Modeling the semantics of *out-* prefixed verbs

Sven Kotowski; HHU Düsseldorf/SFB991
IMM19, Vienna
02/08/2020
Most derivational processes polysemous (Bauer et al. 2013; Lieber 2004; Rainer 2014)

- **locative nouns**: outhouse, outstation
- **locative participle adjectives**: out-hanging, outstretched
- **locative verbs**: outgas (sth.), outsource sth., out-migrate
- **comparative verbs**: outrun so., outdollar so., outstubborn so.
Intro: polysemy in *out-*?

Locative:
1) …some **energy will be outradiated** in a O2/N2 atmosphere only (iWeb)

Comparative:
2) Volume was tough to compare […] So equipped, it **out-blasted the other two**. (iWeb)

- *out*- introduces a SOURCE-PATH
- PATH=SCALE metaphor?

(Talmy 2000; Tolskaya 2014; see Kotowski 2020 for arguments against)
Intro: polysemy in out-?

- What is polysemous, if anything?
- One underspecified affix meaning / polysemy in derivatives?
- Different morphological processes?

- Point of departure: *Synchronic semantic relationship*

(see Lieber 2004; Rainer 2014; Plag 1999; Olsen 2019)
Today: outline

- Based on attestations from (mostly) COCA/iWeb (~1,500 tokens/~800 types; see Davies 2008; 2018)
- Comparative far more productive than locative (see Schröder 2011); only 75 types (exhausts COCA, BNC)

- What are the properties of these two versions of verbal out-?
- Same or different (homophonous) derivational processes?
- How can they be modeled?

1. Intro
2. Comparison of (verbal) locative and comparative out-
   - Non-semantic properties
   - Semantic properties
3. Frame modeling as descriptive lexeme formation rules
4. Conclusion
2. Comparing the properties of locative and comparative *out-*
Non-semantic factors: Stress properties

1) Hispanics as well as Asians are out-marrying by something like 60%. (COCA)
2) …between 1890 and 1920, black men out-márried white men. (iWeb)

3) outshipped óuthaul óutradiate [locative]
4) outshíp outhául outrádiate [comparative]

- Locative: stress on prefix
- Comparative: stress on base
- No polysemy, but partial homonymy, if stress is a lexical property
Non-semantic factors: Syntactic frames and applicativity

Comparative
1) On and off camera, more girls are dishing about discharge, outfarting their friends... (COCA)
2) We try to outdrink our friends and end up as alcoholics. (COCA)
3) ??We try to outdrink.

- Always transitive; irrespective of base
- Clearly applicative
Non-semantic factors: Syntactic frames and applicativity

**Locative**

1) ...thousands [...] were **forced to out-migrate** to safe havens such as Eritrea and Sudan. (iWeb)
2) I have to run down to the armory **to outprocess a Soldier** mid month. (iWeb)

- Transitivity variable

3) They were nearly **forced to migrate to Minnesota** in the mid-1800s (COCA)
4) The **PCFs process soldiers** who are returning to military control while in desert status. (COCA)

- Follows properties of base; non-applicative
Non-semantic factors: Competing forms

**Locative** (cf. *outprocess, outload*)

1) When he returned to the US last month, he had 90 days **to process out of the Army**. (COCA)
2) It may be the friend who's always helping you [...] **load out equipment** at the end of the night. (iWeb)

- Syntactic paraphrases (PPs/particles)

**Comparative**

3) ??We drank out our friends.

- No syntactic paraphrases
- No free form counterpart of *out* (see Tyler & Evans 2003)
Selectional restrictions: locative *out-*

- locative *out* - not category-changing
- All verbal bases semantically dynamic
- Nearly all base verbs including a motion component (see Croft 1990; Dixon 2005; VerbNet, Kipper et al. 2008)

1) outpour, onload, outgas (verbs of PUTTING)
2) outhaul, outdrag, outship (verbs of CARRYING/SENDING)
3) outradiate, outpop, outstream (verbs of EMISSION)

~80% of attested base verbs from these classes (cf. VerbNet)
- PATH-component part of base semantics
Selectional restrictions: comparative *out-*

Stative bases (pace Levin 1999)
1) outweigh, out-know

Change-of-state/Achievement (pace Tolskaya 2014)
2) out-sweeten, out-assassinate, outspot, outwin

Adjectival/nominal/phrasal bases (pace Nagano 2011) --> category-changing
3) out-poor, out-obnoxious, out-horsepower, out-industry, out-dirty-mouth, out-good-ol’-boy

- All aspectual classes, all major parts of speech attested as base
Compatibility with result semantics

Both prefix versions compatible with result semantics (Goldberg & Jackendoff 2004; Rappaport-Hovav & Levin 2001)

1) CAUSATIVE PROPERTY RESULTATIVE
   Semantics: X1 cause [Y2 become Z3]
   --> *outsit your neighbors*. (COCA) [comparative *out*-

2) CAUSATIVE PATH RESULTATIVE
   Semantics: X1 cause [Y2 go path3]
   --> *outblast scent*. (OED) [transitive locative]

3) NONCAUSATIVE PATH RESULTATIVE
   Semantics: X1 go path2
   --> *out-migrate to safe havens* (iWeb) [intransitive locative]
Semantic factors: Event complexity

Comparative *out-* always includes 3 subevents (usually adding 2)

1) **We try to outdrink our friends** and end up as alcoholics. (COCA)

\[ \text{SUB}_1: \text{ Subject-argument participant (CAUSE) – drink X amount} \]
\[ \text{SUB}_2: \text{ Object-argument participant (CORRELATION) – drink Y amount} \]
\[ \text{SUB}_3: \text{ Object-argument participant (EFFECT) – surpassed wrt amount/beaten in competition} \]

2) Whatever you do to stay active this summer, make sure to stay hydrated and to properly fuel with healthy meals pre and post-burn. And remember, **you can never outrun a crappy diet!** (iWeb)

(van Valin & La Polla 1997; Rappaport-Hovav & Levin 1998)
Semantic factors: Event complexity

Locative *out*- adds no or 1 subevent(s)

1) Federally endangered **dry forest species to be outplanted** in the Kaupulehu preserve (COCA)

- Transitives usually include a causative base verb
- *out*-formation takes over causative semantics
- Specifies the **EFFECT** on Object-argument’s **RESULT LOCATION**

2) *gas out-streaming* from the young stars in the clusters can feed [...] the black hole. (iWeb)

- Intransitives are non-causative: **RESULT LOCATION** is added
Semantic factors: Argument mapping

1) The crane ratchets of the later arrivals could still be heard clearly as their crews out ramped. (BNC)
   - Intransitive locative: \( \text{ACT(SUBJECT)} \) & \( \text{BE/BECOME(OUT_OF_GROUND(SUBJECT))} \)

2) Mosquito repellent will outblast scent. (OED)
   - Transitive locative: \( \text{ACT(SUBJECT)} \) & \( \text{CAUSE BE/BECOME (OUT_OF_GROUND(OBJECT))} \)

   - FIGURE-argument needs to be realized
   - Transitive: FIGURE = Object
   - Intransitive: FIGURE = Subject
## Taking stock

<table>
<thead>
<tr>
<th>Locative <em>out-</em></th>
<th>Comparative <em>out-</em></th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Differences</strong></td>
<td></td>
</tr>
<tr>
<td>Not very productive</td>
<td>Robustly productive</td>
</tr>
<tr>
<td>Primary stress on prefix</td>
<td>Primary stress on base</td>
</tr>
<tr>
<td>Variable transitivity</td>
<td>Always transitive</td>
</tr>
<tr>
<td>Category-preserving</td>
<td>Regularly category-changing</td>
</tr>
<tr>
<td>Non-applicative</td>
<td>Clearly applicative</td>
</tr>
<tr>
<td>Equivalent free forms/paraphrases</td>
<td>No equivalent free forms/paraphrases</td>
</tr>
<tr>
<td>No stative bases or readings</td>
<td>Stative bases &amp; readings</td>
</tr>
<tr>
<td>FIGURE transitivity-dependent</td>
<td>(Alleged) FIGURE Subject</td>
</tr>
<tr>
<td>GROUND/GOAL flexible</td>
<td>(Alleged) GROUND Direct Object</td>
</tr>
<tr>
<td>Addition of 0/1 sub-events</td>
<td>Addition of 2 sub-events</td>
</tr>
</tbody>
</table>

### Commonalities
- Resultative *(change-of-location v change-of-(property-)state)*
- *(Sub-event adding)*
3.
Modeling lexeme formation rules in frames
Modeling: Frame semantics

- A frame is a recursive attribute–value structure (Barsalou 1992; Löbner 2014; Petersen 2007)
- Attributes are unique to the attribute holder and take a single value at one point in time
- Lexical rules operating on and manipulating base structures (Andreou 2017; Bonami & Crysmann 2016; Koenig 1999)
- Descriptive rules: generalization over attestations and in consequence the lexicon
The German Me 262 jets could outfly the Mustangs by 100 MPH in level flight. (iWeb)
Based on causation frames in Kallmeyer & Oswald (2013)

Assumption of 2 new subevents added to the base structure: CORRELATION and EFFECT

Making use of Andreou’s (2017) “0!”-notation for structure copying (see Sag 2012)

coerces any base into an eventuality and searches for similarity / compatibility of CAUSE on CORRELATION

Constraint regulates applicability of comparative semantics
In turn, gas **out-streaming from the young stars** in the clusters can feed and energise the black hole. (iWeb)
lfr for intransitive “locative” \textit{out-}

- Denotes \textit{translocation} event
- Assumption of 1 new subevent added to the base structure: EFFECT
- Mereological constraints regulate the configurations between LOCATION (GROUND) and RESULT LOCATION
Conclusion

- Locative/comparative *out*- both fall in the resultative spectrum

- Structural differences between two senses outweigh commonalities by far

- One core meaning for verbal *out*-? Unclear what is gained; large amount of structure needed to disentangle senses

- More likely: locative and comparative *out*- have developed into homophones (and partial ones at best)

- Obviously, there’s a historical story to tell
Thank you


lf for transitive “locccative” out-

- Also denotes causation event
- Assumption of 0/1 new subevents added to the base structure: EFFECT
- Mereological constraints regulate the configurations between LOCATION (GROUND) and RESULT LOCATION