# Split intransitivity in English in cross-linguistic perspective

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# 1   Introduction

- **Split intransitivity:** phenomena whereby intransitive predicates divide into different classes which behave differently in regard to different constructions.

    - Perlmutter's (1978) **Unaccusative Hypothesis**: two classes of intransitives.

    - In mainstream generative terms (after Burzio 1986): unaccusativity

relates to the deep structure / first-merge position of arguments.

(1)   Unergatives e.g. *Lucy worked*:

```
          vP
         /  \
      DP      v'
       |      / \
     Lucy   v    VP
                 /\
               worked
```
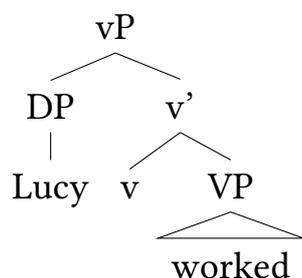
(2)   Unaccusatives e.g. *Lucy arrived*:

```
           vP
          /  \
        v      VP
              /  \
            V      DP
            |      |
         arrived  Lucy
```
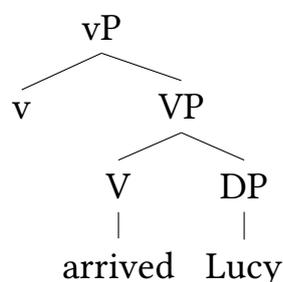
- This presentation: considers purported diagnostics of unaccusativity in English in relation to Sorace's (2000) Auxiliary Selection Hierarchy.

# 2   The Auxiliary Selection Hierarchy

- **Auxiliary selection:** the choice of auxiliary in a given periphrastic construction, which may vary depending on the verb used or subject to other factors.

  - Many Western European languages have a split in the periphrastic perfect between auxiliary BE with some intransitive predicates and auxiliary HAVE with others.

⁎ This is widely held to be diagnostic of unaccusativity: BE verbs are 'unaccusative', HAVE verbs are 'unergative'.

(3) French:

    a. Lucie **est** venu-e
       Lucy is  come-FEM
       'Lucy came; Lucy has come.'

    b. Lucie **a**   joué
       Lucy has played
       'Lucy played; Lucy has played'

(4) a. Hans **ist** gekommen
      Hans is  come
      'Hans came; Hans has come'

    b. Hans **hat** gespielt
       Lucy has played
       'Hans played; Hans has played'

– Auxiliary selection rules in the periphrastic perfect are not the same in every language, for example:

(5) French:

Lucy a   couru
Lucy **has** run
'Lucy ran; Lucy has run'

(6) German:

Hans ist gelaufen
Hans **is**  run
'Hans ran; Hans has run'

• Sorace (2000) presents an **Auxiliary Selection Hierarchy** (ASH) to capture these patterns of variation.

- The ASH divides intransitive verbs into an ordered series of se-
  mantically-based classes (table 1).

| Change of location | *come, arrive, leave, fall …* |
| Change of state | *rise, become, decay, die, be born, happen, grow …* |
| Continuation of state | *stay, remain, last, survive, persist …* |
| Existence of state | *be, belong, sit, seem, be useful, please, depend on …* |
| Uncontrolled processes | *tremble, catch on, skid, cough, rumble, rain …* |
| Controlled motional processes | *swim, run, walk …* |
| Controlled non-motional processes | *work, play, talk …* |

Table 1: *the Auxiliary Selection Hierarchy (based on Sorace 2000)*

- The auxiliary selection patterns in four different European lan-
  guages are summarised in table 2.

|  | French | Dutch | German | Italian |
|---|---|---|---|---|
| Change of location | **BE** | **BE** | **BE** | **BE** |
| Change of state | *BE/HAVE* | *BE/(HAVE)* | **BE** | *BE/(HAVE)* |
| Continuation of state | *HAVE* | *BE/HAVE* | *BE/HAVE* | *BE/(HAVE)* |
| Existence of state | *HAVE* | *(BE)/HAVE* | *(BE)/HAVE* | *BE/(HAVE)* |
| Uncontrolled process | *HAVE* | *HAVE* | *HAVE* | *(BE)/HAVE* |
| Controlled pr. (mot.) | *(BE?)/HAVE* | *BE/HAVE* | *BE/HAVE* | *(BE)/HAVE* |
| Controlled pr. (non-mot.) | *HAVE* | *HAVE* | *HAVE* | *(BE)/HAVE* |

Table 2: *auxiliary selection in four languages (based on Sorace 2000)*

- Verbs in classes toward the top of the hierarchy tend to prefer BE
  ('unaccusatives'); those towards the bottom tend to prefer HAVE
  ('unergatives'). But languages vary in the exact distribution.

- Sorace also reports that speakers have more categorical judgements

regarding auxiliary selection towards the top and bottom of the hierarchy, and weaker judgements toward the middle.

 – Some support for the applicability of the ASH to other unaccusativity diagnostics and other languages:

 * Sorace (2004): Italian *ne*-cliticisation; Japanese quantifier floating?; diagnostics other than auxiliary selection in French?;

 * Montrul (2005): L2 acquisition of various Spanish constructions;

 * Legendre (2007): diachronics of Spanish auxiliary selection;

 * Baker (2013): some 'split-S' case/agreement systems e.g. in Acehnese, Georgian.

 • Research question: **how well do unaccusativity diagnostics proposed for English correspond to the ASH?**

# 3   English unaccusativity diagnostics and the ASH

## 3.1   Method

 • Mix of traditional grammaticality judgements and several online surveys.

 • Surveys: speakers asked to rate acceptability as either 'OK'/'Not OK'/'Not sure' or on an 11-point Likert scale.

- Based primarily on a sample of around 40 verbs (with some from each of the different categories on the ASH), but some other verbs also considered in relation to particular diagnostics.

## 3.2 Two non-diagnostics

- Various authors have associated **locative inversion** (7a) and ***there-insertion*** (7b) with unaccusativity:

  – see Levin and Rappaport-Hovav (1995: 19).

    (7)  a. Into the station came a train.

         b. There arrived a man.

  – supposedly only possible with unaccusatives.

- Speakers' judgements for these diagnostics vary a lot between individual verbs (and between speakers), but no correlation with the ASH apparent.

- Speakers are likely to accept (e.g.) *There worked a man* as *There arrived a man.*

- But maybe these aren't true diagnostics of unaccusativity after all?

  – This is in line with Levin and Rappaport-Hovav (1996: ch. 6) who argue locative inversion is related to discourse function not argument structure, and speculate that the same may be true of *there-*insertion.

  – Ramchand (2008: 78, fn. 6) also assumes *there*-insertion is not an unaccusativity diagnostic.

## 3.3  'Process' diagnostics

- Five diagnostics from the literature identify primarily verbs in Sorace's 'process' class:

    - V *one's way into* (Marantz 1992);

    - V *away* (Keyser and Roeper 1984);

    - cognate objects (Massam 1990);

    - agentive *-er* (Burzio 1981: 255–258);

    - prefix *out-* (Keyser and Roeper 1984).

- All of these constructions are accepted with verbs in the controlled motional processes category:

    (8)  a.  Lucy swam her way into the harbour.

         b.  Lucy was happily swimming away, round and round the lake.

         c.  Lucy swam a swim.

         d.  swimmer

         e.  Lucy outswam Chris.

- They are also mostly accepted with controlled non-motional processes:

    (9)  a.  Lucy worked her way into the upper echelons of university administration.

         b.  Lucy was working away.

         c.  worker

      d.  Lucy outworked Chris.

– But cognate objects often limited to certain contexts:

(10)    a.  Lucy played a play.

          b.  Lucy talked a talk.

          c.  *Lucy worked a work.

– V *one's way into*, V *away* and *-er* also accepted with uncontrolled processes, but judgements weaker/more mixed with cognate objects and *out-*:

(11)    a.  Lucy trembled her way into the room.

          b.  Lucy was trembling away.

          c.  ?Lucy trembled a tremble.

          d.  trembler

          e.  ?Lucy outtrembled Chris.

– In general, these constructions not accepted with non-process verbs, e.g.:

(12)    a.  *Lucy arrived her way into the building.

          b.  *Lucy was arriving away.

          c.  *Lucy arrived an arrival.

          d.  *arriver

          e.  *Lucy outarrived Chris.

– But various exceptions:

* V *one's way into* quite strongly accepted with atelic change of state verbs, and marginal with various others:

(13)  a.  The vine grew its way into the house.

   b.  The butter melted its way into the cake.

   c.  The fire burned its way into the shed.

(14)  a.  ?The zombies decayed their way into the city.

   b.  ?The climber persisted his way into the record books.

* Likewise, V *away* and *out-* accepted or not utterly rejected with several state and (atelic) change of state verbs, e.g.:

(15)  a.  Lucy was freezing away outside in the snow.

   b.  ?The balloon was rising away.

   c.  ?The chocolate was melting away on the stove.

   d.  ?Chris was surviving away.

(16)  a.  Lucy outgrew Chris.

   b.  Lucy outstayed/outlasted Chris.

   c.  ?Lucy's balloon outrose Chris's balloon.

   d.  ?Lucy's lollipops outmelted Chris's lollipops.

* *-er* is sporadically accepted with several non-process verbs, often in restricted contexts:

(17)  a.  leaver

   b.  survivor

   c.  all-comers, early-riser, stayer-at-home, long-laster

* Finally, *die* allows a cognate object:

(18)    The play died a death.

- **Summary:** these diagnostics *primarily* though not *exclusively* identify verbs in the process class:

  – with verbs in other classes, acceptance tends to be weaker and/or more idiosyncratic;

  – pretty good correspondence with ASH, therefore.

  – With verbs at either end of the hierarchy, judgements are generally strongest / more consistent. Toward the middle, judgements are often weaker / showed more mixed behaviour.

    * This is also as predicted.

|   | Ch.loc. | Ch.st. | Cont.st. | Ex.st. | Unc.pr. | Con.mot.pr. | Con.nonmot.pr. |
|---|---------|--------|----------|--------|---------|-------------|----------------|
| 1 | N       | *Y/?/N* | N/?     | N      | **Y**   | Y           | Y              |
| 2 | *(Y)/N* | *(Y)/N* | *Y/N*   | N      | **Y**   | Y           | Y              |
| 3 | N       | *Y/?/N* | *Y/?/N* | N/?    | N/?     | Y           | Y              |
| 4 | N       | N      | N        | N      | **Y/?** | Y           | (Y)            |

Table 3: *'process' diagnostics and the ASH (1 = V* one's way into *and V* away, *2 = -er, 3 =* out-*, 4 = cognate object)*

## 3.4    *for hours*

- Another purported unaccusativity diagnostic (Schoorlemmer 2004: 227).

  – Also *for seconds, for years* etc.

- Accepted with most English intransitives:

(19)    Lucy stayed/sat/coughed/swam/worked for hours.

- But more restricted in the change of state category:

(20)    a.  The butter melted for hours.

           b.  The fire burned for hours.

(21)    a.  *Lucy died for hours.

           b.  *The window broke for hours.

           c.  *The curtain tore for hours.

- And largely ruled out altogether with change of location verbs:

(22)    *Lucy came/went/arrived for hours.

- Though note the following:

(23)    a.  The guests were arriving for hours.

           b.  Lucy tripped and stumbled off the thousand-mile-high cliff. She fell for hours before reaching the bottom.

           c.  Lucy was dying for hours.

  – Conditions under which such verbs accept *for hours* seem quite idiosyncratic, however.

- Again, we see good correspondence with the ASH.

| Ch.loc. | Ch.st. | Cont.st. | Ex.st. | Unc.pr. | Con.mot.pr. | Con.nonmot.pr. |
|---------|--------|----------|--------|---------|-------------|----------------|
| N/N? | *Y/N?* | **Y** | **Y** | **Y** | **Y** | **Y** |

Table 4: *the* for hours *diagnostic and the ASH*

## 3.5  Prenominal past participles

- Identified as a diagnostic by Levin and Rappaport (1986: 654).

- Generally possible with change of state verbs:

    (24)　a.　a grown man

    　　　　b.　a decayed corpse

    　　　　c.　the melted butter

    　　　　d.　the broken window

    - Though note:

    (25)　*a died man

- Also possible to an extent with change of location verbs:

    (26)　a.　the fallen leaves

    　　　　b.　the recently arrived recruits

    　　　　c.　*the gone man

- Ruled out with verbs in other categories:

    (27)　*the remained/sat/trembled/swam/talked man

- Once more, these patterns correspond to the ASH pretty well.

| Ch.loc. | Ch.st. | Cont.st. | Ex.st. | Unc.pr. | Con.mot.pr. | Con.nonmot.pr. |
|---------|--------|----------|--------|---------|-------------|----------------|
| *Y/N* | *Y/N* | N | N | N | N | N |

Table 5: *prenominal past participles and the ASH*

## 3.6  Resultatives and causatives

- Under the (intransitive) **resultative** construction, sentences of the form *X V-ed Adj* are interpreted as meaning ∼'X became Adj as a result of V-ing', e.g.

  (28)  The lollipops froze solid.

  (29)  The wood burned black.

- The 'result state' may also be expressed by means of a PP, e.g.

  (30)  The table broke into pieces.

- The resultative construction is supposed to be possible with (some) unaccusatives, but not with unergatives (Levin and Rappaport-Hovav 1995: ch. 2).

  – Specifically it is basically limited to verbs in Sorace's 'change of state' class.

- Under the **(anti-)causative alternation**, the same verb may be used both transitively and intransitively, where *X V$_{trans}$-s Y* = 'X causes Y to V$_{intrans}$':

  (31)  a.  The lollipops froze.

  b.  Lucy froze the lollipops.

(32)   a.  The toast burned.

        b.  Chris burned the toast.

(33)   a.  The broomstick broke.

        b.  Harry broke the broomstick.

- The ability to allow this construction is supposed to be a property of unaccusative verbs (Perlmutter 1978: 162).

  - It occurs with more-or-less the same set of verbs as allow the resultative construction (i.e. change of state verbs) and not generally with others:

    (34)   a.  The letters arrived.

            b.  *The postman arrived the letters.

    (35)   a.  Lucy remained.

            b.  *Chris remained Lucy. [= 'Chris made Lucy remain']

    (36)   a.  Lucy coughed.

            b.  *Chris coughed Lucy.

    (37)   a.  Lucy swam.

            b.  *Chris swam Lucy.

    (38)   a.  Lucy played.

            b.  *Chris played Lucy. [= 'Chris made Lucy play']

  - A few other verbs do allow something which somewhat resembles the causative alternation, but this is not general to their semantic classes and typically seems to involve a more restricted semantics:

(39)   a.  The dog walked.

        b.  Betty walked the dog.

(40)   a.  The students worked hard.

        b.  The supervisor worked the students hard.

- There are certain exceptions to the general rule that the resultative construction and causative alternation pick out the same class of intransitives:

  - Verbs like *redden*, *blacken* etc. allow causatives but not resultatives:

    (41)   a.  The wood blackened.

            b.  The fire blackened the wood.

    (42)   *The wood blackened black.

  - 'Internally-caused verbs' show rather mixed behaviour:

    (43)   a.  The daffodils grew tall.

            b.  The rose bloomed red.

            c.  Chris blushed scarlet.

            d.  ?The tulips wilted brown.

    (44)   a.  *Lucy grew daffodils.

            b.  ?The tree bloomed flowers.

            c.  *Lucy blushed Chris.

            d.  The heat wilted the tulips.

- Whilst the change of state verbs are close to the top of the ASH, the change of location verbs come higher: so there is not a perfect correspondence with the hierarchy for these two diagnostics.

| Ch.loc. | Ch.st. | Cont.st. | Ex.st. | Unc.pr. | Con.mot.pr. | Con.nonmot.pr. |
|---------|--------|----------|--------|---------|-------------|----------------|
| N | **Y** | N | N | N | N | N |

Table 6: *resultatives/causatives and the ASH*

# 4  Multiple classes of intransitives

- Note: **different diagnostics pick out different groups of verbs**.

| | Telic changes | Atelic changes | States | Processes |
|---|---|---|---|---|
| V *one's way into* etc. | N | N | N | **Y** |
| *for hours* | N | **Y** | **Y** | **Y** |
| prenominal participles | **Y** | **Y** | N | N |
| resultatives, causatives | *Y/N* | *Y/N* | N | N |

Table 7: *idealised summary of classes identified*

- This suggests it may be more appropriate to identify more than just two classes of intransitives ('unergatives', 'unaccusatives') traditionally suggested.

- Rather, multiple classes arise relating to different semantic features (cf. Van Valin 1990):

    - [+process] / [−state, −change]: V *one's way into*, etc.;

    - [−telic]: *for hours*;

    - [+change] (of state or location): prenominal past participles;

    - [−initiation] (after Ramchand 2008): resultatives, causatives.

- For more details see Baker (2016).

|  | initiated | state | change | telic |
|---|:---:|:---:|:---:|:---:|
| A. *talk, swim, cough ...* | + | – | – | – |
| B. *stay, sit ...* | +/– | + | – | – |
| C. *come, arrive ...* | + | – | + | + |
| D. *break, tear ...* | – | – | + | + |
| E. *melt, burn ...* | – | – | + | – |

Table 8: *classes of intransitives*

# 5  Conclusion

- A number of unaccusativity diagnostics in English show good correspondence with Sorace's (2000) Auxiliary Selection Hierarchy.

    – This is support for the hypothesis that the ASH is applicable across languages and to different unaccusativity-related constructions.

    – Various patterns that the ASH does not fully capture, however.

- The fact that intransitives do not divide neatly into two groups suggests the traditional formulation of the Unaccusative Hypothesis may be inadequate.

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