

# **Split intransitivity in English in cross-linguistic perspective**

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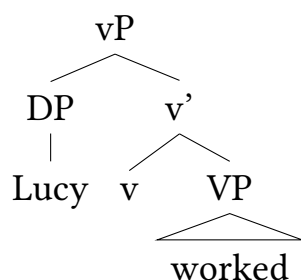
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## **1 Introduction**

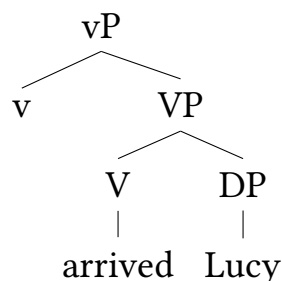
- **Split intransitivity:** phenomena whereby intransitive predicates divide into different classes which behave differently in regard to different constructions.
  - Perlmutter's (1978) **Unaccusative Hypothesis:** two classes of intransitives.
  - In mainstream generative terms (after Burzio 1986): unaccusativity

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

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



(2) Unaccusatives e.g. *Lucy arrived*:



- 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 semantically-based classes (table 1).

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

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

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

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

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 grown man
  - a decayed corpse
  - the melted butter
  - the broken window

– Though note:

- (25) \*a died man

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

- (26)
- the fallen leaves
  - the recently arrived recruits
  - \*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  $X V_{trans-s} Y = \text{‘}X \text{ causes } Y \text{ to } V_{intrans} \text{’}$ :

(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 <i>one's way into</i> etc.	N	N	N	Y
<i>for hours</i>	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. <i>talk, swim, cough ...</i>	+	–	–	–
B. <i>stay, sit ...</i>	+/-	+	–	–
C. <i>come, arrive ...</i>	+	–	+	+
D. <i>break, tear ...</i>	–	–	+	+
E. <i>melt, burn ...</i>	–	–	+	–

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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