

# Ousiometrics: The Essence of Meaning

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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



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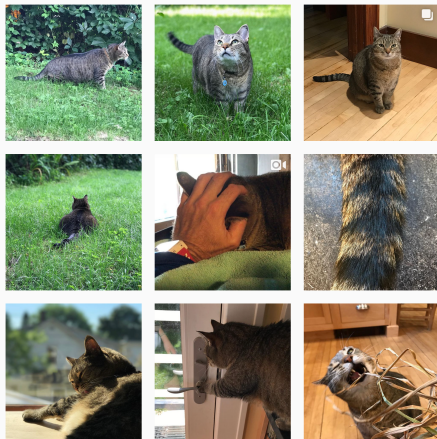
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# The meaning of meaning:



“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”

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What are the essential characteristics of meaning?

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## 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?

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

# This is not easy:

“Abed’s Uncontrollable Christmas”

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## “Abed’s Uncontrollable Christmas”



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

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## “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?”



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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.



# 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.”

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# 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.”



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## “Introduction to Teaching”

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# 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.

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# 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.”





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# 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?’

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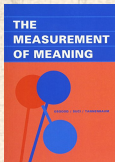
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# From pings to things:



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



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

THE DIMENSIONALITY OF THE SEMANTIC SPACE 67

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

	I	II	III	IV	V	VI	VII	VIII	IX
1. phonetic/pleasant	.68	.00	.00	.33	-.00	-.24	.15	.10	-.00
2. pleasant/neutral	.24	.16	.24	.02	.25	.11	.04	.06	.21
3. smooth/rough	.00	.00	.00	.00	.00	-.24	.00	-.07	.48
4. soft/strong	.00	.00	.00	.00	.00	.00	.00	.00	.00
5. beautiful/ugly	.00	.00	.00	.00	.00	.00	.00	.00	.00
6. delicate/robust	.00	.00	.00	.00	.00	.00	.00	.00	.00
7. low/high	.00	.00	.00	.00	.00	.00	.00	.00	.00
8. powerful/weak	.00	.00	.00	.00	.00	.00	.00	.00	.00
9. simple/complex	.00	.00	.00	.00	.00	.00	.00	.00	.00
10. soft/hard	.00	.00	.00	.00	.00	.00	.00	.00	.00
11. soft/loud	.00	.00	.00	.00	.00	.00	.00	.00	.00
12. good/bad	.00	.00	.00	.00	.00	.00	.00	.00	.00
13. good/evil	.00	.00	.00	.00	.00	.00	.00	.00	.00
14. old/new	.00	.00	.00	.00	.00	.00	.00	.00	.00
15. old/young	.00	.00	.00	.00	.00	.00	.00	.00	.00
16. old/old	.00	.00	.00	.00	.00	.00	.00	.00	.00
17. old/young	.00	.00	.00	.00	.00	.00	.00	.00	.00
18. old/young	.00	.00	.00	.00	.00	.00	.00	.00	.00
19. old/young	.00	.00	.00	.00	.00	.00	.00	.00	.00
20. old/young	.00	.00	.00	.00	.00	.00	.00	.00	.00
21. old/young	.00	.00	.00	.00	.00	.00	.00	.00	.00
22. old/young	.00	.00	.00	.00	.00	.00	.00	.00	.00
23. old/young	.00	.00	.00	.00	.00	.00	.00	.00	.00
24. old/young	.00	.00	.00	.00	.00	.00	.00	.00	.00
25. old/young	.00	.00	.00	.00	.00	.00	.00	.00	.00
26. old/young	.00	.00	.00	.00	.00	.00	.00	.00	.00
27. old/young	.00	.00	.00	.00	.00	.00	.00	.00	.00
28. old/young	.00	.00	.00	.00	.00	.00	.00	.00	.00
29. old/young	.00	.00	.00	.00	.00	.00	.00	.00	.00
30. old/young	.00	.00	.00	.00	.00	.00	.00	.00	.00
31. old/young	.00	.00	.00	.00	.00	.00	.00	.00	.00
32. old/young	.00	.00	.00	.00	.00	.00	.00	.00	.00
33. old/young	.00	.00	.00	.00	.00	.00	.00	.00	.00
34. old/young	.00	.00	.00	.00	.00	.00	.00	.00	.00
35. old/young	.00	.00	.00	.00	.00	.00	.00	.00	.00
36. old/young	.00	.00	.00	.00	.00	.00	.00	.00	.00
37. old/young	.00	.00	.00	.00	.00	.00	.00	.00	.00
38. old/young	.00	.00	.00	.00	.00	.00	.00	.00	.00
39. old/young	.00	.00	.00	.00	.00	.00	.00	.00	.00
40. old/young	.00	.00	.00	.00	.00	.00	.00	.00	.00
41. old/young	.00	.00	.00	.00	.00	.00	.00	.00	.00
42. old/young	.00	.00	.00	.00	.00	.00	.00	.00	.00
43. old/young	.00	.00	.00	.00	.00	.00	.00	.00	.00
44. old/young	.00	.00	.00	.00	.00	.00	.00	.00	.00
45. old/young	.00	.00	.00	.00	.00	.00	.00	.00	.00
46. old/young	.00	.00	.00	.00	.00	.00	.00	.00	.00
47. old/young	.00	.00	.00	.00	.00	.00	.00	.00	.00
48. old/young	.00	.00	.00	.00	.00	.00	.00	.00	.00
49. old/young	.00	.00	.00	.00	.00	.00	.00	.00	.00
50. old/young	.00	.00	.00	.00	.00	.00	.00	.00	.00

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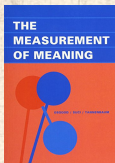
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Evaluation: {bad  $\leftrightarrow$  good}

THE DIMENSIONALITY OF THE SEMANTIC SPACE 67

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1. pleasantness	.86	.20	.33	-.07	-.24	.15	.15	-.37	.55
2. pleasant	.24	.16	.24	.02	.25	.11	.04	-.06	.21
3. pleasant	.77	.05	.35	.05	-.24	.06	-.07	-.48	.48
4. beautiful	.77	.05	.35	.05	-.24	.06	-.07	-.48	.48
5. beautiful	.77	.05	.35	.05	-.24	.06	-.07	-.48	.48
6. beautiful	.77	.05	.35	.05	-.24	.06	-.07	-.48	.48
7. low high	.25	.14	.26	.20	-.39	.11	.16	-.24	.24
8. power/weak	.25	.14	.26	.20	-.39	.11	.16	-.24	.24
9. strong/feeble	.42	-.40	.22	-.01	-.26	.16	.01	-.50	.50
10. soft/hard	.19	.41	.37	.22	.07	-.29	.02	.11	.47
11. soft/hard	.21	-.26	.26	-.11	-.26	.09	.04	.44	.44
12. good/bad	.30	.39	.16	-.16	-.14	-.11	.18	.18	.30
13. good/bad	.20	-.48	.19	.14	.09	-.05	.12	-.09	.20
14. clean/unclean	.30	.39	.16	-.16	-.14	-.11	.18	.18	.30
15. clean/unclean	.20	-.48	.19	.14	.09	-.05	.12	-.09	.20
16. clean/unclean	.20	-.48	.19	.14	.09	-.05	.12	-.09	.20
17. clean/unclean	.20	-.48	.19	.14	.09	-.05	.12	-.09	.20
18. clean/unclean	.20	-.48	.19	.14	.09	-.05	.12	-.09	.20
19. clean/unclean	.20	-.48	.19	.14	.09	-.05	.12	-.09	.20
20. clean/unclean	.20	-.48	.19	.14	.09	-.05	.12	-.09	.20
21. clean/unclean	.20	-.48	.19	.14	.09	-.05	.12	-.09	.20
22. clean/unclean	.20	-.48	.19	.14	.09	-.05	.12	-.09	.20
23. clean/unclean	.20	-.48	.19	.14	.09	-.05	.12	-.09	.20
24. clean/unclean	.20	-.48	.19	.14	.09	-.05	.12	-.09	.20
25. clean/unclean	.20	-.48	.19	.14	.09	-.05	.12	-.09	.20
26. clean/unclean	.20	-.48	.19	.14	.09	-.05	.12	-.09	.20
27. clean/unclean	.20	-.48	.19	.14	.09	-.05	.12	-.09	.20
28. clean/unclean	.20	-.48	.19	.14	.09	-.05	.12	-.09	.20
29. clean/unclean	.20	-.48	.19	.14	.09	-.05	.12	-.09	.20
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31. clean/unclean	.20	-.48	.19	.14	.09	-.05	.12	-.09	.20
32. clean/unclean	.20	-.48	.19	.14	.09	-.05	.12	-.09	.20
33. clean/unclean	.20	-.48	.19	.14	.09	-.05	.12	-.09	.20
34. clean/unclean	.20	-.48	.19	.14	.09	-.05	.12	-.09	.20
35. clean/unclean	.20	-.48	.19	.14	.09	-.05	.12	-.09	.20
36. clean/unclean	.20	-.48	.19	.14	.09	-.05	.12	-.09	.20
37. clean/unclean	.20	-.48	.19	.14	.09	-.05	.12	-.09	.20
38. clean/unclean	.20	-.48	.19	.14	.09	-.05	.12	-.09	.20
39. clean/unclean	.20	-.48	.19	.14	.09	-.05	.12	-.09	.20
40. clean/unclean	.20	-.48	.19	.14	.09	-.05	.12	-.09	.20
41. clean/unclean	.20	-.48	.19	.14	.09	-.05	.12	-.09	.20
42. clean/unclean	.20	-.48	.19	.14	.09	-.05	.12	-.09	.20
43. clean/unclean	.20	-.48	.19	.14	.09	-.05	.12	-.09	.20
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45. clean/unclean	.20	-.48	.19	.14	.09	-.05	.12	-.09	.20
46. clean/unclean	.20	-.48	.19	.14	.09	-.05	.12	-.09	.20
47. clean/unclean	.20	-.48	.19	.14	.09	-.05	.12	-.09	.20
48. clean/unclean	.20	-.48	.19	.14	.09	-.05	.12	-.09	.20
49. clean/unclean	.20	-.48	.19	.14	.09	-.05	.12	-.09	.20
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2. pleasant	.24	.16	.82	-.25	.11	.04	-.06	-.21	.11
3. smooth	.67	-.05	.35	.09	-.24	.06	-.07	.48	.18
4. softness	.77	-.05	.35	.09	-.24	.06	-.07	.48	.18
5. beautiful	.67	-.05	.35	.09	-.24	.06	-.07	.48	.18
6. soft	.28	.14	.85	-.20	-.39	.11	-.16	.28	.11
7. low	.22	-.05	.80	-.20	-.39	.11	-.16	.28	.11
8. soft	.28	.14	.85	-.20	-.39	.11	-.16	.28	.11
9. power	.42	-.40	-.02	-.80	-.16	.05	-.01	.50	.16
10. strength	.42	-.40	-.02	-.80	-.16	.05	-.01	.50	.16
11. soft	.10	.41	.37	.02	.07	-.29	.02	.11	.47
12. soft	.10	.41	.37	.02	.07	-.29	.02	.11	.47
13. good	.30	.39	.16	-.16	-.14	-.11	-.11	.16	.30
14. good	.30	.39	.16	-.16	-.14	-.11	-.11	.16	.30
15. good	.30	.39	.16	-.16	-.14	-.11	-.11	.16	.30
16. good	.30	.39	.16	-.16	-.14	-.11	-.11	.16	.30
17. good	.30	.39	.16	-.16	-.14	-.11	-.11	.16	.30
18. good	.30	.39	.16	-.16	-.14	-.11	-.11	.16	.30
19. good	.30	.39	.16	-.16	-.14	-.11	-.11	.16	.30
20. good	.30	.39	.16	-.16	-.14	-.11	-.11	.16	.30
21. good	.30	.39	.16	-.16	-.14	-.11	-.11	.16	.30
22. good	.30	.39	.16	-.16	-.14	-.11	-.11	.16	.30
23. good	.30	.39	.16	-.16	-.14	-.11	-.11	.16	.30
24. good	.30	.39	.16	-.16	-.14	-.11	-.11	.16	.30
25. good	.30	.39	.16	-.16	-.14	-.11	-.11	.16	.30
26. good	.30	.39	.16	-.16	-.14	-.11	-.11	.16	.30
27. good	.30	.39	.16	-.16	-.14	-.11	-.11	.16	.30
28. good	.30	.39	.16	-.16	-.14	-.11	-.11	.16	.30
29. good	.30	.39	.16	-.16	-.14	-.11	-.11	.16	.30
30. good	.30	.39	.16	-.16	-.14	-.11	-.11	.16	.30
31. good	.30	.39	.16	-.16	-.14	-.11	-.11	.16	.30
32. good	.30	.39	.16	-.16	-.14	-.11	-.11	.16	.30
33. good	.30	.39	.16	-.16	-.14	-.11	-.11	.16	.30
34. good	.30	.39	.16	-.16	-.14	-.11	-.11	.16	.30
35. good	.30	.39	.16	-.16	-.14	-.11	-.11	.16	.30
36. good	.30	.39	.16	-.16	-.14	-.11	-.11	.16	.30
37. good	.30	.39	.16	-.16	-.14	-.11	-.11	.16	.30
38. good	.30	.39	.16	-.16	-.14	-.11	-.11	.16	.30
39. good	.30	.39	.16	-.16	-.14	-.11	-.11	.16	.30
40. good	.30	.39	.16	-.16	-.14	-.11	-.11	.16	.30
41. good	.30	.39	.16	-.16	-.14	-.11	-.11	.16	.30
42. good	.30	.39	.16	-.16	-.14	-.11	-.11	.16	.30
43. good	.30	.39	.16	-.16	-.14	-.11	-.11	.16	.30
44. good	.30	.39	.16	-.16	-.14	-.11	-.11	.16	.30
45. good	.30	.39	.16	-.16	-.14	-.11	-.11	.16	.30
46. good	.30	.39	.16	-.16	-.14	-.11	-.11	.16	.30
47. good	.30	.39	.16	-.16	-.14	-.11	-.11	.16	.30
48. good	.30	.39	.16	-.16	-.14	-.11	-.11	.16	.30
49. good	.30	.39	.16	-.16	-.14	-.11	-.11	.16	.30
50. good	.30	.39	.16	-.16	-.14	-.11	-.11	.16	.30
51. good	.30	.39	.16	-.16	-.14	-.11	-.11	.16	.30
52. good	.30	.39	.16	-.16	-.14	-.11	-.11	.16	.30
53. good	.30	.39	.16	-.16	-.14	-.11	-.11	.16	.30
54. good	.30	.39	.16	-.16	-.14	-.11	-.11	.16	.30
55. good	.30	.39	.16	-.16	-.14	-.11	-.11	.16	.30
56. good	.30	.39	.16	-.16	-.14	-.11	-.11	.16	.30
57. good	.30	.39	.16	-.16	-.14	-.11	-.11	.16	.30
58. good	.30	.39	.16	-.16	-.14	-.11	-.11	.16	.30
59. good	.30	.39	.16	-.16	-.14	-.11	-.11	.16	.30
60. good	.30	.39	.16	-.16	-.14	-.11	-.11	.16	.30
61. good	.30	.39	.16	-.16	-.14	-.11	-.11	.16	.30
62. good	.30	.39	.16	-.16	-.14	-.11	-.11	.16	.30
63. good	.30	.39	.16	-.16	-.14	-.11	-.11	.16	.30
64. good	.30	.39	.16	-.16	-.14	-.11	-.11	.16	.30
65. good	.30	.39	.16	-.16	-.14	-.11	-.11	.16	.30
66. good	.30	.39	.16	-.16	-.14	-.11	-.11	.16	.30
67. good	.30	.39	.16	-.16	-.14	-.11	-.11	.16	.30
68. good	.30	.39	.16	-.16	-.14	-.11	-.11	.16	.30
69. good	.30	.39	.16	-.16	-.14	-.11	-.11	.16	.30
70. good	.30	.39	.16	-.16	-.14	-.11	-.11	.16	.30
71. good	.30	.39	.16	-.16	-.14	-.11	-.11	.16	.30
72. good	.30	.39	.16	-.16	-.14	-.11	-.11	.16	.30
73. good	.30	.39	.16	-.16	-.14	-.11	-.11	.16	.30
74. good	.30	.39	.16	-.16	-.14	-.11	-.11	.16	.30
75. good	.30	.39	.16	-.16	-.14	-.11	-.11	.16	.30
76. good	.30	.39	.16	-.16	-.14	-.11	-.11	.16	.30
77. good	.30	.39	.16	-.16	-.14	-.11	-.11	.16	.30
78. good	.30	.39	.16	-.16	-.14	-.11	-.11	.16	.30
79. good	.30	.39	.16	-.16	-.14	-.11	-.11	.16	.30
80. good	.30	.39	.16	-.16	-.14	-.11	-.11	.16	.30
81. good	.30	.39	.16	-.16	-.14	-.11	-.11	.16	.30
82. good	.30	.39	.16	-.16	-.14	-.11	-.11	.16	.30
83. good	.30	.39	.16	-.16	-.14	-.11	-.11	.16	.30
84. good	.30	.39	.16	-.16	-.14	-.11	-.11	.16	.30
85. good	.30	.39	.16	-.16	-.14	-.11	-.11	.16	.30
86. good	.30	.39	.16	-.16	-.14	-.11	-.11	.16	.30
87. good	.30	.39	.16	-.16	-.14	-.11	-.11	.16	.30
88. good	.30	.39	.16	-.16	-.14	-.11	-.11	.16	.30
89. good	.30	.39	.16	-.16	-.14	-.11	-.11	.16	.30
90. good	.30	.39	.16	-.16	-.14	-.11	-.11	.16	.30
91. good	.30	.39	.16	-.16	-.14	-.11	-.11	.16	.30
92. good	.30	.39	.16	-.16	-.14	-.11	-.11	.16	.30
93. good	.30	.39	.16	-.16	-.14	-.11	-.11	.16	.30
94. good	.30	.39	.16	-.16	-.14	-.11	-.11	.16	.30
95. good	.30	.39	.16	-.16	-.14	-.11	-.11	.16	.30
96. good	.30	.39	.16	-.16	-.14	-.11	-.11	.16	.30
97. good	.30	.39	.16	-.16	-.14	-.11	-.11	.16	.30
98. good	.30	.39	.16	-.16	-.14	-.11	-.11	.16	.30
99. good	.30	.39	.16	-.16	-.14	-.11	-.11	.16	.30
100. good	.30	.39	.16	-.16	-.14	-.11	-.11	.16	.30



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}

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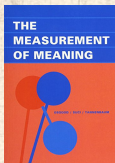
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# From pings to things:



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

	I	II	III	IV	V	VI	VII	VIII	IX
1. pleasantness	.88	-.20	.33	-.07	-.24	.15	.15	-.37	-.55
2. pleasant	.24	.16	.24	.02	.25	.11	.04	-.06	-.21
3. pleasantness	.77	-.35	.35	.09	-.24	.06	-.07	-.48	-.48
4. smooth touch	.22	.25	.19	.01	.01	.01	.01	.01	.01
5. beautiful sight	.22	.14	.35	.20	-.39	.11	-.11	-.16	.24
6. beautiful	.22	.14	.35	.20	-.39	.11	-.11	-.16	.24
7. low high	.22	.14	.35	.20	-.39	.11	-.11	-.16	.24
8. powerful	.42	-.40	-.02	-.01	-.01	-.01	-.01	-.01	-.01
9. strong feeling	.25	.25	.21	.15	-.08	.06	.06	.06	.06
10. soft-lead	.10	.41	.37	.23	.07	-.20	.05	.11	.47
11. soft	.21	-.26	.26	.11	-.26	.09	.04	.44	.44
12. good-bad	.30	.39	.16	-.16	-.14	-.11	.11	.16	.30
13. good-bad	.20	-.48	.19	.14	.09	-.05	.02	-.09	.20
14. clear-busy	.75	.17	.48	-.31	.04	-.05	-.22	-.07	.67
15. clear-busy	.20	.18	-.23	-.24	.31	-.30	.33	-.02	.24
17. clear-busy	.41	-.20	.08	.31	.17	-.07	.31	.14	.67
18. vague-real	.11	-.31	.05	-.19	-.30	.37	.05	-.14	.49
19. abstract	.33	.31	.25	-.31	.23	-.02	.03	-.02	.27
20. faint-loud	.30	.21	.43	.42	.33	.00	-.04	.13	.27
21. soft-hard	.67	-.27	-.28	-.11	.06	-.06	-.06	.06	.06
22. limp-firm	.34	-.40	-.10	.33	-.06	-.01	-.08	-.04	.52
23. stiff-flexible	.43	-.26	.07	-.24	.24	.05	-.04	-.04	.28
24. weak-strong	.44	-.11	.21	.26	.13	.09	.09	.04	.24
25. soft-hard	.31	.30	.28	.62	.07	-.07	-.13	.05	.28
26. heavy-light	.44	-.20	.16	.21	.09	.03	.02	.02	.21
27. wet-dry	.24	-.11	.12	.33	-.11	.09	-.07	.14	.24
28. soft-hard	.20	-.44	-.11	.22	.07	.00	.07	.02	.41
29. smooth-rough	.21	.41	.42	-.20	-.28	-.06	-.03	.04	.28
30. soft-hard	.21	.41	.42	-.20	-.28	-.06	-.03	.04	.28
31. heavy-light	.80	-.36	.08	.21	.19	-.12	.14	-.07	.45
32. dark-light	.35	-.26	.13	.14	-.26	-.07	-.16	.14	.41
33. slow-fast	.23	.21	.25	.05	.23	.20	-.06	.10	.25
34. slow-fast	.23	.21	.25	.05	.23	.20	-.06	.10	.25
35. slow-fast	.23	.21	.25	.05	.23	.20	-.06	.10	.25
36. slow-fast	.23	.21	.25	.05	.23	.20	-.06	.10	.25
37. slow-fast	.23	.21	.25	.05	.23	.20	-.06	.10	.25
38. slow-fast	.23	.21	.25	.05	.23	.20	-.06	.10	.25
39. slow-fast	.23	.21	.25	.05	.23	.20	-.06	.10	.25
40. slow-fast	.23	.21	.25	.05	.23	.20	-.06	.10	.25
41. slow-fast	.23	.21	.25	.05	.23	.20	-.06	.10	.25
42. slow-fast	.23	.21	.25	.05	.23	.20	-.06	.10	.25
43. slow-fast	.23	.21	.25	.05	.23	.20	-.06	.10	.25
44. slow-fast	.23	.21	.25	.05	.23	.20	-.06	.10	.25
45. slow-fast	.23	.21	.25	.05	.23	.20	-.06	.10	.25
46. slow-fast	.23	.21	.25	.05	.23	.20	-.06	.10	.25
47. slow-fast	.23	.21	.25	.05	.23	.20	-.06	.10	.25
48. slow-fast	.23	.21	.25	.05	.23	.20	-.06	.10	.25
49. slow-fast	.23	.21	.25	.05	.23	.20	-.06	.10	.25
50. slow-fast	.23	.21	.25	.05	.23	.20	-.06	.10	.25



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



**Evaluation:** {bad  $\Leftrightarrow$  good}



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**Activity:** {passive  $\Leftrightarrow$  active}

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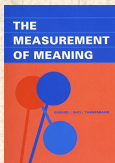
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THE DIMENSIONALITY OF THE SEMANTIC SPACE 27

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

	I	II	III	IV	V	VI	VII	VIII	IX
1. phonetic/plaint	.68	-.00	-.00	-.00	-.24	.15	-.10	-.00	.00
2. pensive/loved	-.24	.16	-.00	-.00	-.24	.15	-.10	-.00	.00
3. month/weak	.00	.24	.00	.00	.00	-.00	-.00	-.00	.00
4. self-reliance	.00	.00	.00	.00	-.24	.15	-.10	-.00	.00
5. beautiful/ugly	.00	.00	.00	.00	.00	.00	.00	.00	.00
6. self-reliance	.00	.00	.00	.00	.00	.00	.00	.00	.00
7. low/high	.00	.00	.00	.00	.00	.00	.00	.00	.00
8. power/weak	.00	.00	.00	.00	.00	.00	.00	.00	.00
9. simple/complex	.00	.00	.00	.00	.00	.00	.00	.00	.00
10. soft/hard	.00	.00	.00	.00	.00	.00	.00	.00	.00
11. self-reliance	.00	.00	.00	.00	.00	.00	.00	.00	.00
12. good/bad	.00	.00	.00	.00	.00	.00	.00	.00	.00
13. good/bad	.00	.00	.00	.00	.00	.00	.00	.00	.00
14. clean/unclean	.00	.00	.00	.00	.00	.00	.00	.00	.00
15. clean/unclean	.00	.00	.00	.00	.00	.00	.00	.00	.00
16. strong/weak	.00	.00	.00	.00	.00	.00	.00	.00	.00
17. strong/weak	.00	.00	.00	.00	.00	.00	.00	.00	.00
18. strong/weak	.00	.00	.00	.00	.00	.00	.00	.00	.00
19. strong/weak	.00	.00	.00	.00	.00	.00	.00	.00	.00
20. strong/weak	.00	.00	.00	.00	.00	.00	.00	.00	.00
21. strong/weak	.00	.00	.00	.00	.00	.00	.00	.00	.00
22. strong/weak	.00	.00	.00	.00	.00	.00	.00	.00	.00
23. strong/weak	.00	.00	.00	.00	.00	.00	.00	.00	.00
24. strong/weak	.00	.00	.00	.00	.00	.00	.00	.00	.00
25. strong/weak	.00	.00	.00	.00	.00	.00	.00	.00	.00
26. strong/weak	.00	.00	.00	.00	.00	.00	.00	.00	.00
27. strong/weak	.00	.00	.00	.00	.00	.00	.00	.00	.00
28. strong/weak	.00	.00	.00	.00	.00	.00	.00	.00	.00
29. strong/weak	.00	.00	.00	.00	.00	.00	.00	.00	.00
30. strong/weak	.00	.00	.00	.00	.00	.00	.00	.00	.00
31. strong/weak	.00	.00	.00	.00	.00	.00	.00	.00	.00
32. strong/weak	.00	.00	.00	.00	.00	.00	.00	.00	.00
33. strong/weak	.00	.00	.00	.00	.00	.00	.00	.00	.00
34. strong/weak	.00	.00	.00	.00	.00	.00	.00	.00	.00
35. strong/weak	.00	.00	.00	.00	.00	.00	.00	.00	.00
36. strong/weak	.00	.00	.00	.00	.00	.00	.00	.00	.00
37. strong/weak	.00	.00	.00	.00	.00	.00	.00	.00	.00
38. strong/weak	.00	.00	.00	.00	.00	.00	.00	.00	.00
39. strong/weak	.00	.00	.00	.00	.00	.00	.00	.00	.00
40. strong/weak	.00	.00	.00	.00	.00	.00	.00	.00	.00
41. strong/weak	.00	.00	.00	.00	.00	.00	.00	.00	.00
42. strong/weak	.00	.00	.00	.00	.00	.00	.00	.00	.00
43. strong/weak	.00	.00	.00	.00	.00	.00	.00	.00	.00
44. strong/weak	.00	.00	.00	.00	.00	.00	.00	.00	.00
45. strong/weak	.00	.00	.00	.00	.00	.00	.00	.00	.00
46. strong/weak	.00	.00	.00	.00	.00	.00	.00	.00	.00
47. strong/weak	.00	.00	.00	.00	.00	.00	.00	.00	.00
48. strong/weak	.00	.00	.00	.00	.00	.00	.00	.00	.00
49. strong/weak	.00	.00	.00	.00	.00	.00	.00	.00	.00
50. strong/weak	.00	.00	.00	.00	.00	.00	.00	.00	.00



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

-  **Evaluation:** {bad ↔ good}
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100s of students, 10s of things, 50 semantic differentials

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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        |                         |

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## Definitions:



Ousiometrics: The quantitative study of the **essential meaningful components** of an entity, however perceived.



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 To be distinguished from semantics, semiotics, ...


 οὐσία is the etymological root of the word ‘essence’.





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 Ousiometry, ousiometer, ousiograms, ...



## Definitions:

-  Ousiometrics: The quantitative study of the **essential meaningful components** of an entity, however perceived.
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-  οὐσία is the etymological root of the word ‘essence’.
-  Ousiometry, ousiometer, ousiograms, ...
-  Telegnomics: The distant sensing of knowledge (~ distant reading <sup>[12]</sup>)





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# 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]

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 Potency ~ Dominance


 Activity ~ Arousal





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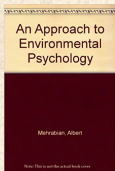




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- 🧱 Intention that VAD  $\equiv$  EPA has become lost in literature. [2]








“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.”*

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# Major problems with measuring essential meaning:

1. **Scale:** Originally 10s and 100s of words → now 10,000s + online rating.

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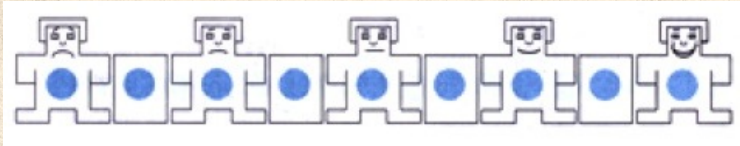
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Solution is to always perform factor analysis (SVD).

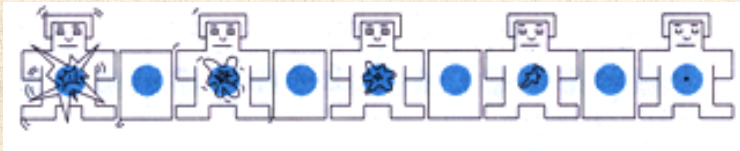


# 1999 ANEW study—three 1–9 scales: [4]

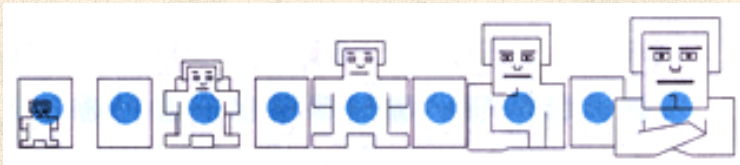
valence:



arousal:



dominance:



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# ANEW study: Valence ~ Happiness:

 Valence scale presented to participants as a 'happy-unhappy scale.'

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







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☰ 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  
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 Best-worst scaling ↗

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

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## Moving beyond Likert scales:



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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.





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



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

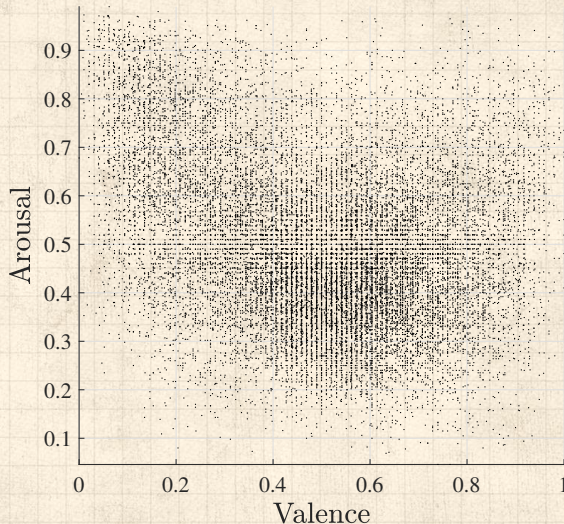
<b>VAD endpoints:</b>	<b>Paradigm words and phrases presented to raters:</b> <sup>[11]</sup>
highest valence	happiness, pleasure, positiveness, satisfaction, contentedness, hopefulness
lowest valence	unhappiness, annoyance, negativeness, dissatisfaction, melancholy, despair
highest arousal	arousal, activeness, 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.





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



```
cd ~/work/psychology/2021-01emotion-intensity/  
figures/.  
matlab  
figmeaning_VAD3d001_demo
```

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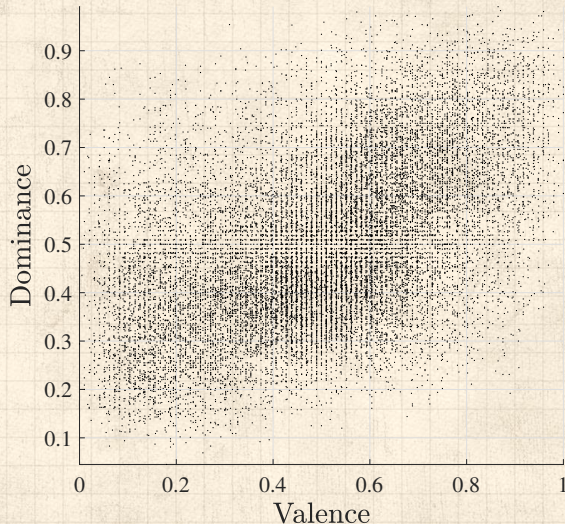
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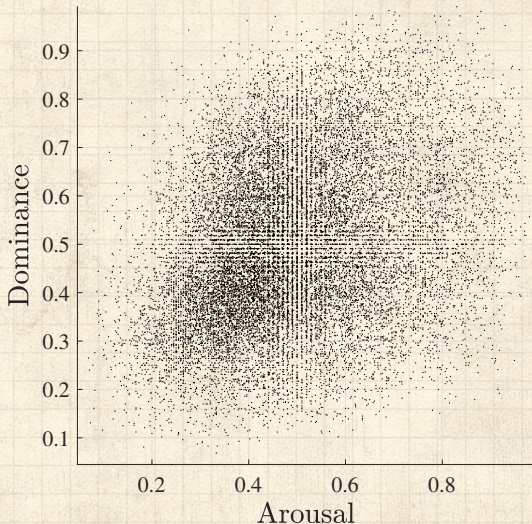
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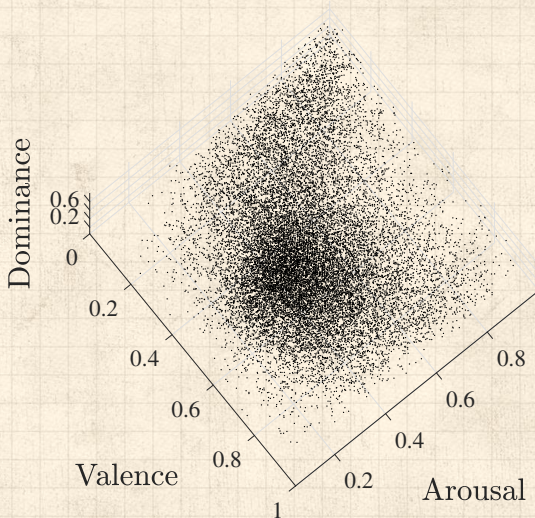
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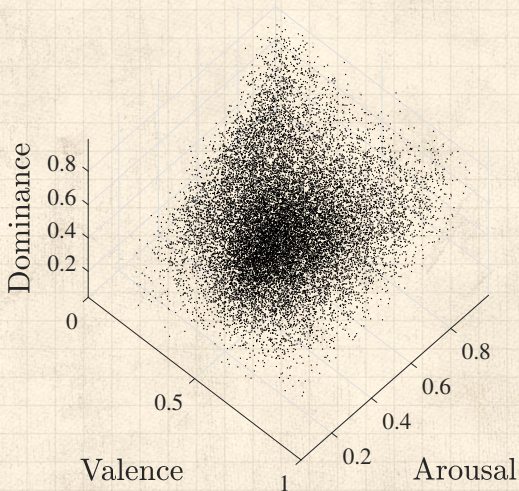
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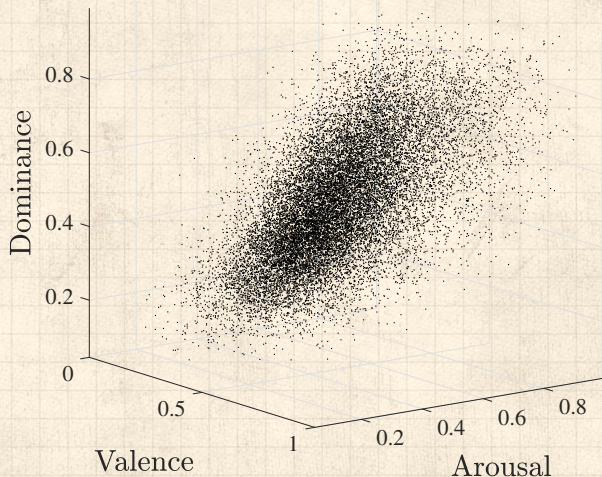
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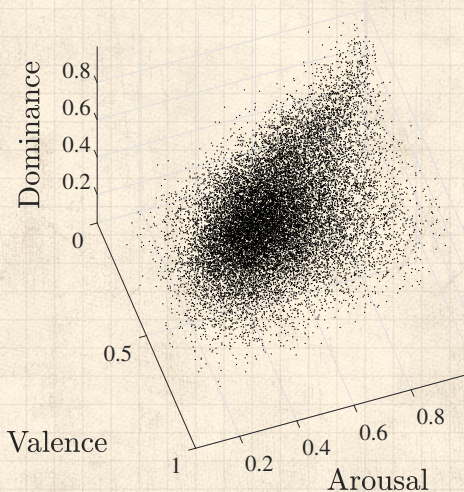
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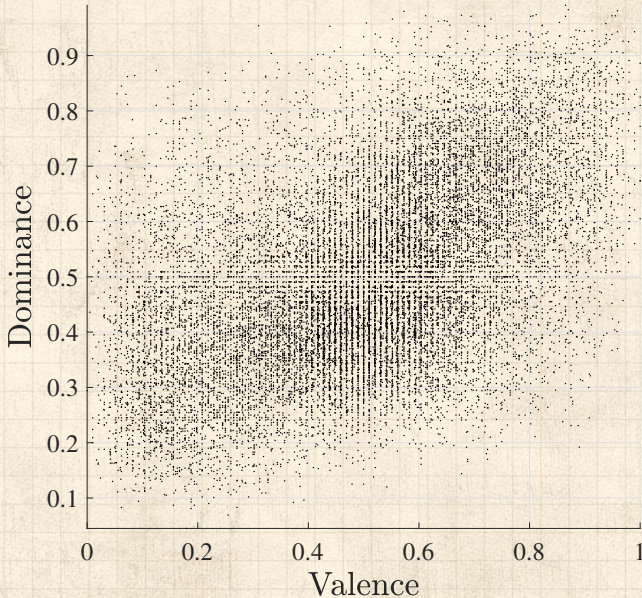
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$$R(D, V) \simeq 0.488$$



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

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

Variance explained:

 VAD: 44.4%, 28.0%, and 27.6%.

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- ❏ Rotate in G-E plane by  $\pi/4$  for what will be Power-Danger-Structure (PDS) 45.5%, 45.5%, 9.1%



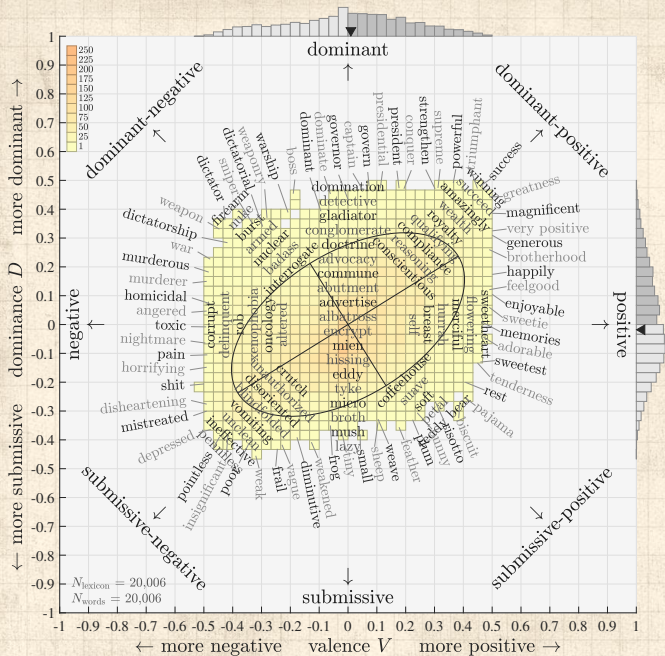
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- 🧱 Interpretability enhancements: Ousiograms.



~ valence-dominance ousiogram for the NRC VAD lexicon ~



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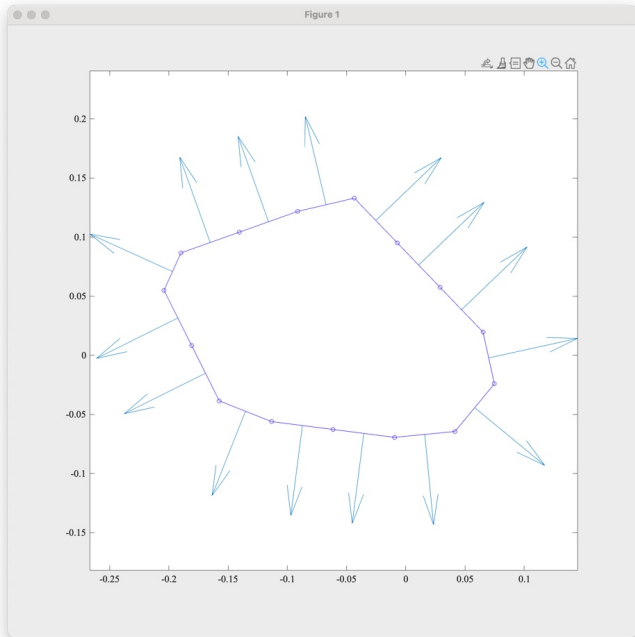
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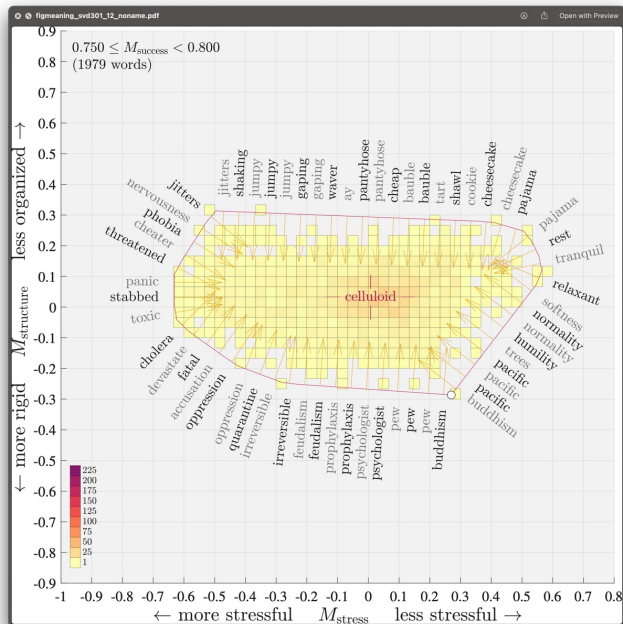
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# Building ousiograms (2021/01/31):



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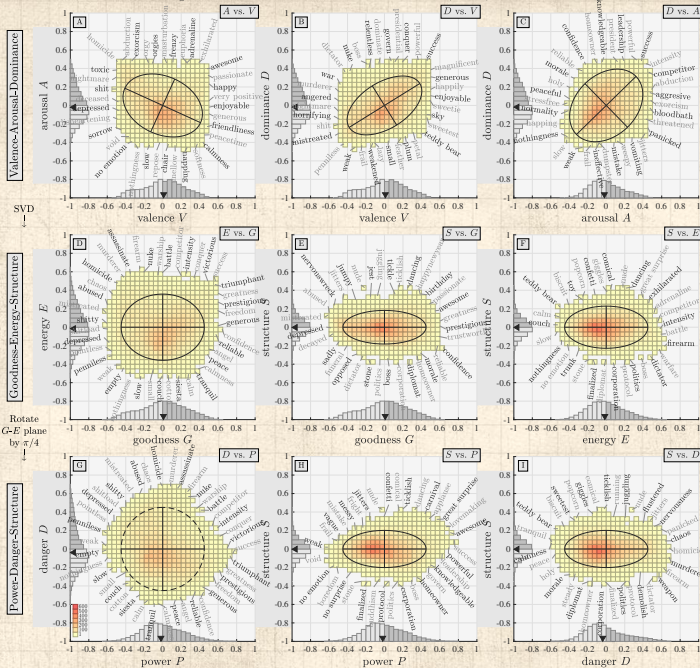
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Ousiograms for the NRC VAD lexicon in the VAD, GES, and PDS frameworks:



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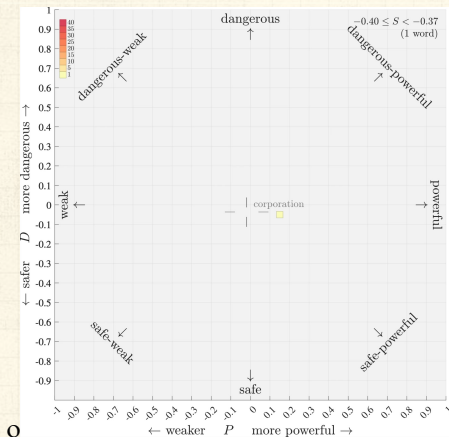
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{powerful  $\Leftrightarrow$  weak} vs {dangerous  $\Leftrightarrow$  safe}  



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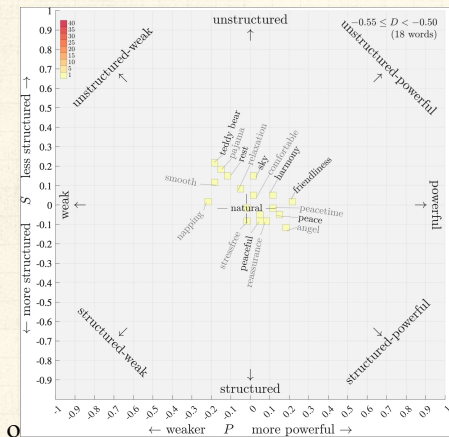
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{powerful  $\Leftrightarrow$  weak} vs {structured  $\Leftrightarrow$  unstructured}  



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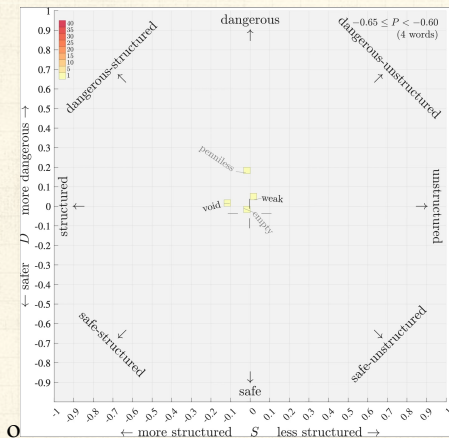
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{dangerous  $\Leftrightarrow$  safe} vs {structured  $\Leftrightarrow$  unstructured}  





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# 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

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# Etymological, taxonomic, and nomenclatural madnesses:



Physics: Power was once sometimes called Activity

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## Etymological, taxonomic, and nomenclatural madnesses:



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(~ lord/ruler/person of power)

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

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


## Other descriptors that don't hold up:






## 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.




## Etymological, taxonomic, and nomenclatural madnesses:


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(~ lord/ruler/person of power)

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 Power-Order/Chaos-Gravity/Seriousness



## Etymological, taxonomic, and nomenclatural madnesses:

🧱 Physics: Power was once sometimes called Activity

🧱 Danger ↗ and Dominance trace back to Dominus ↗  
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🧱 Framing words for EPA, VAD, etc., matter greatly.

## Other descriptors that don't hold up:

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🧱 Energy/Flourishing/Thriving-Threat

🧱 Power-Order/Chaos-Gravity/Seriousness

## After much staring at the ceiling:

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## Other descriptors that don't hold up:

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## After much staring at the ceiling:

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

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## 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)



## 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.

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# 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.

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murderer  
assassin  
killer  
aggression  
pissed  
crucifixion  
lurid  
outburst  
squander  
chaotic  
classic  
homicide  
appraise  
snare  
murder  
assassinate  
earthquake  
mi.





# 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]

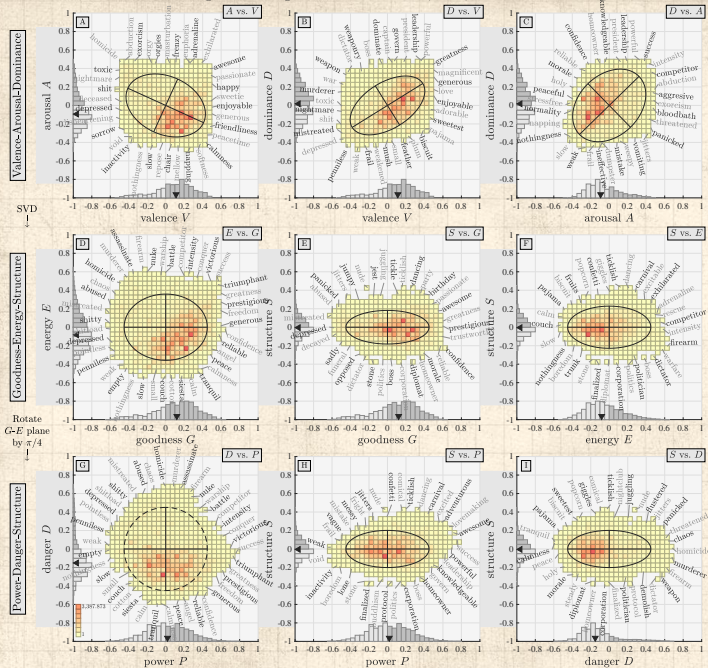
Wikipedia (2019/03). [20]

RadioTalk: Transcriptions of talk radio. [3]

Twitter through Storywrangler. [1]



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



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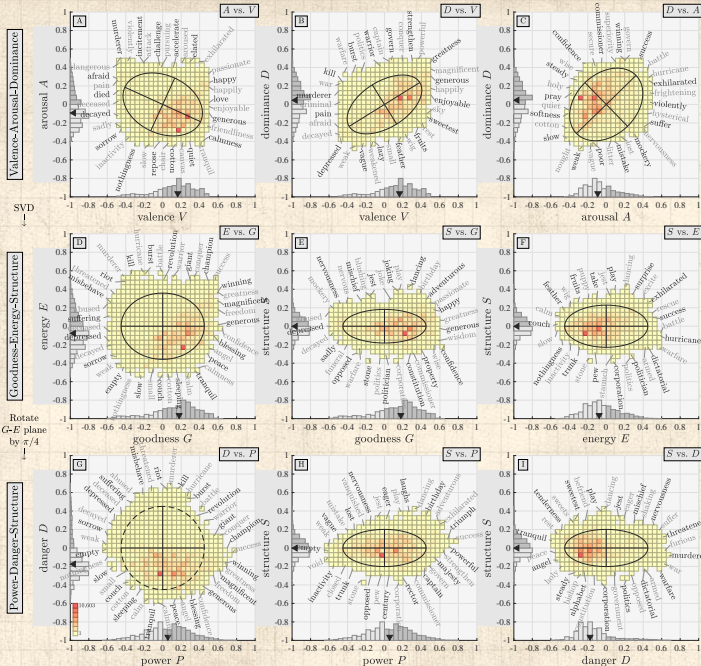
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# Ousiograms for Jane Austen's novels in the VAD, GES, and PDS frameworks:



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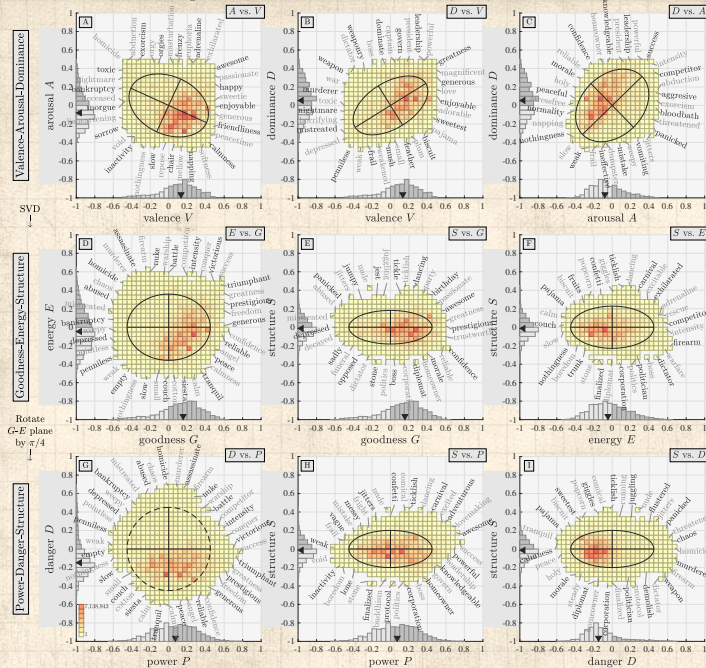
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Ousiograms for the New York Times in the VAD, GES, and PDS frameworks:



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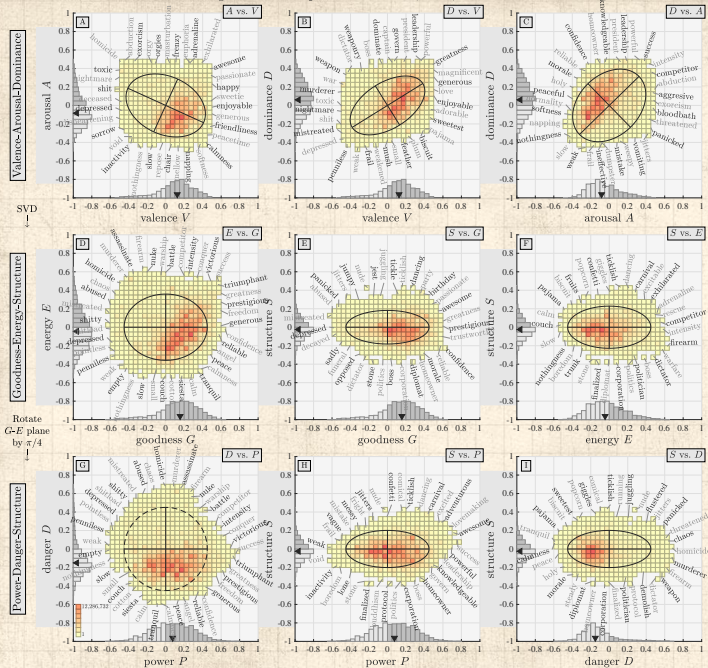
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Ousiograms for Wikipedia in the VAD, GES, and PDS frameworks:



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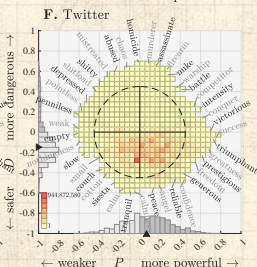
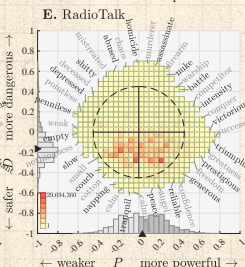
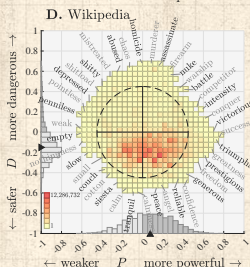
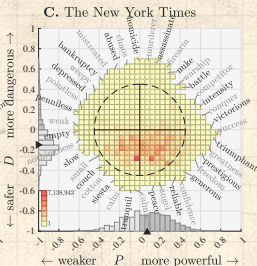
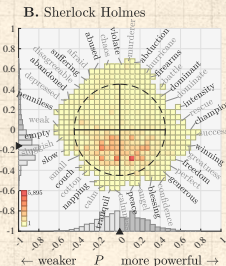
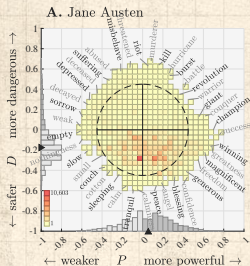
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# A special thing has happened:

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

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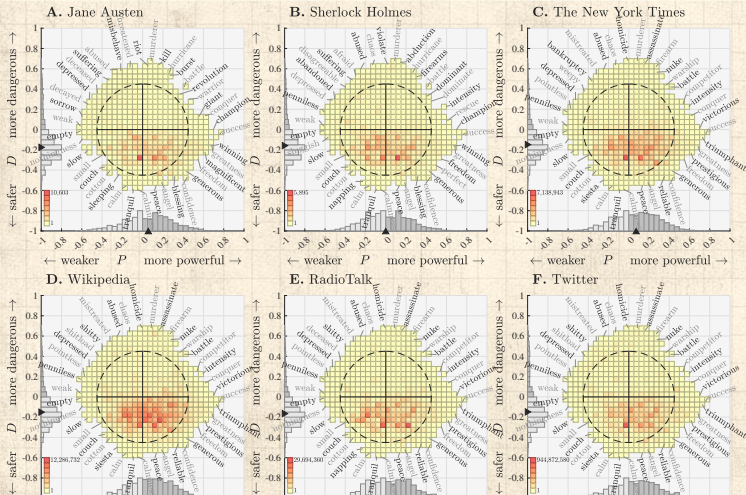
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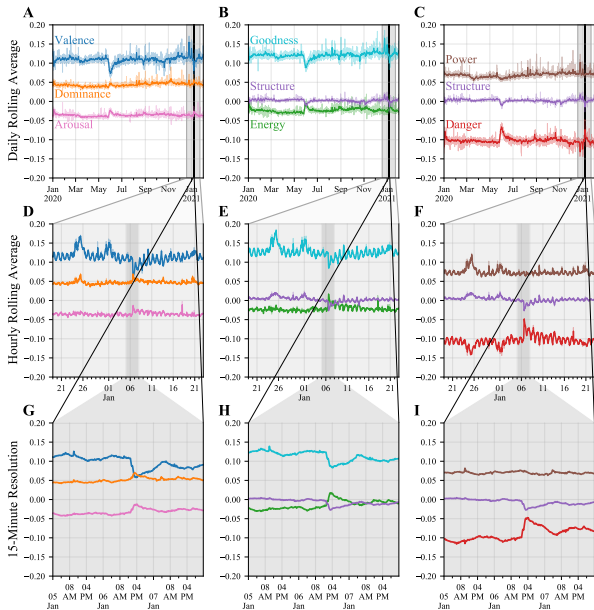
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# Prototype ousiometer—Twitter:



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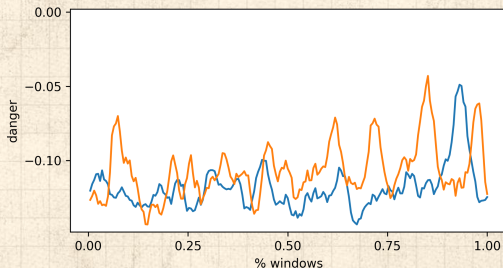
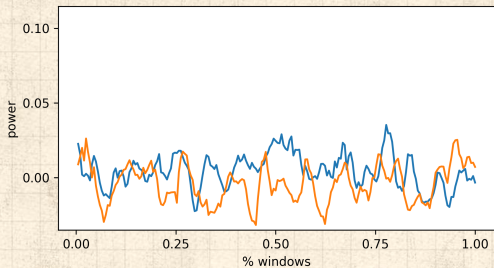
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# Prototype ousiometer—Harry Potter:



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

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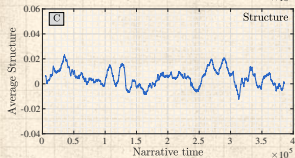
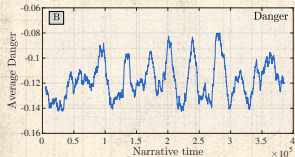
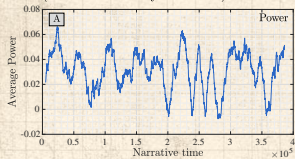
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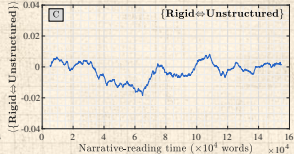
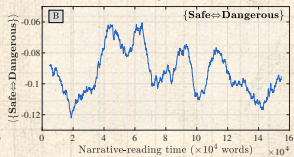
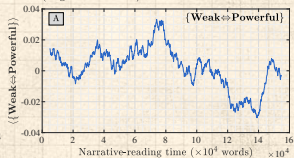


# Power and Danger time series for books:

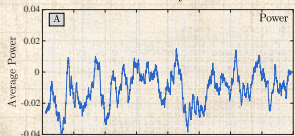
Ousiometrics for  
"Anna Karenina"  
(Peaver Volokhonsky translation)



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

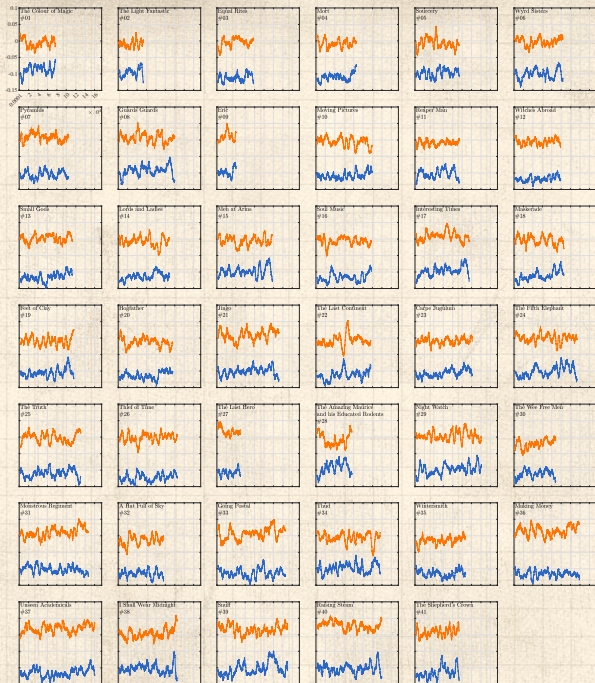


Ousiometrics for "Gravity's Rainbow"









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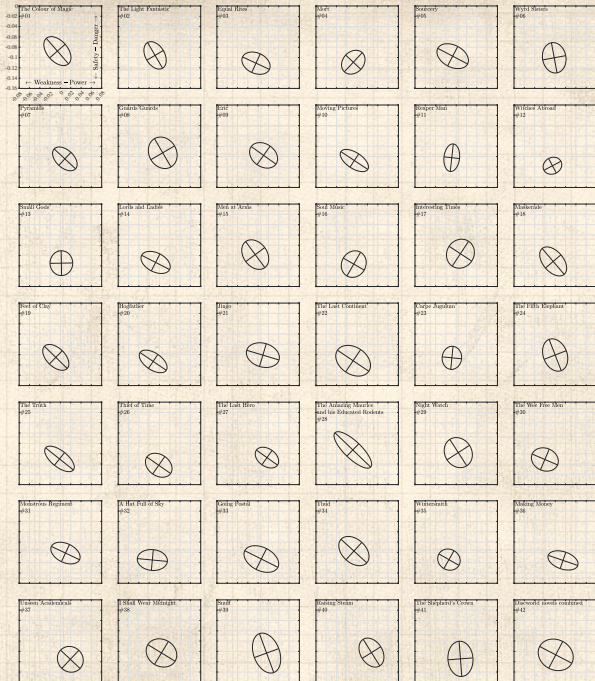
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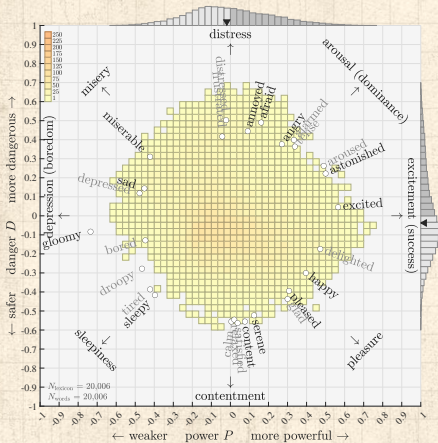




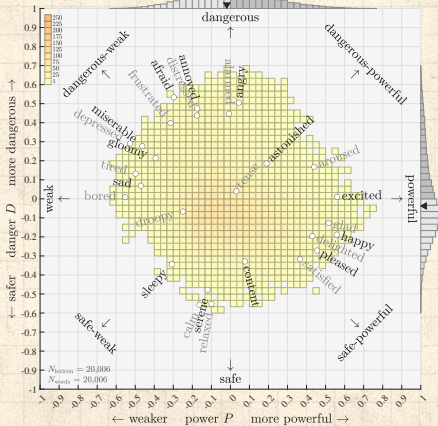


Rough agreement with Russell's circumplex model, [18] which itself doesn't disagree with a 2- $d$  orthogonal framework.

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).

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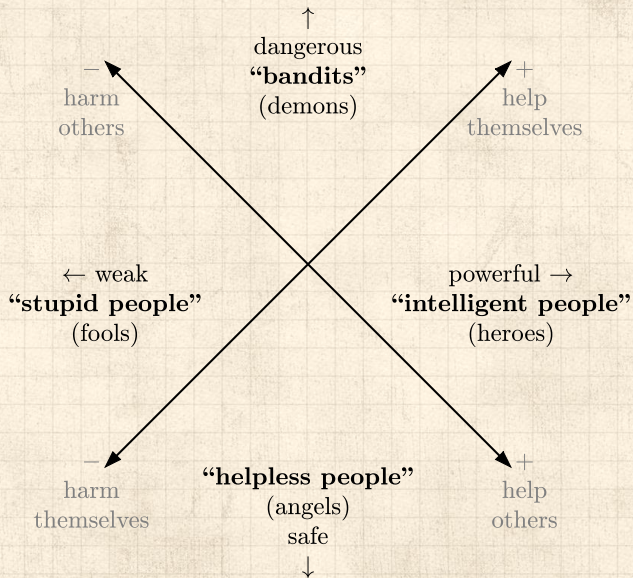
References



<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:



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Orthogonal frames in political rhetoric.



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# Findings, observations, possibilities:

-  Power-danger-structure framework emerges in distinct settings, fitting types and tokens.
-  Safety bias of communication refines Pollyanna Principle of positivity

See concluding remarks in the foundational paper. [5]

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# 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.



See concluding remarks in the foundational paper. [5]

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# Findings, observations, possibilities:

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- 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.

See concluding remarks in the foundational paper. [5]











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
astounded	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

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