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The swarm-*alternation in Romance languages: the fine line between causes and sources*

Abstract: The *swarm*-alternation shows two variants, where the locatum and location alternate their positions: in the locatum-subj variant (*The bees swarm in the garden*), the locatum appears in subject position, whereas the location surfaces as a PP. In turn, in the location-subj variant (*The garden swarms with bees*), the location appears as the subject, and the locatum is introduced by a preposition (*de/di* "of" in Spanish, Catalan, and Italian). We argue that the locatum-PP is, in fact, the element introducing the initiator of the event in the latter variant. This is so because the subject is a non-theta selected element, functioning as the undergoer of the event; hence, it does not meet the requirements to initiate it. As to the locatum-subj variant, the locatum subject works as the initiator and undergoer of the event. Furthermore, we show that the argument structure of these verbs consists of both process and initiation phrases in Ramchand's first phase syntax. While the location-subj variant is consistently unergative, the locatum-subj variant can also be unaccusative as is the case with verbs such as *overflow* or *abound*.

Keywords: *swarm*-alternation; verbs of internal causation; paths; initiators; causes

1 Introduction

The *swarm*-alternation with internal causation verbs (ICVs) (*overflow, swarm, boil, reverberate, shine*, etc.)[1] is an ubiquitous phenomenon across languages and has been

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[1] ICVs describe eventualities caused by the inherent properties of their single argument (see Levin and Rappaport Hovav 1995: 91–92).

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described for Dutch (Hoeksema 2008; Hoekstra and Mulder 1990; Mulder 1992; Mulder and Wehrmann 1989), English (Dowty 2000; Salkoff 1983), French (Boons et al. 1976), Hebrew (Halevy 2013), Romanian (Poponet 2016), Spanish (Di Tullio 2001; Mayoral Hernández 2010), and Czech (Fried 2005), among other languages.[2] There are two main variants for the alternation: the locatum-subj and the location-subj variant (but see Section 2.1 for yet another variant in Germanic languages). In the locatum-subj variant, the locatum-DP appears in subject position, while the location appears postverbally as a PP (1a, 2a). Conversely, in the location-subj variant, the location functions as the subject, and the locatum is realized as a PP after the verb (1b, 2b).

(1)   a.   Locatum-subj variant   (Italian)
           Il   vino   trabocca   nel/   dal   vaso.[3]
           The   wine   overflows   in.the/ from.the   glass
           "The wine overflows into/ from the glass."
      b.   Location-subj variant
           Il   vaso   trabocca   di   vino.
           The   glass   oveflows   of   wine
           "The glass overflows with wine."
           (Vincent 1982: 89)

(2)   a.   Locatum-subj variant   (Spanish)
           Las   soldaderas   pululan   en   las   fotografías.
           The   camp-followers   swarm   in   the   photographs
           "The camp followers swarm in the photographs."
           (1999, Elena Poniatowska, *Las soldaderas*)
      b.   Location-subj variant
           Nuestros   mundos   de   imágenes   pululan   de   cuerpos
           Our   worlds   of   images   swarm   of   bodies
           desnudos […].
           naked
           "Our worlds of images swarm with naked bodies."
           (2019, Peter Sloterdijk, *Crítica de la razón cínica*)

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2 A reviewer asks about the productivity of the *swarm*-alternation in Romance languages compared to that of other languages (see Cifuentes Honrubia 2008; Dowty 2000; Frense and Bennett 1996, i.a.). As indicated by the reviewer, that would require running a corpus study to compare the rates of use of this construction across languages. Unfortunately, that enterprise far exceeds the limits of this work.
3 The verb equivalent to *overflow* in Italian (*traboccare*) may take a goal or a source path phrase in the locatum-subj variant, which are here instantiated by *in* "in" and *da* "from," respectively. In Spanish or Catalan, this verb can only take a source path phrase. See Section 5 for further discussion.

Reportedly, the variants also convey different meanings: in the locatum-subj variant, the location's surface is only partially affected by (or filled with) the locatum's mass, whereas in the location-subj variant, the complete surface of the location is occupied by the locatum (see Anderson 1971; Chomsky 1970; Dowty 2000; Fillmore 1968). The PP denoting the locatum in the location-subj variant contains either a mass noun or a plural nominal (1b, 2b). Dowty notes that a singular term may as well appear making possible a reading with multiple instantiations of the event (3b).

(3)   a.   *The wall crawled with roaches/*a roach.*
      b.   *The whole school buzzed with the rumour about the principal and the librarian.*
           (Dowty 2000: 117, (13a, 14a))

In English, the most common preposition introducing the locatum in the location-subj variant is *with*, except for some verbs such as *reek*, which selects *of*. By contrast, in Italian, Catalan, and Spanish, ICVs select the preposition *di/de* "of," which is also true for Dutch (*van*), French (*de*), and German (*von*). The source of this variation may be deemed a lexical idiosyncrasy with no further consequences. Nevertheless, we cast doubt on this assumption and entertain the hypothesis that the preposition used might have a bearing on the properties of the alternation and the status of the *de*-PP in the location-subj variant's argument structure.

As to the lexical-semantic properties of ICVs, Dowty (2000) identifies five meaning traits: physical movement (*crawl, flow, rumble, vibrate*), sound (*hum, buzz, resonate, resound*), light emission (*shine, flicker, glimmer, flash*), smell (*reek, smell, be fragrant*), and abundance (*abound, teem, be rich/ rife/ rampant with*).[4] Below are examples of these verbs in some Romance languages (4–7).[5]

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4 It seems that not every language in which this alternation is possible allows the same verb classes to participate. Fried (2005: 489) notes that Czech verbs of abundance cannot enter the alternation. Similarly, Spanish verbs of smell, which enter the alternation in English and Czech, cannot be used in the locatum-subj variant, but they may be used in the location-subj variant with the preposition *a* "to" (*El campo huele a flores* "The field smells of flowers"). Thus, the availability of the alternation with the verb classes identified by Dowty (2000) might be lexically constrained by reasons obeying to the lexical meaning codified in these verbs' roots, the prepositions the verbs select for, or the preposition characteristically appearing in the alternation.

5 Speakers may show a preference over one of the variants, thus restricting the use of the verb to one of them. For example, in Spanish, some speakers may prefer the use of *pulular* "swarm" in the locatum-subj variant but reject its use in the location-subj variant. Interestingly, bilingual speakers of Catalan and Spanish reject the Catalan location-subj variant with *pul·lular* "swarm," which is coherent with the absence of this variant in the *CTILC* (*Corpus textual informatitzat de la llengua catalana*).

(4) Physical movement

    a.   Locatum-subj variant   (Italian)

…una costernazione angosciosa di tutto quell'
a   consternation   anguished   of   that.the
ignoto indistinto, che formicolava nel silenzio.
unknown indistinct which swarmed   in.the silence
"…an anguished consternation of all that indistinct unknown, which swarmed in the silence."
(2013, Luigi Pirandello, *I romanzi, le novelle e il teatro*)

    a'.   Location-subj variant

…il confessionale formicolava di peccatori.
the   confessionals   swarmed   of   sinners
"The confessionals swarmed with sinners."
(2020, Manuel Scorza, *Rulli de Tamburo per Rancas*)

    b.   Locatum-subj variant

I droni brulicavano in formazione sulla spiaggia.
The drones swarmed   in formation   on.the   beach
"The drones swarmed in formation on the beach."
(https://www.geniuslociarchitettura.it/2017/12/09/uno-sciame-di-droni-illumina-miami-beach/)

    b'.   Location-subj variant

Le vie brulicavano di persone.
The streets swarmed   of   people
"The streets swarmed with people."
(https://www.gamtorino.it/en/evento/visitare-pompei-visita-guidata-a-orario-fisso/)

(5) Sound

    a.   Locatum-subj variant   (Spanish)

La luz restalla en el cerebro.
The light pulsates in   the   brain
"The light pulsates in the brain."
(2011, Gonzalo Suárez, *Las fuentes del Nilo*)

    a'.   Location-subj variant

El público restalla de risa […].
The public   resonates of laughter
"The public resonates with laughter."
(2017, Daría Carrillo, *Knock out*)

    b.   Locatum-subj variant

        El   *so*   *d'unes*   *passes*   *ressonava*   *per*   (Catalan)
        The   sound   of.some   footsteps   resounded   through
        l'estança.
        the.room
        "The sound of footsteps resounded through the room."
        (1983, Lola Anglada, *Les meves nines*)

    b'.   Location-subj variant

        Els   *boscos*   *i*   *vinyes*   *ressonen*   *de*   *clapits*
        The   forests   and   vineyards   resonate   of   barks
        de   *gossos.*
        of   dogs
        "The forests and vineyards resonate with the barking of dogs."
        (1932, Salvador Maluquer & A. Parramon, *Llibre de la natura: primer grau*)

(6)   Light emission

    a.   Locatum-subj variant   (Italian)

        tutti   *gli*   *elementi [...]*   *scintillano*   *nel*   *linguaggio*   *del*
        all   the   elements   sparkle   in.the   language   of.the
        popolo   *nuorese*   *come*   *pietre*   *preziose*   *en*   *un*
        people   Nuoro   like   precious   stones   in   a
        rozzo   *mosaico.*
        rough   mosaic
        "All the elements sparkle in the language of the Nuoro people like precious stones in a rough mosaic."
        (1901, Grazi Deledda, "Tipi e paesaggi sardi", *Nuova Antologia*)

    a'.   Location-subj variant

        I   *suoi*   *occhi*   *scintillarono*   *di*   *urgenza*   *e*   *gratitudine.*
        The   his   eyes   shined   of   urgency   and   gratitude
        "His eyes shined with urgency and gratitude."
        (2023, Livio Gambarini, *La papessa di Milano*)

    b.   Locatum-subj variant   (Spanish)

        Su   *cara*   *de*   *bendito*   *reluce*   *entre*   *la*
        Her   face   of   blessed   shines   between   the
        cabellera   *de*   *rayos*   *desparramados.*
        mane   of   rays   scattered
        "Her blessed fase shines in between the mane of scattered rays."
        (2011, A. Dujovne Ortiz, *Anita cubierta de arena*)

b'.   Location-subj variant
     [Y]   la   tierra   reluce   de   piedras   preciosas   […].
     And   the   earth   shines   of   stones   precious
     "And the earth shines with precious stones."
     (1935, David Vela, *El mito de Colón*)

(7)   Abundance

a.   Locatum-subj variant   (Italian)
     L'energia   solare   abbonda   in   natura   […].
     The.energy   solar   abounds   in   nature
     "Solar energy is abundant in nature."
     (https://cordis.europa.eu/article/id/209834-innovative-system-turns-sunlight-into-fuel/it)

a'.   Location-subj variant
     Ne   emerge   un risultato caleidoscopico, che   abbonda
     From.it   emerges   a   result   kaleidoscopic   that   abounds
     di   tinte,   stampe,   tessuti   e   vari   oggetti
     of   colors   prints   fabrics   and   various   objects
     di   arredo   contemporáneo   […].
     from   furniture   contemporary
     "The result is a kaleidoscopic one, full of colors, prints, fabrics and various contemporary furniture objects."
     (https://www.vogue.it/article/appartamento-new-york-design-edra)

Another relevant property of the alternation is ICVs' lexical aspect. These are taken to denote processes or states that may occur repetitively (Dowty 2000). Despite not discussing the *swarm*-alternation, Levin and Rappaport Hovav (1995) classify ICVs as atelic given that some of them would qualify as statives, while others would behave as processes. The more stative-like ones would be verbs of smell and light emission, while verbs of sound and substance emission would resemble process events. In their view, the lexical aspectual status of these verbs seems to be controversial as it would bring about the existence of unergative state predicates (see Rappaport Hovav and Levin 2000). The evidence gathered in Section 4 confirms Levin and Rappaport Hovav's unergative characterization of these verbs. Yet, using auxiliary selection data in Italian and other diagnostics in Spanish, we establish that some ICVs may instantiate an unaccusative structure in the locatum-subj variant. As to the location-subj variant's structure, auxiliary selection data along with aspectual and semantic diagnostics lead us to characterize it as unergative. Regarding the alternation's aspectual properties, we show that characterizing ICVs as stative is mistaken as they show the properties of dynamic events, except for *abound* whose behavior is that of states.

The paper is structured as follows: Section 2 reviews some previous approaches to the alternation in Dutch, Spanish, Catalan, French, and German. Section 3 introduces Ramchand's (2008, 2014, 2018) framework, on whose terms our analysis of the alternation is laid out. Sections 4 deals with the syntactic and semantic properties of ICVs. In doing so, we also provide an aspectual characterization of these verbs. Section 5 contains the proposal for the first phase syntax of these verbs in the locatum-subj and location-subj variants. We argue that the alternation consists of both process and initiation phrases, which amount to the presence of a spatio-temporal stage and causation in their unergative configuration. This notwithstanding, using data from Italian as well as other Romance languages, we put forth that the argument structure of the locatum-subj variant can be either unaccusative as is the case with verbs such as *overflow* and *abound* or unergative in the case of verbs such as *swarm* in Italian. In contrast, the argument structure of the location-subj variant is consistently unergative. Finally, we discuss how the locatum-subj and location-subj variant's argument structures differ in terms of their subjects' roles. Briefly, in the locatum-subj variant, the subject bears both the roles of initiator and undergoer of the event, whereas in the location-subj variant, these roles are split up, namely, the initiator role is borne by the locatum PP and the undergoer role is taken up by the location subject. Section 6 brings the discussion to an end.

2 Approaches to the *swarm*-alternation with ICVs

This section reviews previous approaches to the alternation in Dutch (Hoekstra and Mulder 1990; Mulder 1992), Spanish (Mayoral Hernández 2010), Catalan (Acedo-Matellán and Oltra-Massuet 2024), as well as other Romance and Germanic languages (Carlier et al. 2013; Haspelmath and Michaelis 2008). We focus on the properties of ICVs, the status of the locatum and location PPs, and the argument structure argued for each variant.

2.1 The *swarm*-alternation in Dutch

In Dutch, the *swarm*-alternation shows the two variants hitherto discussed, the locatum-subj variant (8a) and the location-subj variant (8b), as well as an impersonal variant where the location appears as a PP and the locatum is introduced by the preposition *van* "of" (8c).[6]

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6 In this paper, we concentrate on the first two variants in Dutch. The reader is referred to Hoekstra and Mulder (1990) for further discussion of the third variant in Dutch.

(8) a. *Mieren   krioelen   in   de   keuken.* (Dutch)
       Ants   crawl   in   the kitchen
       "Ants are crawling (in large numbers) in the kitchen."

   b. *De   keuken   krioelt   van   de   mieren.*
       The kitchen crawls   with the ants
       "The kitchen is crawling with ants."

   c. *Het   krioelt   van   de   mieren   in   de   keuken.*
       It   crawls   with the ants   in   the kitchen
       "The kitchen is crawling with ants."
       (Hoeksema 2008: 2–3, (5))

Hoekstra and Mulder's (1990) analysis of the location-subj variant is based on the intransitive (9) and transitive locative alternation (10), for which a small-clause (SC) headed by a silent adjective equivalent to *vol* "full" is assumed to appear in their argument structures. Accordingly, they propose an unaccusative argument structure, where the location DP is raised from its original position of subject of the SC to spec,IP to receive nominative case.[7] As to the locatum-subj variant, they take it to instantiate an unergative argument structure as no SC is present. The verb appears with a locative phrase instead whose adjunct status is confirmed by its ability to appear pre- and postverbally (11) (Hoekstra and Mulder 1990:16).

(9) *De   kamer   staat   vol   **met**/ ?**van**   rook.*
     The room   stands full with   of   smoke
     "The room is filled with smoke."

(10) a. *Hij   smeert   boter   op   zijn   brood.*
        He   spreads butter on   his   bread
        "He spreads butter on his bread."

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7 Hoekstra and Mulder (1990) build their analysis on Chinese data. In the location-subj variant, the adjective *man* "full" appears in complement position (i), which can take a nonselected subject, denoting a location (ia,c). This variant would be, in essence, unaccusative, as the particle would realize an SC-complement, from which the subject would rise to subject position. However, Dutch does not allow any equivalent adjectives in the alternation (12). See Mulder (1992) for further discussion of this parallelism's limitations.

(i) a. *Qiang-shang   pa   **man**   changchunteng.*   (Chinese)
       Wall-top   crawls **full** ivy

   b. **Qiang-shang   **man**   changchunteng   pa.*

   c. **Qiang-shang   zai   huayuan-li   pa-zhe.*
       Wall-top   in   garden-inside crawl-DUR
       "The wall is crawling in the garden."
       (Hoekstra and Mulder 1990: 18, (37))

b. *Hij **be**smeert zijn brood **met** boter.*
    He BE-spreads his bread with butter
    "He spreads his bread with butter."
    (Mulder and Wehrmann 1989: 111–112, (6, 3))

(11) *…dat er mieren {in de tuin wemelen/ wemelen*
      that there ants in the garden teem/ teem
      in de tuin}.
      in the garden
      (Hoekstra and Mulder 1990: 16, (34))

The purported similarities between the *swarm*-alternation, and the intransitive and transitive locative alternations in Dutch are challenged by Mulder (1992). First, the preposition *van* "of" that appears in the location-subj variant is incompatible with the intransitive and transitive locative alternations (9–10). Yet another reason why Hoekstra and Mulder's (1990) analysis would not be feasible has to do with the impossibility of having the adjective *vol* "full" in the location-subj variant of the *swarm*-alternation (12) (see footnote 7).

(12) **De tuin krioelt **vol** van de mieren.*
      The garden crawls full of the ants
      (Mulder 1992: 184, (50))

Thus, Mulder (1992) rejects an analysis based on the presence of a *vol*-SC and puts forth an unergative argument structure with an adjunct PP, denoting a location in the locatum-subj variant and a source in the location-subj variant. Support for the PP's adjunct status comes from its omissibility in the locatum-subj variant (13b) and the fact that both the PP and verb receive stress (14), all of which are a sign of adjunct status in Dutch (see also Hoekstra and Mulder 1990: 8–9).

(13) a. *…dat de mieren krioelen **in de tuin.***
          that the ants crawl in the garden
      b. *…$^?$dat de mieren krioelen.*
          that the ants crawl
          (Mulder 1992: 187, (60))

(14) a. *…dat de mieren in de TUIN KRIOELEN.*
          that the ants in the garden crawl
      b. *…*dat de mieren in de TUIN krioelen.*
          that the ants in the garden crawl
          (Mulder 1992: 188, (62))

As to the PP in the location-subj variant, Mulder takes it to encode source meaning. Given that the PP can be replaced by an adjunct phrase (*dat komt door* "as a result

of") expressing a similar meaning, he concludes that its status is that of an adjunct (15a, b). Note that the sequence's acceptability is compromised to some extent in (15c).

(15) a. …*de zak rammelt; {dat komt door de stenen/*
     the   bag   rattles   that   comes   by   the   stone/
     zoveel   stenen zitten erin}.
     so.many   stones   sit   there.in

   b. …*de hemel schittert; {dat komt door de sterren/*
     the   sky   twinkles   that   comes   by   the   stars/
     zoveel   sterren staan er}.
     so.many   stars   stand   there

   c. …*de tuin   krioelt; {$^{??}$dat komt door de*
     the   garden   crawls   that   comes   by   the
     mieren/ zoveel   mieren zijn er}.
     ants/   so.many   ants   are   there
     (Mulder 1992: 190–191, (69–70))

Mulder puts forth that these verbs undergo a metaphorical meaning extension in the location-subj variant, thus allowing for the selection of subjects other than those characteristically appearing in the locatum-subj variant. In essence, both variants share the same argument structure except for the presence of a source phrase in the location-subj variant, which enables the extension of the property instantiated by the verb to the location subject. However, according to Mulder, this element may be left out, which is somewhat unexpected if one is to assume that it has a mediating role in the metaphorical meaning extension making possible that the location becomes the predicate's subject. Similarly, it is unclear how the source meaning of the locatum PP may contribute to the metaphorical meaning extension in the location-subj variant. Finally, Mulder takes the location-subj variant to be unergative, which seems consistent with the absence of an SC as complement of the VP and the adjunct status of the locatum PP (see also Hoekstra and Mulder 1990). This can be further sustained with auxiliary selection data found in an internet search for Dutch *wemelen* "swarm, teem" (16), which appears with *hebben* "have," the auxiliary selected for unergative verbs in this language.

(16)   *De   jonge   aarde   moet* **gewemeld hebben** *van*
         The   young   earth   must   teemed   have   of
         deze   dingen   en   volgens   de   onderzoekers   is   hier
         these   things   and   according.to   the   researchers   is   here
         Waarschijnlijk   het   leven   ontstaan.
         probably   it   life   originated
         "The young Earth must have been teeming with these things and, according to researchers, life probably originated here."
         (2014, O. Van Kooten, "Leven is waarschijnlijk op de zeebodem ontstaan", *astroblogs*)

2.2 The *swarm*-alternation in Spanish and Catalan

Mayoral Hernández (2010) proposes a derivational approach for Spanish contingent on the properties of the preposition *de* "of" appearing in the location-subj variant (18). The phrase structure of the *de*-PP is the same as that of the preposition *en* "in" in the locatum-subj variant (17). The derivational account is justified building on Freeze's (1992) analysis of locative and possessive predicational relations, which establishes a direct link between these. The different spell-outs of the prepositions and the different word orders would be the result of the syntactic derivational process that makes possible the two variants. The locatum-subj variant is obtained when the locatum DP is raised to spec,vP to satisfy the EPP. In turn, in the location-subj variant the location DP rises to spec,vP only after the locative preposition rises to P whereby it acquires possessive meaning (18), which is reportedly related to a source meaning (2010: 231). Thus, the location-subj variant is taken to instantiate an unaccusative argument structure, which presumably derives from the properties of the preposition *de* "of."

(17) a. *Los turistas pululan en las playas.* (Spanish)
The tourists swarm in the beaches
"The tourists swarm in the beaches."
b. [$_{vP}$ los turistas$_i$ [$_V$ pululan [$_{PP}$ t$_i$ [$_{P'}$ ∅ [$_{PPloc}$ t$_i$ [$_{P'loc}$ en las playas]]]]]]]

(18) a. *Las playas pululan de gente.*[8]
The beaches swarm of people
"The beaches swarm with people."
b. [$_{vP}$ las playas$_i$ [$_V$ pululan [$_{PP}$ t$_i$ [$_{P'}$ de$_j$ [$_{PPloc}$ gente [$_{P'loc}$ t$_j$ t$_i$]]]]]]]
(Mayoral Hernández 2010: 233, (41–42))

According to Mayoral Hernández, the fact that prepositions equivalent to *with* and *of* are used in the *swarm*-alternation across languages is a strong argument in favor of the nonadjunct status of these elements. However, no evidence leading to the conclusion that the location and locatum PP behave as arguments is provided. As shown in (19a, 20a), the result of using the proform *hacerlo* "do it" in Spanish to substitute for ICVs in the locatum-subj variant sheds doubt on the PPs' argument status and unaccusativity of the argument structure. As to these test's results with the location-subj variant (19b, 20b), we note that they are limited as the proform requires agentive subjects, rendering some sequences' acceptability marginal (19b, 20b). This is due to the fact that the subjects in these sequences are not agentive despite being the initiators of the events.

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8 See footnote 5.

(19) a. *Los   ancianos parsimoniosos pululan [en los   teatros] y*
The   elderly   parsimonious   swarm   in   the   theatres and
los adolescentes inquietos lo hacen [en los   cines].
the teenagers   restless   it   do   in   the   cinemas
"The parsimonious elderly people swarm in the theaters and the restless teenagers do so in the cinemas."

b. ?*Los teatros   pululan [de ancianos parsimoniosos] y*
The   theatres   swarm   of   elderly   parsimonious   and
los   cines   lo hacen [de adolescentes inquietos].
the   cinemas it   do   of   teenagers   restless
"The theatres swarm with parsimonious elderly people and the cinemas do it with restless teenagers."

(20) a. *Los vivos   azules brillan [en el   mar] y*
The   bright blues   shine   in   the   sea   and
los naranjas vibrantes lo hacen [en el   cielo].
the oranges   vibrant   it   do   in   the   sky
"The bright blues shine in the sea and the vibrant oranges do so in the sky."

b. ?*El   mar brilla   [de vivos   azules] y   el   cielo*
The sea   shines   of   bright   blues   and the sky
lo hace [de vibrantes naranjas].
it   does of   vibrant   oranges
"The sea shines with bright blues and the sky does so with vibrant oranges."

Mayoral Hernández concludes that ICVs behave as unaccusative when they enter the location-subj variant. Despite the evidence adduced, we think that there are good reasons to reject an unaccusative argument structure for this variant as in Italian the auxiliary *avere* "have" appears in the perfect tenses in the location-subj variant (see Section 5).

Similarly, Acedo-Matellán and Oltra-Massuet (2024) put forth that *abundar* "abound," a verb denoting an individual-level predicate and entering the *swarm*-alternation in Catalan, is unaccusative in the location-subj variant (21a). They take this variant to denote an existential relation between the locatum and location in line with Freeze's (1992) analysis, just like in Mayoral Hernández (2010). Along with it, they also deal with an alternative syntactically existential variant (21b), where the locatum's presence (*esglésies romàniques* "Romanesque churches") is not mediated by any preposition (see Section 5).

(21) a. *Catalunya abunda   {en/ d'} esglésies romàniques.* (Catalan)
          Catalonia abounds in   of churches Romanesque
          "Catalonia abounds in Romanesque churches."

      b. *A Catalunya hi abunden (les) esglésies romàniques.*
          At Catalonia LOC abound the churches Romanesque
          "In Catalonia there abound Romanesque churches."
          (Acedo-Matellán and Oltra-Massuet 2024: 29, 52)

The argument structures for (21a, 21b) would be identical except for the defective character of the prepositional head in the location-subj variant (21a) (2024: 28–29). This notwithstanding, notice that the configuration of the arguments in (21b) resembles that of the locatum-subj variant (22), that is, both of them have as notional subject the locatum argument. The same verb in Italian in the location-subj configuration takes *avere* "have" as auxiliary in the perfect tenses, which is the case when the argument structure is unergative in this language, shedding doubt on the alleged unaccusativity of the location-subj variant (cf. 21a, 23) (Sorace 2000). See Section 2.3 for further discussion of how unergative verbs can enter a syntactically existential configuration with an unaccusative argument structure.

(22) *Les esglésies romàniques abunden a Catalunya.* (Catalan)
      The churches Romanesque abound at Catalonia
      "Romanesque churches abound in Catalonia."

(23) *Questi mari hanno sempre abbondato di pesci.* (Italian)
      These seas have always abounded of fishes
      "These seas have always been abundant with fish."
      (https://www.dizionario-italiano.it/dizionario-italiano.php?
      parola=abbondare)

While Acedo-Matellán & Oltra-Massuet do not deal with the locatum-subj variant of *abundar* "abound" in Catalan (24), we highlight the fact that in Italian the equivalent sequence requires *essere* "be" selection in the perfect tenses, a clear indication of unaccusativity in this language (see Section 5 for further discussion).

(24) *I soldi non sono mai abbondati in casa* (Italian)
      The money.PL not are never abounded in house
      nostra.
      ours
      "Money has never been abundant in our house."
      (https://www.dizionario-italiano.it/dizionario-italiano.php?
      parola=abbondare)

Using the proform *hacerlo* "do it" to test for the adjunct or argument status of the postverbal PPs with *abundar* "abound" in Catalan produces the contrasts shown in (25). Note that this test with Spanish *pulular* "swarm" shows different results: in the locatum-subj variant, the PP behaves as an adjunct, while in Catalan, the sequence's acceptability is limited (25a). This is coherent with the Italian auxiliary selection data seen above (23, 24), confirming thus the unaccusativity of locatum-sub variant with *abundar* "abound." However, we acknowledge the fact that the proform requires agentive entities as initiators (MacDonald 2024). Similarly, in the location-subj variant (25b), the test's results are not clear.

(25)   a.   ^{??}*Les esglésies romàniques   abunden a   Catalunya* (Catalan)
           The   churches Romanesque abound   in Catalunya
           i   sobretot   ho fan a   la   Catalunya profunda.
           and especially it   do   in   the   Catalonia deep
           "Romanesque churches abound in Catalonia and they especially do in deep Catalonia."
   b.   **Catalunya abunda   en esglésies romàniques*
           Catalonia   abounds in   churches Romanesque
           i   València també ho fa   en esglésies gòtiques.
           and Valencia also   it   does in   churches gothic
           "Catalonia abounds with Romanesque churches and Valencia also does it with Gothic churches."

To sum up, the data reviewed indicate that there is more than one possible argument structure configuration for ICVs in the *swarm*-alternation in Spanish and Catalan in the locatum-subj variant. Depending on the verb, the locatum and location-PP may have argument or adjunct status: Spanish *pulular* "swarm" in the locatum-subj variant appears in an unergative configuration, whereas Catalan *abundar* "abound" in the same variant articulates an unaccusative one. As to the location-subj variant, its argument structure is consistently unergative (see Section 5).

2.3 The *swarm*-alternation in other Romance and Germanic languages

Another possibility explored in the literature is that the locatum PP in the location-subj variant instantiates an internal argument of the verb in French and German (Carlier et al. 2013; Haspelmath and Michaelis 2008). Carlier et al. (2013) consider that the *de*-phrase appearing in the *swarm*-alternation (and other verbs entering the transitive locative alternation in French) behaves as a genitive object given that the clitic pronoun *en* "of something" might substitute for it. Nevertheless, there is

compelling evidence against this analysis for the location-subj variant in Spanish. This evidence comes from the incompatibility of this variant with the partitive phrase *de todo* "of everything." The *de todo* phrase characteristically occupies the (direct) internal argument position, which makes it compatible with transitive and unaccusative verbs, and the impersonal *se* (26) (Treviño 2004, 2010). Thus, it is not possible to find it in the external argument position as subject of unergative or transitive verbs (27). If the locatum PP in the location-subj variant were a true internal argument, it should be interchangeable with this partitive phrase. However, using this element in this variant renders an ungrammatical sequence (28b), which just goes to show that the position of *de abejas* "of bees" (28a) and that of *de todo* "of everything" (26) are not equivalent.

(26)   {*Comió/   llegó/   se   vendió}   de   todo.*   (Spanish)
         Ate-3SG/   arrived/   REFL   sold-3SG   of   everything
         "He ate of everything./ Of everything arrived./ Of everything was sold."
         (Treviño 2010: 50, (2a, b))

(27) a. **{De   todo   brilló/   brilló   de   todo}.*
         of   everything   shined/   shined   of   everything
         "Of everything shined."

   b. **{De   todo   inundó   los   campos/   Inundó   de*
       Of   everything   flooded   the   fields/   flooded   of
       todo   los   campos}.
       everything   the   fields
       "Of everything flooded the fields."

(28) a. *El   jardín   pulula   de   abejas.*
         The   garden   swarms   of   bees
         "The garden swarms with bees."

   b. **El   jardín   pulula   de   todo.*
       The   garden   swarms   of   everything
       "The garden swarms of everything."

One could think that the ungrammaticality of (28b) follows from a general incompatibility of *de todo* "of everything" with ICVs. Quite the contrary, it is possible to find *de todo* "of everything" in the existential variant, where a locative PP occupies the external argument position (29). *De todo* "of everything" (or a bare plural NP) becomes the logical subject of the predicate, showing agreement in number and person with the verb. This is an instance of an unergative verb entering an unaccusative configuration via the presence of a locative phrase in the external argument position, satisfying the EPP (see Rigau 1997; Torrego 1989). Thus, we can discard that the locatum PP in the location-subj variant is an internal argument.

(29) *En el jardín {pulula de todo/   pululan*
      In   the   garden   swarms   of   everything/   swarm
      de esos   gorriones de plumas café}.
      of   those   sparrows   of   wings   brown
      "In the garden swarms of everything / swarm of those sparrows with brown wings."

Notice the contrast between (28b) and (29): the former contains a (direct) internal argument instantiated by *de todo* "of everything," hence forcing an interpretation where the subject must be an initiator, that is, the verb codifies internal causation. This is not true for (29), where the unaccusative structure fails to contain internal causation. In this light, consider (30) in which the verb *rebosar* "overflow" is shown with the partitive phrase *de todo* "of everything." These data indicate that *rebosar* "overflow" may instantiate a different argument structure with no internal causation (see Sections 4 and 5).

(30) [Cádiz] *[r]ebosa de todo   menos de alegría.*
      Cádiz   overflows   of   everything   except   of   happiness
      "[Cádiz] overflows with everything but happiness."
      (https://www.diariodecadiz.es/diario_del_carnaval/rebosa-dice_0_
      1767724098.html)

Similarly, the verb *abundar* "abound" in Spanish may also take a human subject and convey a meaning close to that of *possess*, an individual-level predicate. The example in (31) shows this verb with an internal argument instantiated by *de todo* "of everything" (see Section 5).

(31) *Los nuestros carecían de las cosas más*   (Spanish)
      The   ours   lacked   of   the   things   more
      *necesarias y   ellos **abundaban de todo***   [...].
      necessary and   they   abounded   of   everything
      "Our people lacked the most necessary things and they had plenty of everything."
      (https://www.imperivm.org/comentarios-sobre-la-guerra-civil-julio-cesar-
   libro-i/)

Finally, it is worth mentioning that the argument structures of the location-subj variant and the syntactically existential variant (21) cannot be identical as proposed by Acedo-Matellán and Oltra-Massuet (2024). Were they identical, the contrast between (28) and (29) would go unexplained.

2.4 Interim conclusion

By examining previous approaches to the *swarm*-alternation, we have uncovered several properties of the alternation in Romance languages. First, these verbs are not always unaccusative. The location-PP is an adjunct in the locatum-subj variant with the verb *swarm*. Finally, we have also discarded that the locatum-PP in the location-subj variant is an internal argument of the verb except with *overflow* (30) and *abound* (31).

3 The theoretical framework: Ramchand's first phase syntax

We adopt Ramchand's first phase syntax (Ramchand 2008, 2014), in which event and argument structure are entwined in the verb phrase (VP). There are three possible phrases: initiation (initP), process (procP), and result (resP) (32). The number of phrases projected in a verb's first phase syntax will hinge on the category labels included in the verb root's lexical entry, that is, *init*, *proc*, and *res*. This information belongs to roots' type-A meaning, which instantiates structural meaning relevant to syntax and which is used to create the articulated phrase structure. By contrast, type-B meaning encapsulates lexical conceptual meaning with no effect over syntax. Type-B meaning is ultimately relevant to the mind module as it spreads all over the syntactic structure, once the derivation is sent off to the conceptual-intentional interface. The root is inserted into as many terminal nodes as category labels are specified. Thus, terminal nodes may be realized by more than a single verb root. In line with Nanosyntax's premises (Caha 2019; Starke 2010), a single lexical item may identify a terminal node or a chunk of structure. In turn, each category label corresponds to a subeventive projection identifying the subevents of the macro-event, i.e., an initiation, process, and result subevent.

(32)
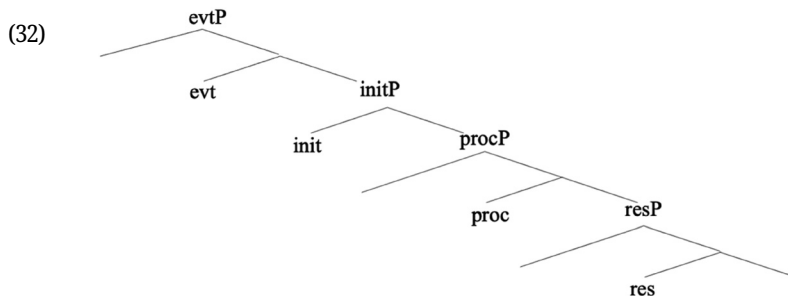
In Ramchand's first phase syntax, an event variable appears within the verbal head. The event variable may consist of several subevents, which together form a macro-event via the "leads to" relation (33).

(33)   *Event Composition Rule*
          $e = e1 \rightarrow e2$: e consists of two subevents, e1, e2 such that e1 causally
          implicates e2 (Ramchand 2008: 44, (5))

In the framework, a process denotes an eventuality with internal change unlike states, which lack it. Only procP is assumed to contain an event variable, whereas initP and resP instantiate states (Ramchand 2008: 44). The interpretation of state subevents is contingent on its merging position; thus, the composition of the argument structure is syntactically determined. Ramchand proposes two rules to determine its interpretation: if the state precedes the process subevent, then it will be interpreted as an initiation subevent (34); in contrast, if it follows the process subevent, it will be taken to instantiate a result subevent (35).

(34)   IF $\exists e_1, e_2$ [State(e_1) & Process(e_2) & $e_1 \rightarrow e_2$], then by definition Initiation (e_1)

(35)   IF $\exists e_1, e_2$ [State(e_1) & Process(e_2) & $e_2 \rightarrow e_1$], then by definition Result (e_1)
          (Ramchand 2008: 44)

This notwithstanding, we assume Silvagni's (2017) redefinition of the notion of event in terms of the presence of a spatio-temporal unit, or stage, and discard dynamicity as a necessary property of events. Silvagni stablishes a clear divide between events and states, which amounts to the presence or absence of a stage, or spatio-temporal unit (Carlson 1977; Kratzer 1995; cf. Maienborn 2005; Rothmayr 2009). States are merely properties over individuals; hence, spatio-temporal notions are not relevant to them.[9] In contrast, events are defined by the presence of a stage(s), or phases, as part of their internal constitution. Dynamicity obtains whenever a sequence of stages is triggered by the action of an entity able to initiate a specific event. An entity's ability to become an initiator does not depend on agentivity, but rather on its capacity to generate such event as is the case with ICVs. A welcome consequence is that dynamicity becomes an epiphenomenon of events rather than their defining property, thus departing from most accounts of internal aspect that make dynamicity the deciding feature of eventiveness (cf. Rothstein 2004; Smith 1991; Vendler 1957). Under these assumptions, two main classes of eventualities arise: states and events, which may be further subclassified as nondynamic and dynamic (36).

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9 For further discussion of the notion of states and problems posed by stage-level states, see Silvagni (2017), Maienborn (2005), Rothmayr (2009), i.a.

(36)   a.   States: *love, know, be yellow, be intelligent,* etc.
    b.   Events:
        i.   Nondynamic events: *sit, lie, be ill, be tired, hang, smell,* etc.
        ii.   Dynamic events: *wait, sleep, run, write, work, build, paint*, etc.

Consequently, it is necessary to modify the denotation of the Ramchandian process as a subevent containing solely a spatio-temporal unit, which in the present terms constitutes an event. On the other hand, a pertinent distinction between initP and resP is established according to which, only the former denotes a proper state of being the cause for the initiation of an event (i.e., a process). By contrast, the latter is held as an event, containing a spatio-temporal unit. Thus, dynamicity results from the concatenation of at least an initiation and process head, or the combination of the process head with a result or path phrase.[10] The latter possibility has already been discussed in Fábregas and Marín (2017), where they put forth a proposal endeavoring to separate eventivity and dynamicity and in which dynamicity stems from the type of complement selected by the process head. Finally, nondynamic events (36b, i) consist of a single spatio-temporal unit, which in the terms laid out amounts to one process head in the first phase syntax. Note that the changes introduced do not substantially modify Ramchand's event composition rules. The interpretation of two subevents in immediate vicinity will then follow from the previously stated rules, which resolve that a state subevent appearing before an event, or process head, is an initiation subevent (37), and that two consecutive events will be interpreted as a process and a result subevent (38), each in order.

(37)   IF $\exists e_1, e_2$ [State(e_1) & Event(e_2) & $e_1 \rightarrow e_2$], then by definition Initiation (e_1)

(38)   IF $\exists e_1, e_2$ [Event(e_1) & Event(e_2) & $e_2 \rightarrow e_1$], then by definition Result (e_1)

Event participants, as instantiated by NPs, DPs, PPs, etc., may occupy the specifier or complement positions of the initiation, process, and result heads, thereby determining the entities' role in the event. Thus, a predication relation is stablished between heads and their specifiers: resultees appear in spec,resP, and undergoers do so in spec,procP. The same reasoning applies to the interpretation of DPs in the specifier position of the initiation head. Following Harley (2013), Ramchand (2018) argues for the existence of a functional head evtP, hierarchically higher than initP, which merges with the resulting first phase syntax and whose specifier contains the external argument. An entity can occupy this position via external or internal merge. evtP also closes the first phase syntax and deploys its content to denote a property of

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10 Such events are instantiated by unaccusative verbs such as *break* or *tear*. In this case, dynamicity stems from the succession of two consecutive spatio-temporal stages, which are realized by proc and res.

events (see Ramchand 2018 for further discussion). Importantly, evtP and initP differ in that the latter is the one introducing the causative semantics. The presence of this causative head legitimizes the presence of an initiator in the external argument position, i.e., an entity whose inherent properties allow it to generate the event regardless of intentionality. The subevent introduced by the initiation head is characterized as a state, namely, an eventuality without internal change. A caveat is in order: the single appearance of the initiation head introduces a state subevent as those instantiated by verbs such as *love, know,* or *fear,* which simply ascribe a property to an entity, i.e., an individual-level property. States may take as complement a rhematic element such as a DP, NP, or PP, and, in that case, the init head will serve to mediate a predication relation between a figure and a ground. Despite there being no process event that can be initiated by the DP in Spec,evtP, the DP entity is still interpreted as the initiator of the macroevent, which amounts to having the property to hold the state.

4 Syntactic and semantic properties of ICVs

In Section 2, we hinted at the possibility that most ICVs are unergative. Yet they are often characterized as stative (see Section 1), which raises the question of how to reconcile these apparently conflicting notions. If ICVs are not stative, then they should contain a procP. Furthermore, since these are internally caused events, we expect their first phase syntax to contain an initP. In Sections 4.1 and 4.2, we put to the test the presence of a spatio-temporal stage and examine the availability of an action component in the first phase syntax.

4.1 A spatio-temporal unit in the lexical entry of ICVs

To establish the existence of a spatio-temporal unit in the denotation of ICVs, we use as diagnostic the compatibility with the Spanish aspectual copula *estar* "be" (lit. "stand") and quantification over the event variable (see Kratzer 1995; Silvagni 2017; i.a.). We contrast them with the eventive verb *correr* "run" and the stative verb *saber* "know." The first diagnostic puts to the test the compatibility of ICVs with the aspectual copula *estar* "be" in Spanish (39), which is characteristically compatible with predicates containing a stage in their denotations (Silvagni 2017: 121).

(39)   Progressive periphrasis
        a.   …*está   corriendo/ *sabiendo.* (Spanish)
               is   running/   knowing

b. …*está   pululando/ hirviendo/ rebosando/   brillando/*
    is   swarming/ boiling/   overflowing/ shining/
    resonando.
    resonating

On the other hand, the possibility of quantifying over the eventive variable by means of *siempre que* "whenever" (40) supports the existence of an event variable in these predicates (see Silvagni 2017: 127, and references therein).

(40)   Quantification over the spatio-temporal variable
       Cada vez/ siempre que …
       Whenever …
   a. *Ana corre en la   pista, sus amigos la   animan.*
       Ana   runs   in the   track   her friends her.ACC cheer.up
       "Ana runs in the track, her friends cheer her up."
   b. **Ana es alta, su   madre   está   contenta.*
       Ana   is tall.F her   mother is   satisfied
       "Ana is tall, her mother is satisfied."
   c. *las abejas pululan entre   las flores, el   perro*
       the bees   swarm   among   the flowers the   dog
       sale   corriendo.
       leaves   running
       "the bees swarm among the flowers, the dog runs away."
   d. *el   agua   hierve, baja   el   fuego.*
       the   water boils   turns.down   the   heat
       "the water boils, he turns down the heat."
   e. *la   leche rebosa   en el   cazo, tengo   que   limpiar*
       the   milk overflows in the pot   have.1SG that clean.up
       todo.
       everything
       "the milk overflows in the pot, I have to clean up everything."
   f. *el   fluorescente titila,   voy   a   comprar uno*
       the   fluorescent flickers   go.1SG to buy   a
       nuevo.
       new
       "the fluorescent flickers, I go to buy a new one."
   g. *el   sol   brilla, salimos   a   pasear.*
       the   sun   shines go.out.1PL to stroll
       "the sun shines, we go out for a walk."
   h. *el   altavoz resuena,   cierro   las   ventanas.*
       the   speaker resonates close.1SG the   windows
       "the speaker resonates, I close the windows."

In conclusion, ICVs conform to the pattern of events as they contain a spatio-temporal unit, which amounts to the presence of a procP in the first phase syntax.

4.2 The init head in the first phase syntax of ICVs

To determine the presence of an action component, we use as diagnostics the proform *hacerlo* "do it" (Dowty 1979; MacDonald 2024; Silvagni 2017; i.a.). The comparison is established using a predicate with the verb *correr* "run," which can be uncontroversially regarded as an instance of an active event, and a predicate with the verb *estar* "be," as an instance of a predicate lacking an action component.

ICVs in Spanish can be paraphrased with *hacer* "do" (41). However, among them, *rebosar* "overflow" shows a lower degree of acceptability in this context, which suggests its argument structure might differ from that of the rest of ICVs (see Section 5).[11]

(41)　Paraphrasis with *hacer* "do"

　　a.　*Lo　que　hace Ana todas las　mañanas　es　correr.*
　　　　The　that　does Ana　all　　the　mornings　is　run
　　　　"What Ana does in the morning is to run."

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11 A reviewer asks about the behavior of *rebosar* "overflow" with the proform *hacerlo* "do it" to determine the argument status of the PPs. (ia, b) exemplify the locatum-subj variant with a location PP and source PP, while the location-subj variant is found in (ic). This test renders dubious sequences. As mentioned above, this has to do with the verb's argument structure, which is discussed in Section 5.

(i)　a.　*?El　vino　rebosa　[en　el　　vaso]　y　　la　　leche*
　　　　The　wine　overflows　in　the　　glass　and　the　milk
　　　　lo　hace [en　　el　cazo].
　　　　it　does　in　　the　pot
　　　　"The wine overflows in the glass and the milk does so in the pot."

　　b.　*?El　vino　rebosa　[del　　vaso]　y　　la　　leche*
　　　　The　wine　overflows　from.the　glass　and　the　milk
　　　　lo　hace [del　　cazo].
　　　　it　does　from.the　pot
　　　　"The wine overflows from the glass and the milk does so in the pot."

　　c.　*?El　vaso　rebosa　[de　　vino]　y　　el　　cazo*
　　　　The　glass　overflows　of　　wine　and　the　pot
　　　　lo　hace [de　　leche].
　　　　it　does　of　　milk
　　　　"The glass overflows with wine and the pot does so with milk."

b. **Lo que hace Ana después de trabajar es estar*
The that does Ana after   of work   is be
cansada.
tired.F
"What Ana does after work is to be tired."

c. *Lo que hace la abeja en primavera es pulular*
The that does the bee in spring   is swarm
entre las flores.
among the flowers
"What the bee does in the spring is to swarm among the flowers."

d. *Lo que hace el agua cuando alcanza 100*
The that does the water when   reaches 100
grados es hervir.
degrees is boil
"What the water does when it reaches 100 degrees is to boil."

e. $^?$*Lo que hace la leche en el microondas es*
The that does the milk in the microwave is
rebosar en el vaso.
overflow in the glass
"What the milk does in the microwave is to overflow from the glass."

f. *Lo que hace el fluorescente de la oficina es*
The that does the fluorescent of the office is
titilar todo el tiempo.
flicker all the time
"What the fluorescent in the office does is to flicker all the time."

g. *Lo que hace el sol tras la tormenta es brillar.*
The that does the sun after the storm   is shine
"What the sun does after the storm is to shine."

h. *Lo que hace el altavoz es resonar a 423MHz.*
The that does the speaker is resonate at 423MHz
"What the speaker does is to resonate."

In this section, we have only considered the locatum-subj variant. Applying the *hacerlo* test to the location-subj variant results in ungrammatical sequences. This is accounted for by the fact that its subject is not a proper initiator of the event, rather than being related to the absence of an action component (42a).

(42) a. **Lo que hace el cielo es brillar de estrellas.*
The that does the sky is shine of stars
"What the sky does is to shine with starts."

The evidence brought to bear shows that ICVs contain an action component, here identified with the presence of an initiation head in their first phase syntax.[12]

4.3 Interim conclusion

ICVs that codify dynamic events have a first phase syntax comprising both initiation and process phrases plus two event participants, initiator and undergoer, respectively. That being said, in Section 2, we identified two verbs entering the *swarm*-alternation, whose properties differ from those of most ICVs: *abound* and *overflow*. According to the evidence presented in Section 4, the verb *abound* in Spanish, Catalan, and Italian does not have causative semantics and denotes an individual-level predicate; hence, its first phase syntax cannot have a process phrase (see Acedo-Matellán and Oltra-Massuet 2024). Thus, it can only consist of an initiation phase. On the other hand, *overflow* in Romance languages may take a path phrase making its argument structure unaccusative as per the facts to be discussed in Section 5. Finally, in Section 2, we saw that ICVs may also instantiate a syntactically existential construction without causative semantics, thus being amenable to an analysis where a single process phrase is projected.

5 The first phase syntax of the *swarm*-alternation

Section 4 concluded that ICVs prototypically consist of initP and procP. Yet, while the location-subj variant is consistently unergative, the locatum-subj variant can also be unaccusative. Our point of departure is the first phase syntax of the locatum-subj variant with *swarm* in Spanish, which has the locatum DP as initiator and undergoer of an atelic event (43). As seen in Section 2.2, the location PP is an adjunct. In the location-subj variant (44), the subject is the location entity, triggering agreement with the verb as no other element is able to do so. We claim that the location is not a proper initiator of the event but rather an undergoer, since it does not properly meet the requirements to initiate the event. Yet, the event remains being internally caused by an entity whose properties endow it with the capability of bringing it into existence, i.e., the locatum PP. To substantiate our claim, we examine the properties of the verb *overflow* in Spanish and Italian, which can have a PP introduced by *de* "of" in both

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12 A reviewer notes that Dutch ICVs do not pass the tests discussed in Section 4.2. However, due to space limitations, we cannot address this topic here. Thus, we leave it for future work on cross-linguistic variation in the *swarm*-alternation.

variants. Yet, the PPs are shown to perform different roles in their first phase syntax: in the locatum-subj variant, *de* "of" introduces a source path indicating the location whence the locatum's "movement" originated, whereas in the location-subj variant, the preposition heads a cause phrase denoting the initiator of the event.

(43)   Locatum-subj variant

   a.   *Las   avispas   pululan   en   la   piscina.*   (Spanish)
        The   wasps   swarms   in   the   pool
        "The wasps swarms in the pool."

   b.
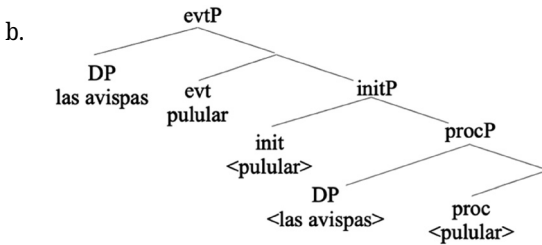
(44)   a.   Locatum-subj variant
              El   vino   rebosa   en   el/   del   vaso.[13]   (Spanish)
              The   wine   overflows   in   the/   from.the   glass
              "The wine overflows into/from the glass."
       b.   Location-subj variant
              El   vaso   rebosa   de   vino.
              The   glass   overflows   of   wine
              "The glass overflows with wine."

This section is organized as follows. First, we deal with the properties of source and cause PPs as codified in the preposition *de* "of" in Spanish. Next, we discuss auxiliary selection data in Italian to support our claim that there are differences in the argument structure of the *swarm*-alternation's variants in Romance languages. These are caused by (i) the presence of source or goal path PPs in the locatum-subj variant with ICVs such as *overflow,* (ii) the PP introducing the locatum in the location-subj variant, and (iii) the properties of the verb *abound*. Finally, we present the first phase syntax of the different variants.

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13 See footnote 3.

5.1 The fine line between causes and source paths

The Spanish preposition *de* "of" brought together the meanings codified in the Latin prepositions *de*, *ab*, and *ex*. These prepositions codified different forms of separation between an entity and its point of origin: *de* indicated a downward movement, *ab* indicated an outward movement from a point outside the referent (without contact with it), and *ex* indicated an outward movement from inside the referent. The grammaticalization of *de* "of" into an element codifying these various semantic relations was facilitated by the origin and separation meanings of the Latin preposition *de* followed by the ablative case. The origin and separation meanings refer to an asymmetric relation between two independent entities, in which one of them is more prominent than the other (Company and Sobrevilla 2014; see Luraghi and Kittilä 2014).[14]

From this basic meaning of asymmetrical relation between two independent entities, other meanings of the preposition *de* "of" can be derived. This is facilitated by the lexical meaning contributed by the verb it appears with (see Company and Sobrevilla 2014). For example, any idea of movement would stem from the dynamicity included in the verb's meaning or its conjunction with a path phrase. In this way, *de* "of" can introduce a source path with dynamic verbs such as *salirse* "get out" (45).

(45)   *Y   también   dixo   que   savía   que*   (Spanish)
         And   also   said   that   knew   that
         frayles   dexavan   los   abitos   y   se   salían
         friars   left   the   habits   and   REFL   left
         de   los   monasterios.
         of   the   monasteries
         "And also said that he knew that friars gave up the habits and left the convents."
         (1576, *Documentos lingüísticos de la Nueva España*)

---

14 The separation meaning is not exclusive to the ablative case but is also found in the partitive case. The latter also codifies the metaphoric meaning of *wholes as origins*, from which part-whole relations can be metonymically derived (Company and Sobrevilla 2014; Luraghi and Kittilä 2014), and which eventually resulted in the partitive use of the preposition *de* "of." In fact, it is not uncommon that partitives develop diachronically from source or origin denoting ablatives to encode part-whole relations (Luraghi and Kittilä 2014). Thereafter, the next possible stage of the grammaticalization cline would be the evolution of the partitive marker into a mark of indefiniteness, which effactually happened in the evolution from Latin to Romance in French and, in some measure, in Italian. Nevertheless, in Italian, the paradigm is slightly more complex as two different prepositions were obtained instead, *di* and *da*. *Di* stems from the Latin preposition *de* as a marker of genitive case, whereas *da* results from the Latin preposition *de* and the ablative case (Carlier and Lamiroy 2014). See DeLancey (1984) for a similar process in English *of*, which became a marker of inactive causes stemming from the ablative sense of the preposition.

De "of" can also introduce an agent or cause provided that its argument is an entity able to fulfill the event (46) (Company and Sobrevilla 2014: 1444). Furthermore, note that the preposition *de* "of" in Modern Spanish may still introduce the agent of a verb in participial form, alternating with the preposition *por* "by," which has taken over this function in the passive voice (47) (Asociación De Academias De La Lengua Española 2009: 2090).

(46) a. …*regresaron   acompañados   de   una   mujer*…
          came.back.3PL accompanied.PL of   a   woman
          "they came back accompanied by a woman."
          (Company and Sobrevilla 2014: 1446, (85b))

  b. *Se   moría   de   sed,   pero   temía   beber   agua.*
      REFL.3SG died   of   thirst but   feared.3SG drink   water
      "He was dying of thirst, but he feared drinking water."
      (Company and Sobrevilla 2014: 1446, (87))

(47) *Era   sabido   de /por   todos   el   dilemma.*
      Was   known   of /by   all   the   dilemma
      que   lo   atormentaba.
      that him-ACC   tortured
      "It was known by all the dilemma that tortured him."

Thus, whether the entity introduced by the preposition *de* is a partitive phrase, source, abstract cause, or emitting entity, those interpretations can be traced back to the same basic meaning of an asymmetric relation between two independent entities in the context of the verbal head. Furthermore, the interpretation must be dependent on the merging point of the preposition in the structure, which could alter the make-up of the preposition. We propose that the *de*-phrases in (44) occupy different positions in the first phase syntax. Moreover, their phrase structures must be different as well. To confirm this, we resort to Italian data, where this ambiguity does not exist as two different prepositions are used in the alternation: *da* in locatum-subj variant and *di* in the location-subj variant (48) (see footnote 14).

(48) a. Locatum-subj variant   (Italian)
          Il   vino   è   traboccato   nel/   dal   vaso.[15]
          The   wine   is overflowed.M in.the/ from.the glass
          "The wine overflowed in/from the glass."

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15 See footnote 3.

    b.   Location-subj variant

         Il   *vaso*   *ha*   *traboccato*   *di*   *vino.*

         The   glass   has   overflowed   of   wine

         "The glass overflowed with wine."

         (Vincent 1982: 89)

The roles of the *de*-PP as a source in the locatum-subj variant and a causer (a type of initiator) in the location-subj variant are correlated with different auxiliaries in the perfect (see Sorace 2000; i.a.): *essere* "be" selection is accompanied by a goal or source path interpretation of the PP (48a), while *avere* "have" selection goes hand in hand with the causer interpretation of the PP (48b). These facts indicate the existence of differences in their first phase syntax and, as a result, of different merging points for the PPs.

    Essere selection with ICVs in Italian is possible whenever there is an entity that undergoes a change of location or displacement in which the starting point is surpassed (see Lewandowski 2018a; Randall 2007; Sorace 2000). Thus, in the locatum-subj variant with *traboccare* "overflow" (49), the locatum in subject position (i.e., *l'acqua* "the water," *la gioia* "the joy") can be conceived of as undergoing a change from its original location, codified in the source PP (i.e., *dalla caraffa* "from the bottle," *dai suoi occhi* "from his eyes"), which grants the selection of *essere* "be." On the other hand, the presence of the locatum PP in the location-subj variant (50) makes possible the presence of an initP in the first phase syntax as signaled by the selection of *avere* "have" in the perfect.[16] Next, we discuss the implementation of this difference in the first phase syntax of the alternation in Spanish.

(49)   Locatum-subj variant

    a.   *L'acqua*   *{è*   *trabocatta/* $^?$*ha*   *traboccato}*   *dalla*

         The.water   is   overflowed.F/   has   overflowed   from.the

         caraffa.

         bottle

         "The water overflowed from the bottle."

---

16   The reason why (49a) is marginally acceptable with *avere* "have" may be due to the possibility of conceiving of the *l'acqua* "the water" as an internal cause (cf. (49b)). In contrast, (50b) is marginally acceptable with *essere* "be" for a different reason. In this case, the auxiliary is to be related to the coming about of a change of state, i.e., *il teatro* "the theatre" became full of spectators. See Sorace (2000).

    b.   *La*   *gioia*   *{è*   *traboccatta/*   **ha*   *traboccato}*   *dai*   *suoi*
       The   joy   is   overflowed.ꜰ/   has   overflowed   from   his
       occhi.
       eyes
       "Joy overflowed from his eyes."
       (Federico Silvagni, p.c.)

(50)   Location-subj variant
    a.   *La*   *pentola*   *{*è*   *traboccata/*   *ha*   *traboccato}*   *di*
       The   pot   is   overflowed.ꜰ/   has   overflowed   of
       brodo.
       broth
       "The pot overflowed with broth."
    b.   *Il*   *teatro*   *{$^?$è/*   *ha*   *trabocatto}*   *di*   *spettatori.*
       The   theatre   is/   has   overflowed   of   audience
       "The theatre overflowed with spectators."
       (Federico Silvagni, p.c.)

## 5.2 The first phase syntax of the locatum-subj and location-subj variant

In this section, we first deal with the argument structure of *overflow* in the main variants of the *swarm*-alternation in Spanish. Next, we present the first phase syntax of prototypical ICVs such as *swarm*. Lastly, we lay out the first phase syntax of the verb *abound* in Catalan and other ICVs such as *overflow* in these Romance languages, which lack an initiation phrase under certain circumstances.

    The verb *rebosar* "overflow" in Spanish shows the preposition *de* "of" (51) in both variants, unlike Italian's distinction between source (*da* "from") and cause (*di* "of"). To account for the meaning difference attested in Italian, it is necessary to assume that Spanish *de* "of" is merged at two different positions: the path phrase *del vaso* "from the glass" (51a) is an argument of the process head, sitting in comp,-procP, while the locatum-PP *de vino* "with wine" is an adjunct to init'. In addition to the different merging positions of the PPs, the phrase structure of these elements must differ in complexity as well to account for the path semantics inherent to the source phrase.

(51) a.   Locatum-subj variant

El	*vino*	*rebosa*	*en el/*	*del*	*vaso.*[17]	(Spanish)
The	wine	overflows	in the/	from.the	glass	

           "The wine overflows from the glass."

    b.   Location-subj variant

El	*vaso*	*rebosa*	*de*	*vino.*
The	glass	overflows	of	wine

           "The glass overflows with wine."

Following Pantcheva (2010), source paths are the highest layer of goal path phrases, given that in several languages, source paths are built by adding a (source) marker to a path. Pantcheva takes the source preposition to indicate that the starting point of the path is the location denoted by the place phrase, whereas in goal paths, the location indicates the ending point of the path instead (see Zwarts 2005; 2008). The first phase syntax for the locatum-subj variant contains a source path, whose head (*de* "from") takes a path phrase as complement (52). The DP (*el vaso* "the glass"), contained within the place phrase, provides the starting point of the path.[18]

(52)   Locatum-subj variant
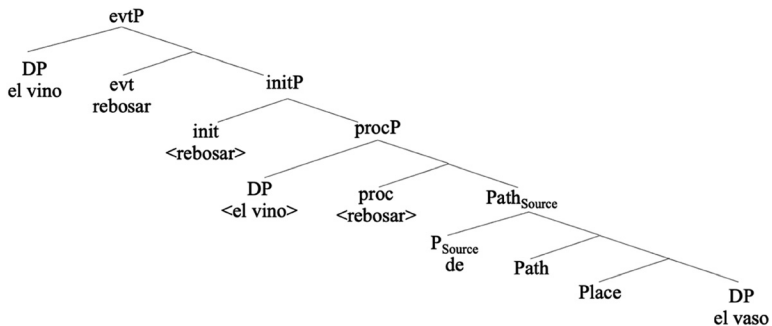
As per the auxiliary selection facts discussed in the preceding section, the location-subj variant has a first phase syntax with both proc and init heads (53). Importantly,

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17 See footnote 3.
18 Following Ramchand (2008: 78–79), unaccusatives can include an init head in their first phase syntax. Thus, we include an initP in the first phase syntax of the unaccusative argument structure proposed for *rebosar* "overflow" followed by a source path phrase, which coheres with the results of applying the paraphrasis with *hacer* "do" (i) in this configuration.

(i)

Lo	*que*	*hizo*	*el*	*vino*	*es*	*rebosar*	*del*	*vaso.*
The	that	did	the	wine	is	overflow	from.the	glass

        "What the wine did is overflow from the glass."

the subject entity cannot be considered the cause or grounds for the initiation of the event, but only an undergoer of the process; hence, it is merged in spec,procP, from which it is raised to spec,evtP.

(53)   Location-subj variant
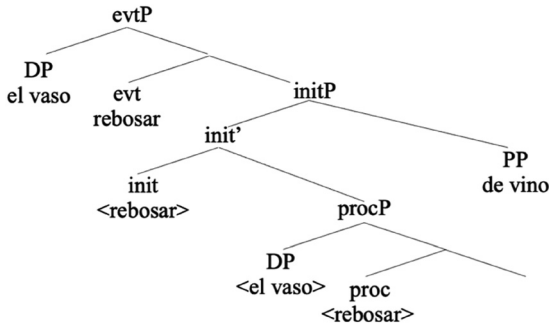
We claim that the role of initiator of the event is undertaken by the locatum-PP, which appears as an adjunct to initP. The preposition *de* "of" plays this role in the location-subj variant, thereby introducing the initiator of the event. In fact, *de* "of" can also have this function with transitive verbs such as *cubrir* "cover." We claim that the *de*-phrase can assign a theta-role by itself, namely, the role of initiator of the event in the intransitive locative alternation. That this element can introduce an initiator by itself can be confirmed via contrast with the preposition *con* "with." The latter requires an agent to appear along in order to bring about the event (54). Lewandowski (2014, 2018b) observes that in Spanish the preposition *con* "with" in the locative alternation requires an agentive entity (54a), which is not the case for the preposition *de* "of" (54b). The latter is preferred in contexts where there are no volitional agents. Thus, *con* "with" requires an init head with an external argument that must be present (i.e., *Manolo* in (54a)). By contrast, *de* "of" can merge in an argument structure with an init head and no external argument as is the case in the *swarm*-alternation and the instances of the anticausative alternation mentioned.

(54) a.   *Manolo   cubrió   la   mesa   {con   un   mantel   /*de   un*
          Manolo   covered   the   table with   a   tablecloth /of   a
          mantel}.
          tablecloth
          "Manolo covered the table with a tablecloth."
          (Lewandowski 2014:281, (155a))

    b.   *La   ventisca   cubrió   la   casa   {*con   nieve   /de   nieve}.*[19]
         The   blizzard   covered   the   house   with   snow   /of   snow
         "The blizzard covered the house with snow."

The semantics for the interpretation of the *de*-phrase as initiator of the event is provided in (55), which indicates that initP takes as participant the PP introduced by *de* "of" containing the locatum, that is, the entity whose very nature make it a viable initiator of the event. The PP works as a relator between the locatum entity, acting as initiator, and the embedded macro-event, denoted by initP. Thus, the PP found in the location-subj variant is structurally simpler than the source path phrase found in the locatum-subj variant with a subset of ICVs.[20]

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19 Note that in (54b) the preposition *de* "of" introduces a modifier to the result phrase.

20 Alternatively, Collins (2005, 2024), Angelopoulos et al. (2020), i.a., have argued that *by*-phrases in passive sentences can behave as arguments rather than adjuncts. This view is based on the fact that these elements can take on the same theta-roles as external arguments would in the active voice. However, to assume that the *de*-phrase in the location-subj variant appears in an A-position, it should be able to bind a nonlogophoric reflexive. This is the case for *by*-phrases in Greek and English passives (i, ii). However, it is impossible to bind a reflexive pronoun (iv) or control an adjunct (v) in Spanish *de*-phrases.

(i)   a.   *Aftes   i   lisis   prota-thik-an   apo*   (Greek)
        These   the   solutions   suggest-NACT.PAST-3P   by
        tus   psichotherapeftes$_i$ ja   to   eafto   tus$_i$.
        the   psychotherapists   for   the   self-ACC.S   their.GEN
        "These solutions were suggested by the psychotherapists for themselves."
  b.   **Aftes   i   lisis   prota-thik-an   chorist   us   psichotherapeftes$_i$*
        These   the   solutions   suggest-NAC-PAST-3P   without   the   psychotherapists
        ja   ton   eafto   tus$_i$.
        for   the   self-ACC.S   their.GEN
        "These solutions were suggested without the psychotherapists for themselves."
        (Angelopoulos et al. 2020: 9, (29))

(ii)   a.   *The magnet$_i$ attracted the metallic objects towards itself$_i$.*
  b.   *The metallic objects were attracted by the magnet$_i$ towards itself$_i$.*
        (Angelopoulos et al. 2020:11, (35))

(iv)   a.   *El   hospital   hervía   de   pacientes$_i$*   (Spanish)
        The   hospital   boiled   of   patients
        (*por   sí   mismos$_i$).
        by   REFL.OBL   themselves.M
  b.   *La   colmena   pululaba   de   abejas$_i$ (*por   sí   mismas$_i$).*
        The   beehive   swarmed   of   bees   by   REFL.OBL   themselves.F

(v)   a.   *El   restaurante   hervía   de   turistas   (*para   almorzar).*
        The   restaurant   boiled   of   tourists   to   have-lunch
  b.   *La   colmena   pululaba   de   abejas   (*para   almacenar   el   néctar).*
        The   beehive   swarmed   of   bees   to   store   the   nectar

(55)   [[initP]] = $\lambda e \exists e_1, e_2 [e=(e_1 \rightarrow e_2)$ & rebosar(e_1) & participant (de vino, e_1) & rebosar(e_2) & participant (el vaso, e_2)]

Before delving into the argument structure of prototypical ICVs, a caveat is in order regarding cross-linguistic differences between Spanish and Italian. (51a) in Spanish may appear with an adjunct PP (*en el vaso* "in the glass") in the locatum-subj variant, which is also the case in Catalan. Thus, nothing changes in terms of the main core elements of the first phase syntax. However, in Italian the PP may instantiate a goal phase in the locatum-subj-variant (56), hence triggering *essere* "be" selection (see Mateu and Rigau 2010, i.a.).

(56) a.   Locatum-subj variant   (Italian)
            Il   vino   trabocca   nel   vaso.
            The   wine   overflows   in.the   glass
            "The wine overflows into the glass."

      b.
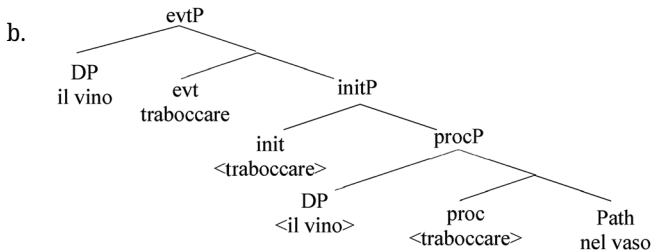
Next, we discuss the argument structure of prototypical ICVs such as Italian *brulicare* "swarm." We take both their variants to have an unergative argument structure as the auxiliary verb *avere* "have" is the "default" option in the perfect tenses. Note that, in the locatum-subj variant (57), the subject is both the initiator and undergoer of the event, while the location is instantiated by an atelic path phrase (*per le strade* "through the streets"). There are also cases in which this verb is used to denote a

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A reviewer notes that the structural position of *de*-phrases conflicts with the UTAH (Baker 1997) as there would be two possible positions where the initiator could be projected. Yet, the binding facts here reviewed indicate that an argument analysis along the lines of Collins (2005, 2024), i.a., is not feasible. We adhere to the reasons adduced by Collins (2024:157-158) for rejecting the UTAH. Namely, the UTAH's effects are the byproduct of a hierarchically universal order of VP shells, as assumed in Ramchand's first phase syntax.

motion event, for example, via the particle *su* "up" (58), thus requiring the selection of *essere* "be" (see Mateu and Rigau 2010). *Essere* selection with ICVs in Italian is possible whenever there is an entity that undergoes a change of location, which is here indicated by the particle *su* "up" (see Lewandowski 2018a; Sorace 2000; i.a.). In turn, in the location-subj variant (59), the locatum PP is the event's initiator but, crucially, not its subject, as the location occupies this position. The latter is initially merged as undergoer of the event in spec,procP rising to spec,evtP to satisfy the EPP.[21]

(57) Locatum-subj variant

a.	*Una*	*grande*	*folla*	*ha*	*brulicato*	*per*	(Italian)
	A	large	crowd	has	swarmed	through	
	le	*strade.*					
	the	streets					

(http://www.centrodilettura.info/gallery/an1961_20070705182829.pdf)

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21 As to the reason why the *de*-phrase may be sometimes obligatory in the location-subj variant, it need not be related to its first phase syntax. For example, the grammatical aspect with which the sentence is encoded (i) can interfere with the omissibility of the *de*-phrase (see Grimshaw and Vikner 1993). Additionally, the existence of a result state in the event structure may be informationally relevant enough (Goldberg and Ackerman 2001), which makes possible the omission of the *de*-phrase. Thus, one can omit the PP in (ii), where a result state is part of the sequence's denotation. By contrast, this is not possible in the *swarm*-alternation (iii) as omitting the adjunct PP hinders the legitimization of the initP, forcing the location-DP to be interpreted as the initiator of the event.

(i) a. ᵗ*El vaso rebosa.*   (Spanish)
         The glass overflows
         "The glass overflows."
     b. *El vaso está rebosando.*
         The glass is overflowing
         "The glass is overflowing."

(ii) a. ᵗ*La casa se llenó.*
          The house REFL filled
          "The house filled."
      b. *El cielo se cubrió.*
          The sky REFL covered
          "The sky covered."

(iii) *El jardín pululó.
   The garden swarmed
       "The garden swarmed."

b.
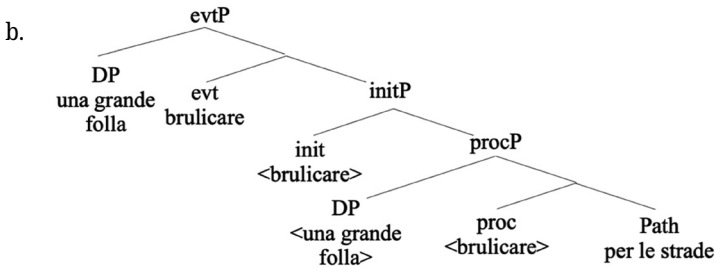
(58) Locatum-subj variant

    a. *Gli   sciami   di   api   sono   brulicati   su.* (Italian)
      The   swarms   of   bees   are   swarmed   up
   (https://www.treccani.it/vocabolario/brulicare/)

    b.
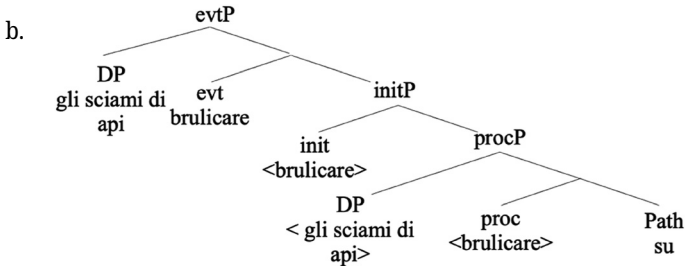
(59) Location-subj variant

    a. *I   caruggi   della   città   per   secoli   hanno* (Italian)
      The   alleys   of-the   city   for   centuries   have
      brulicato   di   camalli.
      swarmed   of   dock-workers
      (https://www.corriere.it/cook/news/22_aprile_14/sapore-libeccio-cucina-
      strada-che-racconta-vecchia-genova-249b96c6-8f1a-11ec-af55-
      d575edc6dd9d.shtml)

    b.
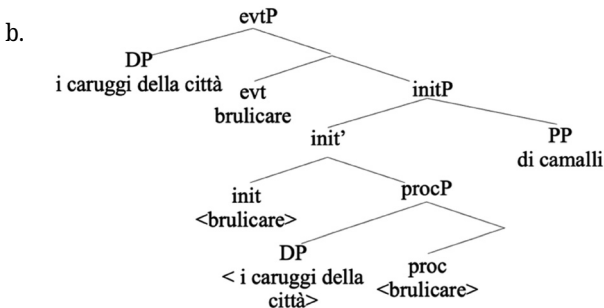
Finally, we present the first phase syntax of the verb *abundar* "abound" in Catalan and other ICVs such as Spanish *rebosar* "overflow," which lack an initiation phrase in the cases discussed in Sections 2 and 4. (60) shows *rebosar* "overflow" with the partitive phrase *de todo* "of everything" as a direct internal argument. This verb can lack an initiation component as seen in (41e). The same is true for the sequences in (61, 62) with the verbs *pulular* "swarm" and *abundar* "abound" in Spanish. *Pulular* "swarm" can enter a syntactically existential construction (61), where the internal argument position is occupied by the partitive phrase *de todo* "of everything" and the external argument position is taken up by the location PP to satisfy the EPP. In turn, *abundar* "abound" (62) can also take an internal and external argument and have stative semantics; hence, its first phase syntax consists of a single initiation phrase, which simply establishes a predicative relation between the arguments.
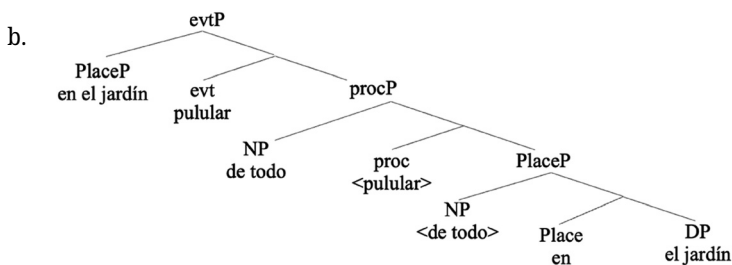
(60)   a.   *Cádiz   rebosa   de   todo.*   (Spanish)
            Cádiz   overflows   of   everything
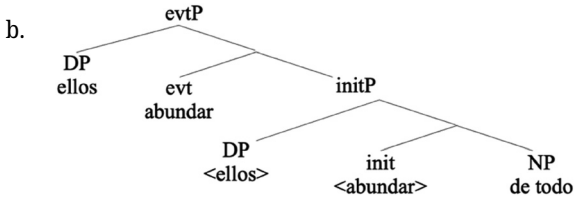   "Cádiz overflows of everything."

       b.
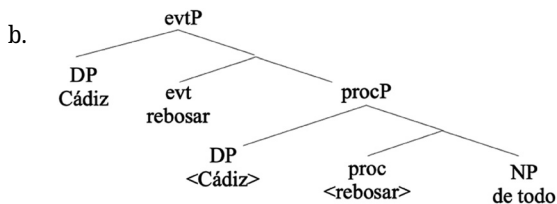
(61)   a.   *En   el   jardín   pulula   de   todo.*   (Spanish)
            In   the   garden   swarms   of   everything
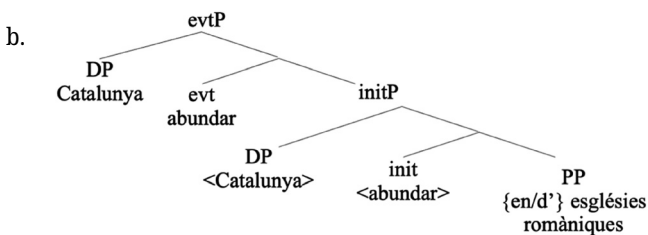   "In the garden swarms of everything."

       b.

(62)   a.   *Ellos   abundaban   de   todo*   [...].   (Spanish)
            They   abounded   of   everything
            "They had plenty of everything."

b.

```
                        evtP
              ┌──────────┴────────┐
           DP                    │
           ellos       evt              initP
                      abundar    ┌────────┴─────────┐
                            DP              │
                         <ellos>      init         NP
                                   <abundar>     de todo
```
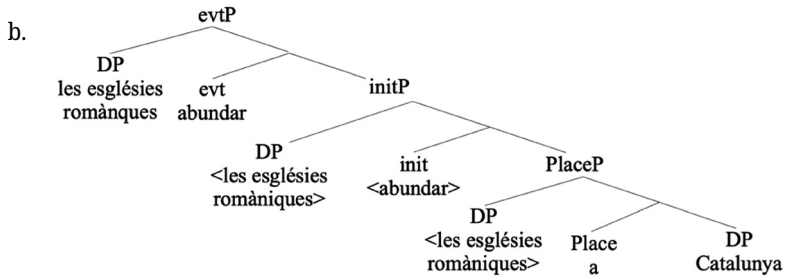
In Catalan, the verb *abundar* "abound" enters the *swarm*-alternation as well. The argument structures for the variants are presented below (63, 64). The argument structure for the location-subj variant in (63) differs significantly from the one proposed in Acedo-Matellán and Oltra-Massuet (2024). As seen in Section 2.2, auxiliary selection data in Italian indicate that the subject is not an internal argument of the verb as *avere* "have" is selected in the perfect tenses. The structure in (63b) reflects the unergative configuration of the location-subj variant as well as the individual-level semantics of the predicate. As to the prepositions *de* "of" and *en* "in," we take them to instantiate an ablative of limitation specifying the subject matter of the verb, that is, that which is abundant. By contrast, as seen in Section 2, in Italian, the locatum-subj variant (64) selects *essere* "be." Being unaccusative, the internal argument (*les esglésies romàniques* "the Romanesque churches") eventually occupies the subject position (64b).

(63) a. *Catalunya abunda   {en/ d'} esglésies   romàniques.*   (Catalan)
        Catalonia abounds   in   of   churches   Romanesque
        "Catalonia abounds in Romanesque churches."
        (Acedo-Matellán and Oltra-Massuet 2024: 29, 52)

b.

```
                        evtP
              ┌──────────┴────────┐
           DP                    │
         Catalunya     evt              initP
                      abundar    ┌────────┴─────────┐
                            DP              │
                      <Catalunya>    init            PP
                                   <abundar>    {en/d'} esglésies
                                                  romàniques
```

(64) a. *Les   esglésies   romàniques   abunden   a   Catalunya.*   (Catalan)
        The   churches   Romanesque   abound   at   Catalonia
        "Romanesque churches abound in Catalonia."

b.

```
                        evtP
            ┌────────────┴────────────┐
           DP                        initP
     les esglésies    evt     ┌────────┴────────┐
      romànques     abundar  DP              (init  PlaceP)
                      <les esglésies      init        ┌───┴───┐
                       romàniques>     <abundar>     DP     Place   DP
                                                  <les esglésies  a  Catalunya
                                                   romàniques>
```

(Tree diagram:)

- evtP
  - DP: les esglésies romànques
  - evt: abundar
  - initP
    - DP: <les esglésies romàniques>
    - init: <abundar>
    - PlaceP
      - DP: <les esglésies romàniques>
      - Place: a
      - DP: Catalunya

6 Conclusions

We have shown that most ICVs in the *swarm*-alternation denote dynamic events; hence, their first phase syntax consists of a procP and initP. The argument structure of the locatum-subj variant can be either unaccusative as is the case with ICVs such as *overflow,* or unergative with ICVs such as *swarm.* As explained, the presence of a path with *overflow* legitimizes the selection of *essere* "be" in Italian, a clear sign of unaccusativity. Furthermore, verbs such as *swarm* in Italian can appear along with a path phrase in the first phase syntax. If the path is delimited, the selection of *essere* "be" is triggered. This notwithstanding, the verb *abound* denotes an individual-level predicate; thus, it consists of a sole initP. Its locatum-subj variant is instantiated in an unaccusative argument structure as per the Italian auxiliary selection facts discussed. As to the location-subj variant, we have argued that its argument structure is always unergative; thus, it consists of both procP and initP with most ICVs, except for *abound.* Finally, the argument structures of the location and locatum-subj variants also differ in terms of the roles performed by their subjects. In the locatum-subj variant, the locatum subject assumes both the roles of initiator and undergoer of the event, while the location-subj variant's subject is solely the undergoer of the event, as the initiator role is borne by the locatum entity. In turn, *abound* has an initiator in both variants.

The results presented go against the line of thought found in Levin (1993: 53–54) and Rappaport-Hovav (2019), among others, for whom this construction instantiates a subtype of the locative alternation in English; hence, an unaccusative argument structure is taken for granted regardless of the verb and variant at play. These approaches are oblivious of the complexity of argument structure variation within languages. Our research brings to the fore the need to adopt a cross-linguistic approach, thus challenging the views in which a common underlying argument structure is used as a template for every verb and every language partaking in this

and other alternations. Consequently, this conclusion should serve as a cautionary tale against assuming a similar argument structure in the *swarm*-alternation in Germanic and other language families. The study of the alternation in further languages must await future research.

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