

# Ousiometrics: The Essence of Meaning

Last updated: 2025/01/11, 09:05:01 EST

Principles of Complex Systems, Vols. 1, 2, & 3D  
CSYS/MATH 6701, 6713, & a pretend number, 2024–2025

Prof. Peter Sheridan Dodds

Computational Story Lab | Vermont Complex Systems Center  
Santa Fe Institute | University of Vermont



Licensed under the [Creative Commons Attribution 4.0 International](https://creativecommons.org/licenses/by/4.0/)

The PoCverse  
Ousiometrics  
1 of 77

Measuring essential  
meaning

History

Definitions

Emotions

Problems

Remeasuring meaning

Ousiograms

Extremousonyms

Dimension names

Safety bias

Applications

The Ousiometer

Correspondences

Nutshell

Extras

References



These slides are brought to you by:

Sealie & Lambie  
Productions



The PoCVerse  
Ousiometrics  
2 of 77

Measuring essential  
meaning

History  
Definitions  
Emotions

Problems

Remeasuring meaning

Ousiograms

Extremousonyms  
Dimension names

Safety bias

Applications

The Ousiometer  
Correspondences  
Nutshell

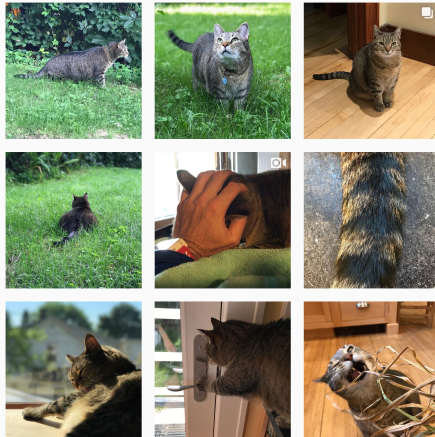
Extras



References



These slides are also brought to you by:

Special Guest Executive Producer



 On Instagram at [pratchett\\_the\\_cat](https://www.instagram.com/pratchett_the_cat) 

The PoCVerse  
Ousiometrics  
3 of 77

Measuring essential  
meaning

History  
Definitions  
Emotions

Problems

Remeasuring meaning

Ousiograms

Extremousonyms  
Dimension names

Safety bias

Applications

The Ousiometer  
Correspondences  
Nutshell

Extras

References



# Outline

## Measuring essential meaning

History

Definitions

Emotions

## Problems

## Remeasuring meaning

## Ousiograms

Extremousionyms

Dimension names

## Safety bias

## Applications

The Ousiometer

Correspondences

Nutshell

## Extras

## References

The PoCverse

Ousiometrics

4 of 77

Measuring essential meaning

History

Definitions

Emotions

Problems

Remeasuring meaning

Ousiograms

Extremousionyms

Dimension names

Safety bias

Applications

The Ousiometer

Correspondences

Nutshell


Extras

References






# The meaning of meaning:



“Ousiometrics and Telegnomics: The essence of meaning conforms to a two-dimensional powerful-weak and dangerous-safe framework with diverse corpora presenting a safety bias” 

Dodds et al.,  
, 2021. [5]

## What does meaning even mean?

-  From the smack-tweeting Merriam-Webster:<sup>1</sup>  
“The thing that is conveyed especially by language”
-  What are the essential characteristics of meaning?
-  Does essential meaning meaningfully span some kind of space?

### Measuring essential meaning

History  
Definitions  
Emotions

Problems

Remeasuring meaning

Ousiograms

Extremousonyms  
Dimension names

Safety bias

Applications

The Ousiometer  
Correspondences  
Nutshell

Extras

References



<sup>1</sup>Life goal: Never get owned by a dictionary on social media

# This is not easy:

## “Abed’s Uncontrollable Christmas”



Abed searches for the meaning of Christmas (in stop animation)



Abed Nadir: [opens present] “It’s the first season of Lost on DVD.”



Pierce Hawthorne: “That’s the meaning of Christmas?”



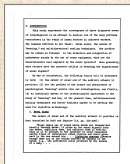
Abed Nadir: “It’s a metaphor. It represents lack of payoff.”


## “Introduction to Teaching”

Abed Nadir: “I thought the meaning of people was somewhere in here. Then I looked inside Nicolas Cage and I found a secret—people are random and pointless.”



# The meaning of pings:



“A factorial study of complex auditory stimuli (passive sonar sounds)” 




L. M. Solomon,

Unpublished Doctoral Dissertation, University of Illinois, , , 1954. <sup>[22]</sup>

## From the introduction:

“This study represents the convergence of three disparate areas of investigation in an attempt to analyze one of the many problems encountered in the study of human factors in undersea warfare.

The domains referred to are these:

-  naval sonar,
-  the nature of “meaning,”
-  and multidimensional scaling techniques.

The problem may be stated as follows: In the detection and recognition of underwater sounds by the use of sonar equipment, what are the discriminative cues employed by the sonar operator?

More generally, what factors does the operator utilize in decoding the significance of sonar signals?’

Measuring essential  
meaning

History  
Definitions  
Emotions

Problems

Remeasuring meaning

Ousiograms  
Extremousonyms  
Dimension names

Safety bias

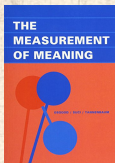
Applications  
The Ousiometer  
Correspondences  
Nutshell



Extras

References



# From pings to things:




“The Measurement of Meaning”    
by Osgood, Suci, and Tannenbaum (1957). <sup>[13]</sup>




THE DIMENSIONALITY OF THE SEMANTIC SPACE 27

Table 4  
UNBIASED CENTRAL FACTOR LOADINGS AND COMMUNITIES (ROUSSEAU TEST)

	I	II	III	IV	V	VI	VII	VIII	IX
1. phonetic/pleasant	.68	-.20	.33	-.07	-.24	.15	-.37	-.37	.55
2. pleasant/pleasant	.24	.16	.20	.22	.25	.11	.04	-.06	.21
3. smooth/weak	.67	-.05	.25	.05	-.24	.06	-.07	-.48	.48
4. soft/strong	.67	-.05	.25	.05	-.24	.06	-.07	-.48	.48
5. beautiful/ugly	.62	.27	.07	.27	-.39	.11	-.16	.24	.44
6. soft/strong	.28	.14	.35	.20	-.25	.24	.18	-.03	.44
7. low/high	.22	-.06	.20	.20	-.25	.24	.18	-.03	.44
8. power/weak	.42	-.40	.22	-.01	-.26	.16	-.01	-.50	.50
9. strong/feeble	.25	.26	.21	.15	-.18	.06	-.31	.44	.44
10. soft/hard	.19	.41	.27	.22	.07	-.29	.05	.11	.47
11. soft/hard	.21	-.26	.26	.11	-.26	.09	.04	.44	.44
12. good/bad	.30	.30	.16	-.16	-.11	-.11	.16	.16	.40
13. good/bad	.20	-.48	-.19	.19	.24	-.24	-.22	-.07	.40
14. good/bad	.30	.30	.16	-.16	-.11	-.11	.16	.16	.40
15. clean/unclean	.20	.17	.48	.31	.04	-.25	.22	-.07	.40
16. clean/unclean	.20	.17	.48	.31	.04	-.25	.22	-.07	.40
17. clean/unclean	.20	.17	.48	.31	.04	-.25	.22	-.07	.40
18. strong/weak	.24	.18	-.23	-.24	.21	-.30	.33	-.02	.34
19. strong/weak	.41	-.20	.08	.31	.17	-.07	.41	.16	.47
18. strong/weak	.41	-.20	.08	.31	.17	-.07	.41	.16	.47
19. strong/weak	.41	-.20	.08	.31	.17	-.07	.41	.16	.47
20. fast/slow	.30	.21	.42	.42	.33	.00	-.04	.13	.27
21. fast/slow	.27	-.27	-.28	-.11	-.06	-.26	-.04	.06	.55
22. fast/slow	.34	-.40	-.10	.10	-.06	-.06	-.04	.04	.52
23. fast/slow	.47	-.26	.07	.24	.04	-.04	-.04	.04	.52
24. fast/slow	.46	-.11	.21	.26	.13	.09	.09	.24	.54
25. fast/slow	.31	.30	.28	.42	.07	-.07	-.13	.35	.52
26. heavy/light	.45	-.20	.18	.21	-.09	-.11	.02	.22	.51
27. heavy/light	.24	-.11	.12	.33	-.11	.09	-.07	.14	.24
28. soft/hard	.20	-.48	-.19	.19	.24	-.24	-.22	-.07	.40
29. smooth/rough	.21	.41	.20	.20	-.28	-.03	-.04	.24	.28
30. rough/smooth	.21	.41	.20	.20	-.28	-.03	-.04	.24	.28
31. soft/hard	.40	-.26	.18	.14	-.12	.14	-.07	.40	.40
32. soft/hard	.35	-.24	.11	.14	-.26	-.17	.16	.14	.41
33. smooth/rough	.27	.21	.35	.25	.23	.20	-.06	.10	.28
34. smooth/rough	.27	.21	.35	.25	.23	.20	-.06	.10	.28
35. smooth/rough	.27	.21	.35	.25	.23	.20	-.06	.10	.28
36. smooth/rough	.27	.21	.35	.25	.23	.20	-.06	.10	.28
37. smooth/rough	.27	.21	.35	.25	.23	.20	-.06	.10	.28
38. smooth/rough	.27	.21	.35	.25	.23	.20	-.06	.10	.28
39. smooth/rough	.27	.21	.35	.25	.23	.20	-.06	.10	.28
40. smooth/rough	.27	.21	.35	.25	.23	.20	-.06	.10	.28
41. smooth/rough	.27	.21	.35	.25	.23	.20	-.06	.10	.28
42. smooth/rough	.27	.21	.35	.25	.23	.20	-.06	.10	.28
43. smooth/rough	.27	.21	.35	.25	.23	.20	-.06	.10	.28
44. smooth/rough	.27	.21	.35	.25	.23	.20	-.06	.10	.28
45. smooth/rough	.27	.21	.35	.25	.23	.20	-.06	.10	.28
46. smooth/rough	.27	.21	.35	.25	.23	.20	-.06	.10	.28
47. smooth/rough	.27	.21	.35	.25	.23	.20	-.06	.10	.28
48. smooth/rough	.27	.21	.35	.25	.23	.20	-.06	.10	.28
49. smooth/rough	.27	.21	.35	.25	.23	.20	-.06	.10	.28
50. smooth/rough	.27	.21	.35	.25	.23	.20	-.06	.10	.28



Osgood et al. used semantic differentials  and factor analysis to identify a basis of three variables for meaning-space:

-  **Evaluation:** {bad  $\leftrightarrow$  good}
-  **Potency:** {weak  $\leftrightarrow$  strong}
-  **Activity:** {passive  $\leftrightarrow$  active}



100s of students, 10s of things, 50 semantic differentials



“EPA framework”

The PoCVerse  
Ousiometrics  
9 of 77

Measuring essential meaning

History  
Definitions  
Emotions

Problems

Remeasuring meaning

Ousiograms  
Extremousynonyms  
Dimension names

Safety bias

Applications  
The Ousiometer  
Correspondences  
Nutshell

Extras

References











Semantic differentials from Osgood et al.: [13]

- |                        |                          |                         |
|------------------------|--------------------------|-------------------------|
| 1. pleasant-unpleasant | 18. large-small          | 36. colorful-colorless  |
| 2. repeated-varied     | 19. clean-dirty          | 37. hot-cold            |
| 3. smooth-rough        | 20. resting-busy         | 38. rich-thin           |
| 4. active-passive      | 21. dull-sharp           | 39. obvious-subtle      |
| 5. beautiful-ugly      | 22. deep-shallow         | 40. wide-narrow         |
| 6. definite-uncertain  | 23. gliding-scraping     | 41. deliberate-careless |
| 7. low-high            | 24. familiar-strange     | 42. happy-sad           |
| 8. powerful-weak       | 25. soft-hard            | 43. gentle-violent      |
| 9. steady-fluttering   | 26. heavy-light          | 44. mild-intense        |
| 10. soft-loud          | 27. wet-dry              | 45. rounded-angular     |
| 11. full-empty         | 28. safe-dangerous       | 46. slow-fast           |
| 12. good-bad           | 29. concentrated-diffuse | 47. rugged-delicate     |
| 13. rumbling-whining   | 30. pushing-pulling      | 48. simple-complex      |
| 14. solid-hollow       | 31. labored-easy         | 49. green-red           |
| 15. clear-hazy         | 32. dark-bright          | 50. masculine-feminine  |
| 16. calming-exciting   | 33. even-uneven          |                         |
| 17. pleasing-annoying  | 34. loose-tight          |                         |
|                        | 35. relaxed-tense        |                         |

## Definitions:

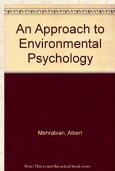
-  Ousiometrics: The quantitative study of the **essential meaningful components** of an entity, however perceived.
-  Used in philosophical and theological settings, the word ‘ousia’ comes from Ancient Greek οὐσία.
-  To be distinguished from semantics, semiotics, ...
-  οὐσία is the etymological root of the word ‘essence’.
-  Ousiometry, ousiometer, ousiograms, ...
-  Telegnomics: The distant sensing of knowledge (~ distant reading <sup>[12]</sup>)





# Essential dimensions captured by emotion:


- 🧱 Late 1800s: Three dimensional representation of emotion postulated by Wendt. [23, 17]
- 🧱 1970s: Mehrabian and Russell explicitly port EPA framework: [7, 8]
  - 🧱 Evaluation ~ Pleasure/Valence (~ Happiness)
  - 🧱 Potency ~ Dominance
  - 🧱 Activity ~ Arousal
- 🧱 VAD has become standard nomenclature even though emotion is less general than meaning.
- 🧱 Explicit presumption of independence of VAD dimensions, has hardened as fact.
- 🧱 Intention that  $VAD \equiv EPA$  has become lost in literature. [2]





“An Approach to Environmental Psychology.”    
by Mehrabian and Russell (1974). <sup>[7]</sup>



“The basic emotional impact of environments”   
Mehrabian and Russell,  
Perceptual and motor skills, **38**, 283–301, 1974. <sup>[8]</sup>

*“Semantic differential studies, in particular, have shown that human judgments of diverse samples of stimuli can be characterized in terms of three dimensions: evaluation, activity, and potency. We have termed the corresponding emotional responses pleasure, arousal, and dominance.”*

*“Thus, each dimension is, in principle, functionally independent of the other two; none of the three dimensions could be subsumed by the others.”*

The PoCVerse  
Ousiometrics  
15 of 77

Measuring essential  
meaning

History  
Definitions  
Emotions

Problems

Remeasuring meaning

Ousiograms

Extremousonyms  
Dimension names

Safety bias

Applications

The Ousiometer  
Correspondences  
Nutshell

Extras

References



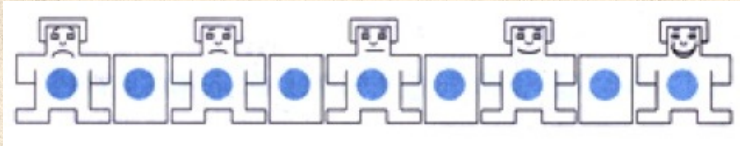
# Major problems with measuring essential meaning:

1. **Scale:** Originally 10s and 100s of words → now 10,000s + online rating.
2. **The focus on types alone and not tokens:** Missing the forest for the book of tree species.
3. **The use of Likert scales for semantic differentials:** Solid but can be improved upon.
4. **Limitations of factor analysis for a large number of categorical dimensions:** Ousiograms will help sort things out.
5. **The misalignment between expert-chosen, end-point descriptors and dimensions of essential meaning:** How to guide raters to score VAD dimensions?  
Solution is to always perform factor analysis (SVD).

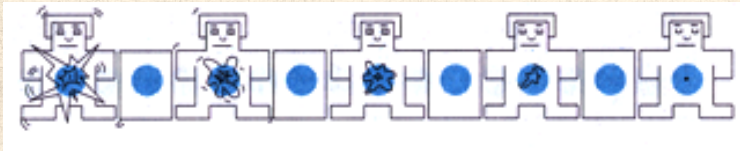


# 1999 ANEW study—three 1–9 scales: [4]

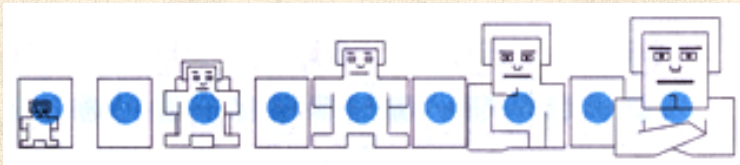
valence:



arousal:



dominance:



The PoCVerse  
Ousiometrics  
17 of 77

Measuring essential  
meaning

History  
Definitions  
Emotions

Problems

Remeasuring meaning

Ousiograms

Extremousonyms  
Dimension names

Safety bias

Applications

The Ousiometer  
Correspondences  
Nutshell

Extras

References





## ANEW study: Valence $\sim$ Happiness:

🧱 Valence scale presented to participants as a ‘happy-unhappy scale.’

🧱 Participants were further told:

“At one extreme of this scale, you are happy, pleased, satisfied, contented, hopeful. ...

The other end of the scale is when you feel completely unhappy, annoyed, unsatisfied, melancholic, despaired, or bored.”

🧱 The Hedonometer was always about essential meaning.

## We now know that ANEW is a no-no:

🧱 Problem: Expert-chosen list of  $\sim$  1,000 words.

🧱 Fine words but poorly cover real texts <sup>[16]</sup>.

🧱 Wrongly suggests Arousal and Dominance are minimal relative to Valence.

# Remeasuring meaning:



“Obtaining Reliable human ratings of valence, arousal, and dominance for 20,000 English words” ↗

Saif M. Mohammad,  
Proceedings of The Annual Conference of the  
Association for Computational Linguistics (ACL),  
38, , 2018. <sup>[10]</sup>

## Moving beyond Likert scales:

🧱 Best-worst scaling ↗

🧱 Ask raters to examine  $n$  things once, and choose the best and worst according to some criterion.

🧱 For  $n = 4$ , there are 6 pair comparisons of Things.

🧱 Choosing best and worst gives 5 orderings:  $\tau_1 > \tau_2, \tau_3 > \tau_4$ .

🧱 Things end up with scores in  $[0, 1]$ .





## NRC VAD Lexicon <sup>[10]</sup>

<b>VAD endpoints:</b>	<b>Paradigm words and phrases presented to raters:</b> <sup>[11]</sup>
highest valence	happiness, pleasure, positiveness, satisfaction, contentedness, hopefulness
lowest valence	unhappiness, annoyance, negativeness, dissatisfaction, melancholy, despair
highest arousal	arousal, activeness, stimulation, frenzy, jitteriness, alertness
lowest arousal	unarousal, passiveness, relaxation, calmness, sluggishness, dullness, sleepiness
highest dominance	dominant, in control of the situation, powerful, influential, important, autonomous
lowest dominance	submissive, controlled by outside factors, weak, influenced, cared-for, guided

Major problem 5: Imposing dimensions through clouds of endpoint descriptors.

# NRC VAD study: 20,007 words:

Standard correlations suggests a bit of Barney Rubble:

$$R(V, A) \simeq -0.268$$

$$R(A, D) \simeq 0.302$$

$$R(D, V) \simeq 0.488$$

The PoCverse  
Ousiometrics  
21 of 77

Measuring essential  
meaning

History

Definitions

Emotions

Problems

Remeasuring meaning

Ousiograms

Extremousonyms

Dimension names

Safety bias

Applications

The Ousiometer

Correspondences

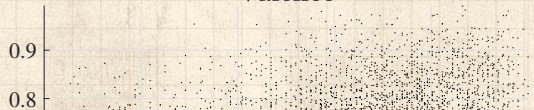
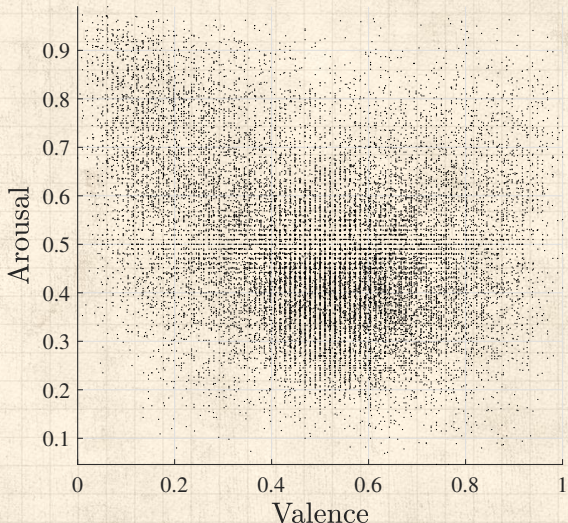
Nutshell

Extras

References



# The Delicious English Muffin of Meaning:<sup>1</sup>



The PoCVerse  
Ousiometrics  
22 of 77

Measuring essential  
meaning

History  
Definitions  
Emotions

Problems

Remeasuring meaning

Ousiograms

Extremousonyms  
Dimension names

Safety bias

Applications

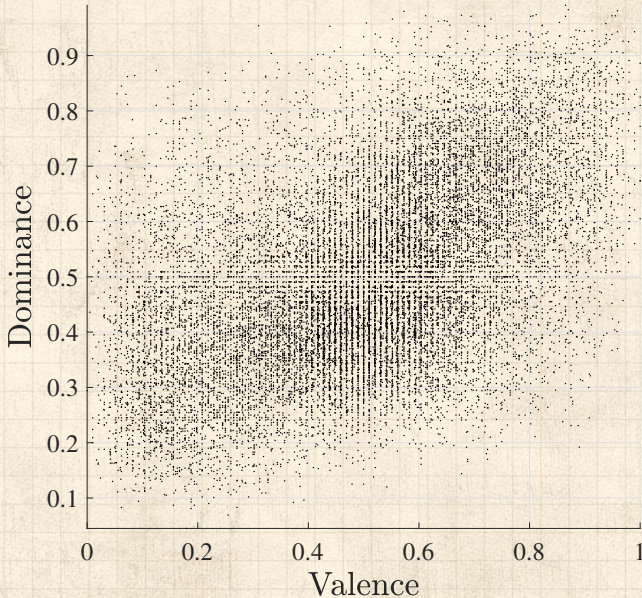
The Ousiometer  
Correspondences  
Nutshell

Extras

References



$$R(D, V) \simeq 0.488$$



Measuring essential  
meaning

History  
Definitions  
Emotions

Problems

Remeasuring meaning

Ousiograms

Extremousonyms  
Dimension names

Safety bias

Applications

The Ousiometer  
Correspondences  
Nutshell

Extras

References



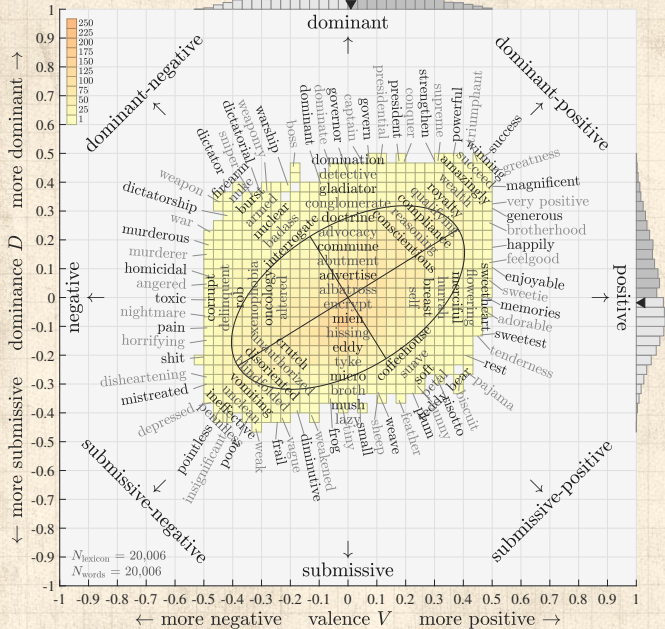
# Release the Hounds by which we mean Singular Value Decomposition:

## Variance explained:

- ❏ VAD: 44.4%, 28.0%, and 27.6%.
- ❏ Apply SVD.
- ❏ Singular values:  $\sigma_1 \simeq 34.1$ ,  $\sigma_2 \simeq 27.2$ , and  $\sigma_3 \simeq 13.8$ ,
- ❏ For what will be Goodness-Energy-Structure (GES): 55.6%, 35.3%, and 9.1%
- ❏ Rotate in G-E plane by  $\pi/4$  for what will be Power-Danger-Structure (PDS) 45.5%, 45.5%, 9.1%
- ❏ Interpretability enhancements: Ousiograms.



~ valence-dominance ouosiogram for the NRC VAD lexicon ~



Measuring essential meaning

- History
- Definitions
- Emotions

Problems

Remeasuring meaning

Ousiograms

- Extremouslyonyms
- Dimension names

Safety bias

Applications

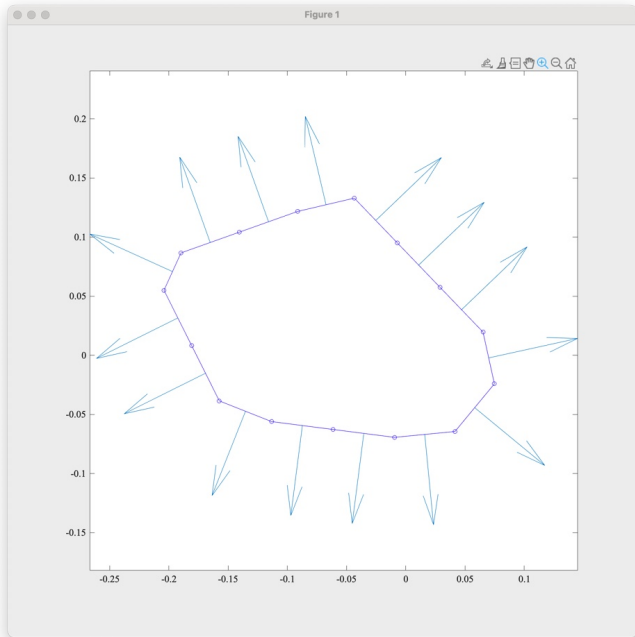
- The Ousiometer
- Correspondences
- Nutshell

Extras

References



# Building ousiograms (2021/01/31):



The PoCverse

Ousiometrics

26 of 77

Measuring essential meaning

History

Definitions

Emotions

Problems

Remeasuring meaning

**Ousiograms**

Extremousonyms

Dimension names

Safety bias

Applications

The Ousiometer

Correspondences

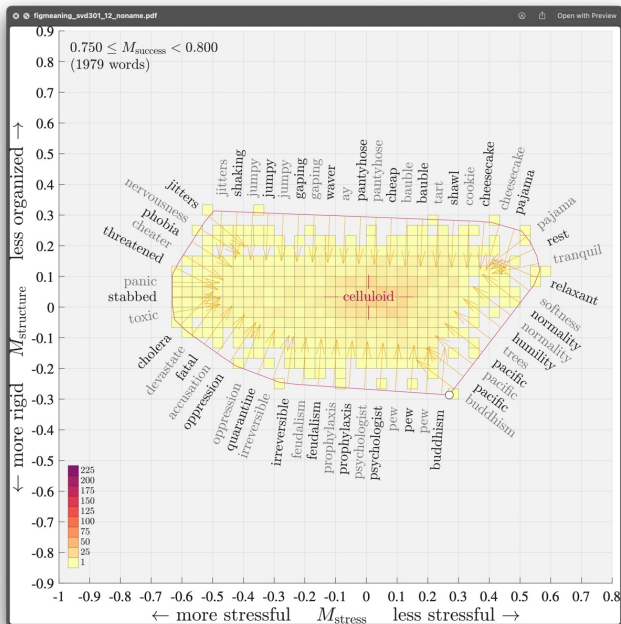
Nutshell

Extras

References



# Building ousiograms (2021/01/31):



The PoCVerse  
Ousiometrics  
27 of 77

Measuring essential  
meaning

History  
Definitions  
Emotions

Problems

Remeasuring meaning

Ousiograms

Extremousonyms  
Dimension names

Safety bias

Applications

The Ousiometer  
Correspondences  
Nutshell

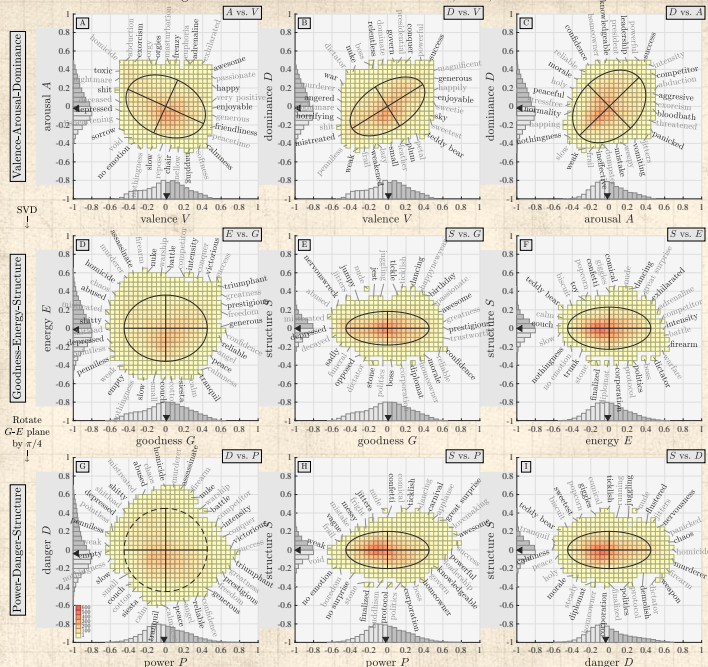
Extras

References





# Ousiograms for the NRC VAD lexicon in the VAD, GES, and PDS frameworks:



The PoCServe  
Ousiometrics  
28 of 77

Measuring essential  
meaning  
History  
Definitions  
Emotions

Problems

Remeasuring meaning

## Ousiograms

Extremouslyonyms  
Dimension names

Safety bias

Applications

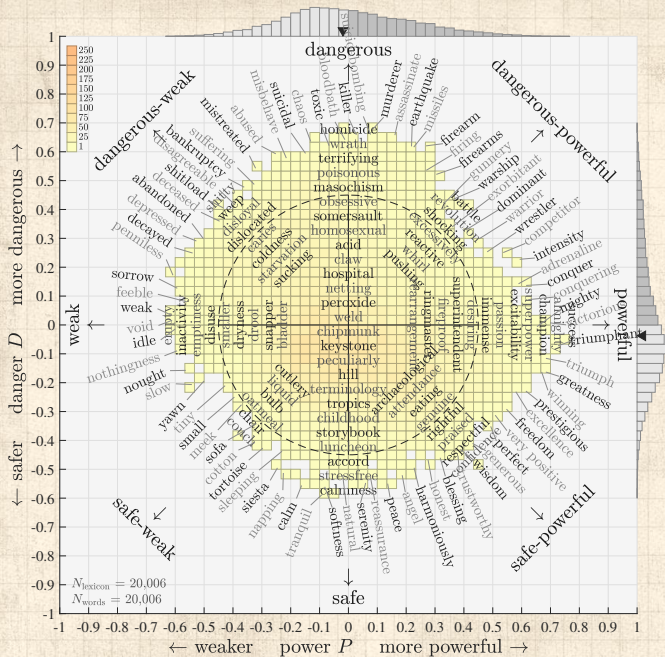
The Ousiometer  
Correspondences  
Nutshell

Extras

References



~ power-danger ousiogram for the NRC VAD lexicon ~



Measuring essential meaning  
History  
Definitions  
Emotions

Problems

Remeasuring meaning

Ousiograms

Extremouslyonyms  
Dimension names

Safety bias

Applications

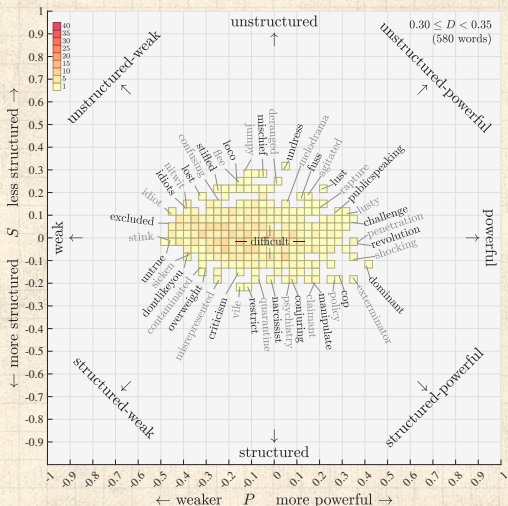
The Ousiometer  
Correspondences  
Nutshell

Extras

References



# Ousiometric slices—MRIs of Meaning



Slices of Structure Flipbook ↗

Slices of Danger Flipbook ↗

Slices of Power Flipbook ↗

Measuring essential meaning

History

Definitions

Emotions

Problems

Remeasuring meaning

Ousiograms

Extremousonyms

Dimension names

Safety bias

Applications

The Ousiometer

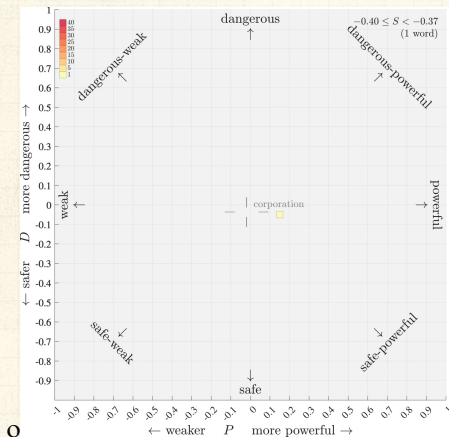
Correspondences

Nutshell

Extras

References

{powerful  $\Leftrightarrow$  weak} vs {dangerous  $\Leftrightarrow$  safe}  



Measuring essential meaning

- History
- Definitions
- Emotions

Problems

Remeasuring meaning

Ousiograms

- Extremousonyms
- Dimension names

Safety bias

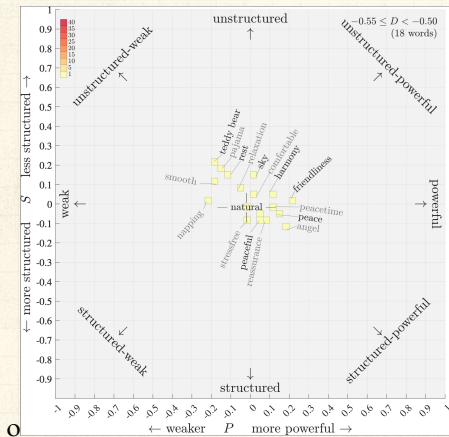
Applications

- The Ousiometer
- Correspondences
- Nutshell

Extras

References

{powerful ⇔ weak} vs {structured ⇔ unstructured}



## Measuring essential meaning

History

Definitions

Emotions

## Problems

## Remeasuring meaning

## Ousiograms

Extremousonyms

Dimension names

## Safety bias

## Applications

The Ousiometer

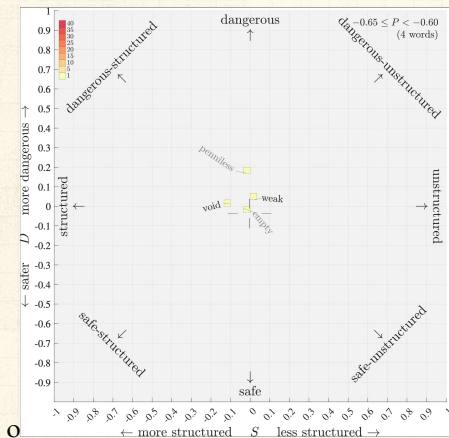
Correspondences

Nutshell

## Extras

## References

{dangerous  $\Leftrightarrow$  safe} vs {structured  $\Leftrightarrow$  unstructured}



# Extremonyms: Synousionyms and Antousionyms:

## Powerful-Safe (Good) to Weak-Dangerous (Bad) axis:

Synousionyms	Valence	Arousal	Dominance	Goodness	Energy	Structure	Power	Danger	Structure
<b>Anchor: wisdom</b>	0.430	-0.198	0.371	0.579	-0.031	-0.158	0.388	-0.432	-0.158
education	0.396	-0.225	0.340	0.539	-0.065	-0.167	0.336	-0.427	-0.167
healthy	0.438	-0.181	0.318	0.558	-0.047	-0.108	0.362	-0.428	-0.108
trustworthy	0.469	-0.185	0.324	0.589	-0.052	-0.100	0.379	-0.453	-0.100
reliable	0.412	-0.259	0.375	0.575	-0.076	-0.202	0.353	-0.460	-0.202
Antousionyms	Valence	Arousal	Dominance	Goodness	Energy	Structure	Power	Danger	Structure
bullshit	-0.458	0.176	-0.317	-0.575	0.046	0.095	-0.373	0.439	0.095
shitty	-0.480	0.179	-0.337	-0.604	0.042	0.100	-0.397	0.456	0.100
nauseate	-0.438	0.160	-0.324	-0.558	0.026	0.101	-0.376	0.413	0.101
weeping	-0.418	0.188	-0.332	-0.549	0.042	0.131	-0.359	0.418	0.131
shame	-0.440	0.170	-0.345	-0.572	0.023	0.120	-0.388	0.421	0.120
diarrhea	-0.408	0.184	-0.357	-0.552	0.023	0.151	-0.374	0.407	0.151

## Powerful to Weak axis:

Synousionyms	Valence	Arousal	Dominance	Goodness	Energy	Structure	Power	Danger	Structure
<b>Anchor: success</b>	0.459	0.380	0.481	0.571	0.501	0.095	0.758	-0.050	0.095
almighty	0.438	0.374	0.458	0.543	0.487	0.098	0.728	-0.040	0.098
triumphant	0.449	0.337	0.472	0.565	0.462	0.073	0.726	-0.072	0.073
champion	0.390	0.380	0.445	0.494	0.492	0.087	0.698	-0.001	0.087
victorious	0.384	0.386	0.446	0.489	0.499	0.087	0.698	0.007	0.087
Antousionyms	Valence	Arousal	Dominance	Goodness	Energy	Structure	Power	Danger	Structure
sorrow	-0.448	-0.265	-0.336	-0.509	-0.329	-0.127	-0.593	0.127	-0.127
tasteless	-0.354	-0.304	-0.352	-0.430	-0.385	-0.092	-0.576	0.032	-0.092
idle	-0.321	-0.333	-0.388	-0.414	-0.434	-0.068	-0.600	-0.014	-0.068
empty	-0.312	-0.317	-0.419	-0.424	-0.439	-0.033	-0.610	-0.011	-0.033
void	-0.365	-0.337	-0.370	-0.443	-0.420	-0.103	-0.611	0.016	-0.103

# Extremonyms: Synousionyms and Antousionyms:

## Dangerous-Powerful (High Energy) to Safe-Weak (Low Energy) axis:


Synousionyms	Valence	Arousal	Dominance	Goodness	Energy	Structure	Power	Danger	Structure
<b>Anchor: volcanic</b>	-0.156	0.410	0.281	-0.061	0.515	-0.045	0.322	0.407	-0.045
shelling	-0.163	0.417	0.273	-0.072	0.518	-0.039	0.316	0.417	-0.039
artillery	-0.150	0.412	0.294	-0.050	0.523	-0.050	0.335	0.405	-0.050
wild	-0.188	0.422	0.250	-0.105	0.514	-0.032	0.289	0.438	-0.032
rifles	-0.163	0.364	0.265	-0.068	0.470	-0.062	0.284	0.380	-0.062
Antousionyms	Valence	Arousal	Dominance	Goodness	Energy	Structure	Power	Danger	Structure
couch	0.094	-0.418	-0.302	-0.002	-0.524	0.025	-0.372	-0.369	0.025
mellow	0.133	-0.431	-0.235	0.066	-0.504	-0.009	-0.310	-0.403	-0.009
pillow	0.163	-0.372	-0.305	0.049	-0.498	0.085	-0.317	-0.387	0.085
tortoise	0.173	-0.422	-0.250	0.092	-0.511	0.025	-0.297	-0.427	0.025
quilt	0.143	-0.377	-0.274	0.048	-0.482	0.052	-0.307	-0.375	0.052
cotton	0.139	-0.429	-0.260	0.059	-0.517	0.012	-0.324	-0.407	0.012




## Dangerous to Safe axis:

Synousionyms	Valence	Arousal	Dominance	Goodness	Energy	Structure	Power	Danger	Structure
<b>Anchor: homicide</b>	-0.490	0.473	0.018	-0.485	0.478	0.011	-0.005	0.681	0.011
killer	-0.459	0.471	0.043	-0.446	0.485	0.008	0.028	0.658	0.008
psychopath	-0.460	0.443	0.036	-0.446	0.458	-0.003	0.009	0.640	-0.003
bloodshed	-0.452	0.442	0.025	-0.444	0.450	0.008	0.004	0.633	0.008
violate	-0.439	0.470	0.019	-0.440	0.468	0.033	0.020	0.642	0.033
Antousionyms	Valence	Arousal	Dominance	Goodness	Energy	Structure	Power	Danger	Structure
natural	0.354	-0.382	-0.019	0.354	-0.382	-0.026	-0.020	-0.520	-0.026
tranquil	0.417	-0.406	-0.145	0.351	-0.480	0.078	-0.091	-0.588	0.078
softness	0.375	-0.414	-0.098	0.338	-0.455	0.021	-0.082	-0.561	0.021
serenity	0.400	-0.378	0.057	0.429	-0.345	-0.054	0.060	-0.547	-0.054
comfortable	0.427	-0.337	-0.027	0.406	-0.361	0.039	0.032	-0.542	0.039
calmness	0.434	-0.395	-0.106	0.383	-0.453	0.065	-0.049	-0.591	0.065




## Etymological, taxonomic, and nomenclatural madnesses:


 Physics: Power was once sometimes called Activity


 Danger  and Dominance trace back to Dominus   
(~ lord/ruler/person of power)

 Framing words for EPA, VAD, etc., matter greatly.


## Other descriptors that don't hold up:


 Success-Stress-Structure.

 Energy/Flourishing/Thriving-Threat

 Power-Order/Chaos-Gravity/Seriousness

## After much staring at the ceiling:

 Goodness-Energy-Structure (GES) (still fails)

 Power-Danger-Structure (PDS) (succeeds)

Measuring essential meaning

History

Definitions

Emotions

Problems

Remeasuring meaning

Ousiograms

Extremousonyms

Dimension names

Safety bias

Applications

The Ousiometer

Correspondences

Nutshell

Extras

References




## Connections between meaning dimensions:


$$\begin{bmatrix} \text{Goodness} \\ \text{Energy} \\ \text{Structure} \end{bmatrix} \approx \begin{bmatrix} +0.86 & -0.15 & +0.48 \\ -0.16 & +0.83 & +0.54 \\ +0.48 & +0.55 & -0.69 \end{bmatrix} \begin{bmatrix} \text{Valence} \\ \text{Arousal} \\ \text{Dominance} \end{bmatrix}$$


$$\begin{bmatrix} \text{Power} \\ \text{Danger} \\ \text{Structure} \end{bmatrix} \approx \begin{bmatrix} 0.53 & 0.45 & 0.72 \\ -0.70 & 0.71 & 0.07 \\ 0.48 & 0.55 & -0.69 \end{bmatrix} \begin{bmatrix} \text{Valence} \\ \text{Arousal} \\ \text{Dominance} \end{bmatrix}$$


$$\begin{bmatrix} \text{Power} \\ \text{Danger} \end{bmatrix} = \frac{1}{\sqrt{2}} \begin{bmatrix} 1 & 1 \\ -1 & 1 \end{bmatrix} \begin{bmatrix} \text{Goodness} \\ \text{Energy} \end{bmatrix} \quad (1)$$


# From types to tokens: [15, ?]


 Analysis so far is for a lexicon of types: Each word counts once.


 Must consider how words are used in real texts by frequency: Tokens.


 Rebuild ousiograms with usage frequency incorporated.


 A set of distinct corpora:


 English fiction from Google Books (120 years). [9, 14]


 Jane Austen's novels.

 Sherlock Holmes stories.

 New York Times (20 years). [19]

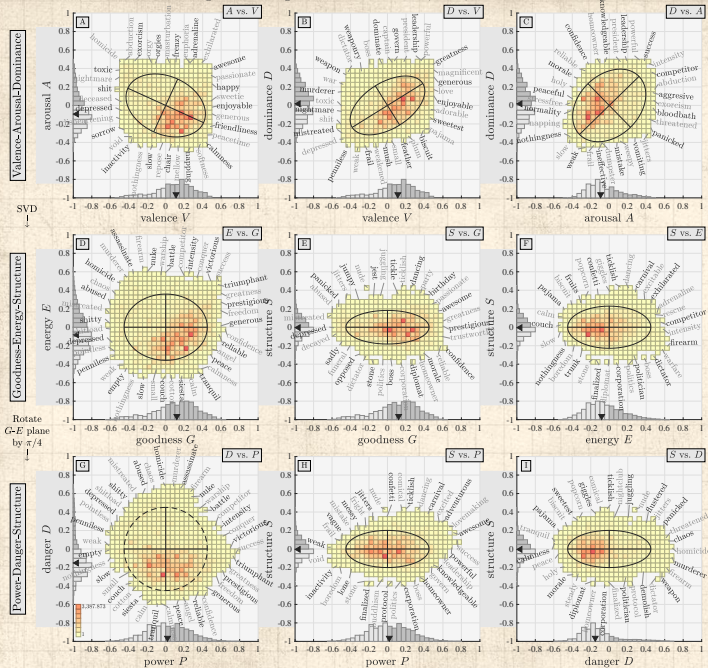
 Wikipedia (2019/03). [20]

 RadioTalk: Transcriptions of talk radio. [3]

 Twitter through Storywrangler. [1]



Ousiograms for English fiction in the VAD, GES, and PDS frameworks:



The PoCServe  
Ousiometrics  
41 of 77

Measuring essential  
meaning

History

Definitions

Emotions

Problems

Remeasuring meaning

Ousiograms

Extremousynonyms

Dimension names

Safety bias

Applications

The Ousiometer

Correspondences

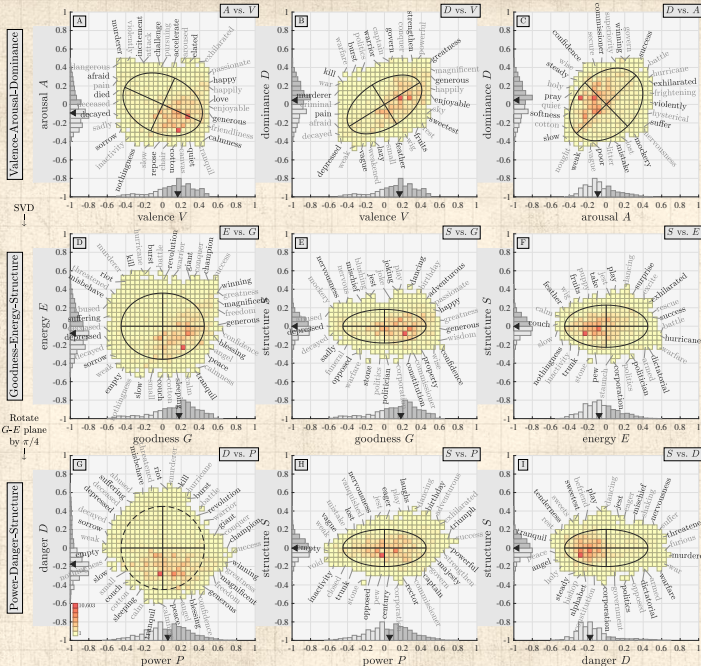
Nutshell

Extras

References



# Ousiograms for Jane Austen's novels in the VAD, GES, and PDS frameworks:



The PoCServe  
Ousiometrics  
42 of 77

Measuring essential  
meaning

History

Definitions

Emotions

Problems

Remeasuring meaning

Ousiograms

Extremousynonyms

Dimension names

**Safety bias**

Applications

The Ousiometer

Correspondences

Nutshell

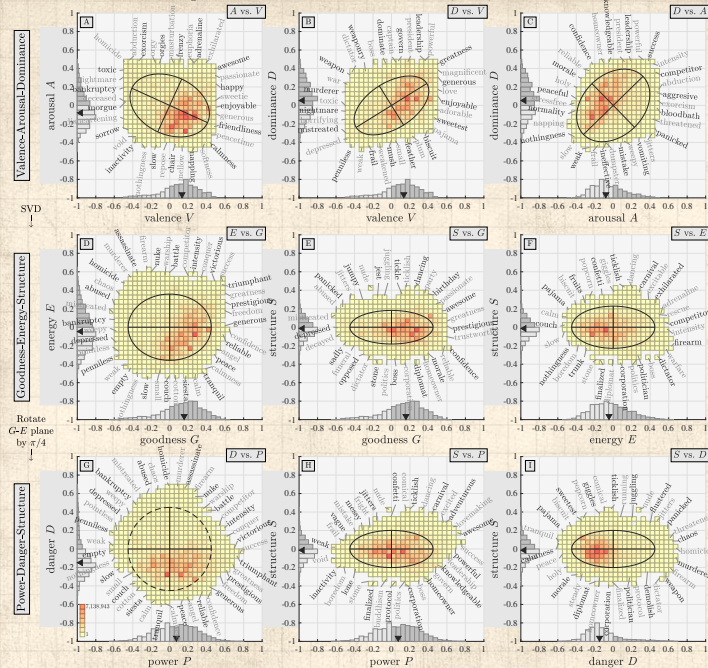
Extras

References





# Ousiograms for the New York Times in the VAD, GES, and PDS frameworks:



The PoCServe  
Ousiometrics  
44 of 77

Measuring essential  
meaning

History

Definitions

Emotions

Problems

Remeasuring meaning

Ousiograms

Extremouslyonyms

Dimension names

**Safety bias**

Applications

The Ousiometer

Correspondences

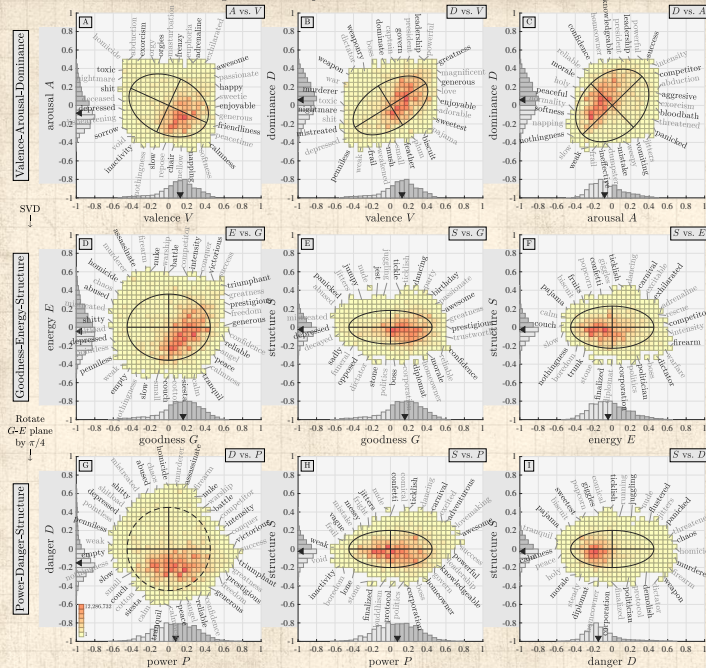
Nutshell

Extras

References



# Ousiograms for Wikipedia in the VAD, GES, and PDS frameworks:



The PoCServe

Ousiometrics

45 of 77

Measuring essential meaning

History

Definitions

Emotions

Problems

Remeasuring meaning

Ousiograms

Extremouslyonyms

Dimension names

Safety bias

Applications

The Ousiometer

Correspondences

Nutshell

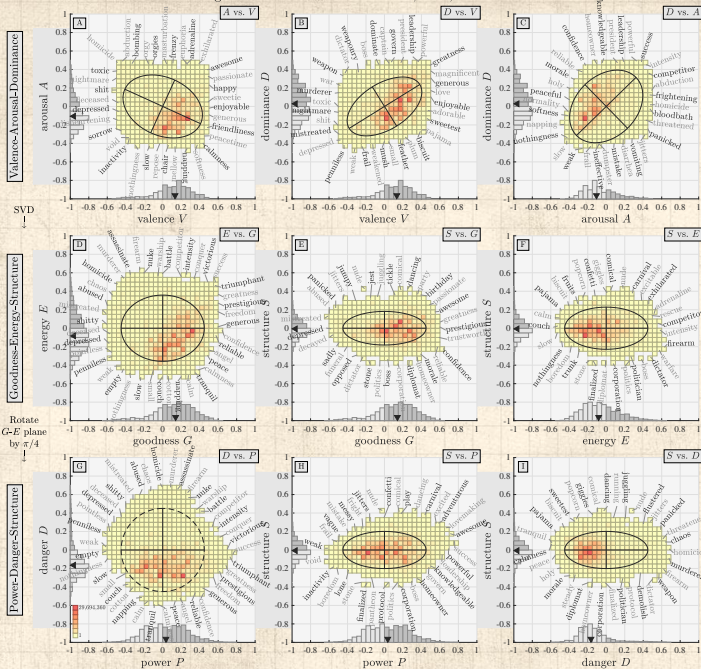
Extras

References





# Ousiograms for RadioTalk in the VAD, GES, and PDS frameworks:



The PoCServe  
Ousiometrics  
46 of 77

Measuring essential  
meaning

History

Definitions

Emotions

Problems

Remeasuring meaning

Ousiograms

Extremousynonyms

Dimension names

Safety bias

Applications

The Ousiometer

Correspondences

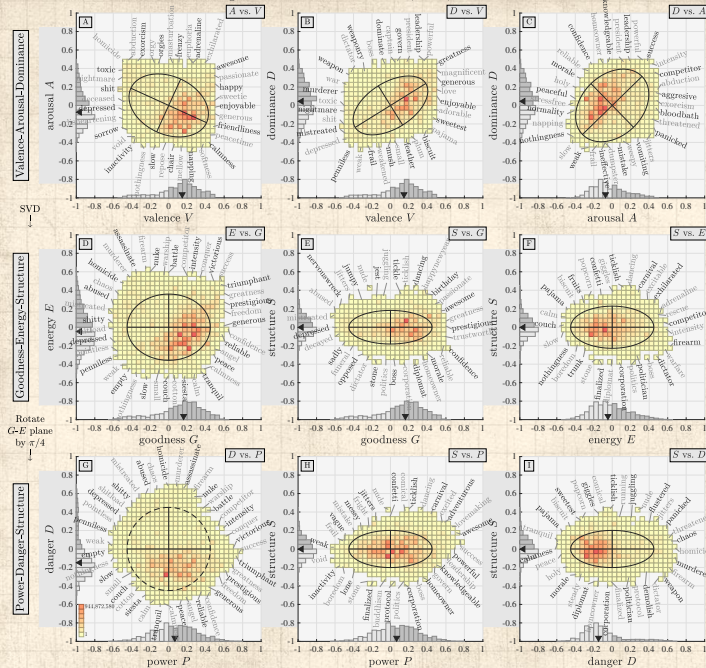
Nutshell

Extras

References



# Ousiograms for Twitter in the VAD, GES, and PDS frameworks:



The PoCServe

Ousiometrics

47 of 77

Measuring essential meaning

History

Definitions

Emotions

Problems

Remeasuring meaning

Ousiograms

Extremouslyonyms

Dimension names

**Safety bias**

Applications

The Ousiometer

Correspondences

Nutshell

Extras

References



Measuring essential meaning

- History
- Definitions
- Emotions

Problems

Remeasuring meaning

Ousiograms

- Extremousynoms
- Dimension names

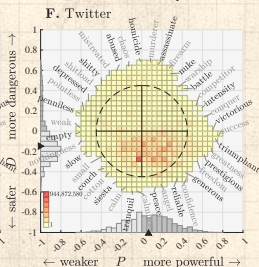
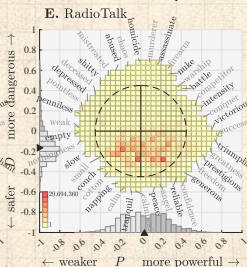
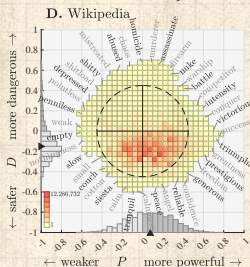
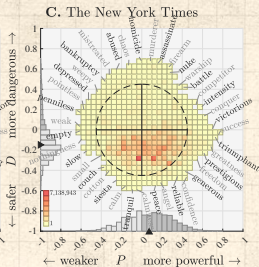
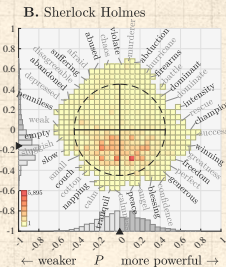
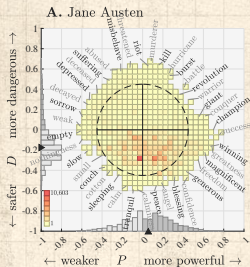
Safety bias

Applications


- The Ousiometer
- Correspondences
- Nutshell


Extras

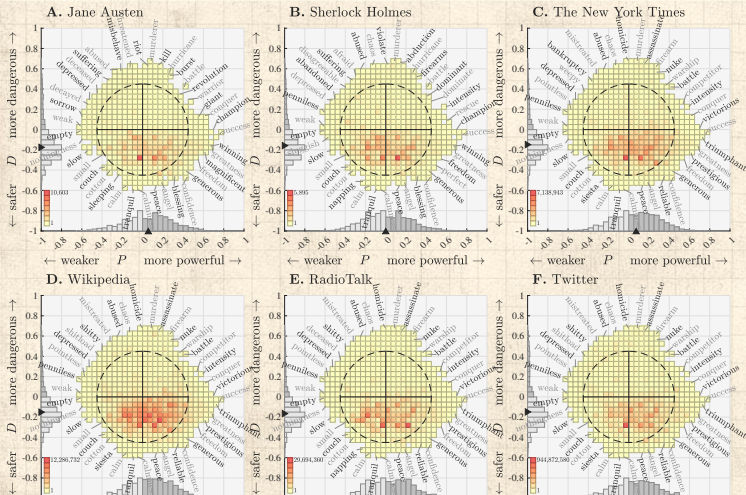
References



# A special thing has happened:

 The PDS framework emerged only from analyzing a lexicon (types).

 Applying PDS framework to disparate corpora (tokens) reveals a linguistic 'safety bias'.



Measuring essential  
meaning

History

Definitions

Emotions

Problems

Remeasuring meaning

Ousiograms

Extremousynoms

Dimension names

**Safety bias**

Applications

The Ousiometer

Correspondences

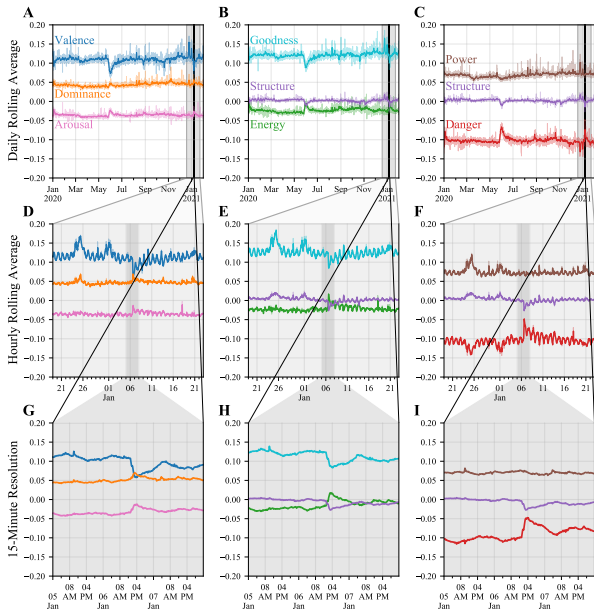
Nutshell

Extras

References



# Prototype ousiometer—Twitter:



Measuring essential meaning

- History
- Definitions
- Emotions

Problems

Remeasuring meaning

Ousiograms

- Extremouonyms
- Dimension names

Safety bias

Applications

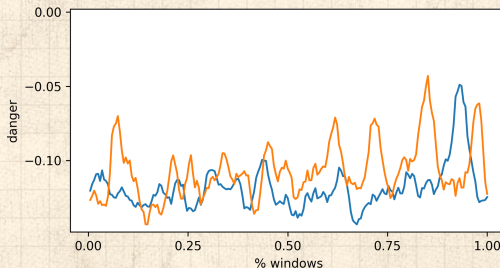
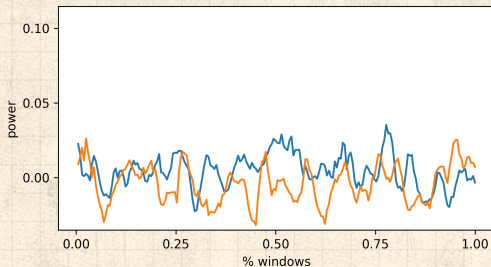
- The Ousiometer
- Correspondences
- Nutshell

Extras

References



# Prototype ousiometer—Harry Potter:



Blue: Harry Potter and the Half-Blood Prince  
Orange: Harry Potter and the Deathly Hallows

The PoCVerse  
Ousiometrics  
52 of 77

Measuring essential  
meaning

History  
Definitions  
Emotions

Problems

Remeasuring meaning

Ousiograms

Extremouslyonyms  
Dimension names

Safety bias

Applications

The Ousiometer  
Correspondences  
Nutshell

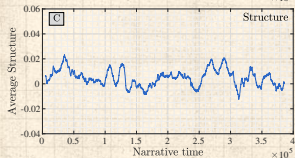
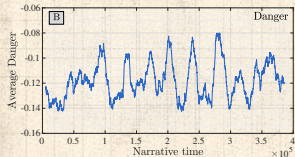
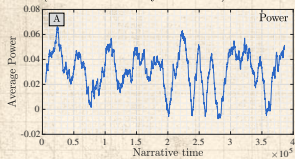
Extras

References

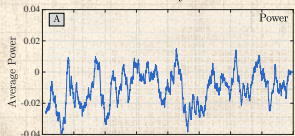


# Power and Danger time series for books:

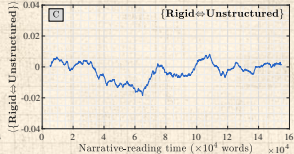
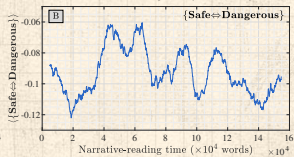
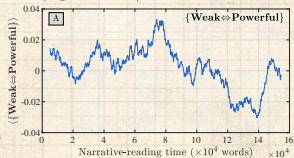
Ousiometrics for  
"Anna Karenina"  
(Peaver Volokhonsky translation)



Ousiometrics for "Gravity's Rainbow"



Ousiometrics for  
"One Hundred Years of Solitude"  
(English translation)



# Prototype ousiometer—Terry Pratchett's Discworld:

The PoCServe  
Ousiometrics  
54 of 77

Measuring essential  
meaning

History  
Definitions  
Emotions

Problems

Remeasuring meaning

Ousiograms

Extremousonyms  
Dimension names

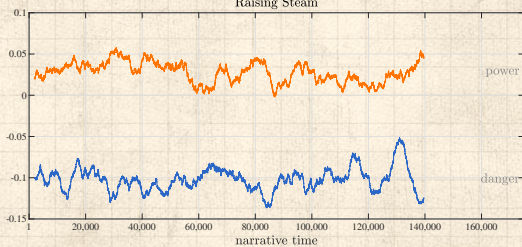
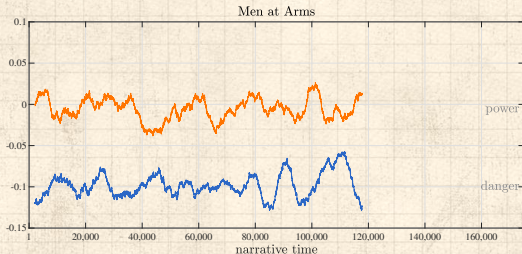
Safety bias

Applications

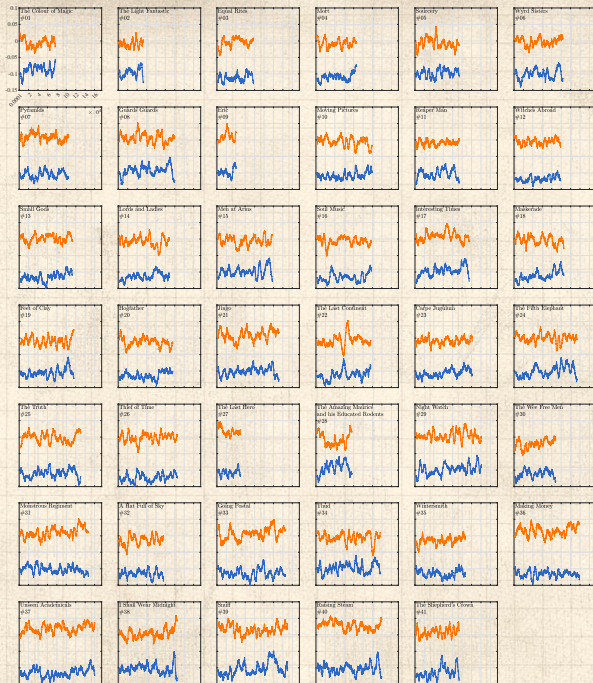
The Ousiometer  
Correspondences  
Nutshell

Extras

References







Measuring essential meaning

- History
- Definitions
- Emotions

Problems

Remeasuring meaning

Ousigrams

- Extremouslyonyms
- Dimension names

Safety bias

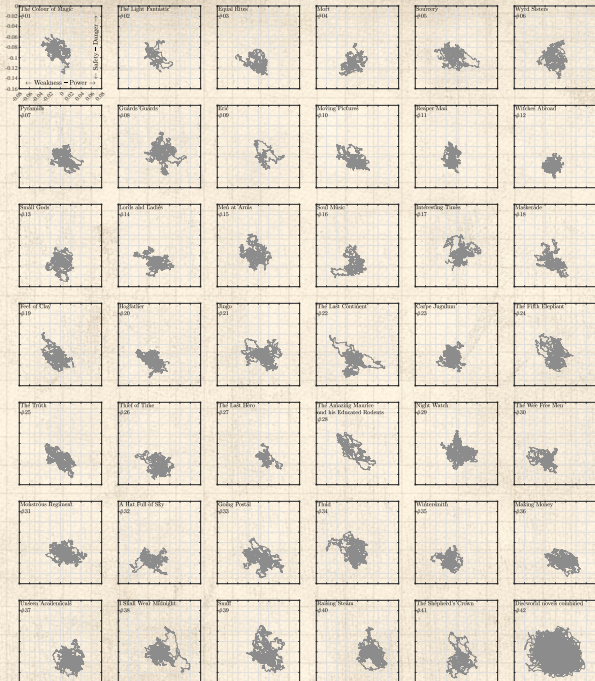
Applications

- The Ousimeter
- Correspondences
- Nutshell

Extras

References





The PoCVerse  
 Ousiometrics  
 56 of 77

Measuring essential meaning

- History
- Definitions
- Emotions

Problems

Remeasuring meaning

Ousiograms

- Extremouonyms
- Dimension names

Safety bias

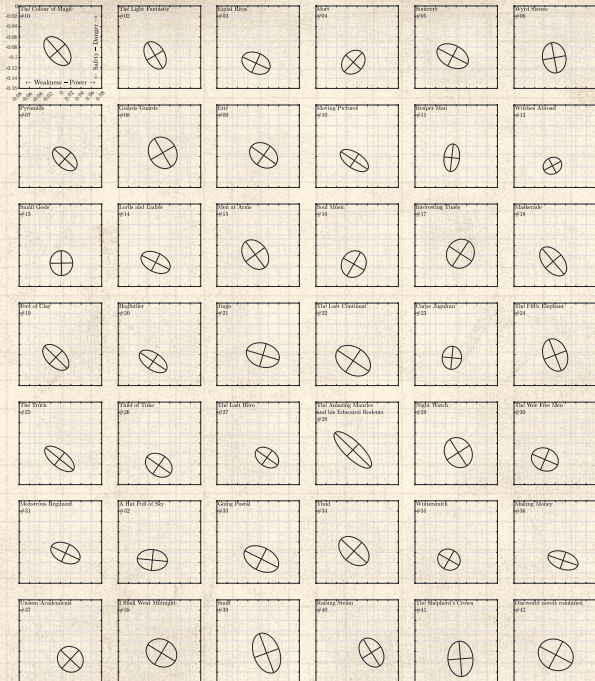
Applications

- The Ousiometer
- Correspondences
- Nutshell

Extras

References





Measuring essential meaning

- History
- Definitions
- Emotions

Problems

Remeasuring meaning

Ousiograms

- Extremousonyms
- Dimension names

Safety bias

Applications

- The Ousiometer
- Correspondences

Nutshell

Extras

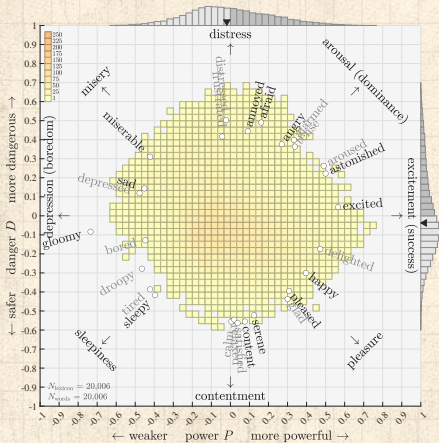
References



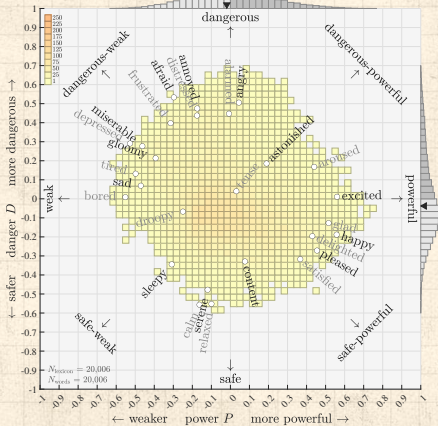


Rough agreement with Russell's circumplex model, [18] which itself doesn't disagree with a 2- $d$  orthogonal framework.

A. Circumplex model of affect:



B. Power-danger coordinates for Russell's affect words:



# Dungeons & Dragons—Two alignment ↗ axes for character:



{lawful  $\leftrightarrow$  chaotic}  
(vertical) and  
{good  $\leftrightarrow$  evil}  
(horizontal).

The PoCVerse  
Ousiometrics  
60 of 77

Measuring essential meaning

History  
Definitions  
Emotions

Problems

Remeasuring meaning

Ousiograms

Extremouslyonyms  
Dimension names

Safety bias

Applications

The Ousiometer

Correspondences  
Nutshell

Extras

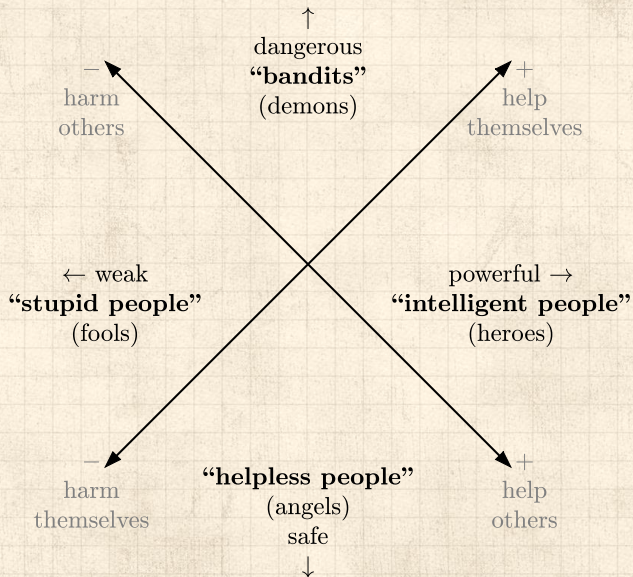
References



<sup>1</sup>From this Reddit thread ↗, where, naturally, the choices are enthusiastically debated.

lawful-good ~ structured-powerful- safe	neutral-good ~ neutral-powerful- safe	chaotic-good ~ unstructured- powerful-safe
lawful-neutral ~ structured-neutral	(true) neutral	chaotic-neutral ~ unstructured-neutral
lawful-evil ~ structured- dangerous	neutral-evil ~ neutral-dangerous	chaotic-evil ~ unstructured- dangerous

# Aligns with rotated version of Cipolla's Basic Laws of Human Stupidity:



## Ousiometrics: Dangerous and Weak

Measuring essential meaning

History  
Definitions  
Emotions

Problems

Remeasuring meaning

Ousiograms

Extremousonyms  
Dimension names

Safety bias

Applications

The Ousiometer  
Correspondences

Nutshell

Extras

References



0

Orthogonal frames in political rhetoric.



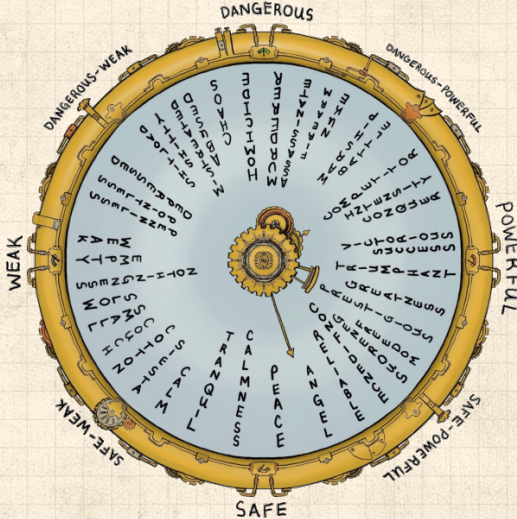
# Findings, observations, possibilities:

- Power-danger-structure framework emerges in distinct settings, fitting types and tokens.
- Safety bias of communication refines Pollyanna Principle of positivity
- Happiness/Goodness = Power + Safety
- Ousiometer can be improved and refined.
- Possible: Emotions map onto powerful-safe and danger axes.
- Power-danger framework for survival.
- Possible: Telegnomics for stories—Measuring character arcs, plots.
- Complement to information theory which is meaning-free. [21]

See concluding remarks in the foundational paper. [5]



# The Compass of Meaning:



The PoCVerse  
Ousiometrics  
66 of 77

Measuring essential meaning

History  
Definitions  
Emotions

Problems

Remeasuring meaning

Ousiograms  
Extremousonyms  
Dimension names

Safety bias

Applications

The Ousiometer  
Correspondences  
Nutshell

Extras

References



Online appendices: Paper(s), flipbooks, code, ...

<https://storylab.w3.uvm.edu/ousiometrics>

Synonyms	Valence	Arousal	Dominance	Goodness	Energy	Structure	Power	Danger	Structure
happy	0.50	0.24	0.27	0.53	0.26	0.18	0.57	-0.16	0.18
delighted	0.44	0.16	0.18	0.44	0.17	0.17	0.44	-0.18	0.17
excited	0.41	0.43	0.21	0.39	0.40	0.29	0.56	0.04	0.29
astonished	0.01	0.28	0.07	0.00	0.27	0.10	0.18	0.19	0.10
aroused	0.21	0.45	0.17	0.19	0.43	0.23	0.43	0.19	0.23
tense	-0.10	-0.06	0.15	-0.01	0.05	-0.19	0.03	0.04	-0.19
alarmed	-0.31	0.32	-0.01	-0.32	0.31	0.03	-0.03	0.45	0.03
angry	-0.38	0.33	0.10	-0.33	0.39	-0.07	0.02	0.51	-0.07
afraid	-0.49	0.28	-0.26	-0.59	0.17	0.09	-0.32	0.52	0.09
annoyed	-0.40	0.28	-0.16	-0.46	0.21	0.07	-0.19	0.47	0.07
distressed	-0.36	0.27	-0.18	-0.43	0.19	0.10	-0.19	0.43	0.10
frustrated	-0.42	0.15	-0.25	-0.50	0.06	0.05	-0.33	0.38	0.05
miserable	-0.44	-0.04	-0.31	-0.52	-0.13	-0.02	-0.47	0.26	-0.02
sad	-0.28	-0.17	-0.35	-0.38	-0.28	0.02	-0.47	0.05	0.02
gloomy	-0.39	-0.09	-0.21	-0.43	-0.13	-0.09	-0.40	0.20	-0.09
depressed	-0.48	-0.05	-0.36	-0.58	-0.17	-0.01	-0.54	0.27	-0.01
bored	-0.35	-0.33	-0.30	-0.40	-0.38	-0.14	-0.55	-0.02	-0.14
droopy	-0.06	-0.15	-0.20	-0.13	-0.22	0.03	-0.25	-0.08	0.03
tired	-0.38	-0.18	-0.31	-0.45	-0.26	-0.07	-0.50	0.11	-0.07
sleepy	0.10	-0.37	-0.25	0.03	-0.46	0.02	-0.29	-0.36	0.02
calm	0.37	-0.40	-0.22	0.28	-0.51	0.11	-0.14	-0.56	0.11
relaxed	0.36	-0.41	-0.12	0.32	-0.46	0.03	-0.08	-0.56	0.03
satisfied	0.46	0.01	0.18	0.48	0.04	0.10	0.38	-0.30	0.10
at ease	—	—	—	—	—	—	—	—	—
ease	0.30	-0.11	-0.01	0.27	-0.15	0.09	0.10	-0.29	0.09
content	0.26	-0.20	0.06	0.29	-0.18	-0.03	0.09	-0.33	-0.03
serene	0.30	-0.37	-0.13	0.25	-0.42	0.03	-0.10	-0.48	0.03
glad	0.44	0.26	0.24	0.45	0.27	0.19	0.52	-0.10	0.19
pleased	0.44	0.05	0.29	0.51	0.13	0.03	0.47	-0.25	0.03



“Semantic differential profiles for 1,000 most frequent English words.” ↗

David R. Heise,  
Psychological Monographs: General and Applied,  
79, 1, 1965. [6]

## Dimension

Evaluation

Activity

Potency

Stability

## Scale

Good-Bad  
Pleasant-Unpleasant  
Active-Passive  
Lively-Still  
Strong-Weak  
Tough-Tender  
Rational-Emotional  
Tamed-Untamed

The PoCVerse  
Ousiometrics  
68 of 77

Measuring essential  
meaning

History  
Definitions  
Emotions

Problems

Remeasuring meaning

Ousiograms

Extremousonyms  
Dimension names

Safety bias

Applications

The Ousiometer  
Correspondences  
Nutshell

Extras

References



# Remeasuring meaning:

The PoCverse  
Ousiometrics  
69 of 77

Measuring essential  
meaning

History  
Definitions  
Emotions

Problems

Remeasuring meaning

Ousiograms

Extremousonyms  
Dimension names

Safety bias

Applications

The Ousiometer  
Correspondences  
Nutshell


Extras

References



## Confusion and Conflation:



“Pleasure, arousal, dominance: Mehrabian and Russell revisited” 

Bakker et al.,

Current Psychology, **33**, 405–421, 2014. <sup>[2]</sup>




Test whether EPA and VAD match.




Explore historical problems of defining end point descriptors for meaning dimensions.

# References I

- [1] T. Alshaabi, J. L. Adams, M. V. Arnold, J. R. Minot, D. R. Dewhurst, A. J. Reagan, C. M. Danforth, and P. S. Dodds. Storywrangler: A massive exploratorium for sociolinguistic, cultural, socioeconomic, and political timelines using Twitter.

[Science Advances](#), 7:eabe6534, 2021. pdf 

- [2] I. Bakker, T. Van Der Voordt, P. Vink, and J. De Boon. Pleasure, arousal, dominance: Mehrabian and Russell revisited.

[Current Psychology](#), 33:405–421, 2014. pdf 

- [3] D. Beeferman, W. Brannon, and D. Roy. RadioTalk: A large-scale corpus of talk radio transcripts.

[arXiv preprint arXiv:1907.07073](#), 2019. pdf 



## References II

- [4] M. M. Bradley and P. J. Lang.  
Affective norms for English words (ANEW): Stimuli,  
instruction manual and affective ratings.  
Technical report c-1, University of Florida, Gainesville, FL,  
1999.
- [5] P. S. Dodds, T. Alshaabi, M. I. Fudolig, J. W. Zimmerman,  
J. Lovato, S. Beaulieu, J. R. Minot, M. V. Arnold, A. J.  
Reagan, and C. M. Danforth.  
Ousiometrics and Telegnomics: The essence of meaning  
conforms to a two-dimensional powerful-weak and  
dangerous-safe framework with diverse corpora presenting a  
safety bias, 2021.  
Available online at <https://arxiv.org/abs/2110.06847>. pdf ↗



## References III

- [6] D. R. Heise.  
Semantic differential profiles for 1,000 most frequent English words.  
[Psychological Monographs: General and Applied, 79\(8\):1, 1965. pdf](#)
- [7] A. Mehrabian and J. A. Russell.  
[An Approach to Environmental Psychology](#).  
MIT Press, 1974.
- [8] A. Mehrabian and J. A. Russell.  
The basic emotional impact of environments.  
[Perceptual and motor skills, 38:283–301, 1974. pdf](#)





# References IV

- [9] J.-B. Michel, Y. K. Shen, A. P. Aiden, A. Veres, M. K. Gray, The Google Books Team, J. P. Pickett, D. Hoiberg, D. Clancy, P. Norvig, J. Orwant, S. Pinker, M. A. Nowak, and E. A. Lieberman.

Quantitative analysis of culture using millions of digitized books.

[Science Magazine](#), 331:176–182, 2011. pdf ↗

- [10] S. M. Mohammad.

Obtaining reliable human ratings of valence, arousal, and dominance for 20,000 English words.

In [Proceedings of The Annual Conference of the Association for Computational Linguistics \(ACL\)](#), Melbourne, Australia, 2018. pdf ↗



# References V

- [11] S. M. Mohammad.  
Word affect intensities.  
In Proceedings of the 11th Edition of the Language Resources and Evaluation Conference (LREC-2018), Miyazaki, Japan, 2018. [pdf](#) 
- [12] F. Moretti.  
Distant Reading.  
Verso, New York, 2013.
- [13] C. Osgood, G. Suci, and P. Tannenbaum.  
The Measurement of Meaning.  
University of Illinois, Urbana, IL, 1957.
- [14] E. A. Pechenick, C. M. Danforth, and P. S. Dodds.  
Characterizing the Google Books corpus: Strong limits to inferences of socio-cultural and linguistic evolution.  
PLoS ONE, 10:e0137041, 2015. [pdf](#) 



## References VI

- [15] C. S. S. Peirce.  
Prolegomena to an apology for pragmatism.  
[The Monist](#), 16(4):492–546, 1906. [pdf](#)
- [16] A. J. Reagan, B. F. Tivnan, J. R. Williams, C. M. Danforth,  
and P. S. Dodds.  
Sentiment analysis methods for understanding large-scale  
texts: A case for using continuum-scored words and word  
shift graphs.  
[EPJ Data Science](#), 6, 2017. [pdf](#)
- [17] R. Reisenzein.  
Wundt’s three-dimensional theory of emotion.  
[Poznan Studies in the Philosophy of the Sciences and the  
Humanities](#), 75:219–250, 2000.

The PoCverse  
Ousiometrics  
75 of 77

Measuring essential  
meaning

History  
Definitions  
Emotions

Problems

Remeasuring meaning

Ousiograms

Extremousonyms  
Dimension names

Safety bias

Applications


The Ousiometer  
Correspondences  
Nutshell

Extras

References



## References VII

- [18] J. A. Russell.  
A circumplex model of affect.  
[Journal of Personality and Social Psychology](#), 39:1161, 1980.  
[pdf](#) 
- [19] E. Sandhaus.  
The New York Times Annotated Corpus.  
Linguistic Data Consortium, Philadelphia, 2008.  
Available online at: <https://doi.org/10.35111/77ba-9x74>.
- [20] I. Semenov.  
Wikipedia word frequency, 2019.  
<https://github.com/IlyaSemenov/wikipedia-word-frequency>,  
accessed 2021/04/02.

The PoCverse  
Ousiometrics  
76 of 77

Measuring essential  
meaning

History  
Definitions  
Emotions

Problems

Remeasuring meaning

Ousiograms

Extremousonyms  
Dimension names

Safety bias

Applications

The Ousiometer  
Correspondences  
Nutshell

Extras

References



## References VIII

[21] C. E. Shannon.

A mathematical theory of communication.

The Bell System Tech. J., 27:379–423,623–656, 1948. pdf ↗

[22] L. M. Solomon.

A factorial study of complex auditory stimuli (passive sonar sounds).

Unpublished Doctoral Dissertation, University of Illinois,  
1954. pdf ↗

[23] W. M. Wundt.

Grundriss der Psychologie.

Kröner, 1922.

The PoCverse  
Ousiometrics  
77 of 77

Measuring essential  
meaning

History  
Definitions  
Emotions

Problems

Remeasuring meaning

Ousiograms

Extremousonyms  
Dimension names

Safety bias

Applications

The Ousiometer  
Correspondences  
Nutshell

Extras

References

