Breaking all the rules
Verbs of separation in metaphoric usage

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This study asks

• How can we account for the difference in selectional restrictions of physical vs. metaphorical uses of the same verb?

• Specifically: a look at metaphorical and physical uses of separation verbs (cut and break verbs)
Overview

• Semantics of physical uses of *cut* & *break*
• Frame semantics
• Conceptual metaphor theory
• Database study of metaphoric uses
  – Metaphoric object example 1
  – Metaphoric object example 2
• Conclusions
Physical uses of cut and break verbs

Causative
• Tear the paper / # Shatter the paper
• Cut the paper / ? Slice the paper

Inchoative
• The paper tore / # shattered, # chipped
• # The paper cut / chopped / sliced
Metaphoric objects

• break the Olympic record in swimming
• break the law/the rules
• trim expectations
Frames

• “Meanings are relativized to scenes (Fillmore 1977).”

• Scenes include a wide array of information from very schematic to very detailed. Include participants and their interrelationships.

• Lexical and grammatical items evoke frames (Bouveret & Sweetser 2009; Sullivan 2007)

• Perspectivized
Work on physical use frames

- Fujii, Radetzky & Sweetser (2011): How can we account for physical meanings of break when no physical breaking is taking place?
  - My computer broke.
  - The car broke down.
  - Oh, no! I broke my cell phone!

- *Casser, briser, rompre* in French (Bouveret & Sweetser 2009)
Example Frame (FrameNet)

Removing frame

An **Agent** causes a **Theme** to move away from a location, the **Source**.

– Core Frame Elements:
  
  • **Agent**, e.g., **He** tore a page from the book.
  • **Cause**, e.g., **The wind** tore posters off of walls.
  • **Source**, e.g., **He** tore a page **from the book**.
  • **Theme**, e.g., **He** tore a **page** from the book.
Example Frame

Removing frame Lexical Units (LUs)

- clear.v, confiscate.v, **cut.v**, discard.v, disgorge.v, dislodge.v, drain.v, dust.v, eject.v, ejection.n, eliminate.v, elimination.n, empty.v, evacuate.v, evacuation.n, evict.v, eviction.n, **excise.v**, expel.v, expulsion.n, expunge.v, expurgate.v, extract.v, extraction.n, file.v, flush.v, oust.v, pluck.v, prise.v, purge.n, purge.v, removal.n, remove.v, rinse.v, **rip.v**, roust.v, scrape.v, shave.v, skim.v, snatch.v, strip.v, swipe.v, take.v, **tear.v**, unload.v, wash.v, weed.v, withdraw.v, withdrawal.n
# Frames used in study

<table>
<thead>
<tr>
<th>Frame</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Separating</td>
<td>Render non-functional</td>
</tr>
<tr>
<td>Cutting</td>
<td>Impact</td>
</tr>
<tr>
<td>Breaking apart</td>
<td>Damaging</td>
</tr>
<tr>
<td>Breaking off</td>
<td>Removing</td>
</tr>
<tr>
<td>Interruption of connection</td>
<td>Create shape (representation)</td>
</tr>
<tr>
<td>Interruption of continuity</td>
<td>Open a surface</td>
</tr>
<tr>
<td><strong>Caused_fragmentation</strong></td>
<td>Destruction</td>
</tr>
</tbody>
</table>
USING FRAMES TO UNDERSTAND METAPHORIC USES
Frames and Metaphor

The foundations of his theory are shaky. We have to take apart the theory piece by piece and reconstruct it from scratch.

**Target (abstract)**
- COMPLEX COGNITIVE STRUCTURES
- THEORIES

**Source (concrete)**
- COMPLEX PHYSICAL STRUCTURES
- BUILDINGS

- Theoretical foundations → Foundation of building
- Core arguments → Skeletal framework
- Construction of theory → Construction of building
- Deconstruction of theory → Demolishing of building
Frames as constraints on lexical meaning

- Metaphorically mapped frame structure can be directly compared with the frame structure evoked by the non-metaphoric senses of lexical items (Sullivan 2007, and forthcoming in 2012, p. 50).

  = Semantic frames constrain mappings, and hence constrain possible metaphors
Physical and metaphoric uses

Verb Argument Structure Construction Database
(Sweetser, Bouveret, Radetzky, Fujii, & David)

Metaphoric uses (tokens):
  – *Cut*: 74% (559/758)
  – *Break*: 81% (454/563)
Verb families

Cut and break family verbs:
(Guerssel et al. 1985; Majid et al. 2007, 2008; Levin 1997)

- **CUT** family: chop, clip, snip, hack, slash, slice, slit, trim, *(cut)*, chip, carve

- **BREAK** family: shatter, smash, snap, split, rip, tear, crack, *(break)*, chip, burst
Metaphoric objects: records

• Break / smash / shatter *the record*
• ? Crack
• # Chip
• #Tear / # rip
• #Cut / chop / slice
Metaphoric objects: records

• He **broke** the world **record** in the 100-meter dash.

• ...reach four hundred seventy-six million dollars that would **shatter** the all-time **record** for an America lottery. (COCA)
Metaphoric objects: records

<table>
<thead>
<tr>
<th>Target (abstract)</th>
<th>Source (concrete)</th>
</tr>
</thead>
<tbody>
<tr>
<td>purposeful action</td>
<td>goal-directed motion along a path</td>
</tr>
<tr>
<td>Speedy action</td>
<td>Speedy motion along a path towards a goal</td>
</tr>
<tr>
<td>Standards of successful action</td>
<td><strong>physical barriers</strong> on path to goal</td>
</tr>
<tr>
<td>overcoming difficulties in purposeful action</td>
<td><strong>Destroying physical barriers</strong> from your path</td>
</tr>
</tbody>
</table>

- Standards → Barriers
- Effort in attaining purpose → physical effort in getting to and through barrier
- Degree of standards → Toughness of barriers
Cause_to_fragment & Impact frames

• Source frame: **Cause_to_fragment**
  – An Agent suddenly and often violently separates the Whole_patient into two or more smaller Pieces.
  
  Has to be complete, not partial:
  – ? chip the record

• Source frame: **Impact**
  – While in motion, an Impactor makes sudden, forcible contact with the Impactee.
Metaphoric objects: rules and laws

• Break the rules, laws, codes of conduct
• # Shatter
• #Split / crack
• # Chop / cut / slice
Metaphoric objects: rules and laws

<table>
<thead>
<tr>
<th>Target (abstract)</th>
<th>Source (concrete)</th>
</tr>
</thead>
<tbody>
<tr>
<td>purposeful action</td>
<td>goal-directed motion along a path</td>
</tr>
<tr>
<td>hard to overcome difficulties</td>
<td>rigid <strong>physical obstacles</strong> in your path</td>
</tr>
<tr>
<td>overcoming difficulties in purposeful action</td>
<td><strong>Eliminating</strong> rigid physical obstacles from your path by fragmenting them</td>
</tr>
</tbody>
</table>

- course of desired action $\rightarrow$ path of motion to a desired goal
- difficulties in action $\rightarrow$ physical object in your way to the goal
Cause_to_fragment frame

• Source domain frame: Cause_to_fragment
  – An Agent suddenly and often violently separates the Whole_patient into two or more smaller Pieces, resulting in the Whole_patient no longer existing as such.
Metaphoric objects: expectations

- The IMF's World Economic Outlook TRIMMED its expectations of growth in world output in 1992 from 1.4 percent in May to 1.1 percent. (BNC)

- Trim the hedges.
- Trim the crust off the pie.
- Trim hair (vs. cut or chop hair)
Removing frame

• An Agent causes a Theme to move away from a location, the Source.
  – Special case: removing excess from a whole
<table>
<thead>
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<th>Metaphoric objects: prices and taxes</th>
</tr>
</thead>
<tbody>
<tr>
<td>• Cut prices (1310000)</td>
</tr>
<tr>
<td>• Slash prices (3690000)</td>
</tr>
<tr>
<td>• Chop prices (?)</td>
</tr>
<tr>
<td>• Slice prices (?)</td>
</tr>
<tr>
<td>• Trim prices (?)</td>
</tr>
<tr>
<td>• Carve prices (2170)</td>
</tr>
<tr>
<td>- Cut taxes (2240000)</td>
</tr>
<tr>
<td>- Slash taxes (70000)</td>
</tr>
<tr>
<td>- Chop taxes (3000)</td>
</tr>
<tr>
<td>- Slice taxes (5600)</td>
</tr>
<tr>
<td>- Trim taxes (16000)</td>
</tr>
<tr>
<td>- Carve taxes (64)</td>
</tr>
</tbody>
</table>
Cut vs. break verbs in metaphor

- (Physical) cutting scenarios and frames do not focus on the resulting state of the object, so metaphoric uses of frames reflect **purposes**, **intentions**, and **subsequent actions** surrounding cutting event
  - Removing_to_reduce (‘chop prices’ ‘trim expectations’)
  - Injure (‘words cut through her heart’)
  - Division_for_allocation (‘slice up sovereignty’)
  - Interruption_of_connection (‘we got cut off’)

- Break frames do focus on resulting state of the object, so metaphoric uses tend to elaborate on more specific instances of **result** types
  - Destruction
  - Damaging
  - Caused_fragmentation
Conclusions

• Concrete source domain frames influence metaphorlic uses.

• This will inferentially inform and constrain the way metaphorlic uses become acceptable.

• There is no class-based distinction, rather a gradient
THANK YOU!
References

• Bouveret, Myriam and Eve Sweetser. 2009. Multi-frame semantics, metaphoric extensions and grammar. BLS 35.


Database information

• FrameNet: https://framenet.icsi.berkeley.edu/fndrupal/

• VACDB
  • http://linguistics.berkeley.edu/~sweetservacdb/index.html

• MetaNet - not yet available, check with us soon!

• ICSI release:
  • http://www.icsi.berkeley.edu/icsi/gazette/2012/05/menet-project