. The rock moved down the mountain. (because there is an environmental condition that licenses this movement, such as an inclined plane)

Both examples in (2) display causativity but no transitivity (as we are dealing with one-place predicates), and they differ in the source of the cause: in (2a), the cause of the event one can informally represent in predicate-argument terms as move (telephone) is an internal device, inherent to the argument (therefore, corresponding to what I have called internal cause). (2b), on the other hand, displays an event move (rock) licensed by an external condition, but not an agent/initiator (a sortal entity that triggers the event). The syntactic structures corresponding to both unergative Vs are the same, displaying a vP-VP dynamics[5], but the thematic interpretation of the element in Spec,vP is not always that of an agent, as is the case of (2a–b). The determination of causativity types, then, goes beyond what syntactic nodes can tell us assuming bi-univocal mapping syntax-semantics; otherwise, I should be forced to assume a rich inventory of functional projections and features, as in Nanosyntax (e.g., Fábregas and Putnam, forthcoming, on the syntax of middle constructions) or cartographic approaches, which in our opinion go against basic considerations of economy in

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[5] That is, [Agent [[CAUSE] [[DO] √MOVEMENT]]], with conflation of the root onto both DO and CAUSE. See, for instance, Jackendoff (1983, 1987) and Hale and Keyser (2002:15), who use some notational variants (V$_1$ and V$_2$ instead of vP and VP). See also Harley (2003), for some differences: she just assumes conflation of the root onto v. Considering that v conveys *cause*, I will argue that whenever there is v, there must be V (which conveys *event*), which justifies the extra layer. Empirical evidence is provided by causativized ergatives: they are events (i.e., VPs) that might or might not appear with a vP layer.

syntactic representations, a basic methodological Minimalist desideratum. As should be obvious by now, I am already distinguishing different levels of analysis: on the one hand, causativity is a semantic notion, read off at LF from a syntactic-semantic construal (i.e., a structure built by syntactic means, optimally just concatenation, manipulating only a minimal number of semantically interpretable elements), whereas transitivity is a morphological phenomenon (consider the accusative vs. ergative case paradigms, see Laka 2002 for an introductory overview), often related to affectedness. In concrete terms, an external initiator in a syntactic-semantic construal affects an internal argument via an event denoted by the verbal root. In this construal, the affected object (A relation which, according to Gropen, Pinker, Hollander and Goldberg 1991:158–159, includes possession, change of state/location, etc. identifies the moved theme in a locative construal with the affected object, a claim I share and expand. Configurationally, it corresponds to the figure in a PP, from a localist perspective; see, e.g., Anderson 1971) receives an accusative morphological exponent. Needless to say, causativity and affectedness do not always coincide, since Unergative construals do not license the position for an internal argument in the syntax unless those internal arguments are further specifications of a cognate nominal root (assuming a Hale and Keyser 2002 style for the derivation of denominal verbs; see also Mateu Fontanals 2000, 2002), as will be seen below. Causativity is taken here to mean only the presence of internal, external, or environmental action triggers in the syntactic-semantic construal without implying any of the other notions. These distinctions, which might seem anti-economical, prove useful when considering concrete data, and provide the bases for a highly componential interface-based system.

Causativity, as an interface phenomenon, does not escape the general economy tendency to minimize Spell-Out when possible, that is, reduce the number of overt elements liking form and meaning (see Krivochen and Kosta 2013:178 for a comparison with Nunes' 2004:50 maximization of Spell-Out links in a chain; also Krivochen, forthcoming for an application of this principle to the derivation of Wh-interrogatives, Parasitic Gaps, and multiple gap constructions)[6]. This does not mean relying on a rich

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[6] Far from being a shortcoming, I explicitly claim that not only every *linguistic* phenomenon is an *interface* phenomenon, since natural language itself is a system that displays not only structural relations, but substantive elements as well, sound and meaning, but also that an explanation that rests only on syntactic 'evidence' (e.g., Agree, being the most pervasive in the literature) is stipulative as it rests on non-falsifiable assumptions (e.g., the existence of features given by UG as something more than metaphors) and elements that, if *only* usable by the so-called 'narrow syntax' (like Edge Features, or Agreement Projections) should be eliminated. If there is a change of meaning involved in a construal, I see no obstacle in considering there is interplay of syntax *and* semantics there. Notice that, for instance, the linking rules used by Levin and Rappaport Hovav (1995) are not narrowly syntactic (just like Jackendoff's linking rules in the Parallel

skeleton of phonologically null functional projections (as cartographical approaches do), but predicts a preference of synthetic forms (Shibatani and Pardeshi's (a) and (b) groups) over analytical forms (Shibatani and Pardeshi's (c) group) in language use to convey a certain meaning, as can be seen in the following examples. (3a) and (4a) are periphrastic, analytic causative, (3b) is a resultative construction of synthetic form, and (4b) with overt *se* clitic is causative in Masullo's (1992) terms.[7]

(3) a. (?)John caused the metal to go flat by hammering it.

   b. John hammered the metal flat.

(4) a. (?)Juan hace   que el doctor García lo   atienda.   (Spanish)
      Juan make.PRES.3SG that the doctor García CL.ACC examine.PRES.SUBJ.3SG
   'John makes Dr. García examine him.'

   b. Juan se   atiende   con el   doctor García.   (Spanish)
      Juan CL   examine.PRES.3SG with the doctor García
   'Juan goes to Dr. García's.'

This phenomenon has received the label of "lazy-Spell-Out" in Krivochen and Kosta (2013), and is a form of a general principle of economy, which Chomsky (2013:38, fn. 12) has formulated, informally, as "less is better than more", as a sort of aproristic approach to economy. If this minimization of overt material is to be taken seriously, then deviations from the synthetic case must be justified in interface terms, particularly, in semantic terms: an analytic syntactic construal conveys some extra meaning, absent in the synthetic version (e.g., use of the *se* clitic in Spanish, resultatives in Germanic languages, among many other options); in other words, more materialized elements mean more nodes in the syntactic structure. In turn, if all nodes are to be justified from a semantic point of view, more nodes mean more elements in the representation to be read, which have to be justified by the cognitive benefits one takes from computing extra material (taking into account the implementational level of the

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Architecture), as they involve, at least, two levels: Lexical Semantic Representation and Argument Structure (see also Williams 2003 for a related view).

[7] List of abbreviations in the glosses: CL = clitic; ERG = ergativizer; PASS = passive; REFL = reflexive; ACC = accusative; GEN = genitive; SG = singular; PL = plural; PRES = present; PST = past; PERF = perfective; SUBJ = subjunctive; AUX = auxiliary; PART = participle.

proposal, contrarily to most narrowly-syntactic proposals)[8]. This has as a consequence that periphrastic causative constructions are, when confronted with a non-periphrastic version, rendered awkward by most speakers (when they are not directly ungrammatical, examples and judgments are taken from Kosta 2011:240), as if there was extra information ('positive cognitive effects', in Relevance Theoretic terms; see Sperber and Wilson 1995; Wilson and Sperber 2004), as in (5a) and (5b):

(5) a. Karel   upustil   dopis.   (Czech)
        Karel   drop.PST.3SG   the-letter
      'Karel dropped the letter.'

    b. *Karel   dal   upustit   dopis.   (Czech)
        Karel   give.PST.3SG   fall   the-letter
      'Karel made the letter fall.'

    In this case, it is not the presence of an overt external sortal initiator for the event fall (letter) that influences grammaticality, but, I argue, the violation of a local morphological rule allowing conflation of a root onto a light node, following Hale and Keyser (2002). The structure of a causative construction I assume is Hale and Keyser's (as well as Mateu Fontanals' 2002, see also Pylkkänen 2008 for a related view but assuming a different, richer clausal skeleton), distinguishing three layers within the verbal domain (cf. Kosta 2011:251, who claims, following Larson 1988 and related work, that internal arguments are arguments of V, not of P, as I, following Mateu Fontanals 2000 et seq., do):

(6)

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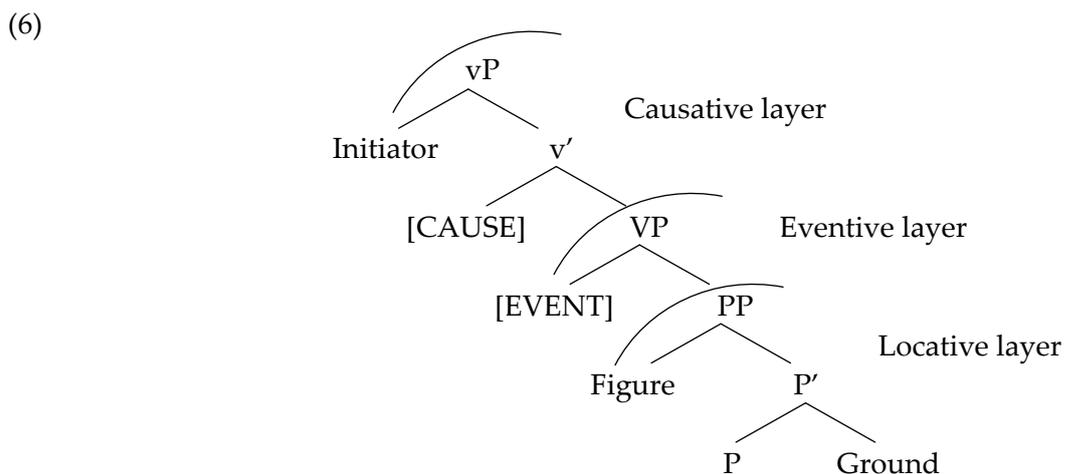
[8] This does not mean adhering to the Derivational Theory of Complexity, since there is not a relation of direct function between number of nodes/operations and interpretative complexity: it is relativized by the context-sensitive notion of cost-benefit relations.

According to Mateu Fontanals (2000:5, 2002:33), the nodes *cause*, *event*, and *P* (the latter corresponding to the semantic primitive Location) can adopt two values each (not intended to be taken in the Minimalist sense of features to be valued, but as interpretative *possibilities* in a Relational Semantic structure, to be linguistically instantiated)[9]:

- [+ cause] → external / internal cause
- [− cause] → possession (morphologically transitive, but *uncaused*)
- [+ event] → dynamic V
- [− event] → stative V
- [+ location] → terminal coincidence relation (see Hale 1986; Hale and Keyser 2002:218, ff.)
- [− location] → central coincidence relation

Causativity, I propose, is not an isolated, narrowly syntactic phenomenon whose explanation could be exhausted by means of feature valuation operations or purely formal mechanisms of the sort but the result of *compositionality* within local cycles at the Conceptual-Intentional (C-I) interface, once the whole construal has been transferred by cycles assuming that a causative domain, comprising an initiator, a theme, and a location, configure a fully interpretable object (a θ-domain, in Grohmann's 2003 terms, as all and every possible theta-position is represented in (6)) and can thus be taken by the interfaces to be assigned an interpretation and phonological matrices (see Krivochen 2012; Krivochen and Kosta 2013:94, ff. for discussion and examples).

Assuming the clause structure in (6), a periphrastic causative construction would be the result of spelling out *both* [cause] and [event] (v and V) as different terminal nodes, via separate vocabulary items. Since most Romance, Germanic, and Slavic languages allow the possibility of V-to-v conflation (or incorporation, depending on the framework one assumes), the periphrastic causative is a suboptimal candidate for evaluation, as the non-periphrastic construction conveys (in most cases) the same propositional information using less material. This happens, of course, when the *cause* node (syntactically represented as a v head) spells out as a light verb taking a clause

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[9] Notice that the primitives, and the values they adopt, are strikingly similar to those predicted by Generative Semantics during the 60s, and also used by Jackendoff within his Conceptual Semantics framework (Jackendoff 1983, 1987, 2002). The use of CS, GS, and Relational Semantics is thus justified in terms of the close relations I can find among these theories. As such, 'features' are just ways to represent, for instance, the two possible syntactic-semantic readings of a locative relation, namely, *central* and *terminal coincidence*.

(Exceptionally Case Marked) or a spatial relation (locative Vs) as its complement, for instance:

- make + ECM/small clause, let + ECM/small clause, cause + ECM/small clause, take + PP, give + PP (and, by hypothesis, their equivalent forms in any language).

Two key features are to be taken into account here: first, that the competition between candidates is won by the non-periphrastic forms if and only if it exists as a convergent (optimal) form in a language L. For instance, in the following competition, the interfaces, peering into the syntactic workspace (see Boeckx 2007; Krivochen 2012; Krivochen and Kosta 2013 for details) selects the periphrastic CC as a convergent unit and takes it away for semantic interpretation, as the non-periphrastic CC is non-convergent when attempting to convey the same meaning[10] (examples and judgments have been checked with native speakers):

(7) a. John made the baby cry.

   b. Jan   rozplakal   dítě.   (Czech)
      Jan   make-cry.PST.3SG   the-baby'
      'Jan made the baby cry.'

   c. Juan   hizo   llorar   al bebé.   (Spanish)
      John   make.PST.3SG   cry   to-the baby
      'John made the baby cry'

   d. *John cried the baby.

   e. *Jan   plakal   dítě.   (Czech)
      Jan   cry.PST.3SG   the-baby
      '*Jan cried the baby.'

   f. *Juan   lloró   al   bebé.   (Spanish)
      John   cry.PST.3SG   to-the baby
      '*John cried the baby.'

Arguably, the structure [the baby cry] is an event in itself (comprising a 'manner of emission' Unergative verb, [cry], and an external argument, the one who 'emits cry', [the baby]), and cannot be tampered with once completed and, possibly, transferred to

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[10] Hale and Keyser's (2002) account of this impossibility also resorts to a *mixed* explanation, involving *both* syntax and semantics, mentioning as a core factor the nature of the involved root (e.g., 2002:3, 15). Also, Uriagereka's (1998: Chapter 6.2) discussion of some 'impossible words' takes into account interface factors and opacity of domains, *contra* narrowly syntactic accounts. His proposal also draws on elements from Hale and Keyser (1993).

C-I interface (see Stroik and Putnam 2013:135, ff. for discussion in an alternative framework), if the interface is somehow sensitive to propositional forms (which is not incompatible with Chomsky's early conception about 'propositional phases', see Chomsky 1998:20), as seems to be the case if one considers the processes of construction of propositional forms tackled from a Relevance Theoretic perspective (Sperber and Wilson 1995; Wilson and Sperber 2004). That is why all additional material is added on top (namely, the light V [make] and the external initiator [John]). The full representation of (7a) would then go along the lines of (8):

(8) [John [CAUSE$_{EXT}$ [the baby [CAUSE$_{INT}$ [DO [$\sqrt{}$CRY]]]]]]

Notice that I am assuming (following Hale and Keyser 2002:47; Mateu Fontanals 2002; among others) that unergative verbs, of the kind of "cry" are lexically derived through conflation of a root onto V, and the complex {V, $\sqrt{}$} onto v (which can Spell-Out separately from the V root, as in English, or as part of the V, as in Czech and Slovak). These structures do not admit the configuration (7d–f) insofar as we are dealing with two events, both of which are caused (see Levin and Rappaport Hovav 1995:83, 108 for a related, two-event proposal, but at the lexical-argument structure levels, with no reference to syntactic-semantic cycles):

(9) a. Main Event (cycle 1): [John [CAUSE$_{EXT}$ [cycle 2]]]

b. Cycle 2: [the baby [CAUSE$_{INT}$ [DO [$\sqrt{}$CRY]]]]

Arguably, each sub-derivation is derived in parallel syntactic workspaces (following the "derivational cascades" theory of Uriagereka 2002), transferred when completed, and then unified at the interfaces: semantically, a global complex causative construction is read off the construal; notice that [John] is an initiator of the event [the baby cry], whereas [the baby] is an initiator of the syntactically embedded event of crying.[11] The impossibility of unifying both causative phases into a single "John cried the baby" follows from the framework outlined so far if cycles are taken to be impenetrable to external operations once completed and taken by the interfaces as they

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[11] I use 'cycle', 'cascade', or 'sub-derivation' following the proposal of Multiple Spell Out of Uriagereka (2002, 2012) and in order to avoid the stipulations related to the static phase framework of Chomsky (1998 et seq.). Uriagereka's model, phonologically based (command units are monotonically-assembled Markovian objects which can thus be linearized at PF), has the advantage of not stipulating the size of transferrable units *a priori*, contrarily to Phase Theory. I adopt a complementary model to that of Uriagereka, in which semantically interpretable units are independent of phonologically interpretable ones, and thus, LF and PF cycles need not coincide (see Krivochen and Kosta 2013 for details and implementation).

are no longer in the syntactic workspace (Uriagereka 2002, 2012; Krivochen, forthcoming). Phonologically, attention is paid to the impossibility of tampering with cycles once transferred, thus making conflation (a process that is both syntactic and phonological, as there is p(honological)-signature copying, but the restrictions over strict complementation for conflation are established in narrowly syntactic configurations; see Hale and Keyser 2002:59) of {CAUSE, {DO, √CRY}} onto {CAUSE} in the main event impossible, once again, because they are no longer in the active workspace. It is to be noticed, although I will come back to this below, that there is a tension between semantics and morpho-phonology that generates these interpretations as interface results: semantics operates globally (as argued in Krivochen 2013) at the level of determining the propositional information to be conveyed, plus implicatures derived from specific Topic/Focus projections, whereas phonology, as has been argued since Bresnan (1971) operates in a cyclic, local fashion, recently revived within the phase framework: from syllable stress assignment rules to word-level or phrase-level materialization. Taking into consideration the representation in (8), the ungrammaticality of the Czech examples follows straightforwardly if one acknowledges the fact that there is no structural position where to Merge the applicative clitic [mu] (in terms of Kosta 2011:253), and it is therefore a superfluous element in the representation at LF which is banned by a strict interpretation of the Full Interpretation Principle (Chomsky 1995:27).

The second issue to take into account, in a related note, is the composition of the phonological lexicon, that is, how verbs "get their names" (Harley 2003). In the present framework, verbal Spell-Out (i.e., the morpho-phonologically visible "verb") is the result of either:

(a) Conflated p-signatures: the phonological form of a {D} structure is copied onto the closest higher empty/phonologically defective node (e.g., a clitic or affix). There is no movement, but, if the reader prefers, percolation of phonological features, following Hale and Keyser's (2002:59) requirement of strict complementation for conflation. This occurs with "heavy" roots, that is, roots that instantiate substantial conceptual information. In a word, only these verbs involve roots, and they constitute the vast majority of verbs in Spanish and English (unergatives, location, locatum, ergatives, and even some unaccusatives), or

(b) Default Spell-Out: this occurs only with very primitive and semantically light verbs. A p-signature is inserted in an empty [event] node when no conflation process has occurred to prevent PF crash. The piece inserted depends entirely on the syntactic configuration in which {V/event Ø} appears, giving us a strongly compositional system. A list of such verbs include, to our understanding, GO, BE, PUT, TAKE,

ARRIVE (see above), LEAVE, DO (and their equivalents in other languages[12]). These verbs can be exhaustively decomposed in features of v, V, and P (in the sense of Mateu Fontanals 2002, 2005) with no need to resort to a root either to provide content or phonological signature: in GB traditional terms, they would not impose s-selectional restrictions to co-occurring arguments (as the pair [John came]/[Winter came] would prove). My claim is that there are no roots involved here, but purely contextual interpretative issues, in the sense that the verbs in the list above are materializations of the combinations of semantic primitives proposed by Mateu Fontanals in different configurations, for instance:

GO = dynamic V, positive locative node (terminal coincidence)
BE = stative V, negative locative node (central coincidence)

It is to be noticed that some of these verbs (e.g., BE, HAVE, DO) also work as auxiliaries marking Time and/or Aspect.

Coming back to the "lazy Spell-Out" claim ("prefer synthetic candidates ceteris paribus"), consider for instance the following paradigm (taken from Kosta 2011:246):

(10) a. Petr   změnil   strategii.   (Czech)
          Peter   change.PST.3SG   the-strategy
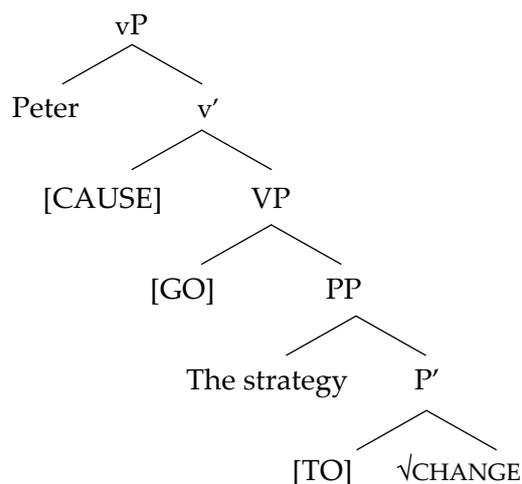   'Peter changed the strategy.'

      b. Strategie   *(se)   změnila.   (Czech)
          the-strategy   CL[ERG]   change.PST.3SG
          'The strategy changed.'

The presence of an overt external causator of the event change (strategy), namely [Petr], in (10a) is explained by the fact that it increases the informational load in a relevant way: the identity of the external initiator is revealed, and, moreover, it is thematic (i.e., leftmost within the TP). (10b), on the other hand, presents an anticausative (ergative, as the event is a change of state) alternation on the light of the absence of a materialized agent. This does not mean that, in the phenomenological world, the event is actually uncaused, but that the speaker has chosen to present it that way, possibly, because the identity of the initiator is not pertinent (a pragmatic reason). Truth conditions vary from (10a) to (10b), as a person could hold (10b) true, but deem

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[12] Ancient Greek verbs GO and BE, for example, differed only in *word stress*: εἰμὶ ([be], with both individual and stage level predicates as complements) and εἶμι ([go]), which is evidence in favor of our position that they are really Spell-Out of the same eventive node (V/T, depending on the terminology one takes) in different syntactic configurations (e.g., central/terminal coincidence, distribution of cognitive Figure and Ground), provided that stress assignment takes place, as DM claims, post-syntactically.

(10a) false if, for instance, the initiator was not Peter. Semantically, the root requires causation in this particular construal (V + NP [strategy]), as a strategy does not contain an internal, inherent capability for change; change must always come from the outside: crucially, this does not mean that there is no semantic cause, just that there is no overt external initiator. A comparison of both structures might help clarifying the scenario I propose (following Mateu Fontanals 2002; also Jackendoff 2002):

(11) a.   b.

```
        VP                                      vP
       /  \                                    /  \
    [GO]   PP                              Peter   v'
          /  \                                    /  \
   The strategy  P'                         [CAUSE]   VP
                /  \                                  /  \
             [TO]  √CHANGE                        [GO]    PP
                                                         /  \
                                                 The strategy  P'
                                                              /  \
                                                           [TO]  √CHANGE
```
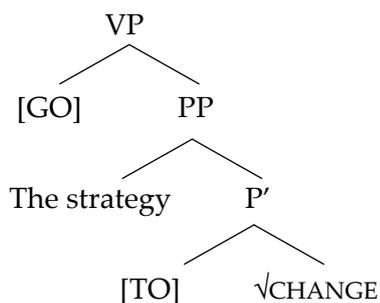
Both construals depict a dynamic (event primitive [GO]) change of state (positive location primitive [TO]), but (11b) includes an external sortal initiator, licensed in turn by the causative v head on top of the eventive node. In both cases, the root [√CHANGE] conflates to v, following the Head Movement Constraint, through all intermediate heads, which contribute to the final semantic interpretation of the root in its final syntactic destination. Thematic roles, within the construal, are read off at LF from the configuration, following the strongly configurational theta theory of Hale and Keyser (2002), Chomsky (2004) – where it is subjected to the duality of semantics, a proof that it is not narrowly syntactic even for some orthodox generativists, and Krivochen (2012): as I have argued elsewhere, thematic roles have no entity at all in a purely generative syntactic component which consists only on a generative algorithm, but are read off from a configuration in which DPs establish local relations with the procedural nodes cause and P.[13] Considerations of theoretical economy, and logical consistency within

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[13] Arguments in favor of the hypothesis of considering theta-roles outside the scope of narrow syntax as conceived in MGG (also backed up by extensive bibliography) are both architectural and empirical: on the one hand, if the syntactic component is purely generative, then it cannot read theta-roles, or else it should have to be both generative *and* interpretative, thus rendering the sound and meaning interfaces partially redundant. If such a redundancy arises, sound and meaning being necessary, it must be purged from the syntax. On the other hand, as well demonstrated in GB, an element that fails to comply with the (purely

the theory prevent me from accepting the thesis that thematic relations have any relevance for the generative engine, unless enriched with interpretative protocols (which belong to the interfaces, by definition). Therefore, the present proposal does not fail to overcome the criticism made by Jackendoff (1987), among others, to the orthodox Theta-Criterion exposed in Chomsky (1981), in two relevant senses:

• An argument can have more than one theta-role (e.g., in [John sent a letter to Mary], [John] is both Agent and Source).
• An argument's thematic role is not directly mapped from an a priori lexical entry, fixed in the Lexicon, but dynamically read off a syntactic-semantic construal, as in (8).

Therefore, *Uniformity Theta Assignment Hypotesis* (UTAH)-based approaches to thematic roles (and also, Montague Grammar and Categorial Grammar along the same lines; see Jackendoff 1997:33) are rejected within this theory because of their static and aprioristic character. I explicitly argue in favor of a componential theory of semantic relations between arguments, to be established at the semantic interface (not at the lexicon, either), which should be the object of thorough research even within syntactico-centric theories (if one takes Relevance Theory to be a valid context-sensitive, internalist pragmatic-semantic theory, it partly has been): theta roles are taken here to be the result of local relations between sortal entities and v or P (for the latter, as either Figure or Ground) at the syntax-semantics interface, where these relations are read off as theta-roles. In this vein, I argue that, if thematic roles are not relevant at the syntactic component, but at the semantic component, then there is no difference between Agent, Cause, and so on, as they are all inferential specifications of a more general "thematic sphere", Agent/Initiator (Krivochen 2012: Chapter 2; Krivochen and Kosta 2013:93),[14] a reasoning that is not alien to proposals like Holinsky

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semantic, by the way) requirements to bear a theta role in a construal does not by itself render it ungrammatical but deviant, whereas, for instance, an element that does not receive Case does:

(i) ??The guitar was writing a paper.

(ii) *John worked a car.

Another argument comes from the very same theories that assume theta-roles as having entity in the narrow syntax, as features. If movement can be triggered by the need to check a theta-feature present in a functional head: (a) how come the semantic interface can distinguish between theta roles (say, distinguish Agent from Theme)? Are there diacritics in theta-features? and (b) exactly at which level is the assignment of theta-features to functional heads determined? Is it not stipulative? What prevents assigning a certain head theta-features just to motivate movement (which is, in my view, flagrantly stipulative)?

[14] The concept is similar, but not identical to, Van Valin and Wilkins' (1996) *effector* ('the dynamic part doing something in an event'). On the one hand, I consider volition to be inferential, thus, post-propositional semantically relevant. On the other, the present proposal does not require of an NP to be

(1987). This being so, the ungrammaticality of a certain example cannot be blamed on theta-roles (an independency statement that can be traced back to Chomsky's first writings), as they are post-syntactic: a free, blind-Merge system (see, e.g., Chomsky 2004; Boeckx 2010; Krivochen 2011 et seq.) is not sensitive to thematic relations, which are not relevant until LF-Transfer, where configurations are read (see also Stroik and Putnam 2013: Chapter 6 for discussion about the locus of relevance of semantic relations).

These interface-oriented considerations are essential if one is to distinguish between internal and external causation, as it has to be done at two levels: syntax and semantics, independently of their morpho-phonological manifestation.

3. Dissociating Internal/External Cause

Now, after the basic assumptions have been outlined, I can expand on whether the difference between internal and external cause is narrowly semantic, narrowly syntactic, or a combination of both, and how it is materialized. Moreover, is causativity a property of a root (as Schäfer 2008 suggests), or, more componentially, of the construal the root appears in?
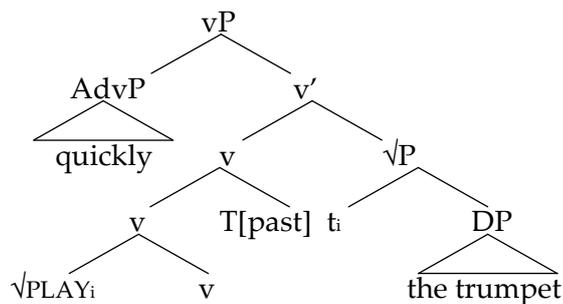
Distributed Morphology (Halle and Marantz 1993; Embick and Noyer 2005; see also Panagiotidis 2013 for recent references) claims, as I pointed out in section 1, that "all roots are meaningless in isolation" (Panagiotidis 2013:5; Borer 2009), insofar as they can only have meaning within a specific construal, in local relations with affixes, categorizers, etc. I disagree with this claim, as my proposal does not divorce the roots from the Encyclopedia (the reservoir of content): a root has meaning, albeit a highly underspecified one, which allows for a limited range of variation, as in genotype/phenotype dynamics (which derives from a theory with LF-underspecified roots; see Panagiotidis 2011). What is more, this claim does not invalid any of the empirical evidence Panagiotidis offers in favor of meaningless roots, it only relativizes the theoretical claim. Meaningless roots, if taken in a strict sense, could lead to a situation of overgeneration, as there is no reason why a particular meaningless element should be linked to an encyclopedic entry, or a Spell-Out pattern: if a root is meaningless, then one would have to resort to PF and LF diacritics for the root to be interpreted at all (or B-list and C-list diacritics, using DM terminology) and avoid roots randomly assigned PF and LF properties, which would result in interface crash for

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definite and animate to be a better candidate for the effector role (Van Valin and Wilkins 1996:314): an eventive entity denoted by a CP, or a nominalization (categorially an NP, but denoting an event) can also belong to the thematic sphere Agent/Initiator.

most cases. The content of a root, underspecified though it might be, weakly constrains the possible interpretations of that root, the contexts it can appear in, and the PF/LF representations that are associated to those contexts, all of which I consider advantages over contentless roots. Moreover, if they are really "unexceptional syntactic objects" (Panagiotidis 2013:7), then they cannot be radically empty, as every element is to have an interface motivation, or else it should be eliminated because of Full Interpretation. Functional material on top can specify the reference of the root (either to an entity or to an event), as a subset of the potential extension of the root, but functional nodes (procedural nodes, in Relevance Theory) do not provide semantic substance.

Part of this precision or specification is the determination of the source of causation, when the causative alternation is possible. A crucial objection I will make to the radical 'empty roots' theory is that, if roots are in fact meaningless, how come they take arguments? Consider the following representation, taken from Embick and Noyer (2005:24):

(12)

$$
\begin{array}{c}
\text{vP} \\
\diagup \quad \diagdown \\
\text{AdvP} \qquad \text{v}' \\
\diagup\diagdown \qquad \diagup \quad \diagdown \\
\text{quickly} \quad \text{v} \qquad \sqrt{\text{P}} \\
\diagup\diagdown \qquad \diagup \quad \diagdown \\
\text{v} \quad \text{T[past]}\ t_i \qquad \text{DP} \\
\diagup\diagdown \qquad\qquad \diagup\diagdown \\
\sqrt{\text{PLAY}_i} \quad \text{v} \qquad \text{the trumpet}
\end{array}
$$

Notice that the argument [the trumpet] originates within the $\sqrt{P}$, which implies that there are some features in the root that percolate to a label, and, more importantly, that the root has selectional features, which allow the merger of an internal argument. The DP is directly governed by the root, not by the v head. What is more, there is no lexical/eventive projection (i.e., VP) here, just a root Phrase and the vP, in charge of categorization via incorporation of the root to v. Assuming a bottom-up approach to syntactic derivations, the DP must have entered the syntactic workspace before the root has been categorized by v: how come the root takes a complement if it is semantically empty (see also Harley 2013 for a similar representation assuming a $\sqrt{P}$)? And how to prevent for the root to take any XP as complement, if there is no content to constrain combination possibilities?

A similar analysis to that of Embick and Noyer (2005) can be seen in Kosta's (2011) bracketing structures, following Alexiadou et al. (2006), where (13a) is assumed to have the structure (13b):

(13) a. Petr   otevřel   dveře.   (Czech)
     Peter   open.PST.3SG   the-door
    'Peter opened the door.'

   b. [Petr VOICE [CAUSE [dveře √OTEVŘEL]]]

Here, the DP [dveře] appears within the domain of the root, not of an eventive variable, as there is no VP (or [EVENT] head) in that representation. However, there is a Voice node which, apparently, "expresses the relation between the element in the specifier and the event in the complement position (CAUS)" (Kosta 2011:285), following and extending the proposal of Kratzer (1996). My take on the matter is quite different. In my opinion, the presence of a Voice head as distinct from v is not justified, as it is the semantically interpretable causative head that requires an initiator, and the roles of the two functional nodes seem to overlap: insofar as v conveys the semantically interpretable dimension *causativity*, it is v that licenses subject oriented adverbs and [by-phrases] in passives, licensing (but not always requiring the overt realization of) an external argument which receives a thematic interpretation initator, agent, (natural) force, etc. being inferential (therefore, post-syntactic) specifications. As I have claimed above, in the present proposal, v has a clear semantic value, which is causativity. It is essential to bear in mind that the initiator argument is not always spelled-out, whereas this does not take causativity away from the semantic representation of the construal (as I saw above). How to solve this apparent problem? A semantically based solution, focused on economy of representation and derivation would be to abandon the X-bar intra-theoretical stipulation that all X project a specifier (see, e.g., Chomsky 1995). If the semantic primitive CAUSE syntactically represented by v does not necessarily project a specifier position because there is nothing in the lexical array to merge in Spec-v, then one gets something like (14):

(14) Dveře   se   otevřely.   (Czech)
    the-door   CL[ERG/PASS]   open.PST.3SG
    'The door opened.'

In this case, I agree with Kosta's representation (including cause, but without an external argument), which goes along the lines of (15):

(15) [CAUSE [the door [√OPEN]]

but I would add an eventive variable (bound by the features of T, which anchor the reference of the event, and incidentally generates a V category reading for the root

at the semantic interface), which in this case would be a positive value for the V node (i.e., a dynamic event), and a cause primitive that has not been morphologically materialized and can therefore be taken not to be relevant (in the technical sense of Sperber and Wilson 1995) for the construction of a full propositional form and posterior interpretation, thus getting (16):

(16) [CAUSE_ENV [the door [[GO] √OPEN]]]

If there is no element in the array to be merged as a specifier to CAUSE, then the position is not projected, in real derivational time, and there is no need to resort to a different Voice projection to account for internal/external causation alternations, thus simplifying the array of functional material. Harley (2013) proposes to keep VoiceP as divorced from both VP and vP, which introduces an initiator (vP being 'specifier-less') based on morphological evidence from Hiaki interpreted through the Mirror Principle (Baker 1985:375, 'Morphological derivations must directly reflect syntactic derivations (and vice-versa)'), and assuming each morpheme corresponds to a projection in the syntax and materialization is unambiguous. Harley assumes Pylkkänen's (2002, 2008) analysis of Appl(icative)P, which is in itself a problematic projection. Pylkkänen (2008) employs the term applicative as a way to denote indirect object arguments added to a V. It is claimed that semantic properties of applicative (i.e., ditransitive) constructions are more or less uniform among languages, but their syntactic properties differ (Pylkkänen 2008:11). Thus, for instance, whereas English does not allow applicative arguments (i.e., benefactive/goal datives) with unergative Vs, Bantu languages do. Moreover, the relative stability of applicative semantics is due to the scope they have, thus defining two kinds of applicatives: high applicatives, which have scope over the VP; and low applicatives, within the VP. The representations are as in (17):
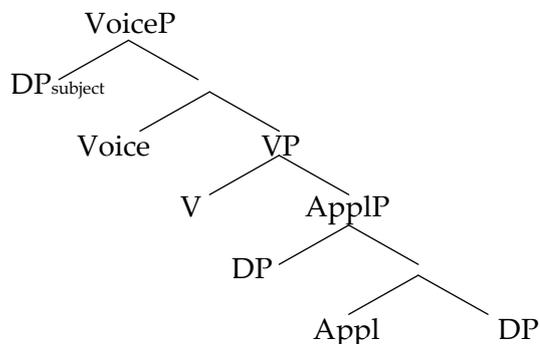
(17) Low Applicative   High Applicative
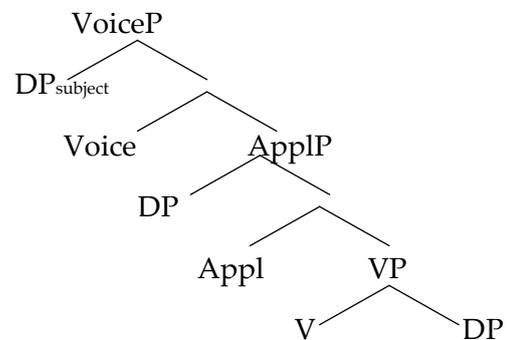
However, it is to be noticed that not all authors accept this distinction. For instance, Marvin (2011) claims that Slovenian displays ambiguous readings with some ditransitive transmission constructions:

(18) Binetu   sem   poslal   pismo.   (Slovenian)
     Bine.DAT   AUX   send.PST.1SG   the-letter.ACC
     'I sent Bine the letter'/'I sent the letter to Bine.'

The readings, according to Marvin (2011:100–101), are the following:

(a) High Applicative: I sent X the letter instead of Bine (Bine was the recipient of my event of sending the letter).

(b) Low Applicative: I sent Bine the letter (Bine is the intended recipient of the letter).

While one would expect a logical form analysis of the sentence, so that scope relations are made explicit, Marvin (2011) provides none. However, she does make a point about the ambiguous scope of ApplP, as she finds the same effect with non-transmission Vs (like *skuhal* 'cook') and possessor rising constructions, in which the dative (DAT) argument introduced by the Appl can either denote the possessor of the accusative (ACC) object or not. What is more, she extends her claim to other Slavic languages, like Serbo-Croatian and Macedonian. I will not discuss the empirical appropriateness of Marvin's (2011) analysis, but rather try to simplify the theoretical apparatus. In Hale and Keyser's (1993 et seq.) framework, the P node can convey either a central or a terminal coincidence relation, which determines the difference between location and locatum Vs:

(19) a. John shelved the book = [John [CAUSE$_{EXT}$ [GO [[the book] [TO [√SHELF]]]]]] →
         Location V

      b. John buttered the toast = [John [CAUSE$_{EXT}$ [GO [[the toast] [WITH [√BUTTER]]]]]] → Locatum V

Notice that (19b) denotes a possession relation, in which John causes the event of the toast having butter. This possession relation is interpreted because of the nature of the locative node P, a central coincidence relation: possession is a kind of location, in which the possessed thing is merged as the complement of P and the possessor, as the specifier. As Bleam (2003) has pointed out, contrarily to the judgments of Pylkkänen (2008:15), it is ungrammatical to cancel the presupposition with an adversative clause if the main sentence is not negated, as in (20):

(20) *Peter sent Lina the book, but she never got it.

This is arguably the most salient semantic difference between prepositional indirect object constructions (PIOC), in which the DAT argument is introduced via a preposition, and double object constructions (DOC), in which the DAT-ACC dynamics is only read off the configuration, there being an adjacency relation between internal arguments, materialized as DAT-ACC. Taking this into account, (21) is perfectly acceptable, since PIOCs do not generate the presupposition that at the end of the process the locations of Figure and Ground coincided (i.e., there is no possession presupposition):

(21) Peter sent a book to Lina, but she never got it.

The structures proposed by Bleam (2003; as well as Harley 2002) involves a caused event (in Harley's terms, a vCAUSE) having scope over a central coincidence relation (in Harley's terms, a PHAVE). If P takes two arguments, as Hale and Keyser (2002) propose, then the semantic contribution of P is precisely to provide instructions to the semantic system as to how to interpret the relation between those sortal arguments. The question arises whether one needs an Appl node to account for the introduction of an oblique argument in the construal (as Pylkkänen claims) or not (as in Kosta's 2011, 2014 account). Without even trying to exhaust the topic, my very provisional answer, guided by Minimalist desiderata of economy in representations, will be that, if transitive constructions always involve a P node (in monotransitives, the complement of P conflates onto P^0), then there is no need to resort to an extra Appl projection to account for DAT arguments. Moreover, the observations with respect to the ungrammaticality of applicative arguments in Unergative construals (Pylkkänen 2008:11) would be derived from the syntactic-semantic construal underlying unergativity, which in Hale and Keyser's (1993) terms, involve root conflation to a defective V head, roughly equivalent to DO or EMIT. With this in mind, if

> [t]he key argument for the separation of Voice and v is a minor variation on the argument presented by Pylkkänen (2002: 122–125). The key point is that the behavior of the applicative shows that the causative v° head does not introduce the overt external argument in Hiaki causatives. (Harley 2013:35–36)

Then an argument against Appl as an independent head undermines Harley's argument indirectly, and forces us to reanalyze the empirical data. Arguments against the Mirror Principle (the other main support of Harley's discussion of Hiaki data) have risen from outside MGG, from theories that either do not subscribe to Structural Uniformity (e.g., Culicover and Jackendoff's 2005 Simpler Syntax) or have

problematized morpho-phonological linearization such that each phrase marker can receive two logically possible and equally theoretically valid materializations (Uriagereka's 2012:56 Mirror Linear Correspondence Axiom). The problem clearly exceeds the limits of the present work, but I think the problems proposed here suffice to consider the validity of alternatives to Harley's tripartite split-VP proposal on both conceptual and empirical grounds.

4. A Frustrating Approach to Causativity and Alternations

In a semantically based syntax, global tendencies favor information conservation (see Lasnik, Uriagereka and Boeckx 2005; Krivochen 2011, 2012) throughout the derivation, whereas local tendencies favor cyclic transfer of local derivational chunks to the phonological component (as first noticed by Bresnan 1971), a tension I have (using Binder's 2008 terminology and following Uriagereka 2012) described as a dynamical frustration in cognitive design, particularly pervasive in language under a Multiple Spell-Out model. This frustration, defined as the tension between opposing forces, or global and local tendencies, is very much present in language (see Tesniére 1959: Chapters 6–7), and interlinguistic variation at certain respects can be looked at from a "frustrated" perspective. For instance, Schäfer (2008) and Alexiadou et al. (2006) justify the need for independent VOICE projections on the light of contrasts like the following (taken from Kosta 2011:284):

(22) a. John/the explosion/Will's banging broke the window.

　　 b. Okno　　　 bylo rozbito　　　 Johnem /explozí/　　 ránou　Willa. (Czech)
　　　　 the-window AUX break.PST.PART by-John/the-explosion /banging Will.GEN
　　　　 'The window was broken by John/the explosion/Will's banging.'

(23) a. *The window broke by John/by the explosion/by Will's banging.

　　 b. *Okno　　　　 se　　　　　 rozbilo　　　　　 Johnem / explozí /
　　　　 the-window CL[REFL/ERG]　 break.PST.3SG　　 by-John / the-explosion /
　　　　 ránou　 Willa.　　　　　　　　　　　　　　　　　　　　 (Czech)
　　　　 banging Will.GEN
　　　　 'The window broke (itself) by John/the explosion/Will's banging.'

　　 However, Spanish (a Romance language) allows constructions of the type of (23), as shown in (24):

(24) La   ventana   se   rompió   por   la   explosion.   (Spanish)
     the window   CL[ERG]   break.PST.3SG   by   the   explosión
     'The window broke because of the explosion.'

Kosta notices this fact, and makes the caveat that an agent cannot be introduced by means of a PP:

(25) *The window broke from Mary.

However, the mistake here, inducing ungrammaticality, seems to be the preposition choice, as (26) is grammatical:

(26) The window broke because of John.

How is (26) to be interpreted? Possibly, it is to be interpreted along the lines of (22a), being paraphraseable as "the window broke because of what John did". In that case, we would not be dealing with an entity as the cause of the relevant event of [breaking] but with an event itself as the cause (whatever John did), which is correctly predicted to be grammatical by Kosta.[15] In spite of this, the motivation for Voice is far from clear, since nothing in the nature or semantic contribution of the v head determines that a CP (a full proposition) or a nominalization with a full thematic structure (agent, event, theme) cannot occupy that position. In more concrete terms, once I have distinguished several semantic types of cause, and clarified which arguments are licensed by which heads, the necessity of an independent Voice head fades out, until further evidence forces the revision of these claims.

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[15] Peter Kosta (pers. comm.) objects to this analysis that I propose [because of] as introducing a [cause] argument, which is admittedly clearly false, but that is not what I actually say. He points out that [because of] introduces a partial ellipsis, along the lines of [the boat sank because of the storm [~~that has caused that the boat sank~~]]. However, the objection does not apply: what I am saying is precisely that I am not dealing with a sortal cause here, but with an eventive cause, an observation captured in the paraphrasis provided for (21). To spell it out, [because of] introduces a semantically eventive argument, materialized as a DP. Thus, being an event, it does not behave as a [by-phrase] agent, as Kosta correctly points out. Moreover, there is no evidence or compelling conceptual argument to claim that eventive and sortal causatives require different projections, thus licensing the presence of VoiceP. In a free-Merge syntax, there is simply no reason to assume that the generative engine deriving representations is sensitive to such distinctions. If the syntactic component is claimed to be indeed sensitive to the eventive/sortal opposition, then one must concede it is not only generative but also partly interpretative, which would in turn make the interfaces (at least LF) partly superfluous. Arguments in favor of a more economic approach including only vP are thus both conceptual and empirical, deep-rooted in a cognitive stance.

The caveat I have made above provides some bases for a classification of causatives according to the kind of PP causator they allow: [by-phrases] are licensed by sortal causatives, in which the causator is a sortal entity, denoted by a DP. On the contrary, [because of]/[due to] phrases are licensed by eventive causatives, in which the cause of the event denoted by V is an event itself, regardless its grammatical realization (i.e., it can be grammaticalized as a PP followed by a CP, as in [because of what X did], or as a nominal). In the case of (26), for instance, the eventive causative has a conceptual subject [what John did], grammatically realized as a PP [because of John]. Interestingly, eventive causatives do not have the same semantic restrictions as sortal causatives, that is, the requirement of animacy and volition for sortal DP agents. In Spanish, some apparent ergative constructions can be thought to be in fact eventive causatives, for instance:

(27) La puerta se   abrió.   (Spanish)
    the door   CL[ERG/PASS]   open.PST.3SG
    'The door opened/was opened.'

(28) La puerta se   abrió   por   el   viento.   (Spanish)
    the door   CL[*ERG/PASS] open.PST.3SG because the wind
    'The door was opened by the wind.'

Notice that the eventive causator, roughly [because of what the wind was doing], is introduced by a different preposition than that used by Instrumental arguments (roughly paraphraseable as 'by means of'):

(29) La puerta se   abrió   con la llave.   (Spanish)
    the door   CL[PASS]   open.PST.3SG with the key
    'The door was opened with the key.'

This paradigm, admittedly reduced, already introduces interesting conditions for the semantic classification of causatives, and, in my opinion, motivates a revisiting of transparent syntax-semantics-morpho-phonology interface proposals, based on uniform mapping between the aforementioned systems. The concept of tension is thus essential in an interface proposal that seeks to achieve explanatory adequacy while accounting for both sound-morphology and meaning requirements, from my point of view.

5. Some Problems with Root Classification

I would now like to address an apparent counterexample proposed to me by Kosta (pers. comm.; see also Kosta 2014) regarding the classification of verbs and the possibilities of alternations: his evidence consists on distinguishing roots characterizing them via [± cause], [± voice] features, which project from the Lexicon (a strong lexicalist stance, insofar as syntactic structure is not a function of semantic requirements, but of intra-lexical specifications). This double classification results in four kinds of verbal roots:

- √agentive (murder, assassinate, cut) projects only a VoiceP: [+voice], [-cause].
- √internally caused (blossom, wilt, grow) projects only a CausP: [-voice], [+cause].
- √externally caused (destroy, kill, slay) projects a VoiceP and a CausP: [+voice], [+cause].
- √cause unspecified (break, open, melt) projects a light vP: [-voice], [-cause].

While assuming a uniform system of projection and v as a mere categorizer head (e.g., Marantz 1997; see also Panagiotidis 2011), Kosta's objection would be indeed correct, and I would need an extra head to account for dissociation; if one treats Specifiers as Adjuncts (see, for instance, Uriagereka 2002; Chomsky 1995), that is, elements that are absent of the core projection system, then the extra Voice head is not necessary, particularly with the added assumption (made above) that v can either project a Specifier position or not, depending on the pre-linguistic semantic construal to be linguistically instantiated: in our theory, syntactic structure depends on semantic requirements, not on X-bar theoretical axioms. It is also important to notice that the conception Kosta has of v is, apparently, completely different from my own: in this theory, ergatives have no v layer, insofar as the semantic contribution I assign to the v procedural element is, precisely, causativity; diathesis having no independent projection (i.e., no VoiceP) as it is not narrowly syntactic in nature but more related to theme-rheme dynamics (as in passivization, taken to be the thematization of the grammatical object), as noticed, among many others, by Frías Conde (2010; pers. comm.); if this is the case, then diathesis is at best an interface phenomenon, but does not belong to the narrow syntax (i.e., the generative algorithm alone). A further point to be considered is that I invert the logics: transitivity and passivization are not sine qua non conditions for causativity, as I have dissociated all three, but this does not mean I have proposed three independent syntactic projections. It is to be noticed that some cases are not as clear-cut as they seem, something predicted in a blind, free-Merge system: the generative system is not constrained, and alternations are always logically possible; constraints on alternations are given by use and historical accidents, and can be reversed (as opposed to a rigid conception of the lexicon in which

alternations are a priori limited by the featural composition of the root involved, see also the discussion in Krivochen 2012: Chapter 2). Consider, for example, the case of "read":

(30) a. John read the book. (transitive causative)

b. The book was read by John. (personal passive, licensed by v)

c. "The text is a faithful rendering of the original in style and register, and it reads easily and smoothly."
(http://www.linguee.com/english-spanish/translation/reads+easily.html)
(middle/impersonal construction?)[16]

It has been noticed that (30c) presents some properties of anti-causative constructions, in spite of its apparent middle meaning, and while (31a) could be a suitable paraphrasis of (30), (31b) could not:

(31) a. Anyone reads the text easily and smoothly.

b. *The text is read easily and smoothly by anyone.

The unacceptability of the [by-phrase] leads to the idea that the syntax of this construction is closer to that of anti-causatives, in the event that middles are not considered a kind of anti-causative. In any case, the point is clear: alternations are available in the system, a subset of which constitutes the core data for linguists (roughly, Coseriu's norm). If generative linguistics analyzes the system that generates structural descriptions of sentences, then a full account of the system is to be given: constraints on alternations must be revisited paying attention to the use. Historically, language development might drive apart from uniform interface mapping, which is problematic for a systematic approach to the causative/anti-causative distinction unless it is dynamically interpreted.[17]

The non-uniform mapping between (syntax and) semantics and phonology (including the claim that PF-cycles – possibly, tone units - and FL-cycles – propositional objects - might not coincide) is exactly the kind of problem addressed in Krivochen (2013) from the perspective of dynamical frustrations (that is, mutually opposing forces at global and local levels; see Binder 2008), and which can be useful

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[16] The exact expression "reads easily" got more than 280.000 hits in Google, which is not a minor number given the specificity of the search.

[17] It is possible that the contrast can be semantically analyzed along the lines of a non-valid LF movement of the universal quantifier, but this possibility will not be analyzed within the context of this paper.

here.[18] Notice that, be it a CP or a DP, the restriction on the materialization of the causator is not categorial (as such a restriction would imply re-introducing subcategorization frames from the GB model), but semantic: in structures like (21), the causator, if materialized, corresponds to an event, roughly, [what John did], and not to a sortal entity (of the kind denoted by proper names). When cyclically transferred to PF, the structure collapses if an anti-causative construal, with no Spec,vP position, contains a proper name introduced by a PP, but not if the PP introduces an event, even if categorized as an NP (e.g., a nominalization). Since the restriction is by nature (broadly) semantic, I find no justification to the addition of a node in the syntactic structure (as Voice), as the effects can be accounted for via interface conditions and the tension between global semantic requirements and local phonological cycles.

This perspective can also prove useful when considering the availability of causative/anti-causative alternations for certain roots, a restriction Schäfer (2008), among others, attributes to the semantic (encyclopedic) content of the root. In my opinion, such a proposal has a crucial disadvantage; it needs a syntactic component that, apart from building structure, is sensitive to the inner characteristics of the elements it manipulates, in order to identify the roots that allow alternations and those which do not, and construe a phrase marker in consequence. This entails directly that the so-called "Narrow Syntax" (Hauser, Chomsky and Fitch 2002) cannot be just Merge (or Merge + Move/Agree…), but Merge + some interface reading/evaluating function applying locally, still unspecified in the mainstream literature (but see Putnam 2010; Stroik and Putnam 2013 for some proposals). I will take two sets of examples, in order to support our argument that things are not that simple, as "root content" is easy to write, but hard to define; in a strongly componential, semantically-motivated syntax, construal is always to be taken into account, as in (32)–(33):

(32) a. The flowers blossomed.

    b. Květiny   rozkvetly   (Czech)
       the-flowers   blossom.PST.3PL
       'The flowers blossomed.'

    c. Kwiatek   zakwitł.   (Polish)
       the-flower blossom.PST.3PL
       'The flower blossomed.'

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[18] The existence of a tension between syntax-semantics and morphology has been acknowledged since at least Tesniére (1959:19–22). In Krivochen (2013), I attempted to tackle the problem of its implementation in the mind-brain, following Uriagereka (2012).

    d. Las flores   florecieron.   (Spanish)
       the flowers   blossom.PST.3PL
     'The flower blossomed.'

(33) a. *The gardener blossomed the flowers.

    b. *Zahradník   rozkvetl   květiny   (Czech)
      the-gardener   blossom.PST.3PL   the-flowers
     '*The gardener blossomed the flowers.'

    c. *Ogrodnik   zakwitł   kwiat   (Polish)
      the-gardener   blossom.PST.3PL   the-flower
     '*The gardener blossomed the flower.'

    d. *El jardinero floreció   las flores.   (Spanish)
      the gardener   blossom.PST.3PL   the flowers
     '*The gardener blossomed the flowers.'

The paradigm above (including Romance, Slavic, and Germanic languages) shows that an overt CAUSE_EXT initiator is incompatible with ergative construals, but it says nothing about whether it is the construal itself that does not allow the presence of an overt external initiator or it is the content of the root, specified enough to make c-/s-selection choices, that bans the external argument. Schäfer (2008), like Embick and Noyer (2005) (see also Alexiadou 2003:19; Harley 2013), assumes that the root not only projects, but also establishes constraints as to its "arguments". The perspective presented here is different: ergative/unaccusative, unergative, and (di)transitive are primarily conceptual templates (Relational Semantic Structures, in Mateu Fontanals' 2002 terms; see Jackendoff 1987, 2002 for a Conceptual Semantics proposal) a subject can organize phenomenological information with, and might or might not be instantiated linguistically. When they are, the meaning is to be read off the whole structure, not as a mere projection of the root, which is too semantically underspecified to be interpretable on its own and thus cannot take arguments or impose restrictions to co-occurring XPs. As Hale and Keyser (1997:40) eloquently put it:

> I maintain that certain crucial aspects of meaning are dependent on the very structural features whose identification is at issue. If I 'knew the meaning' I would know the structure, perforce, because I know the meaning from the structure. [emphasis in the original] (Hale and Keyser 1997:40)

What I would like to problematize here, without attempting to reach a decisive answer, is the fact that, in principle, all roots should be equally "causitivisable", from a strictly syntactic point of view (i.e., just the combinatory engine), as already noticed by

Levin and Rappaport Hovav (2003, 2008). From a strictly semantic point of view (unstructured meaning, as structured meaning would involve syntax), the possibility of causative alternations is banned from square one, due to the selectional properties of the root (however they turn out to be encoded). From an interface point of view, like the one I defend here following Hale and Keyser (1993 et seq.) and Mateu Fontanals (2000, 2002) among others, there are at least two factors to be taken into account:

(a) The construal in which the root appears, and the structural positions licensed by such construal (Mateu Fontanals 2002:24), and

(b) Extra-linguistic processes of coinage and fossilization of certain structures.

The immediate consequence of this proposal is that linguistic diachrony cannot be overlooked when analyzing argumental alternations in a particular language, otherwise, any account would require ad hoc stipulations to determine the availability of alternations for certain Vs and not others within a single typology (e.g., unlike [blossom], some ergatives allow pure transitive alternations, like [grow]: John grows$_{EXT}$ tomatoes/Tomatoes grow$_{INT}$; however, both [grow] and [blossom] are customarily classified as ergatives). Another consequence is that syntactic structure is driven by global semantic requirements, therefore, optimality considerations about the positioning of arguments and competition among candidates must take into account not only Spell-Out possibilities but also which candidate turns out to be less entropic with respect to the global semantic content to be linguistically instantiated: in this way, I aim to integrate conceptual structures (Krivochen, forthcoming) with conceptual semantics (Jackendoff 2002; Mateu Fontanals 2002 et seq.) and lexical semantics (Kosta 2011, 2014; Hale and Keyser 1993, 1997, 2002), all of which take into account structured meaning (i.e., syntax + semantics), and thus provide valuable insight for interface accounts.

Coming back to the ergative paradigm above, it is to be noticed that the causative meaning is not banned in the construal (which could be interpreted as an argument in favor of compositional approaches rather than root-oriented constraints on construal), since (34) is well formed:

(34) The gardener made the flower blossom. (for instance, by using a special fertilizer on it)

What is banned is the particular materialization of causative meaning in a synthetic manner, that is, Shibatani and Pardeshi's (2001) (a) group comprising lexical causatives. The tension mentioned before is also visible here: a global meaning is available (in principle, if thought systems are independent of language, and

computational themselves, why would it not be?), but not all materialization possibilities are equally evaluated, as already mentioned, synthetic materializations having the upper hand ceteris paribus.[19] In this case, Transfer-PF by local cycles, as in (9), sets the local limits for the application of PF-related operations, including conflation. As one can see, broader interface and architectural issues are to be taken into account when considering constraints over alternations, as well as extra-linguistic issues related to coinage.[20]

6. Conclusion

In this paper, I proposed an interface approach to the phenomenon of causativity, based on the lexical decomposition approach taken by Kosta (2011, 2014) among others, complementing it with notions from Conceptual Semantics and Relational Semantics, configuring a consistent system. In doing so, I highlighted that no linguistic phenomenon can be fully understood or accounted for from a single perspective (be it purely syntactic, semantic, or morpho-phonological), but from the interaction and mutual conditioning between those components, what is called "interfaces", and, moreover, I adopted a particular approach to the interaction between the interfaces and the purely generative syntactic component in terms of a tension or frustration, the solution of which in a particular language L (given certain possibilities for morpho-phonological expression) results in a materialized form. I revisited the concept of causativity exposed, among others, by Schäfer (2008) and Kosta (2011, 2014), and proposed a different, though related, classification of 'flavors of causativity', which in turn helped us eliminate elements in the syntactic representation (e.g., VoiceP) in favor of less in number but more explicit semantically interpretable syntactic heads, thus simplifying the theoretical apparatus while maintaining empirical coverage in the examples analyzed with respect to the cited sources. A more elegant theory of causativity can be further developed along the lines hereby proposed, although there is much pending investigation. Among the problems to tackle, the availability of

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[19] The *ceteris paribus* clause refers to the existence of extra positive cognitive effects (or, in Grohmann's 2003 terms, *drastic interface effects*).

[20] This is related to the following problem (pointed out to me by Phoevos Panagiotidis, pers. comm.): Is it really the case that a root like √CAT is somehow more inclined to be merged with a D procedural node because of some syntactic requirement or is it that, as the N is "more widely used" (because of socio-historical factors, once again), and the phonological matrix is perceived in certain environments, the neurological connection is rutinized and the syntactic configuration reflects that statistical asymmetry by merging {D, √CAT} "by default", as the *most accessible (but not the only one) option for the inferential component to work with*? See Krivochen (2012:123, ff.) for a take on the matter.

alternations, and tests to identify verb typology are particularly salient, and I hope to address them in future research.

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