English Verbs of “Yelling”
A Quantitative Corpus-Based Exploration of Synonymy

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Synonymy

Why study synonymy?
• Synonymy is relatively understudied¹
• Synonymy is gaining attention within cognitive and corpus linguistics²

What impacts the meaning of synonyms?
• Language usage patterns³
• The context of language use⁴

Synonym Set:
10 English synonyms for “yelling”

BAWL, BELLOW, HOLLER, HOWL, ROAR, SCREAM, SCREECH, SHOUT, SHRIEK, YELL.
"... he began **bawling** at the top of his voice..."
"... as he spins towards us, **bellowing** at the top of his voice..."
"... the unhinged officer **bellowed** at him..."
"... I lost my cool and **hollered** at all three kids..."
"... they **howled** at each other..."
"... ‘let me go’ she **roars** at a team of doctors..."
"... **roaring** out at the top of her voice..."
"... she finally **screamed** at him..."
"... Robert would literally **scream** at the top of his voice..."
"... he and Litlun **screeced** at each other..."
"... ‘you are dog excrement!’ he **shouted** at the guy in the mask..."
"... Barry **shrieked** at Moore, ‘you set me up’..."
"... the guy **yelled** at Enrique to ‘open the God damned door’..."
Data Sources

• Contemporary Corpus of American English (COCA: Davies, 2008-)
  – Written sub-genres only
  – 200 random concordance lines / synonym

• Elicitation Task
  – 31 university students
    • mean age = 20.55 years
    • Native-speakers of English
  – 3 sentences / synonym / student
<table>
<thead>
<tr>
<th>Feature</th>
<th>Levels</th>
<th>Description</th>
<th>Example</th>
</tr>
</thead>
<tbody>
<tr>
<td>Logical Subject (LS)</td>
<td>Human Animal Inanimate Unknown</td>
<td>The agent. In most cases, this was the syntactic subject. However, in cases where the syntactic subject was not explicitly expressed the agent was often still identifiable (e.g., see the last example for SS).</td>
<td>although my sister bawled pitilessly = human the beast bawled and spooked = animal she heard a steamship whistle bawl = inanimate</td>
</tr>
<tr>
<td>Verbal Morphology (TAM)</td>
<td>VVB (bare) VVD (past) VVG (-ing)</td>
<td>Verbal morphology</td>
<td>NOTE: The CLAWS-5 coding scheme was followed: <a href="http://ucrel.lancs.ac.uk/claws5tags.html">http://ucrel.lancs.ac.uk/claws5tags.html</a></td>
</tr>
<tr>
<td>Logical Object (LO)</td>
<td>Yes No</td>
<td>Was the action directed towards a specific person or object?</td>
<td>He bellowed at the angus bull = yes ...to deal with Bala yelling at him = yes ...howling at the moon = yes The kids were bawling = no</td>
</tr>
<tr>
<td>Right Collocate (Next Word)</td>
<td>Adverb particle Preposition</td>
<td>Classification of the right collocate</td>
<td>NOTE: The CLAWS-5 coding scheme was followed and then consolidated: <a href="http://ucrel.lancs.ac.uk/claws5tags.html">http://ucrel.lancs.ac.uk/claws5tags.html</a></td>
</tr>
<tr>
<td>Emotion</td>
<td>Positive Negative Neutral</td>
<td>The emotion underlying the action. (e.g., joy, fear, etc.)</td>
<td>Her father bellowed with laughter ... = positive I can howl in agony = negative ...the fire roaring away ... = neutral</td>
</tr>
</tbody>
</table>
COCA Results

Hierarchical clustering on the factor map

Cluster 1
Cluster 2
Cluster 3

Multivariate Exploratory Data Analysis and Data Mining with R
(Husson, Josse, Le & Mazet, 2013)
COCA Results

Variables factor map (PCA)

Individuals factor map (PCA)
<table>
<thead>
<tr>
<th>WORD</th>
<th>LS</th>
<th>TAM</th>
<th>LO</th>
<th>POS</th>
<th>Emotion</th>
<th>Freq</th>
<th>Exp</th>
<th>Cont.chisq</th>
<th>P.adj.Holm</th>
<th>Q</th>
</tr>
</thead>
<tbody>
<tr>
<td>ROAR</td>
<td>inanimate</td>
<td>VVD</td>
<td>no</td>
<td>PRP</td>
<td>neutral</td>
<td>23</td>
<td>1.22</td>
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<td>VVZ</td>
<td>no</td>
<td>AVP</td>
<td>neutral</td>
<td>8</td>
<td>0.0581</td>
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<td>2.31E-11</td>
<td>0.004</td>
</tr>
<tr>
<td>YELL</td>
<td>human</td>
<td>VVD</td>
<td>yes</td>
<td>PRP</td>
<td>negative</td>
<td>16</td>
<td>1.1122</td>
<td>199.2884</td>
<td>6.72E-10</td>
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<tr>
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<td>VVD</td>
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<td>PRP</td>
<td>neutral</td>
<td>15</td>
<td>1.22</td>
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<td>PRP</td>
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<td>VVG</td>
<td>no</td>
<td>PRP</td>
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<td>VVG</td>
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<td>6</td>
<td>0.184</td>
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<td>VVG</td>
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<td>0.005</td>
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<td>yes</td>
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<td>1.1122</td>
<td>71.0248</td>
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</tbody>
</table>

Example Sentences:
- "One flick of the switch and the vacuum roared to life."
- "A big sedan roars up, cutting her off."
- "Mom was irate. Mom yelled at me. Mom told me to get the hell out."
- "The chopper lifts out in a power climb, roaring away across the parking lot..."
- "...their tires screeching as they turn onto this street..."
- "You’re going to yell at me. It’s not fair."
- "‘You are dog excrement’, he shouted at the guy in the mask."

(Gries, 2004)
## HCFA Significant Results (COCA)

(Gries, 2004)

<table>
<thead>
<tr>
<th>WORD</th>
<th>LS</th>
<th>TAM</th>
<th>LO</th>
<th>POS</th>
<th>Emotion</th>
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</tr>
</thead>
<tbody>
<tr>
<td>YELL</td>
<td>human</td>
<td>VVD</td>
<td>no</td>
<td>none</td>
<td>negative</td>
<td>22</td>
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<tr>
<td>Example Sentence: “‘Get your dad,’ Wyman yelled. ‘I’m bleeding to death.’”</td>
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<tr>
<td>ROAR</td>
<td>inanimate</td>
<td>VVG</td>
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<td>Example Sentence: “They plummet. Alice screaming.”</td>
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<tr>
<td>SCREAM</td>
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<td>VVG</td>
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<td>PRP</td>
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<td>0.7966</td>
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<tr>
<td>Example Sentence: “Mahesh kept screaming at his uncles, his cousins...” (NOTE: larger context used for emotion)</td>
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<td>Example Sentence: “The wind howling around them.”</td>
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<td>VVG</td>
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<td>0.8739</td>
<td>58.1121</td>
<td>0.029519</td>
<td>0.004</td>
</tr>
<tr>
<td>Example Sentence: “…stops the disk that spins before him and sends it screeching in the opposite direction.”</td>
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<td></td>
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<td></td>
<td></td>
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<td></td>
<td></td>
</tr>
<tr>
<td>SCREAM</td>
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<td>VVI</td>
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<td>none</td>
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<tr>
<td>Example Sentence: “…shaking desperately and trying not to scream.” (NOTE: larger context used for LS and emotion)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

(Gries, 2004)
Summary

Differences Amongst Synonyms:

• Figurative compared to literal use (e.g., “The wind howling around them” compared to “You’re going to yell at me”)

• Expression of emotion (e.g., “The guards roared in laughter” compared to “Mom was irate. Mom yelled at me”)

• Whether the action is directed at a particular person or entity (e.g., “he roars very loud” compared to “he shouted at the guy in the mask.”).
Corpus Compared to Elicitation Data

COCA

Elicited

Individuals factor map (PCA)

Dim 1 (38.31%)

Dim 2 (19.33%)

Dim 1 (34.29%)

Dim 2 (25.67%)

scream
bawl
howl
screech
shout
shriek
holler
yell
bellow
scream
holler
roar
screech
shriek
yell
bellow
bawl
howl
roar
screech
Corpus Compared to Elicitation Data

COCA

Elicited

Individuals factor map (PCA)
Comparison of Data Sources

- The proportion with which each feature was used is highly correlated across the two data sources ($r (188) = 0.80, p < 0.01$).

### Subjects: Proportion of animals compared to Inanimates

<table>
<thead>
<tr>
<th>COCA Proportion of Occurrence (Mean)</th>
<th>Elicited Proportion of Occurrence (Mean)</th>
<th>Difference between COCA and Elicited</th>
</tr>
</thead>
<tbody>
<tr>
<td>LS Animal</td>
<td>0.064</td>
<td>0.142</td>
</tr>
<tr>
<td>LS Inanimate</td>
<td>0.157</td>
<td>0.075</td>
</tr>
</tbody>
</table>

HOWL_ROAR_SCRUEECH CLUSTER

LS Animal in COCA = 0.10
LS Animal in the elicited data = 0.40

LS inanimate in COCA = 0.38
LS inanimate in the elicited data = 0.21
Animals vs. Inanimate as Subjects

- Corpus = frequent uses in naturalistic speech
- Elicitation = language out of context

Why would they differ?
- Exemplar and Prototype Theory
  - Exemplars = specific examples (e.g., like in a corpus: “A big sedan roars up, cutting her off.”)
  - Prototypes = abstract categorization of the “best” example (e.g., like in the elicitation task: “The coyotes howled all through the night.”)

(e.g., Reisberg, 2010; Rouder & Ratcliff, 2006; Vanpaemel & Storms, 2008)
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