Bodies, motion, and the semantic content of unergative roots

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1 Introduction

1.1 The big picture

(1)   Contemporary root-based approaches to argument structure

  ⇒   Verbs lack selectional or projectional properties that explain the distribution of verbs and their arguments (Marantz 2013; Haselbach, *this workshop*)[1]

The perspective in (1) leads to a question like (2):

(2)   If the syntax generates sentences like (3) and (4) with the Root $\sqrt{\text{SMILE}}$, why is (4) degraded in comparison to (3)?

(3)   The baby smiled.

(4)   *The dad smiled the baby.

(5)   Big picture questions:

  i.   What is the role of Root content in such contrasts?
  ii. How do different syntactic structures interact with Root content?
  iii. How should we talk about available vs. coerced meanings since we can no longer pin the blame on "violations" of argument structure?

1.2 Focus for today

Make some headway on (5) by manipulating Roots in familiar interpreted structures (Embick 2009; Beavers and Koontz-Garboden 2017).

Two activity Roots in structures that convey a change in state or location:

- English Roots: $\sqrt{\text{DANCE}}$ and $\sqrt{\text{SMILE}}$
- Structures that denote a change of state/location:

  ○ Figure-ground structures (Talmy 1985; Svenonius 2003; Wood 2015, inter alia)

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[1]Though "verbal" Roots may have low-level semantic type; see e.g., Embick (2009) and—for a stronger view— Levinson (2010).

- ○ Existential unaccusative structures (Irwin 2018)
- ○ (Some attention to: X's self, the *way* construction)

Why do sentences with *dance* allow a change of location for the possessor of the (dancing) body (6), but sentences *smile* do not (7)?

(6)   The little boy danced into the room.
        ⤳ *the boy entered the room*

(7)   The little boy smiled into the room.
        ⤳ *the boy didn't enter the room*

⇒ Core aspect of Root meaning that interacts with these syntactic structures: whole-body vs. body-part.

1.3   Starting point

(8)   Some technical assumptions about structures and meanings:

    i.   Roots are merged as modifiers of little-v (Marantz, 2009b, 2013)
    ii.   External arguments are introduced by Voice (Kratzer, 1996)
    iii. Unergative sentences in English have Voice$_{\{D\}}$: Fill my specifier with nominal, a thing of type DP.[2]
    iv.   The direct argument to a verb (the v + root complex) is interpreted as a **caused change of state**. (Marantz 2009a; Wood 2012, 2015)
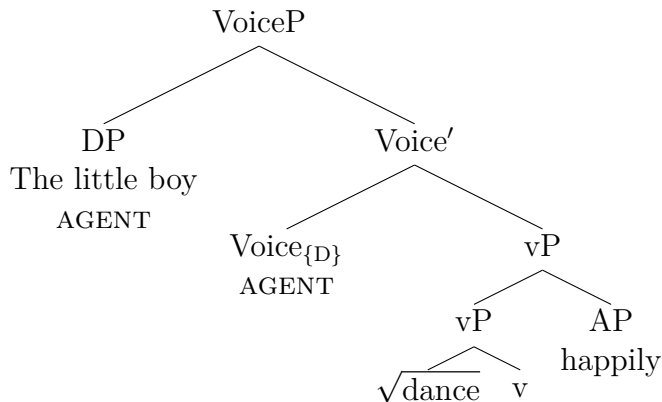
1.4   Two English roots: $\sqrt{\textbf{dance}}$ and $\sqrt{\textbf{smile}}$

Both Roots occur in structures that pass diagnostics for unergative vPs:

(9)   No direct object "needed"

    a.   The child danced happily.
    b.   The smiled happily.

(10)   Cognate object

    a.   The child smiled a little smile.
    b.   The child danced a little dance.

(11)   The *way* construction

    a.   The child smiled its way to a second cup of cocoa.
    b.   The child danced its way into auntie's arms/to a four-year scholarship.

(12)   Unergative structure: *The little boy danced happily.*

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[2]Some recent, more articulated typologies of Voice: Kastner (2017); Nie (2017), Oseki (2017), *inter alia.*

VoiceP
├── DP
│   The little boy
│   AGENT
└── Voice′
    ├── Voice$_{\{D\}}$
    │   AGENT
    └── vP
        ├── vP
        │   ├── √dance
        │   └── v
        └── AP
            happily

2 Figure-ground sentences

Figure-ground sentences: Change of location along a path with respect to some reference point.

(13)   The little boy danced into the room.

(14)   [The little boy]$_{figure}$ danced [into [the room]$_{ground}$]$_{path}$

(15)   Three elements in the figure-ground structure (paraphrased from Talmy 2000: 25 on motion events)

   a.   **Figure**: an object moving or located with respect to another object
   b.   **Ground**: reference "frame" or stationary reference object
   c.   **Path**: site or path followed by the Figure with respect to the Ground

We will see that . . .

   • The most unmarked interpretation of a figure-ground sentence (i.e., the one that requires the least extra context): a whole body goes from one physical location to another;
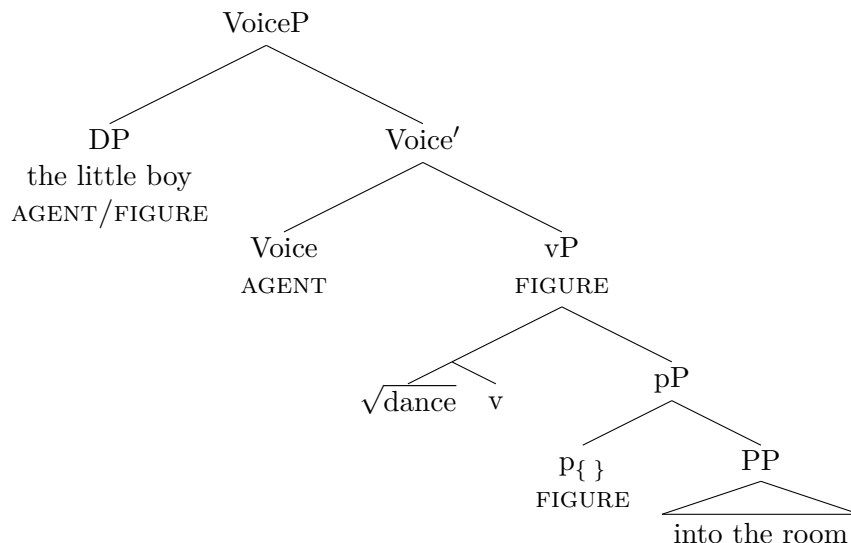   • . . . but Root content and surrounding material can "coerce" other meanings.

2.1 Figure-ground structures

(16)   The English sentence (13) is likely structurally ambiguous:

   i.   an **unmarked figure reflexive** (17) (based on Wood 2015 on Icelandic)
   ii   a figure-ground structure that is a species of unaccusative (18): the "**unaccusative figure reflexive**"
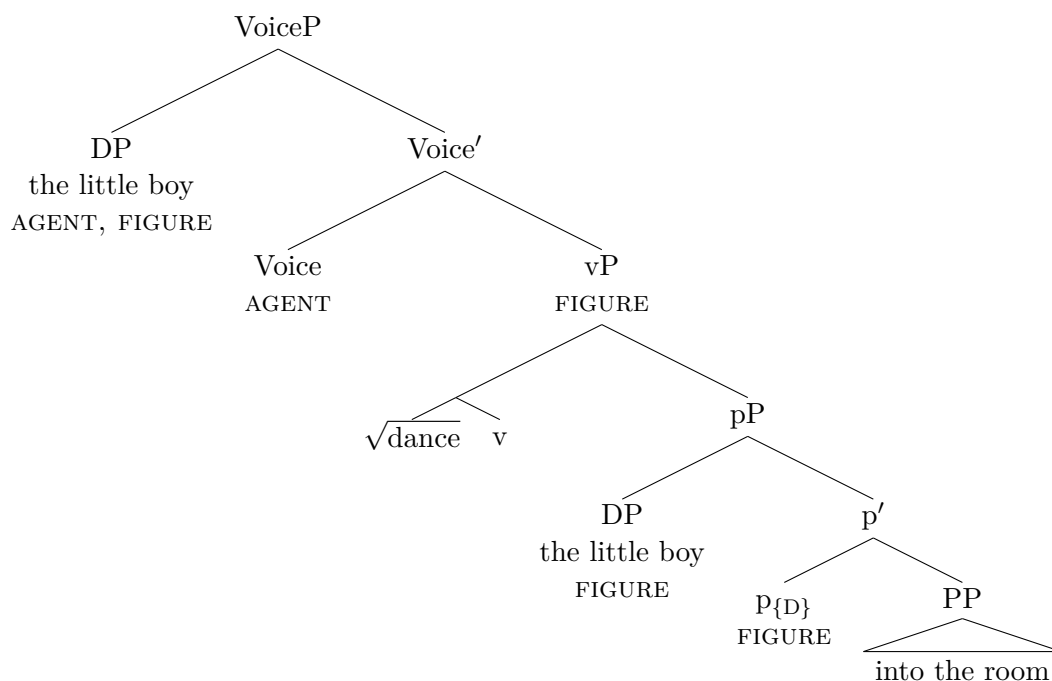
The differences between these two are interesting though not of central concern here.

   • Other Germanic languages have some better diagnostics for determining these structures (Haselbach, *this workshop*)

(17)   Unmarked figure reflexive: *The little boy danced into the room.* (Wood, 2015: 188)

VoiceP
- DP — the little boy — AGENT/FIGURE
- Voice′
  - Voice — AGENT
  - vP — FIGURE
    - √dance v
    - pP
      - p{ } — FIGURE
      - PP — into the room

(18)　"Unaccusative" figure reflexive: *The little boy danced into the room.*

VoiceP
- DP — the little boy — AGENT, FIGURE
- Voice′
  - Voice — AGENT
  - vP — FIGURE
    - √dance v
    - pP
      - DP — the little boy — FIGURE
      - p′
        - p{D} — FIGURE
        - PP — into the room

(19)　Thematic interpretation in (17) and (18):

    a.　In the unmarked figure reflexive (17), the external argument gets the FIGURE role through "delayed gratification" (Myler 2014: 58; Myler 2016: 47) and the AGENT role from Voice;

    b.　In the unaccusative figure reflexive (18), the little boy gets the FIGURE role from pFIGURE and AGENT from Voice—*or not!* (Biggs, *this workshop*).

(20)   Paraphrase of the semantics of figure-ground vP *danced into the room* (17), based on
        loosely Wood (2015: 185):
        the set of entities x *and dancing events* e *such there is a caused change (of location)*
        event that x *undergoes such that* x *goes into the room.*[3,4]

2.2   Figure-ground sentences with $\sqrt{\text{dance}}$

Sentence (13) has to mean that the boy went into the room:

(21)   *The boy ends up in the room*
        The boy danced into the room, #but he didn't go in.

Sentence (13) has to mean that the boy's *whole body* went into the room:

(22)   *The boy's whole body ends up in the room*
        The boy danced into the room, #but he only stuck his hand in.

Change of location and self-propulsion in (13):
   - Most natural interpretation of (13): the dancing activity was what propelled the little boy
     into the room (23)

(23)   The little boy danced himself into the room.
        ⤳ *the boy is the causer of his change of state/location and the agent of the dancing event*

Change of location and (external) propulsion in (13):
   - Another interpretation: scenario in which the boy's big sister pulls him into the room on a
     cart while he is dancing.

(24)   The little boy danced into the room on a cart pulled by his big sister.
        ⤳ *the boy is the agent of the dancing event but not the causer of the change of*
        state/location that he undergoes

(25)   ⇒ In all readings of (13), the **boy's whole body** goes into the room.

The observation in (25) seems to be a consequence of **Root content**, not of structural meaning:
$\sqrt{\text{DANCE}}$ implicates the whole body in these sentences.

When a specific body part is the subject of a vP with *dance*, the Root is forced to have a
non-literal meaning:

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[4]Wood's paraphrase is more like: "the set of entities x and dancing events e such that e causes x to go
into the room," but I have modified this to cover the scenario with the sister and the cart discussed in (24).

[4]The pP is looking for an entity (to return a state), and the v is looking for an event; so the two get
together through function composition to yield a function that's looking for an entity and will return the
event/state that the v is looking for.

(26)   The stylist's hands danced through the model's hair.

In (26), the meaning picked out by $\sqrt{\text{DANCE}}$ is not "rhythmic, choreographed movement of the body usually to music", but something more like "skilled, artful movement"

2.3   Figure-ground sentences with $\sqrt{\text{smile}}$

Compare the *dance* dance sentence (13) (repeated below) with a *smile* sentence (28):

(27)   The little boy danced into the room.

(28)   The little boy smiled into the room.

Assume the same structures as the one with $\sqrt{\text{DANCE}}$, so that in (28), the little boy is both AGENT and FIGURE (remaining agnostic as to which figure-ground structure(s) are relevant).

(29)   Figure, ground, path in (28)
> **Figure**: little boy $\rightsquigarrow$ image of the boy's mouth/smile
> **Ground**: the room (inside-outside)
> **Path**: space between the origin of the facial expression (the boy—specifically, the boy's face) and an actual or hypothetical viewer inside the room

(30)   Easiest scenarios to get for (28), without additional context
> i.   The boy turned his face in the direction of the room and smiled . . . *or*
> ii.   The boy stuck his head into to the room and smiled... *and*
> iv.   The image of a smile would be visible to anyone who might be inside the room.
> iii.   The boy's body (all or most of it) remained outside the room.

For me, sentence (28) has to mean that the boy stayed outside the room:

(31)   The boy smiled into the room, #and he stayed there for an hour.

(32)   The boy smiled into the room, ✓and then he stuck a foot in.

(33)   The boy smiled into the room, ✓and then he walked in.

Cartoon scenario for (28): The (monster) boy's smile becomes gigantic and his mouth sort of stretches into the room.
- Even in this case, the whole boy doesn't necessarily enter the room.
- (This latter interpretation may be one in which the boy is the causer of the change of state; in the others, he's just a figure)

(34)   Unavailable interpretations for (28)—for me at least (perhaps available to others?)
> i.   The little boy smiled as he went into the room.
> ii.   The boy's smiling activity propelled the change of location event.

> $\Rightarrow$ In (nearly) all readings of (28), the boy's body **stays outside of the room**.

As with the figure-ground sentences with $\sqrt{\text{DANCE}}$, this seems to be a consequence of **Root content**: $\sqrt{\text{SMILE}}$ implicates a body *part*, and when $\sqrt{\text{SMILE}}$ is put into a structure that denotes change of location, the meaning of the whole vP becomes somewhat non-literal.

When a specific body part is the subject of the a vP with *smile*, the Root does not seem to change to a different meaning:

(35)   Sam's lips smiled, but above his grin, his yellow eyes turned sad.   (Web search)

2.4   Interim discussion: direct objects and causative *smile*

The sentence *the little boy smiled into the room* does not mean that the boy propelled himself into the room.

- But smiling events *can* be construed as (i) metaphorically getting a person from one place to another; or (ii) occurring along a path along which the whole person's body travels from one place to another.

- This can be seen when we add direct objects: reflexives, regular direct objects, X's way

(36)   John smiled the guests to their seats.
         ⤳ *John's smiling activity caused the guests move from a location of not in their seats to in their seats*

              two interpretations: "signaling" and "accompanying"

(37)   John smiled himself into a denture modeling gig.
         ⤳ *John's smiling activity caused him to go from not having to having a denture modeling gig*

(38)   John smiled his way into the room.
         a.   ✓ *John's smiling occurred along a gradual path from outside the room to inside the room*
         b.   ✗ *the image of John's smiling face gradually appeared to the people in the room*

If *John smiled into the room* can mean that the image of John's smiling face gradually appeared to the people in the room, then why can't *John smiled his way into the room* mean that he gradually made his smiling face visible to the people in the room?

(39)   When we give [$v + \sqrt{\text{SMILE}}$] a direct object, with *-self* or *X's way* . . .
         a.   ✗ John stays in one place; just his image traverses the path
                   ⇒ *the "gradual appearance" interpretation is no longer available*
         b.   ✓ John's whole body/self changes location

2.5   The existential unaccusative structure

Sentences that involve "presentation," inspired by Guéron (1980):

(40)   a.   A lady waltzed in.

      b.   A cab pulled up.

      c.   A clown came over.

      d.   A little boy darted out.

(41)   Existential unaccusative analysis

      a.   Syntactically: unaccusative (single direct argument, vP-internal)

      b.   Semantically: contains an existential proposition (Irwin, 2016, 2018)

      c.   Discourse function: establish (or re-establish) a discourse referent ("presentation") for subsequent reference.

(42)   Comparison with *there* BE and presentational *there* sentences

      a.   A fancy lady waltzed in.

      b.   There was a fancy lady who waltzed in.

      c.   There waltzed into the room a fancy lady. (Milsark's "outside verbals")

(43)   Schematic analysis: *a fancy lady waltzed in*
        A fancy lady [$_{vP}$ waltzed [$_{PredP}$ [in HERE] <a fancy lady>]]

(44)   Existential unaccusative structure
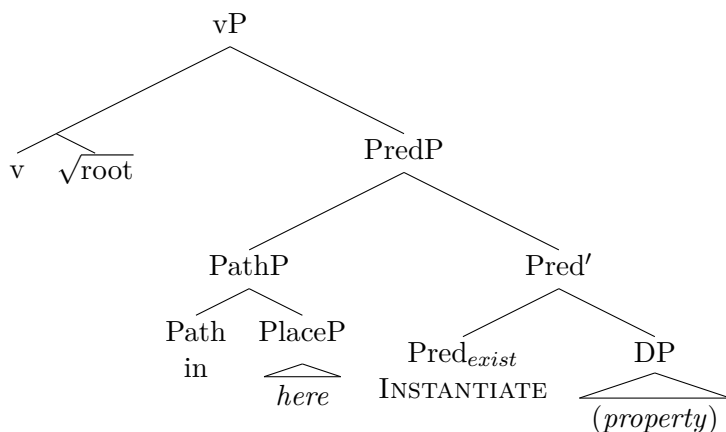
(45)   Informal paraphrase of *a fancy lady waltzed in* as an existential unaccusative:
        there's a waltzing event extending along the path "in," in which a fancy lady is a participant and that ends at a contextually-determined location with an instantiation of a fancy lady.

2.5.1 Existential unaccusatives with $\sqrt{\textbf{dance}}$ and $\sqrt{\textbf{smile}}$

Contrast in acceptability between (46) and (47):

(46)   A little boy danced in.
        ⇒ *easily construable as "presentational"*

(47) ??A little boy smiled in.
        ⇒ *harder to construe as "presentational"*

(48)   Paraphrase of (46) as an existential unaccusative
        there's a dancing event extending along the path "in," in which a little boy is a

> *participant and that ends at a contextually-determined location with an instantiation of a little boy,* "here".

(49)   A little boy danced in. He bowed to the parents seated in the audience.

The interpretation of (47) is more difficult. Without additional context, it sounds unacceptable:

(50)   ??A little boy smiled in. He bowed to all the parents.

We can break down the meaning of (47) into figure-ground terms:

(51)   Figure, ground, path in *a little boy smiled in* (47)
            Figure: the little boy *(not the image of his smile, I don't think)*
            Ground: "here" in the discourse (contextually-determined reference point)
            Path: from non-existence to existence in the current discourse

The syntax generates (47), but we need to add considerably more context for it to sound acceptable.

(52)   *Context: A story about a time when I was sitting by the window at a cafe*
            We glanced out the window, and a little boy smiled in.
            He bowed and then walked away.

3   Conclusion: The role of bodies

3.1   Who's the culprit?

The sentences in (53) are all grammatical, but they have different levels of acceptability—different requirements for extra context.

(53)   a.   The little boy danced into the room.
            b.   A little boy danced in.
            c.   ?The little boy smiled into the room.
            d. ??A little boy smiled in.

(54)   a. $\sqrt{\text{DANCE}}$: whole body
            b. $\sqrt{\text{SMILE}}$: body part

3.2   Structures + Roots

The syntactic structures in (53) all convey change of location along a path

- The root $\sqrt{\text{DANCE}}$ implicates a body conceived as a whole
  ⇒ less context needed for change of location, since the whole body can move
- The root $\sqrt{\text{SMILE}}$ implicates a body part (the face/mouth)
  ⇒ MORE context needed for change of location, since the lips/mouth can't move separately from a body,[5]

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[5]Even in a Cheshire cat context, the whole cat's body undergoes a change in location—it's not that only the cat's smile changes location, it's just that we only see the smile.

(55)   Existential unaccusative structure (53d) with $\sqrt{\textsc{smile}}$ requires the **most** additional
        context
    ●   Discourse function: present a whole entity for subsequent reference.
    ⇒   Structure asks for a "whole body" interpretation even more strongly than the other
        structures.

Appendix

This section gives some extra information about the existential unaccusative structure.

(56)   Existential unaccusative structure: basics of the analysis (draws heavily on McCloskey
        2014)
    a.   Existential unaccusatives share with existentials the discourse function of
        establishing a "persistent" (McNally, 1992, 1997) discourse referent
    b.   Discourse referent establishment is triggered by the function INSTANTIATE
        (McNally, 1992, 1997)
    c.   the DP from which the discourse referent is established is a property (which gets
        type-shifted down to an entity) (McNally 1992, 1997; McCloskey 2014)
    d.   Existential predications have a contextually-determined element as part of their
        meaning (Francez 2007; McCloskey 2014)—informally, LOC or "*here*" (Irwin, 2016,
        2018)
    e.   the verb in an existential sentence takes a SC complement; part of the denotation of
        the SC is Instantiate (McCloskey, 2014)

(57)   *Denotation of the English existential predicate head*
        ⟦ Pred_{exist} ⟧ = λP λLOC λe [INSTANTIATE ($^\cap$λx [P(x) & LOC(x, e)])]

(58)   *Denotation of Irish* ann *'in it'* (McCloskey, 2014: 36), for comparison
        ⟦ *ann* ⟧ = λP [INSTANTIATE ($^\cap$λx (P(x) & R(x, a)))]

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