Ousiometrics: The Essence of Meaning

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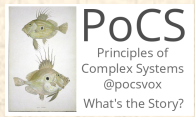
Principles of Complex Systems, Vols. 1, 2, 3D, 4 Fourever, V for Vendetta

Prof. Peter Sheridan Dodds

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



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Outline

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]

Current version:
https://pdodds.w3.uvm.edu/share/true-dimensions-of-meaning-manuscript.pdf

What does meaning even mean?

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"The thing that is conveyed especially by language"

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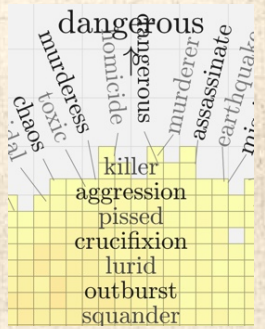
[1] Life goal: Never get owned by a dictionary on social media

Abed's search for the meaning of Christmas

Abed's Uncontrollable Christmas, S2E11 of Community

This is not easy:

"Abed's Uncontrollable Christmas"



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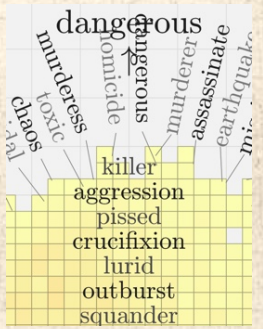

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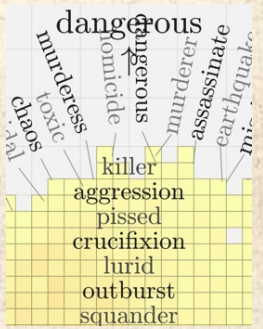

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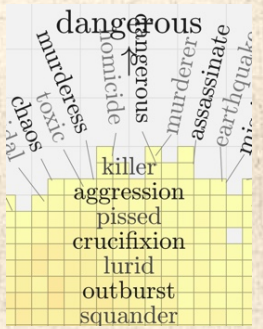

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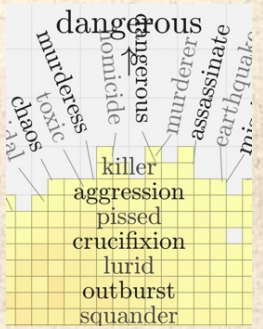

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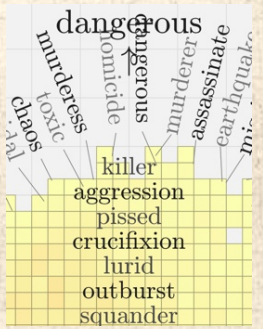

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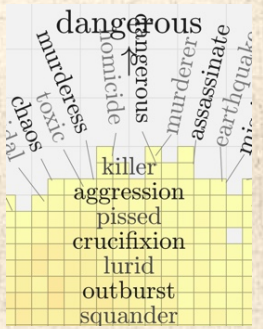
“Introduction to Teaching”, S5E02 of Community



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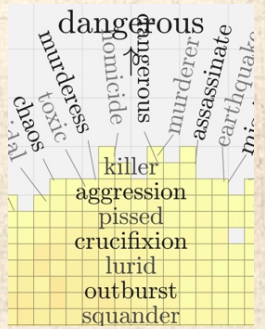
"Introduction to Teaching", S5E02 of Community

Abed Nadir: "I thought the meaning of people was somewhere in here.



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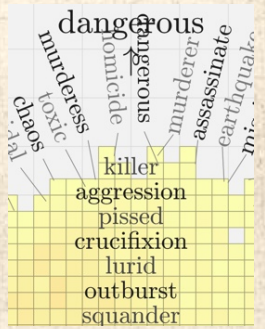

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"Introduction to Teaching", S5E02 of Community

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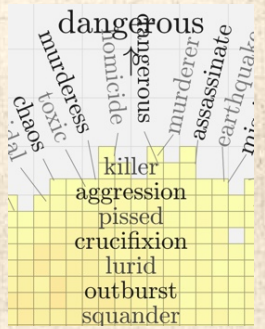
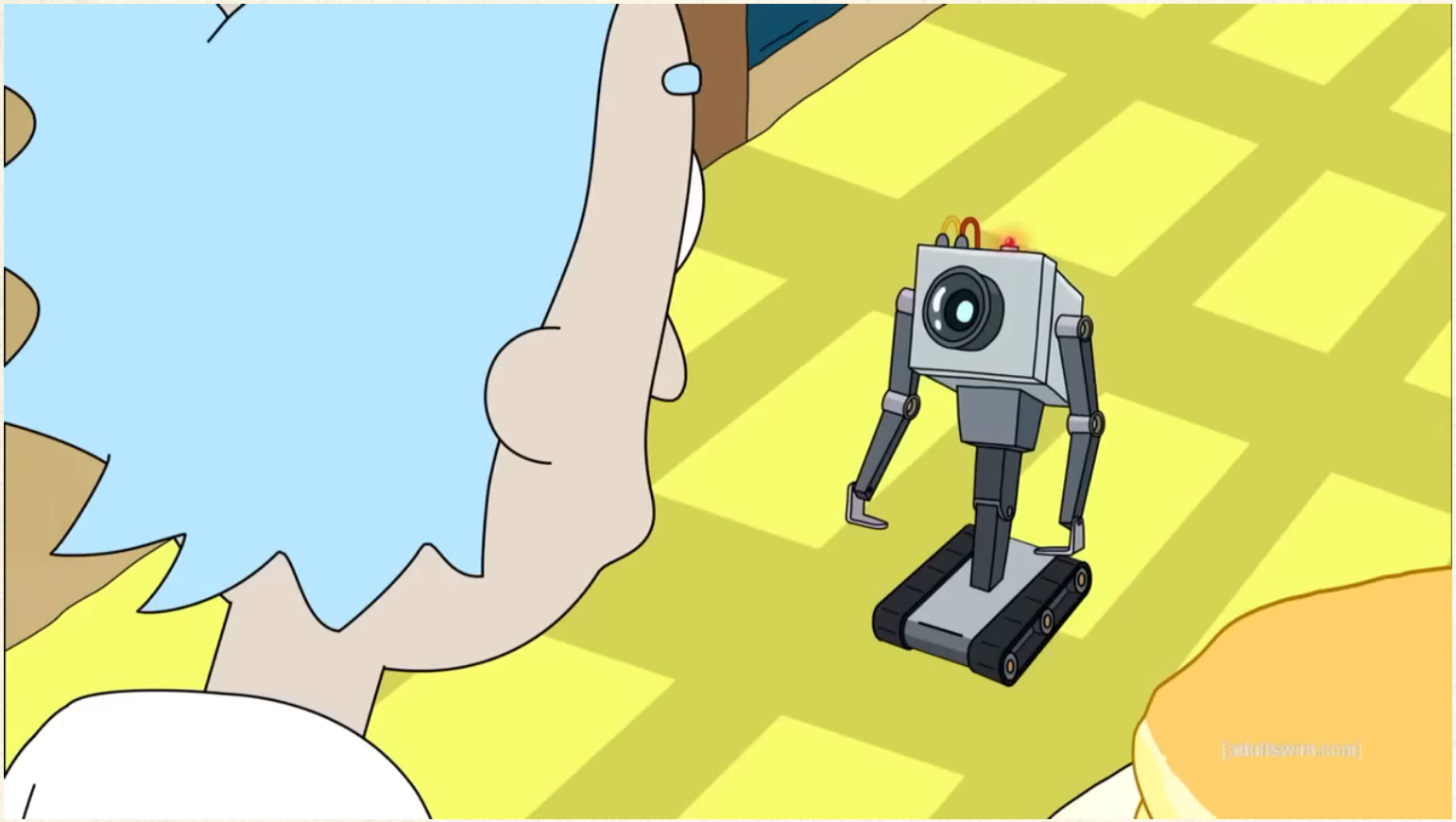


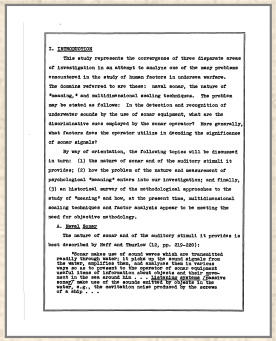
Purpose Robot



Something Ricked This Way Comes, S1E09 of Rick and Morty

Outline

The meaning of pings:



"A factorial study of complex auditory stimuli (passive sonar sounds)"
L. M. Solomon,
Unpublished Doctoral Dissertation, University of Illinois, , , 1954. [24]

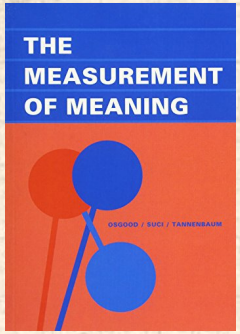
From the introduction:

'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:

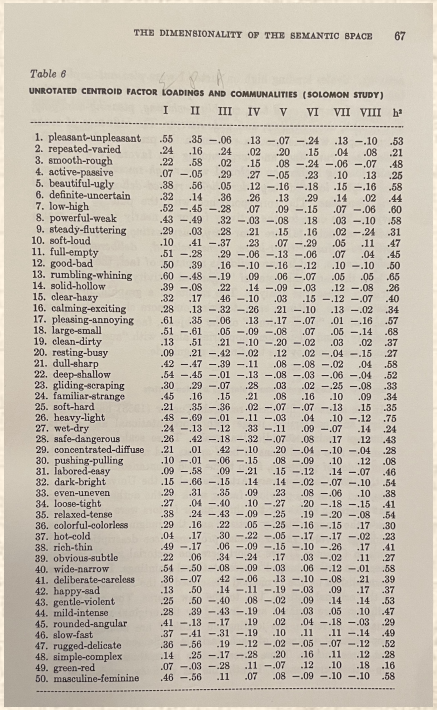
- naval sonar,
- the nature of "meaning,"
- and multidimensional scaling techniques.

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?'

From pings to things:



"The Measurement of Meaning" by Osgood, Suci, and Tannenbaum (1957). [15]



THE DIMENSIONALITY OF THE SEMANTIC SPACE 67

Table 6

UNROTATED CENTROID FACTOR LOADINGS AND COMMUNALITIES (SOLOMON STUDY)

	I	II	III	IV	V	VI	VII	VIII	h^2
1. pleasant-unpleasant	.55	.35	−.06	.13	−.07	−.24	.13	−.10	.53
2. repeated-varied	.24	.16	.24	.02	.20	.15	.04	.08	.21
3. smooth-rough	.22	.58	.02	.15	.08	−.24	−.06	−.07	.48
4. active-passive	.07	−.05	.29	.27	−.05	.23	.10	.13	.25
5. beautiful-ugly	.38	.56	.05	.12	−.16	−.18	.15	−.16	.58
6. definite-uncertain	.32	.14	.36	.26	.13	.29	.14	.02	.44
7. low-high	.52	−.45	−.28	.07	.09	−.15	.07	−.06	.60
8. powerful-weak	.43	−.49	.32	−.03	−.08	.18	.03	−.10	.58
9. steady-fluttering	.29	.03	.28	.21	.15	.16	.02	−.24	.31
10. soft-loud	.10	.41	−.37	.23	.07	−.29	.05	.11	.47
11. full-empty	.51	−.28	.29	−.06	−.13	−.06	.07	.04	.45
12. good-bad	.50	.39	.16	−.10	−.16	−.12	.10	−.10	.50
13. rumbling-whining	.60	−.48	−.19	.09	.06	−.07	.05	.05	.65
14. solid-hollow	.39	−.08	.22	.14	−.09	−.03	.12	−.08	.26
15. clear-hazy	.32	.17	.46	−.10	.03	.15	−.12	−.07	.40
16. calming-exciting	.28	.13	−.32	−.26	.21	−.10	.13	−.02	.34
17. pleasing-annoying	.61	.35	−.06	.13	−.17	−.07	.01	−.16	.57
18. large-small	.51	−.61	.05	−.09	−.08	.07	.05	−.14	.68
19. clean-dirty	.13	.51	.21	−.10	−.20	−.02	.03	.02	.37
20. resting-busy	.09	.21	−.42	−.02	.12	.02	−.04	−.15	.27
21. dull-sharp	.42	−.47	−.39	−.11	.08	−.08	−.02	.04	.58
22. deep-shallow	.54	−.45	−.01	.13	−.08	−.03	−.06	−.04	.52
23. gliding-scraping	.30	.29	−.07	.28	.03	.02	−.25	−.08	.33
24. familiar-strange	.45	.16	.15	.21	.08	.16	.10	.09	.34
25. soft-hard	.21	.35	−.36	.02	−.07	−.07	−.13	.15	.35
26. heavy-light	.48	−.69	−.01	−.11	−.03	.04	.10	−.12	.75
27. wet-dry	.24	−.13	−.12	.33	−.11	.09	−.07	.14	.24
28. safe-dangerous	.26	.42	−.18	−.32	−.07	.08	.17	.12	.43
29. concentrated-diffuse	.21	.01	.42	−.10	.20	−.04	−.10	−.04	.28
30. pushing-pulling	.10	−.01	−.06	−.15	.08	−.09	.10	.12	.08
31. labored-easy	.09	−.58	.09	−.21	.15	−.12	.14	−.07	.46
32. dark-bright	.15	−.66	−.15	.14	.14	−.02	−.07	−.10	.54
33. even-uneven	.29	.31	.35	.09	.23	.08	−.06	.10	.38
34. loose-tight	.27	.04	−.40	.10	−.27	.20	−.18	−.15	.41
35. relaxed-tense	.38	.24	−.43	−.09	−.25	.19	−.20	−.08	.54
36. colorful-colorless	.29	.16	.22	.05	−.25	−.16	−.15	.17	.30
37. hot-cold	.04	.17	.30	−.22	−.05	−.17	−.17	−.02	.23
38. rich-thin	.49	−.17	.06	−.09	−.15	−.10	−.26	.17	.41
39. obvious-subtle	.22	.06	.34	−.24	.17	.03	−.02	.11	.27
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45. rounded-angular	.41	−.13	−.17	.19	.02	.04	−.18	−.03	.29
46. slow-fast	.37	−.41	−.31	−.19	.10	.11	.11	−.14	.49
47. rugged-delicate	.36	−.56	.19	−.12	−.02	−.05	−.07	−.12	.52
48. simple-complex	.14	.25	−.17	−.28	.20	.16	.11	.12	.28
49. green-red	.07	−.03	−.28	.11	−.07	.12	.10	.18	.16
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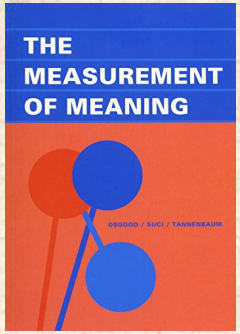
Osgood et al. used semantic differentials and factor analysis to identify a basis of three variables for meaning-space:

From pings to things:



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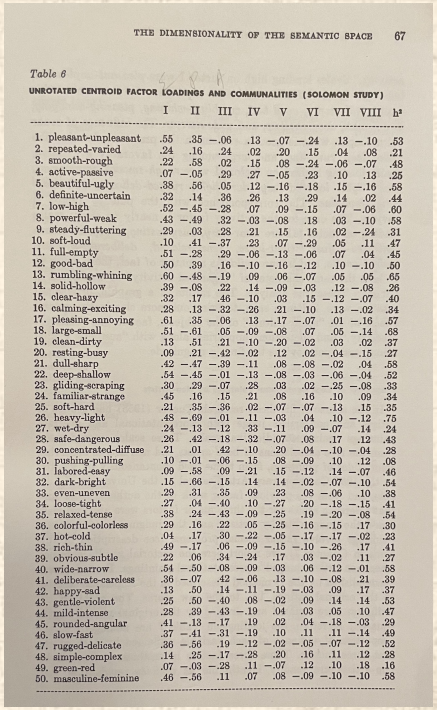

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26. heavy-light	.48	−.69	−.01	−.11	−.03	.04	.10	−.12	.75
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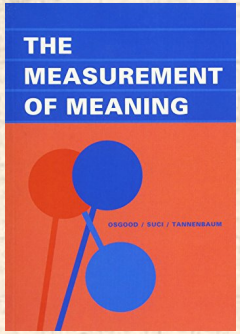
47. rugged-delicate	.36	−.56	.19	−.12	−.02	−.05	−.07	−.12	.52
48. simple-complex	.14	.25	−.17	−.28	.20	.16	.11	.12	.28
49. green-red	.07	−.03	−.28	.11	−.07	.12	.10	.18	.16
50. masculine-feminine	.46	−.56	.11	.07	.08	−.09	−.10	−.10	.58

- Osgood et al. used semantic differentials and factor analysis to identify a basis of three variables for meaning-space:
  - Evaluation: {bad ⇔ good}

From pings to things:



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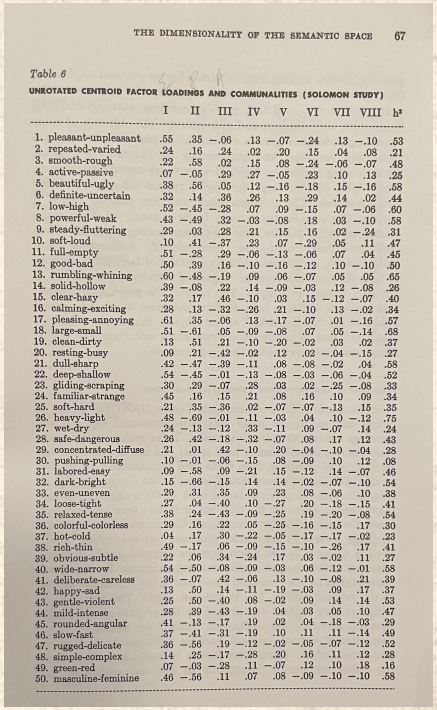

THE DIMENSIONALITY OF THE SEMANTIC SPACE 67

Table 6

UNROTATED CENTROID FACTOR LOADINGS AND COMMUNALITIES (SOLOMON STUDY)

	I	II	III	IV	V	VI	VII	VIII	h^2
1. pleasant-unpleasant	.55	.35	−.06	.13	−.07	−.24	.13	−.10	.53
2. repeated-varied	.24	.16	.24	.02	.20	.15	.04	.08	.21
3. smooth-rough	.22	.58	.02	.15	.08	−.24	−.06	−.07	.48
4. active-passive	.07	−.05	.29	.27	−.05	.23	.10	.13	.25
5. beautiful-ugly	.38	.56	.05	.12	−.16	−.18	.15	−.16	.58
6. definite-uncertain	.32	.14	.36	.26	.13	.29	.14	.02	.44
7. low-high	.52	−.45	−.28	.07	.09	−.15	.07	−.06	.60
8. powerful-weak	.43	−.49	.32	−.03	.08	.18	.03	−.10	.58
9. steady-fluttering	.29	.03	.28	.21	.15	.16	.02	−.24	.31
10. soft-loud	.10	.41	−.37	.23	.07	−.29	.05	.11	.47
11. full-empty	.51	−.28	.29	−.06	−.13	−.06	.07	.04	.45
12. good-bad	.50	.39	.16	−.10	−.16	−.12	.10	−.10	.50
13. rumbling-whining	.60	−.48	−.19	.09	.06	−.07	.05	.05	.65
14. solid-hollow	.39	−.08	.22	.14	−.09	−.03	.12	−.08	.26
15. clear-hazy	.32	.17	.46	−.10	.03	.15	−.12	−.07	.40
16. calming-exciting	.28	.13	−.32	−.26	.21	−.10	.13	−.02	.34
17. pleasing-annoying	.61	.35	−.06	.13	−.17	−.07	.01	−.16	.57
18. large-small	.51	−.61	.05	−.09	−.08	.07	.05	−.14	.68
19. clean-dirty	.13	.51	.21	−.10	−.20	−.02	.03	.02	.37
20. resting-busy	.09	.21	−.42	−.02	.12	.02	−.04	−.15	.27
21. dull-sharp	.42	−.47	−.39	−.11	.08	−.08	−.02	.04	.58
22. deep-shallow	.54	−.45	−.01	.13	−.08	−.03	−.06	−.04	.52
23. gliding-scraping	.30	.29	−.07	.28	.03	.02	−.25	−.08	.33
24. familiar-strange	.45	.16	.15	.21	.08	.16	.10	.09	.34
25. soft-hard	.21	.35	−.36	.02	−.07	−.07	−.13	.15	.35
26. heavy-light	.48	−.69	−.01	−.11	−.03	.04	.10	−.12	.75
27. wet-dry	.24	−.13	−.12	.33	−.11	.09	−.07	.14	.24
28. safe-dangerous	.26	.42	−.18	−.32	−.07	.08	.17	.12	.43
29. concentrated-diffuse	.21	.01	.42	−.10	.20	−.04	−.10	−.04	.28
30. pushing-pulling	.10	−.01	−.06	−.15	.08	−.09	.10	.12	.08
31. labored-easy	.09	−.58	.09	−.21	.15	−.12	.14	−.07	.46
32. dark-bright	.15	−.66	−.15	.14	.14	−.02	−.07	−.10	.54
33. even-uneven	.29	.31	.35	.09	.23	.08	−.06	.10	.38
34. loose-tight	.27	.04	−.40	.10	−.27	.20	−.18	−.15	.41
35. relaxed-tense	.38	.24	−.43	−.09	−.25	.19	−.20	−.08	.54
36. colorful-colorless	.29	.16	.22	.05	−.25	−.16	−.15	.17	.30
37. hot-cold	.04	.17	.30	−.22	−.05	−.17	−.17	−.02	.23
38. rich-thin	.49	−.17	.06	−.09	−.15	−.10	−.26	.17	.41
39. obvious-subtle	.22	.06	.34	−.24	.17	.03	−.02	.11	.27
40. wide-narrow	.54	−.50	−.08	−.09	−.03	.06	−.12	−.01	.58
41. deliberate-careless	.36	−.07	.42	−.06	.13	−.10	−.08	.21	.39
42. happy-sad	.13	.50	.14	−.11	−.19	−.03	.09	.17	.37
43. gentle-violent	.25	.50	−.40	.08	−.02	.09	.14	.14	.53
44. mild-intense	.28	.39	−.43	−.19	.04	.03	.05	.10	.47
45. rounded-angular	.41	−.13	−.17	.19	.02	.04	−.18	−.03	.29
46. slow-fast	.37	−.41	−.31	−.19	.10	.11	.11	−.14	.49
47. rugged-delicate	.36	−.56	.19	−.12	−.02	−.05	−.07	−.12	.52
48. simple-complex	.14	.25	−.17	−.28	.20	.16	.11	.12	.28
49. green-red	.07	−.03	−.28	.11	−.07	.12	.10	.18	.16
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- Osgood et al. used semantic differentials and factor analysis to identify a basis of three variables for meaning-space:
  - Evaluation: {bad ⇔ good}
  - Potency: {weak ⇔ strong}

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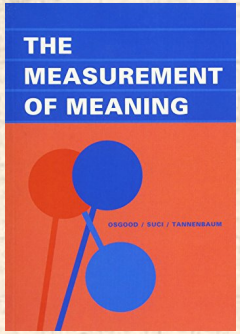

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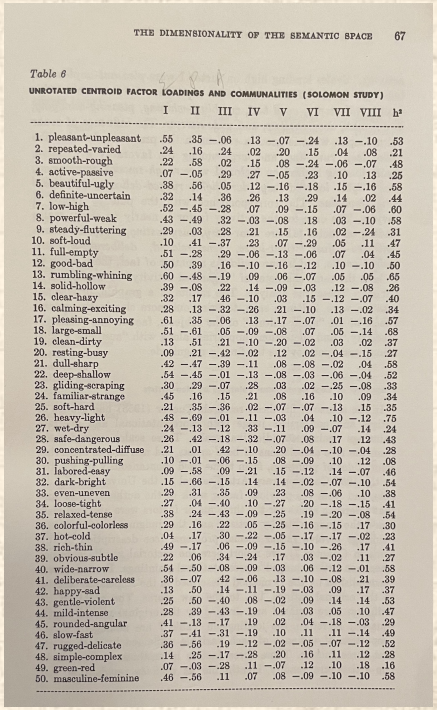

THE DIMENSIONALITY OF THE SEMANTIC SPACE 67

Table 6

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	I	II	III	IV	V	VI	VII	VIII	h^2
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2. repeated-varied	.24	.16	.24	.02	.20	.15	.04	.08	.21
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4. active-passive	.07	−.05	.29	.27	−.05	.23	.10	.13	.25
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7. low-high	.52	−.45	−.28	.07	.09	−.15	.07	−.06	.60
8. powerful-weak	.43	−.49	.32	−.03	.08	.18	.03	−.10	.58
9. steady-fluttering	.29	.03	.28	.21	.15	.16	.02	−.24	.31
10. soft-loud	.10	.41	−.37	.23	.07	−.29	.05	.11	.47
11. full-empty	.51	−.28	.29	−.06	−.13	−.06	.07	.04	.45
12. good-bad	.50	.39	.16	−.10	−.16	−.12	.10	−.10	.50
13. rumbling-whining	.60	−.48	−.19	.09	.06	−.07	.05	.05	.65
14. solid-hollow	.39	−.08	.22	.14	−.09	−.03	.12	−.08	.26
15. clear-hazy	.32	.17	.46	−.10	.03	.15	−.12	−.07	.40
16. calming-exciting	.28	.13	−.32	−.26	.21	−.10	.13	−.02	.34
17. pleasing-annoying	.61	.35	−.06	.13	−.17	−.07	.01	−.16	.57
18. large-small	.51	−.61	.05	−.09	−.08	.07	.05	−.14	.68
19. clean-dirty	.13	.51	.21	−.10	−.20	−.02	.03	.02	.37
20. resting-busy	.09	.21	−.42	−.02	.12	.02	−.04	−.15	.27
21. dull-sharp	.42	−.47	−.39	−.11	.08	−.08	−.02	.04	.58
22. deep-shallow	.54	−.45	−.01	.13	−.08	−.03	−.06	−.04	.52
23. gliding-scraping	.30	.29	−.07	.28	.03	.02	−.25	−.08	.33
24. familiar-strange	.45	.16	.15	.21	.08	.16	.10	.09	.34
25. soft-hard	.21	.35	−.36	.02	−.07	−.07	−.13	.15	.35
26. heavy-light	.48	−.69	−.01	−.11	−.03	.04	.10	−.12	.75
27. wet-dry	.24	−.13	−.12	.33	−.11	.09	−.07	.14	.24
28. safe-dangerous	.26	.42	−.18	−.32	−.07	.08	.17	.12	.43
29. concentrated-diffuse	.21	.01	.42	−.10	.20	−.04	−.10	−.04	.28
30. pushing-pulling	.10	−.01	−.06	−.15	.08	−.09	.10	.12	.08
31. labored-easy	.09	−.58	.09	−.21	.15	−.12	.14	−.07	.46
32. dark-bright	.15	−.66	−.15	.14	.14	−.02	−.07	−.10	.54
33. even-uneven	.29	.31	.35	.09	.23	.08	−.06	.10	.38
34. loose-tight	.27	.04	−.40	.10	−.27	.20	−.18	−.15	.41
35. relaxed-tense	.38	.24	−.43	−.09	−.25	.19	−.20	−.08	.54
36. colorful-colorless	.29	.16	.22	.05	−.25	−.16	−.15	.17	.30
37. hot-cold	.04	.17	.30	−.22	−.05	−.17	−.17	−.02	.23
38. rich-thin	.49	−.17	.06	−.09	−.15	−.10	−.26	.17	.41
39. obvious-subtle	.22	.06	.34	−.24	.17	.03	−.02	.11	.27
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43. gentle-violent	.25	.50	−.40	.08	−.02	.09	.14	.14	.53
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47. rugged-delicate	.36	−.56	.19	−.12	−.02	−.05	−.07	−.12	.52
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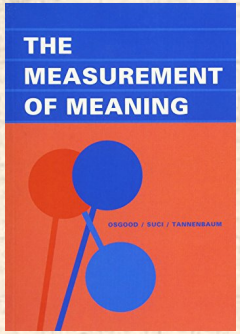

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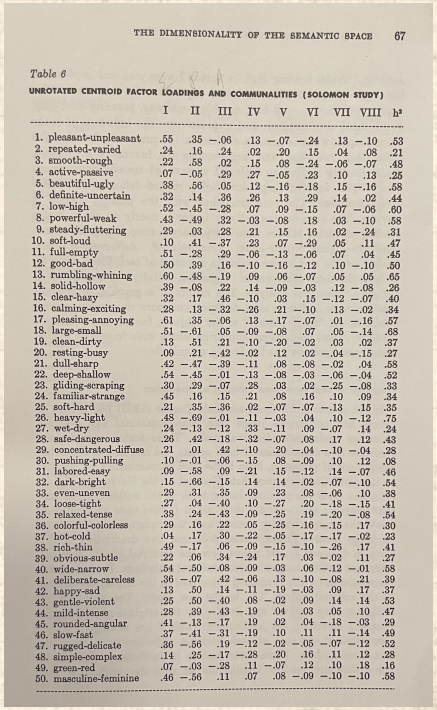

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12. good-bad	.50	.39	.16	−.10	−.16	−.12	.10	−.10	.50
13. rumbling-whining	.60	−.48	−.19	.09	.06	−.07	.05	.05	.65
14. solid-hollow	.39	−.08	.22	.14	−.09	−.03	.12	−.08	.26
15. clear-hazy	.32	.17	.46	−.10	.03	.15	−.12	−.07	.40
16. calming-exciting	.28	.13	−.32	−.26	.21	−.10	.13	−.02	.34
17. pleasing-annoying	.61	.35	−.06	.13	−.17	−.07	.01	−.16	.57
18. large-small	.51	−.61	.05	−.09	−.08	.07	.05	−.14	.68
19. clean-dirty	.13	.51	.21	−.10	−.20	−.02	.03	.02	.37
20. resting-busy	.09	.21	−.42	−.02	.12	.02	−.04	−.15	.27
21. dull-sharp	.42	−.47	−.39	−.11	.08	−.08	−.02	.04	.58
22. deep-shallow	.54	−.45	−.01	.13	−.08	−.03	−.06	−.04	.52
23. gliding-scraping	.30	.29	−.07	.28	.03	.02	−.25	−.08	.33
24. familiar-strange	.45	.16	.15	.21	.08	.16	.10	.09	.34
25. soft-hard	.21	.35	−.36	.02	−.07	−.07	−.13	.15	.35
26. heavy-light	.48	−.69	−.01	−.11	−.03	.04	.10	−.12	.75
27. wet-dry	.24	−.13	−.12	.33	−.11	.09	−.07	.14	.24
28. safe-dangerous	.26	.42	−.18	−.32	−.07	.08	.17	.12	.43
29. concentrated-diffuse	.21	.01	.42	−.10	.20	−.04	−.10	−.04	.28
30. pushing-pulling	.10	−.01	−.06	−.15	.08	−.09	.10	.12	.08
31. labored-easy	.09	−.58	.09	−.21	.15	−.12	.14	−.07	.46
32. dark-bright	.15	−.66	−.15	.14	.14	−.02	−.07	−.10	.54
33. even-uneven	.29	.31	.35	.09	.23	.08	−.06	.10	.38
34. loose-tight	.27	.04	−.40	.10	−.27	.20	−.18	−.15	.41
35. relaxed-tense	.38	.24	−.43	−.09	−.25	.19	−.20	−.08	.54
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38. rich-thin	.49	−.17	.06	−.09	−.15	−.10	−.26	.17	.41
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42. happy-sad	.13	.50	.14	−.11	−.19	−.03	.09	.17	.37
43. gentle-violent	.25	.50	−.40	.08	−.02	.09	.14	.14	.53
44. mild-intense	.28	.39	−.43	−.19	.04	.03	.05	.10	.47
45. rounded-angular	.41	−.13	−.17	.19	.02	.04	−.18	−.03	.29
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- 100s of students, 50 semantic differentials,
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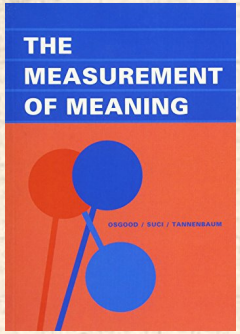
From pings to things:



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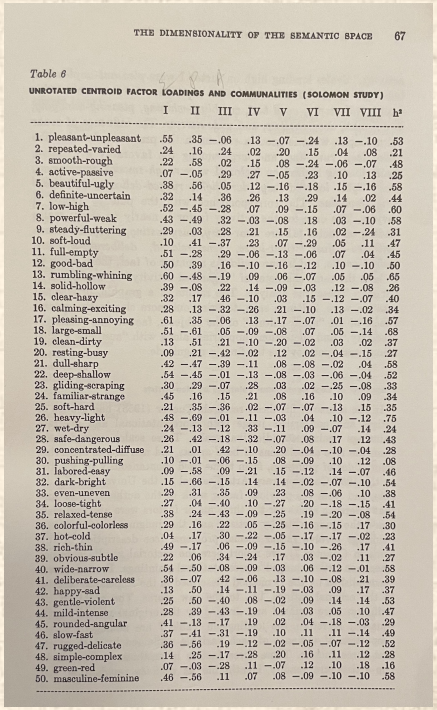

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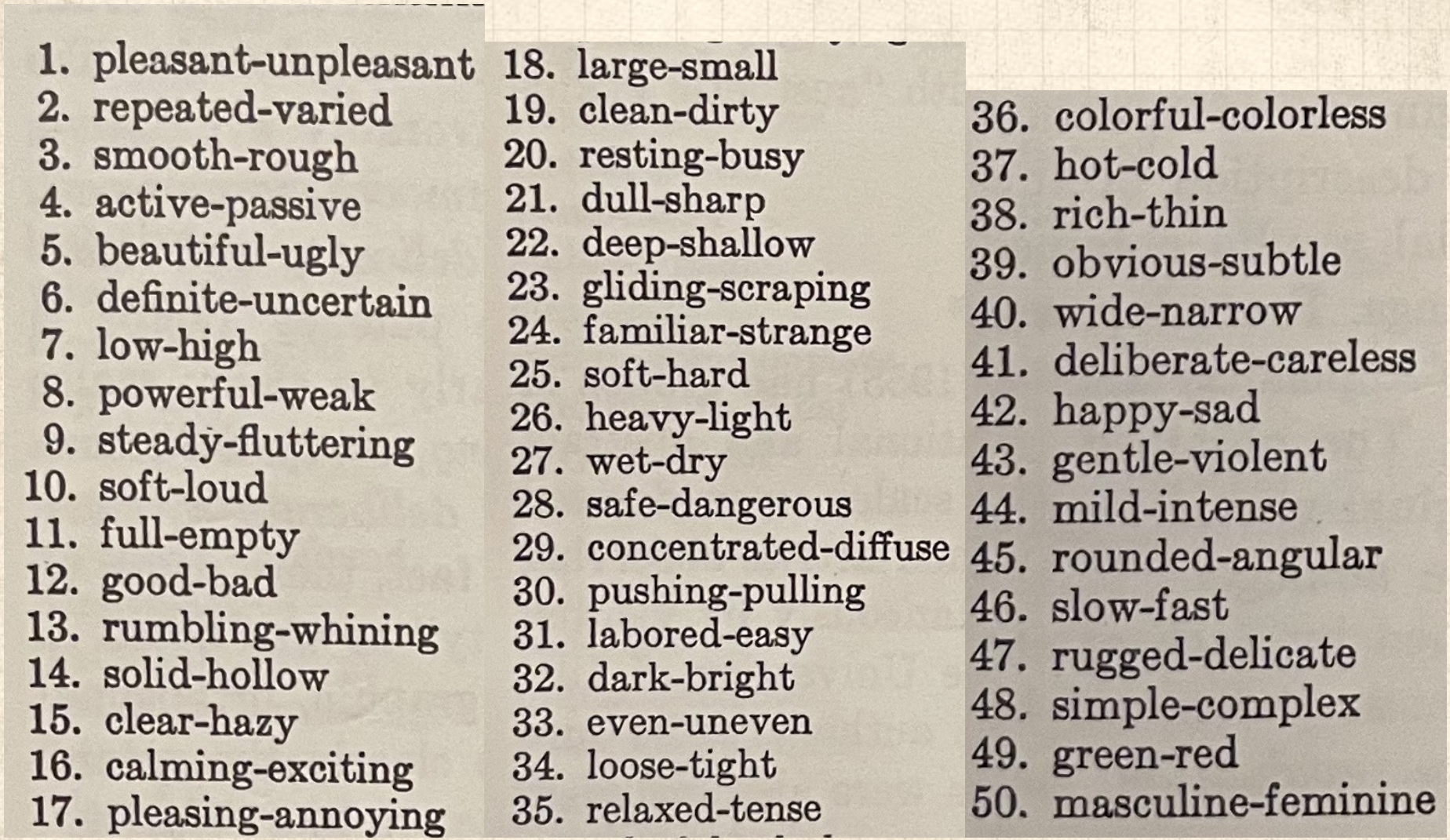
11. full-empty	.51	−.28	.29	−.06	−.13	−.06	.07	.04	.45
12. good-bad	.50	.39	.16	−.10	−.16	−.12	.10	−.10	.50
13. rumbling-whining	.60	−.48	−.19	.09	.06	−.07	.05	.05	.65
14. solid-hollow	.39	−.08	.22	.14	−.09	−.03	.12	−.08	.26
15. clear-hazy	.32	.17	.46	−.10	.03	.15	−.12	−.07	.40
16. calming-exciting	.28	.13	−.32	−.26	.21	−.10	.13	−.02	.34
17. pleasing-annoying	.61	.35	−.06	.13	−.17	−.07	.01	−.16	.57
18. large-small	.51	−.61	.05	−.09	−.08	.07	.05	−.14	.68
19. clean-dirty	.13	.51	.21	−.10	−.20	−.02	.03	.02	.37
20. resting-busy	.09	.21	−.42	−.02	.12	.02	−.04	−.15	.27
21. dull-sharp	.42	−.47	−.39	−.11	.08	−.08	−.02	.04	.58
22. deep-shallow	.54	−.45	−.01	.13	−.08	−.03	−.06	−.04	.52
23. gliding-scraping	.30	.29	−.07	.28	.03	.02	−.25	−.08	.33
24. familiar-strange	.45	.16	.15	.21	.08	.16	.10	.09	.34
25. soft-hard	.21	.35	−.36	.02	−.07	−.07	−.13	.15	.35
26. heavy-light	.48	−.69	−.01	−.11	−.03	.04	.10	−.12	.75
27. wet-dry	.24	−.13	−.12	.33	−.11	.09	−.07	.14	.24
28. safe-dangerous	.26	.42	−.18	−.32	−.07	.08	.17	.12	.43
29. concentrated-diffuse	.21	.01	.42	−.10	.20	−.04	−.10	−.04	.28
30. pushing-pulling	.10	−.01	−.06	−.15	.08	−.09	.10	.12	.08
31. labored-easy	.09	−.58	.09	−.21	.15	−.12	.14	−.07	.46
32. dark-bright	.15	−.66	−.15	.14	.14	−.02	−.07	−.10	.54
33. even-uneven	.29	.31	.35	.09	.23	.08	−.06	.10	.38
34. loose-tight	.27	.04	−.40	.10	−.27	.20	−.18	−.15	.41
35. relaxed-tense	.38	.24	−.43	−.09	−.25	.19	−.20	−.08	.54
36. colorful-colorless	.29	.16	.22	.05	−.25	−.16	−.15	.17	.30
37. hot-cold	.04	.17	.30	−.22	−.05	−.17	−.17	−.02	.23
38. rich-thin	.49	−.17	.06	−.09	−.15	−.10	−.26	.17	.41
39. obvious-subtle	.22	.06	.34	−.24	.17	.03	−.02	.11	.27
40. wide-narrow	.54	−.50	−.08	−.09	−.03	.06	−.12	−.01	.58
41. deliberate-careless	.36	−.07	.42	−.06	.13	−.10	−.08	.21	.39
42. happy-sad	.13	.50	.14	−.11	−.19	−.03	.09	.17	.37
43. gentle-violent	.25	.50	−.40	.08	−.02	.09	.14	.14	.53
44. mild-intense	.28	.39	−.43	−.19	.04	.03	.05	.10	.47
45. rounded-angular	.41	−.13	−.17	.19	.02	.04	−.18	−.03	.29
46. slow-fast	.37	−.41	−.31	−.19	.10	.11	.11	−.14	.49
47. rugged-delicate	.36	−.56	.19	−.12	−.02	−.05	−.07	−.12	.52
48. simple-complex	.14	.25	−.17	−.28	.20	.16	.11	.12	.28
49. green-red	.07	−.03	−.28	.11	−.07	.12	.10	.18	.16
50. masculine-feminine	.46	−.56	.11	.07	.08	−.09	−.10	−.10	.58

- Osgood et al. used semantic differentials and factor analysis to identify a basis of three variables for meaning-space:
  - Evaluation: {bad ⇔ good}
  - Potency: {weak ⇔ strong}
  - Activity: {passive ⇔ active}
- 100s of students, 50 semantic differentials,
  10s of things.
- "EPA framework"

Semantic differentials from Osgood et al.: [15]



1. pleasant-unpleasant
2. repeated-varied
3. smooth-rough
4. active-passive
5. beautiful-ugly
6. definite-uncertain
7. low-high
8. powerful-weak
9. steady-fluttering
10. soft-loud
11. full-empty
12. good-bad
13. rumbling-whining
14. solid-hollow
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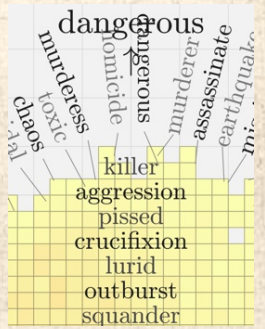
Outline



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[1] "Gretchen, stop trying to make fetch happen, it's NOT going to happen!" — Regina George

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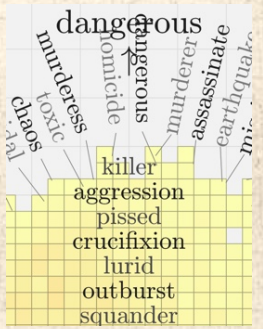

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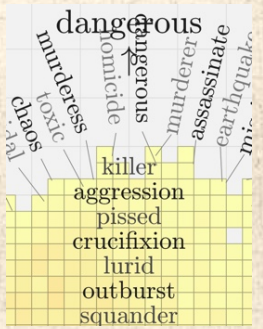

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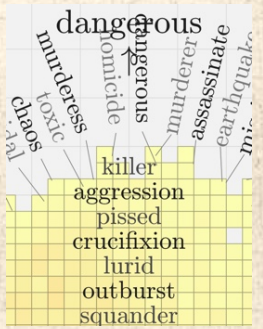

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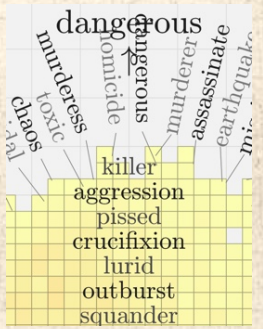

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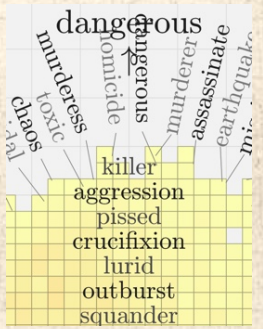
- **Telegnomics:** The distant sensing of knowledge (∼ distant reading [14])



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~~Side~~ Main quest:

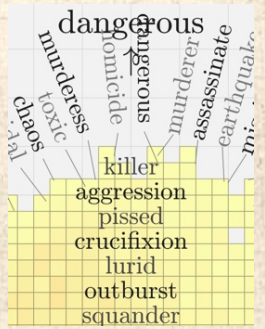
Meowsiometrics

Seriously: Animal language. Why the slow roll?

Outline

Essential dimensions captured by emotion:

- Late 1800s: Three dimensional representation of emotion postulated by Wundt. [25, 19]



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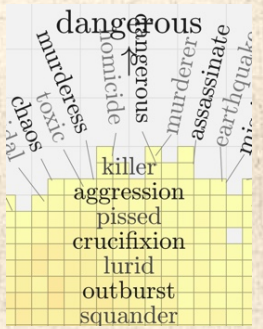

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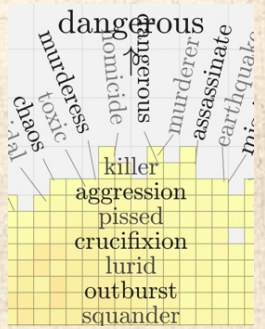

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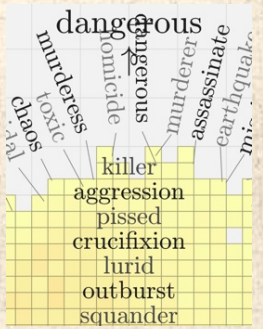

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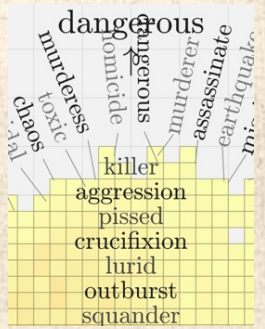

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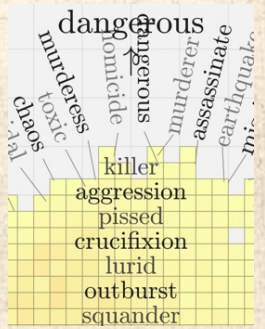

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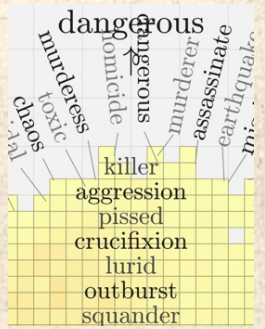
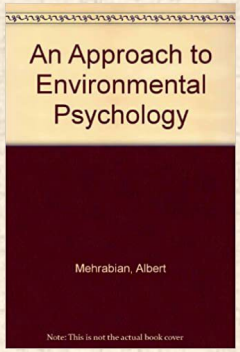
- Intention that VAD ≡ EPA has become lost in literature. [2]





"An approach to environmental psychology" by Mehrabian and Russell (1974). [9]

"The basic emotional impact of environments" Mehrabian and Russell, Perceptual and Motor Skills, **38**, 283–301, 1974. [10]

"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."

Outline

Measuring essential meaning

History

Definitions

Emotions

Revisiting the Revisiting of the Measuring of Meaning

Problems

Remeasuring meaning

Ousiograms

Extremousionyms

Dimension names

Safety bias

Applications

The Ousiometer

Correspondences

Nutshell

Extras

References

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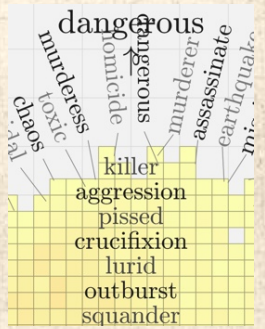

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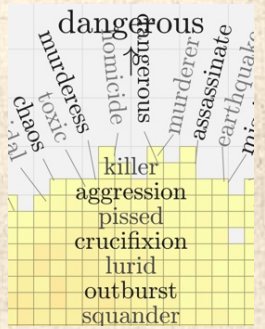

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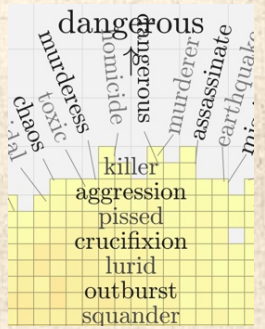

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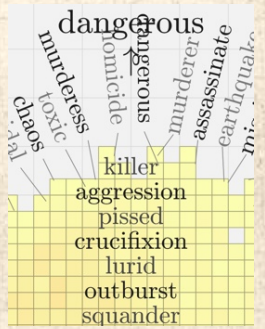

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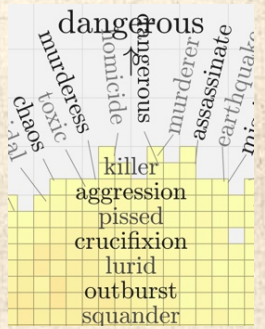

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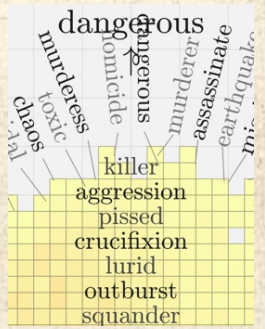
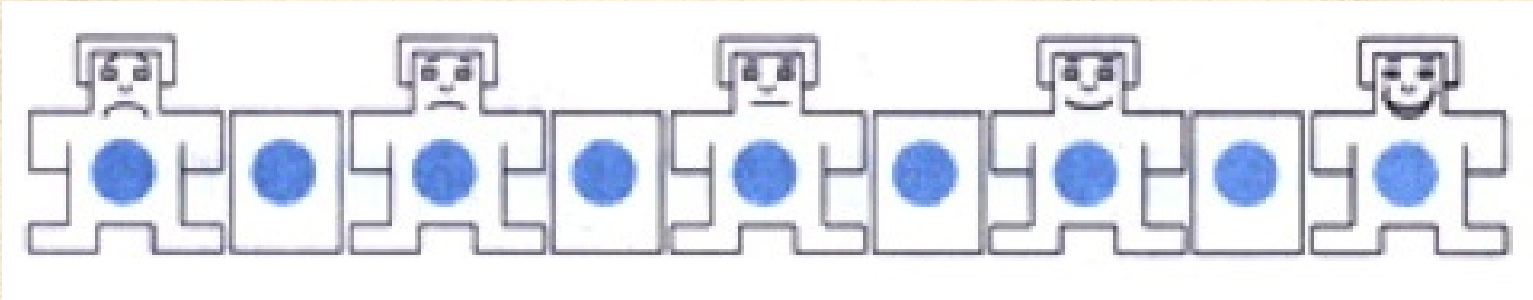


1999 ANEW study—three 1–9 scales: [4]

valence:



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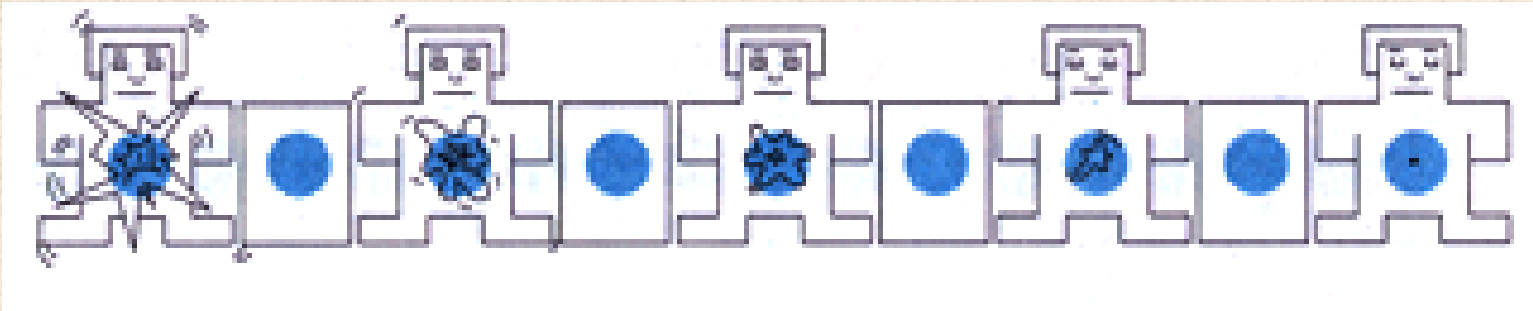
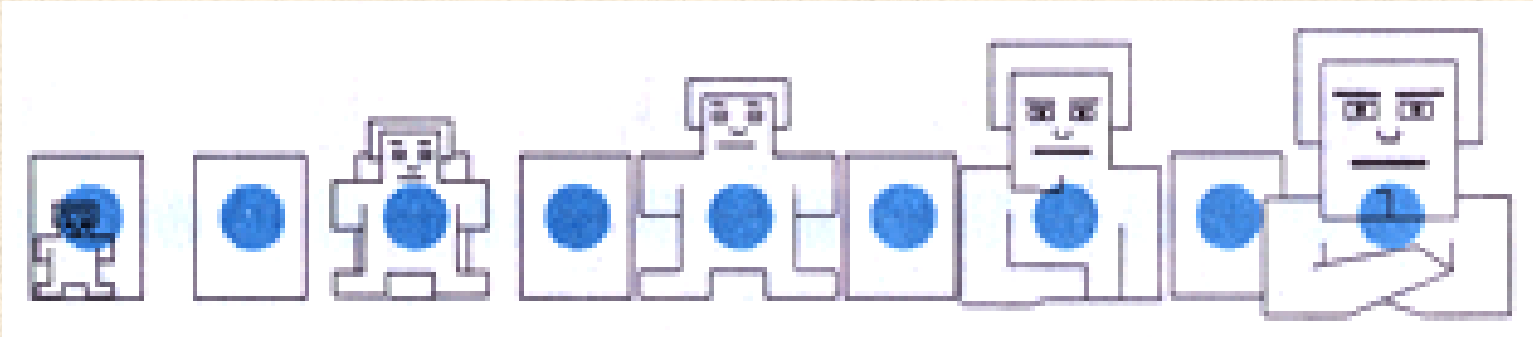


dominance:



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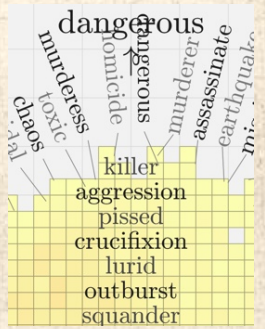

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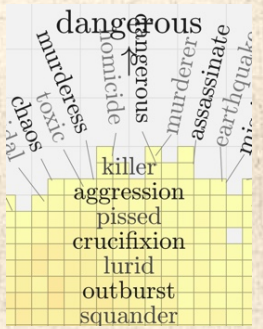

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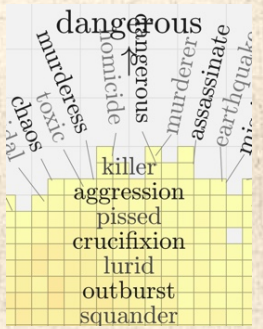

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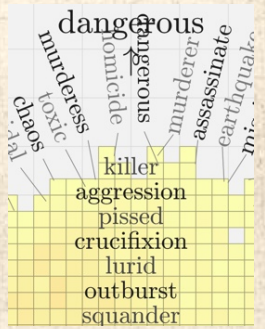

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- Valence scale presented to participants as a ‘happy-unhappy scale.’
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  “At one extreme of this scale, you are happy, pleased, satisfied, contented, hopeful. ...

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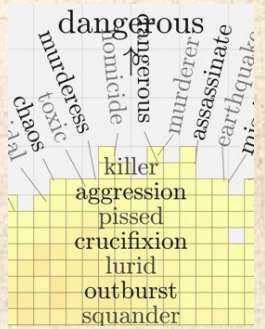

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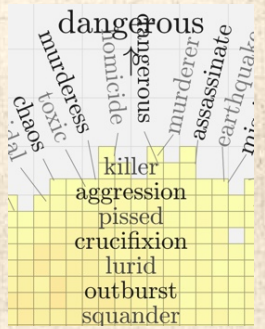
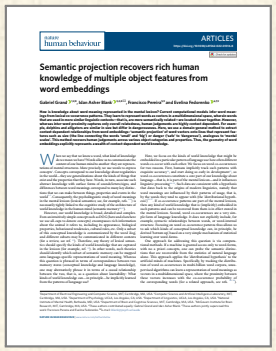


LLMs encode semantic differentials:



“Semantic projection recovers rich human knowledge of multiple object features from word embeddings”

Grand et al.,

Nature Human Behaviour, **6**, 975–987, 2022. [6]

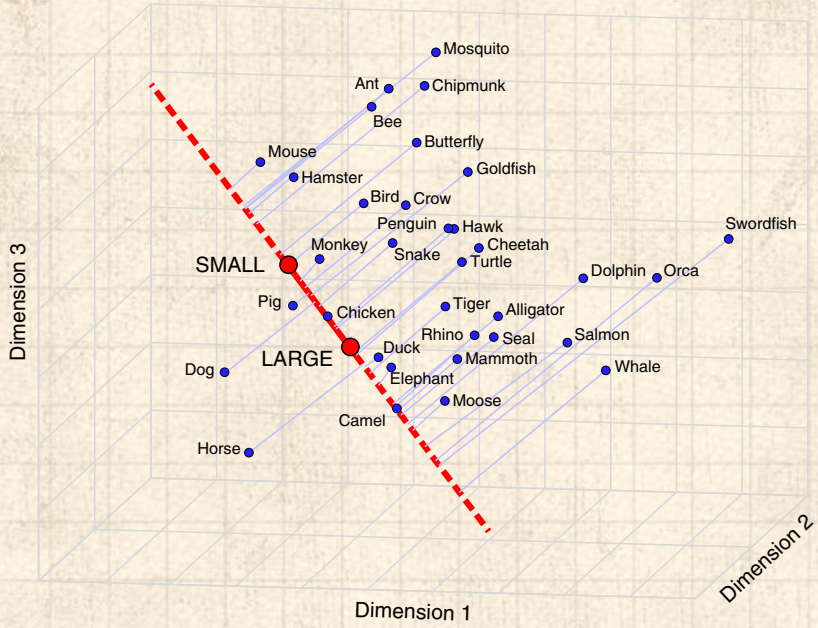


Fig. 1 | Schematic illustration of semantic projection. Word-vectors in the category ‘animals’ (blue circles) are orthogonally projected (light-blue lines) onto the feature subspace for ‘size’ (red line), defined as the vector difference between $\overrightarrow{\text{large}}$ and $\overrightarrow{\text{small}}$ (red circles). The three dimensions in this figure are arbitrary and were chosen via principal component analysis to enhance visualization (the original GloVe word embedding has 300 dimensions, and projection happens in that space). For an animated version of this figure, see Supplementary Video 1.

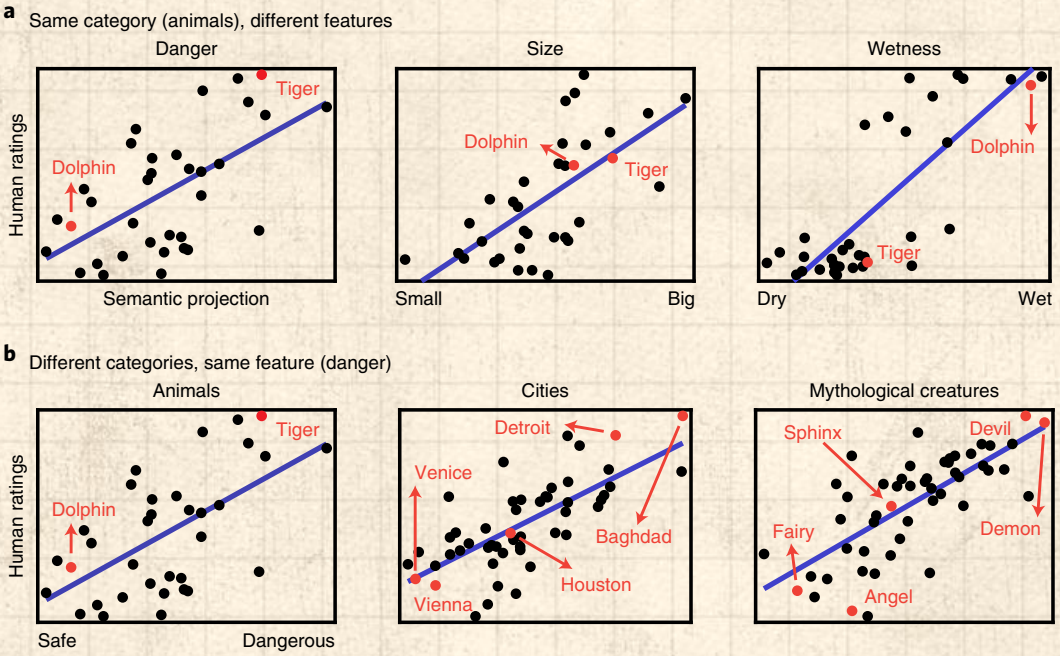


Fig. 2 | Semantic projection predicts human judgements: sample cases. a, Examples of three features for the same category (animals). Notice that the items—for instance, dolphin versus tiger—change their similarities to one another depending on context (feature), and semantic projection recovers these cross-feature differences. In other words, the model does not recover the same relationships across features. **b**, Examples of three categories for the same feature (danger). Sample items are highlighted in red for illustrative purposes. For descriptive and inferential statistics, see Table 1. Each panel is based on data from $n = 25$ participants.

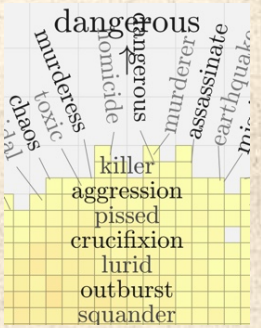


Fig. 4 | Semantic projection predicts human judgements: detailed results. For each of 52 category–feature pairs, scatterplots show the relationship between *z* scores of average item ratings across participants ($n = 25$; *y* axis) and ratings predicted by semantic projection (*x* axis). Correlation and pairwise order consistency (OC_p) values are presented below each scatterplot. Experiments for which both of these measures were significant are shown over a white background. Straight lines are linear regression fits to the data and, across figures, vary according to correlation strength from black (weak) to blue (strong).

Remeasuring meaning:


Obtaining Reliable Human Ratings of Valence, Arousal, and Dominance for 20,000 English Words
Saif M. Mohammad
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Moving beyond Likert scales:

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Abstract

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

NRC VAD Lexicon [12]

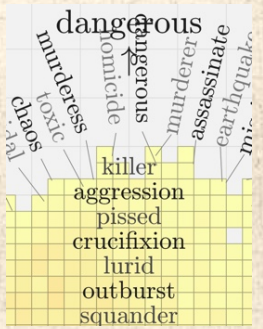
VAD endpoints:	Paradigm words and phrases presented to raters: [13]
highest valence	happiness, pleasure, positiveness, satisfaction, contentedness, hopefulness
lowest valence	unhappiness, annoyance, negativeness, dissatisfaction, melancholy, despair
highest arousal	arousal, activeness, stimulation, frenzy, 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—20,006 words[2]:

Numbersinaboxology format:

[2]Original study had 20,007 words. We removed one.



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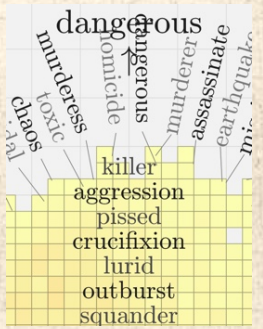

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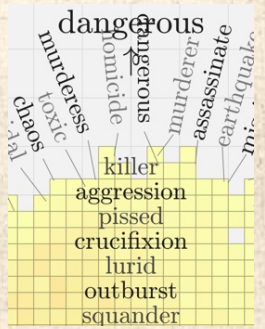

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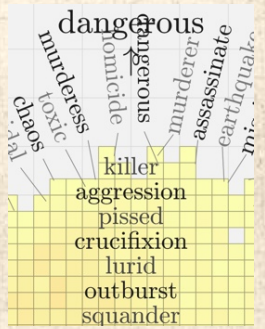

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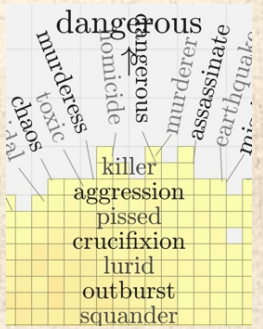

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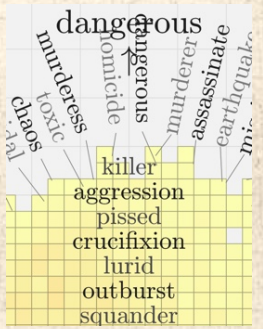

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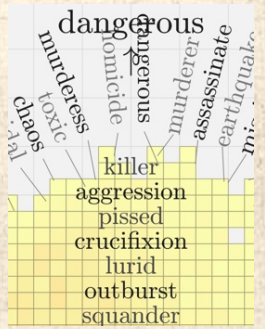

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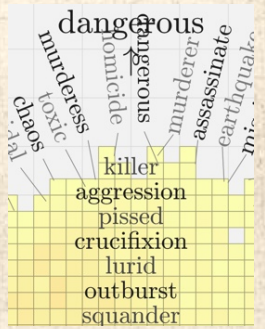

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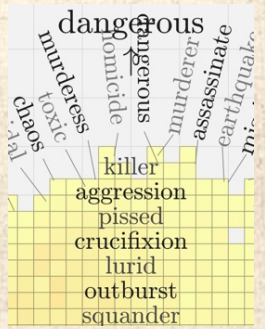

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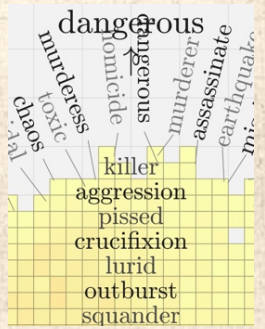

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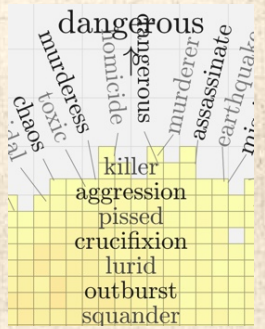

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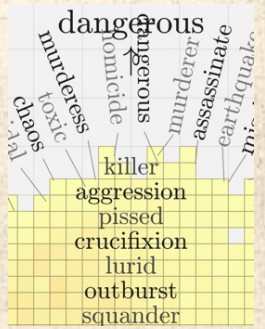
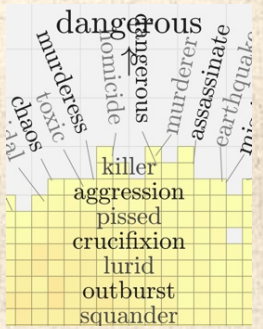




Ruh-roh

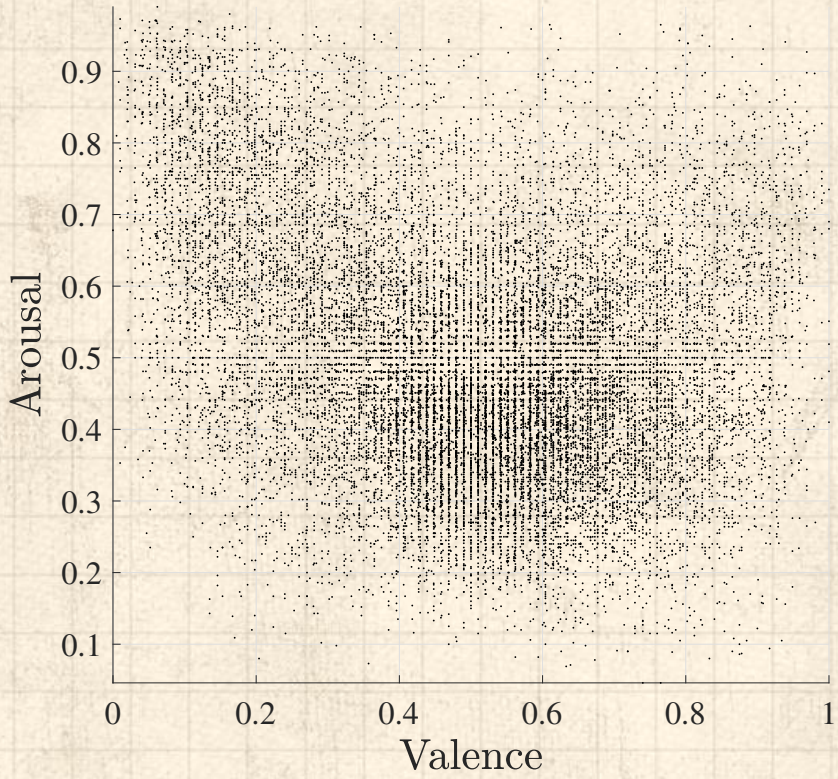
Standard[3] correlations suggests a bit of https://en.wiktionary.org/wiki/Barney_Rubble for orthogonality claims:

$$r_{\mathbf{Va},\mathbf{Ar}} \simeq -0.268,$$
$$r_{\mathbf{Ar},\mathbf{Dm}} \simeq +0.302,$$
$$r_{\mathbf{Dm},\mathbf{Va}} \simeq +0.488.$$

Compare these numbers with 0.

[3] Don't name fundamental scientific things after people.

The Delicious English Muffin of Meaning:[1]

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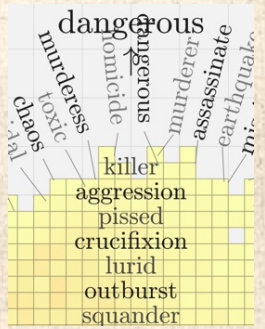
matlab
figmeaning_VAD3d001_demo
```

[1] Apricot jam, always.



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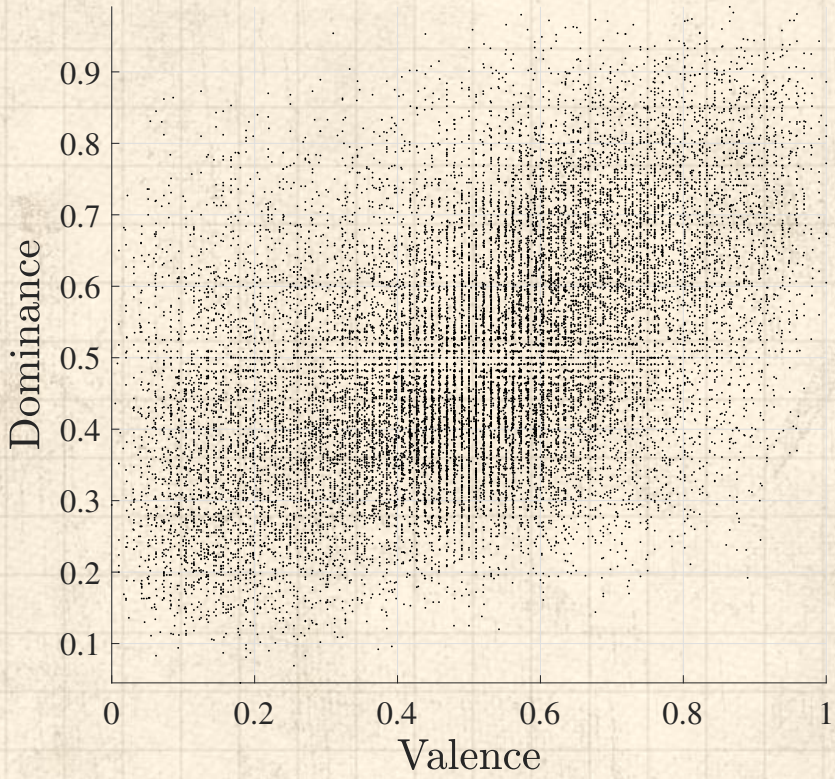


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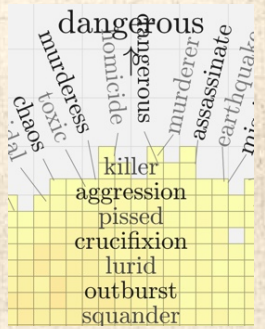

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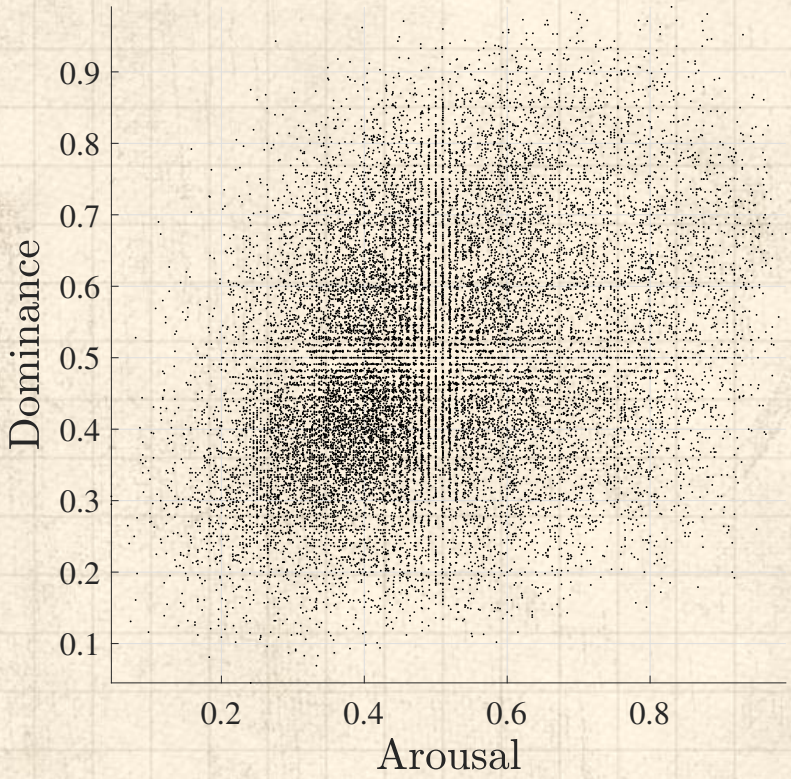


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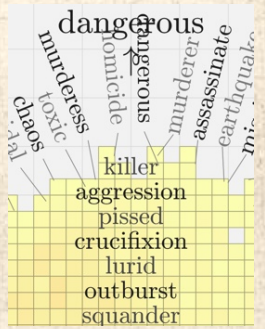

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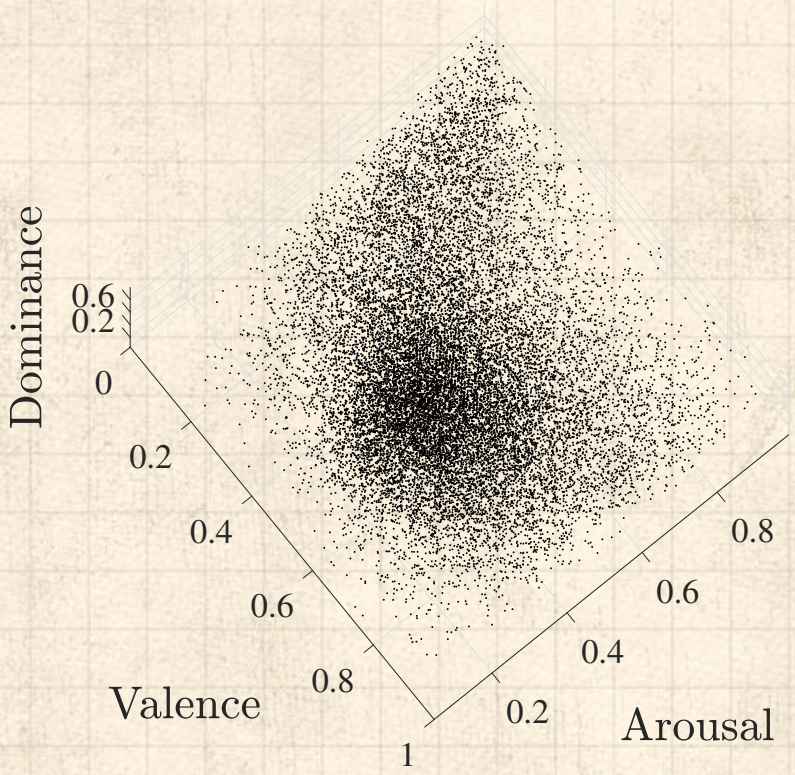


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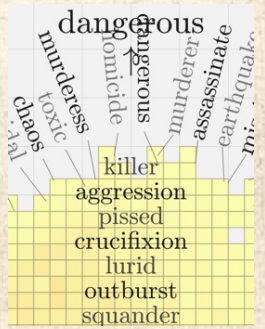
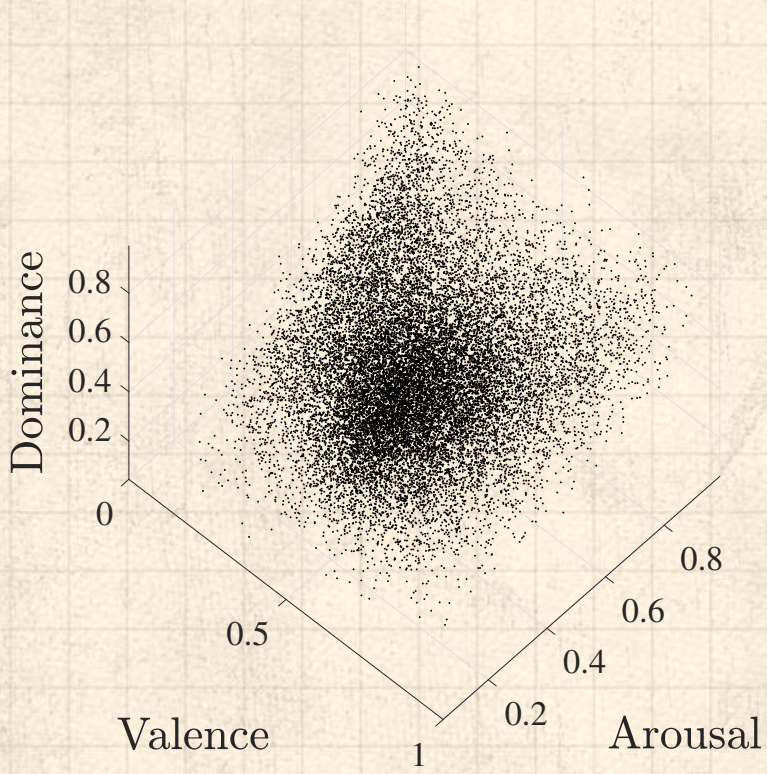


The Delicious English Muffin of Meaning:[1]

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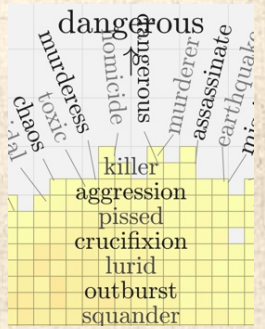

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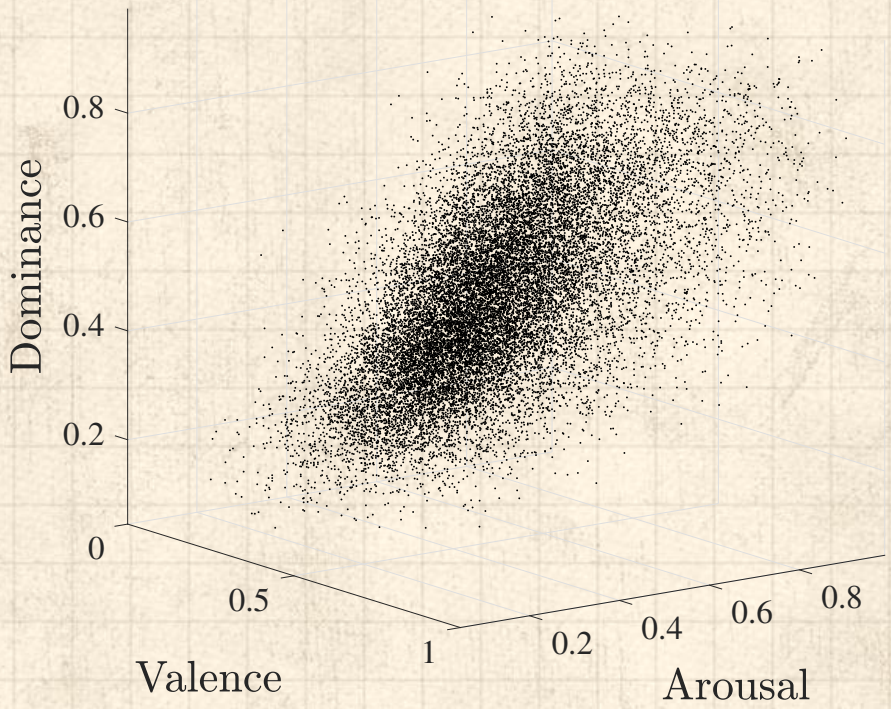


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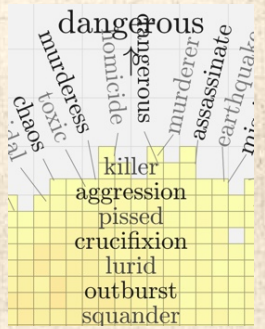
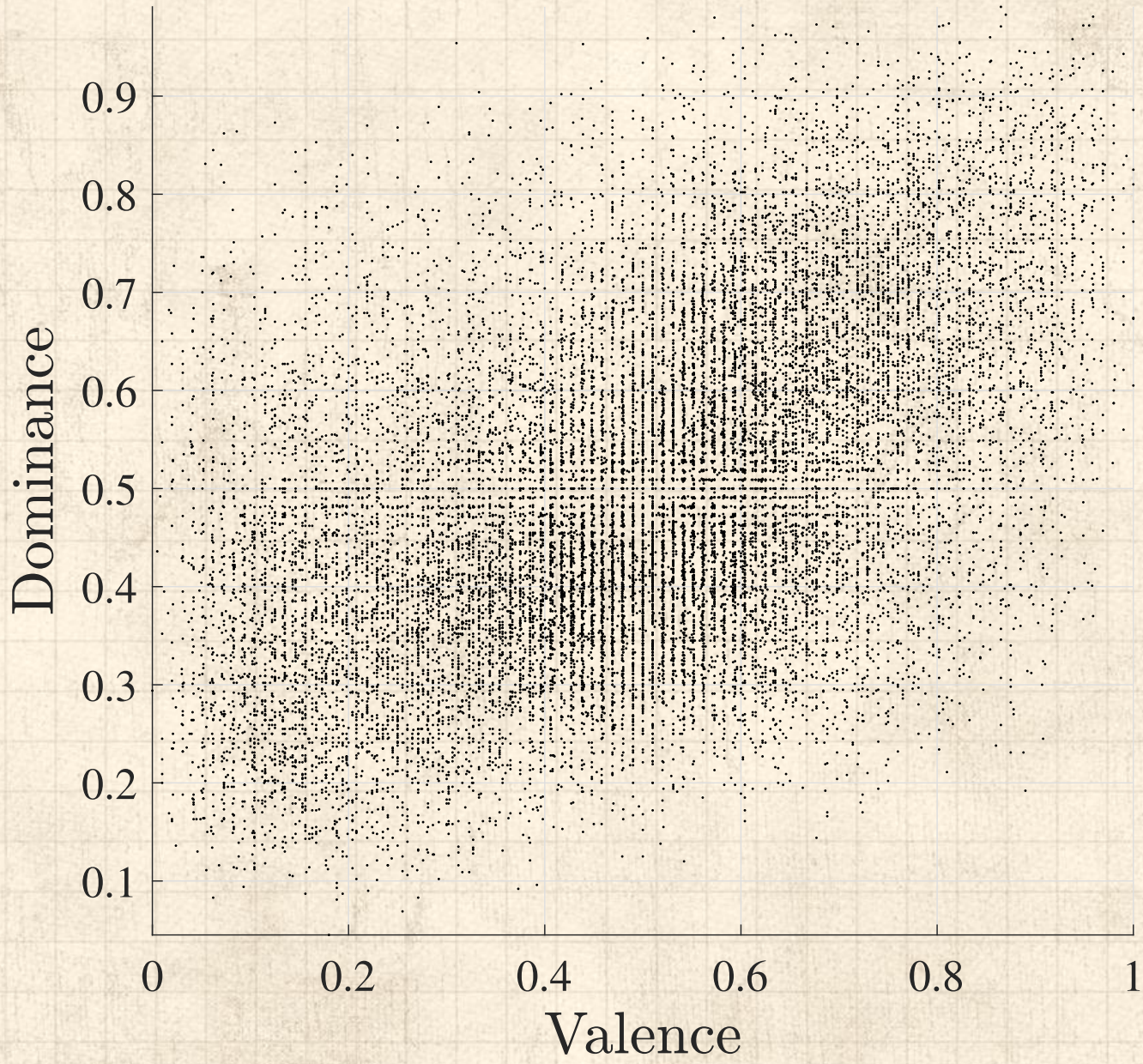
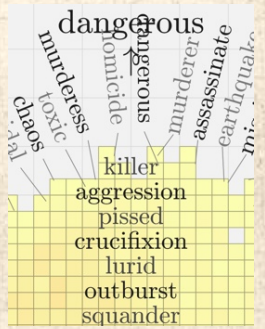


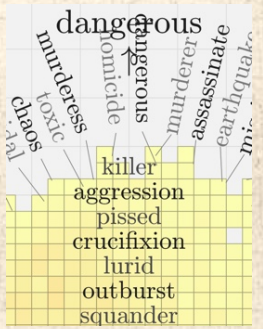
$R(\mathbf{Dm}, \mathbf{Va}) \simeq 0.488$





Release the Hounds by which we mean Singular Value Decomposition:

Variance explained:



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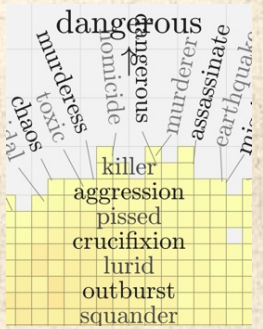

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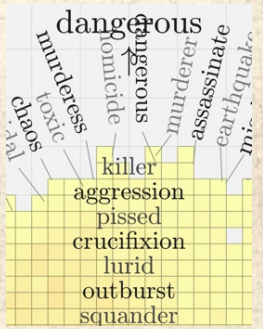

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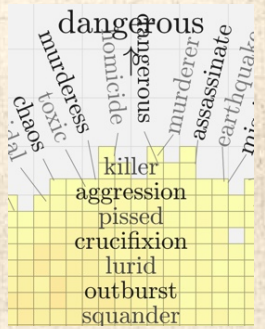

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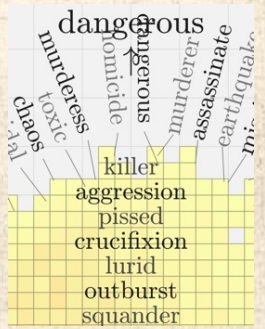

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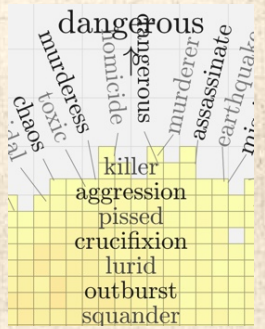

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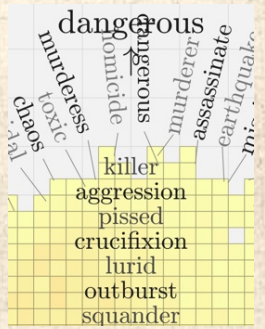

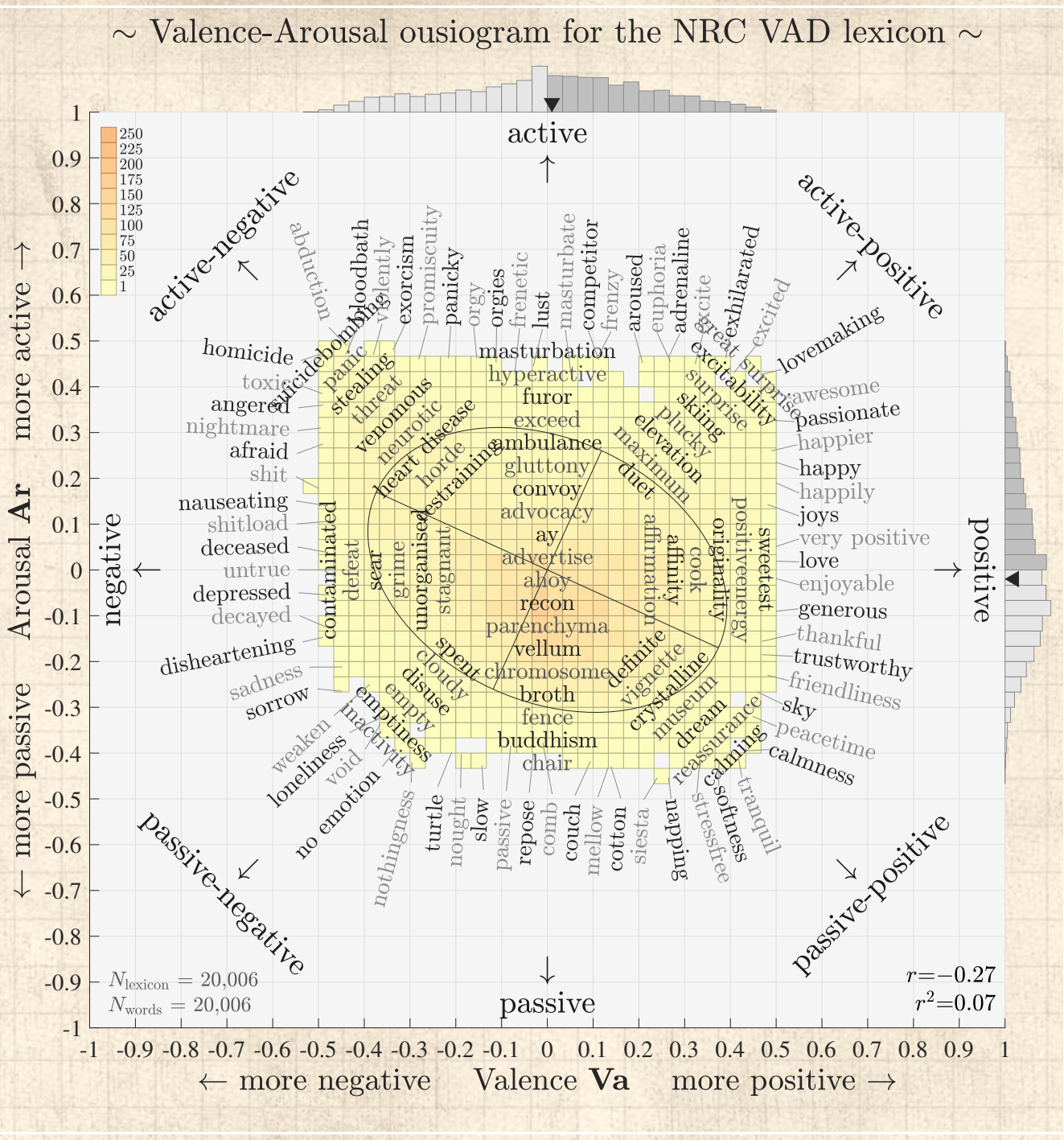

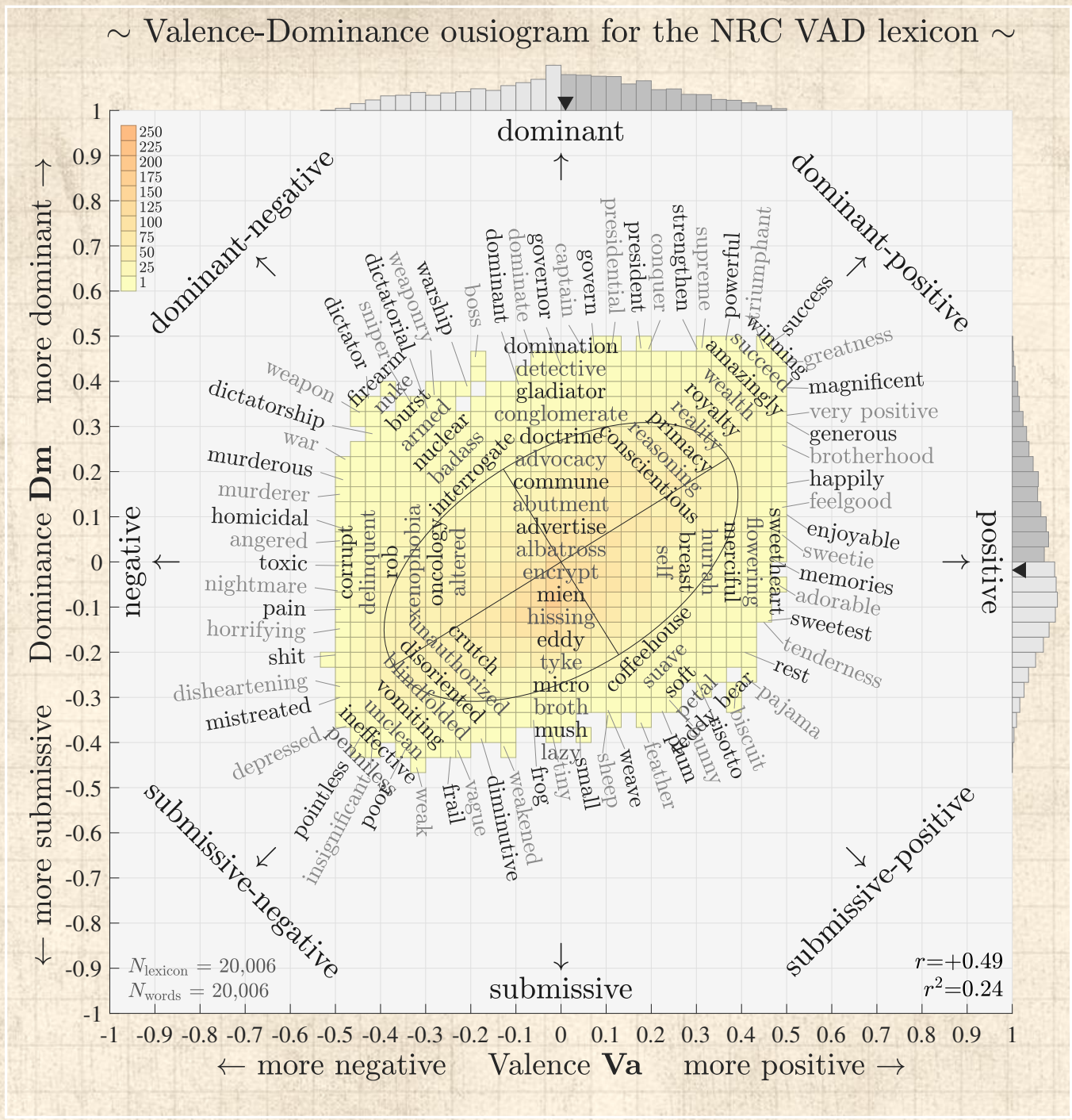

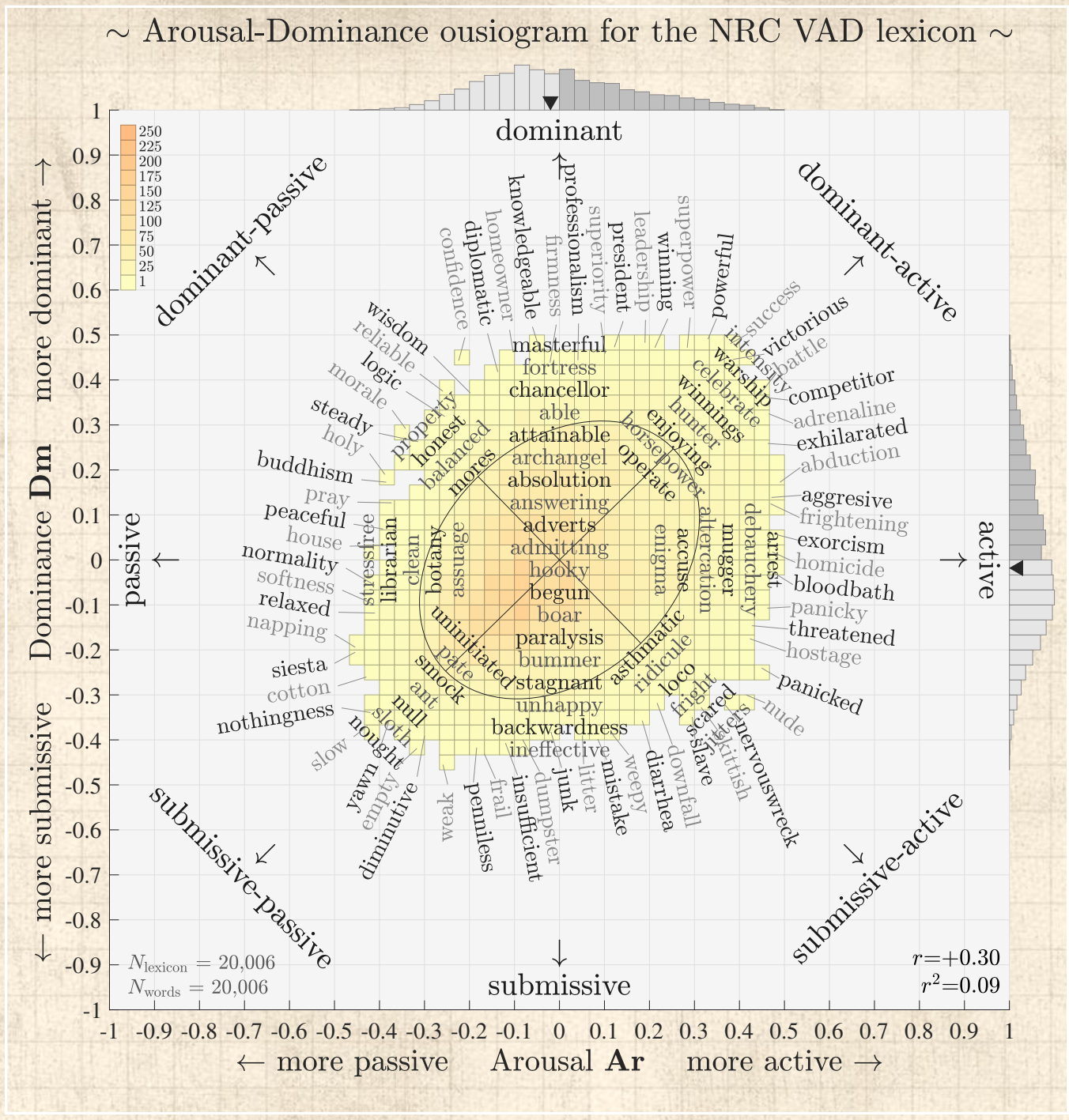

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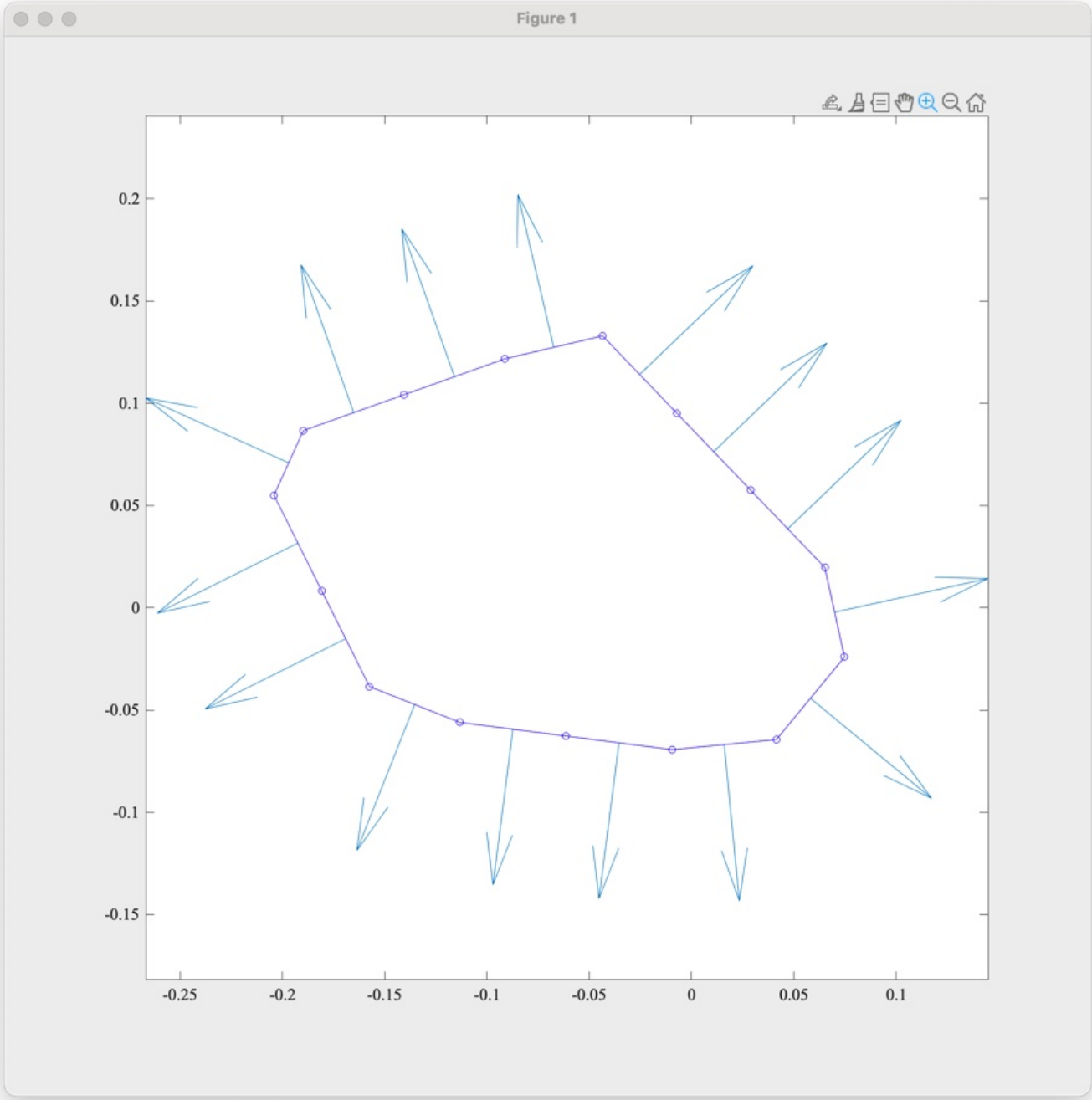

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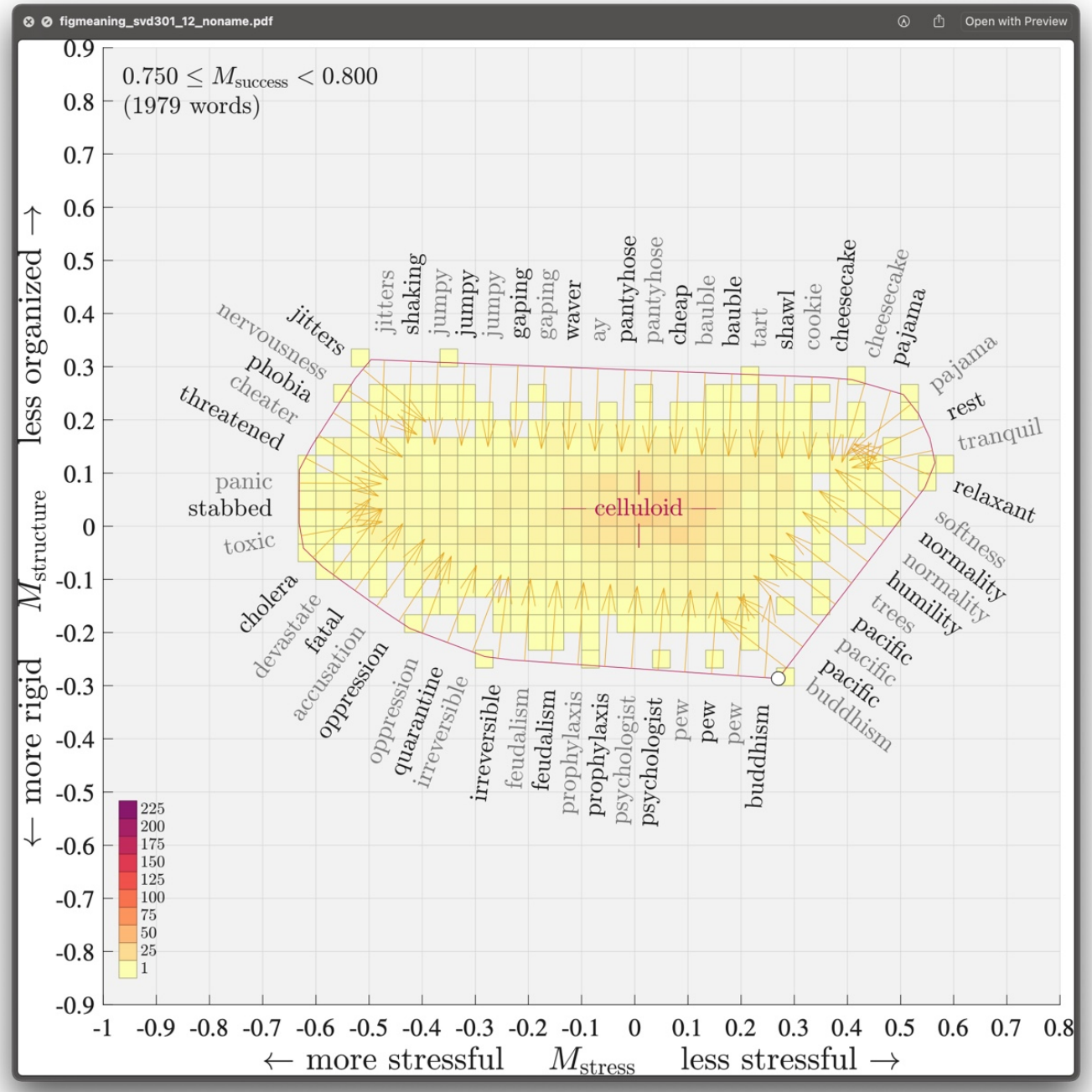
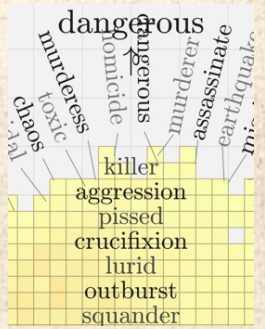
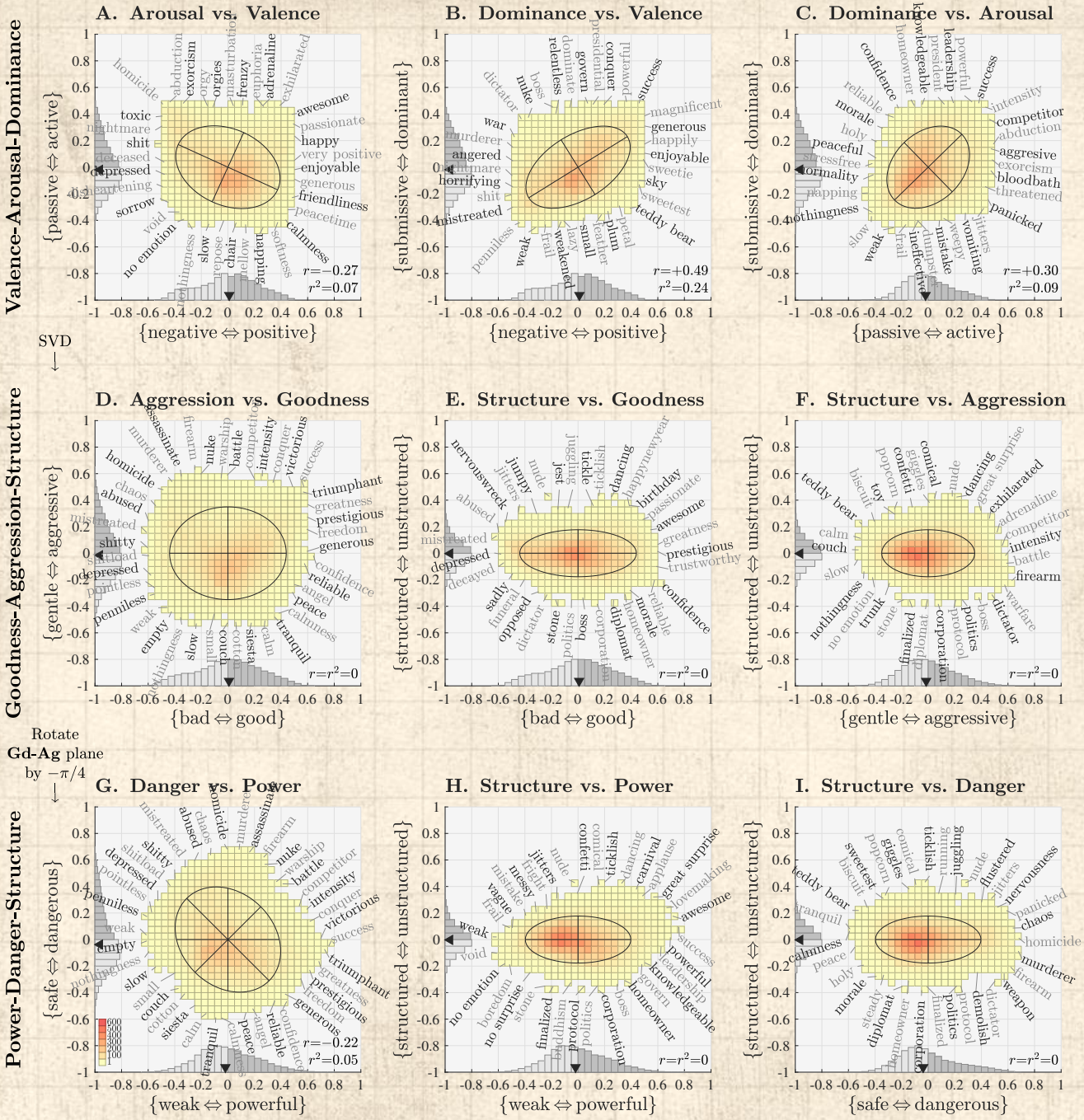
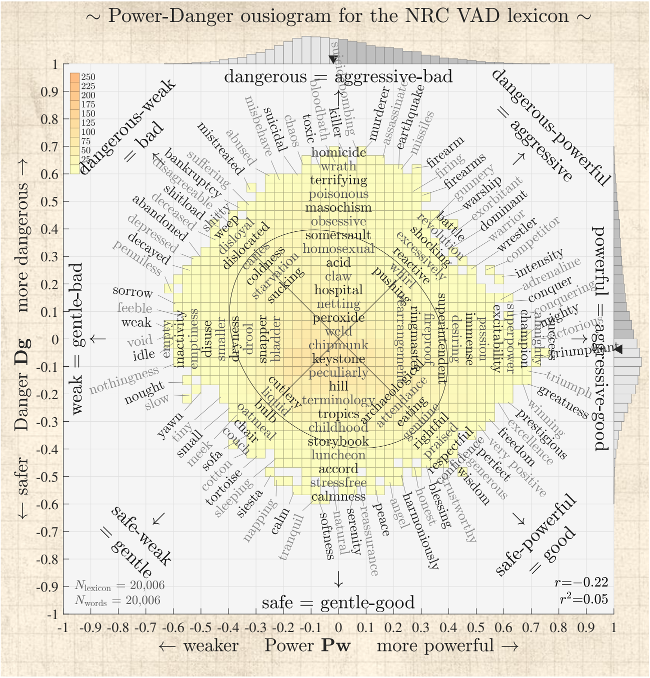


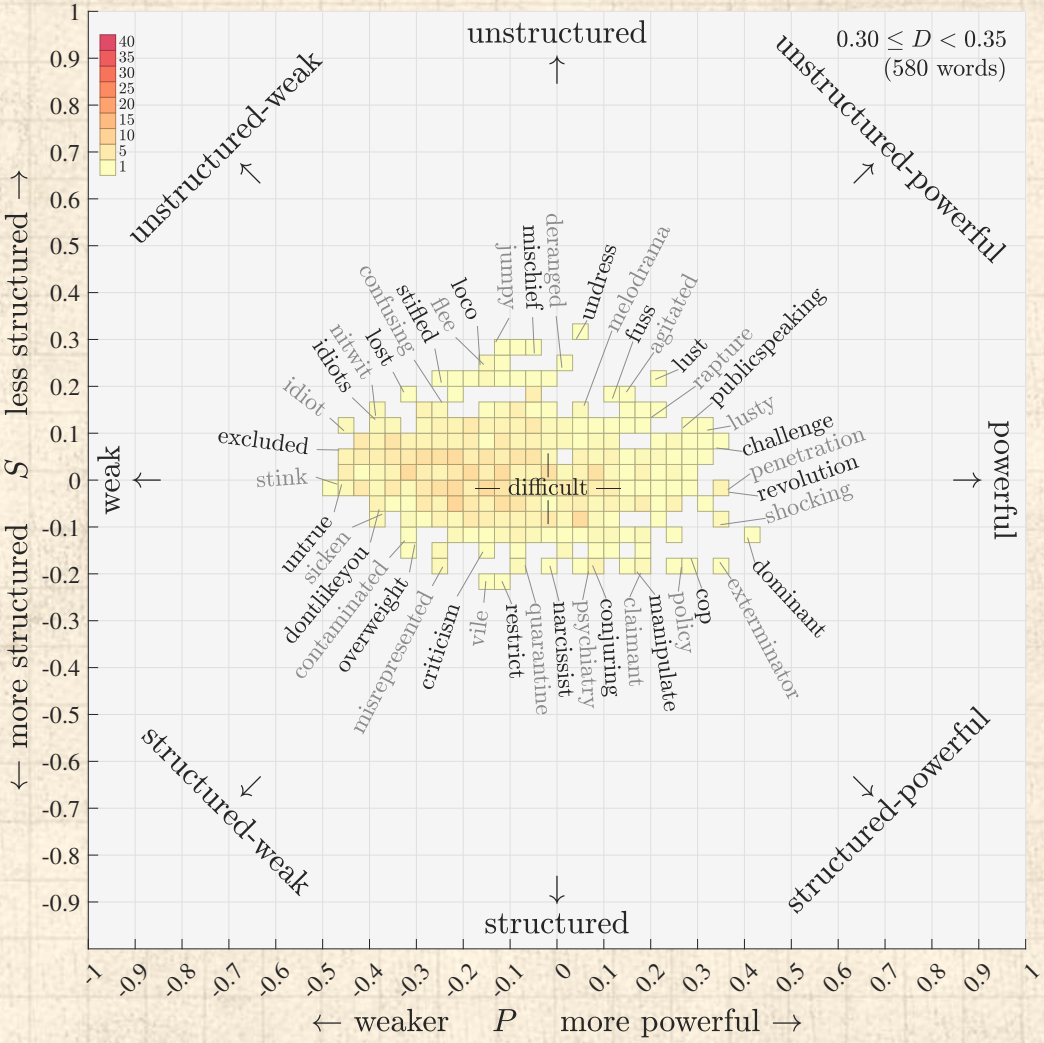


Ousiograms for the NRC VAD lexicon in the VAD, GAS, and PDS frameworks:





Ousiometric slices—MRIs of Meaning

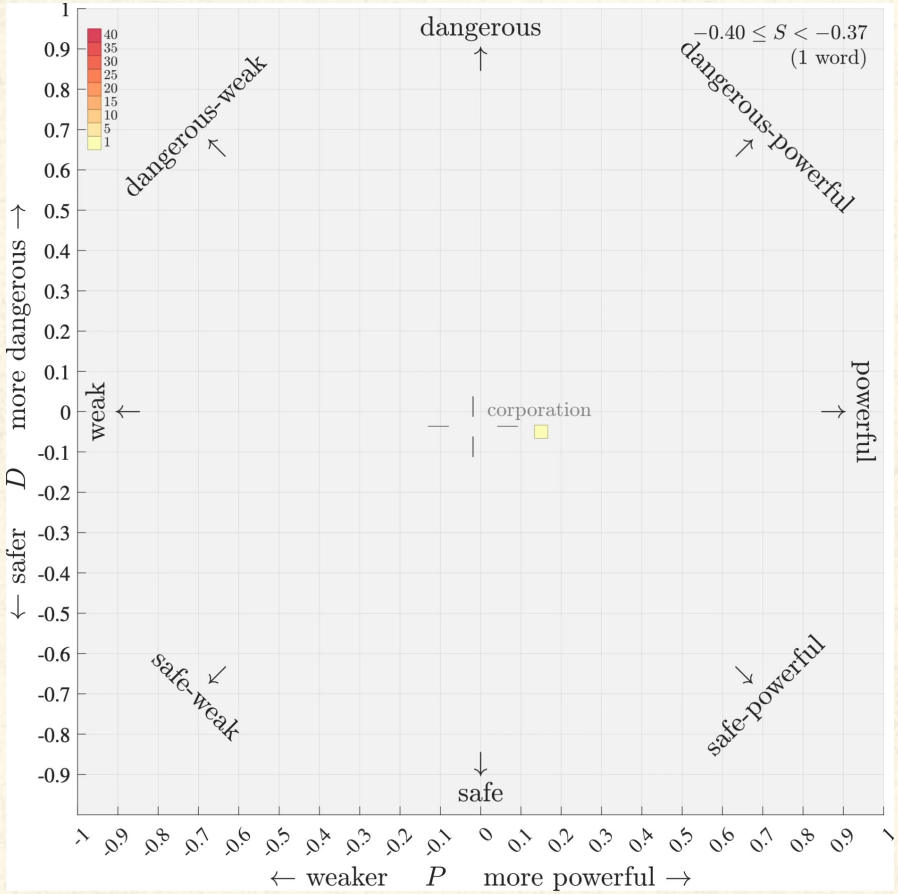


Slices of Structure Flipbook

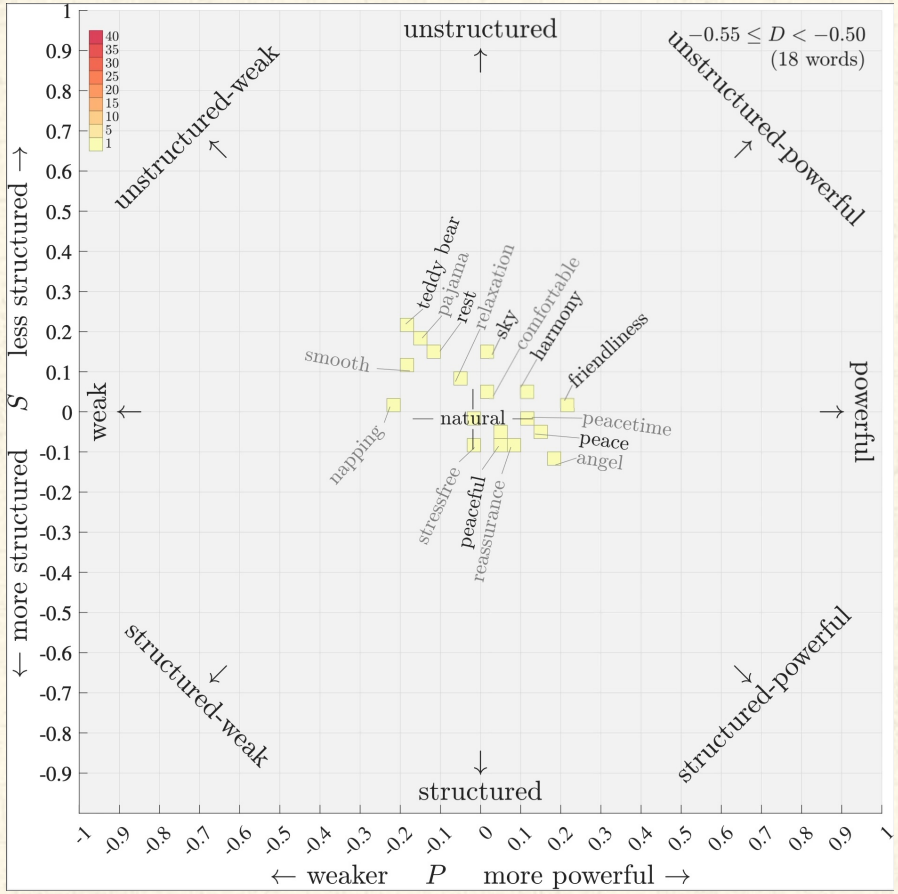
Slices of Danger Flipbook

Slices of Power Flipbook

{powerful ⇔ weak} vs {dangerous ⇔ safe}



{powerful ⇔ weak} vs {structured ⇔ unstructured}



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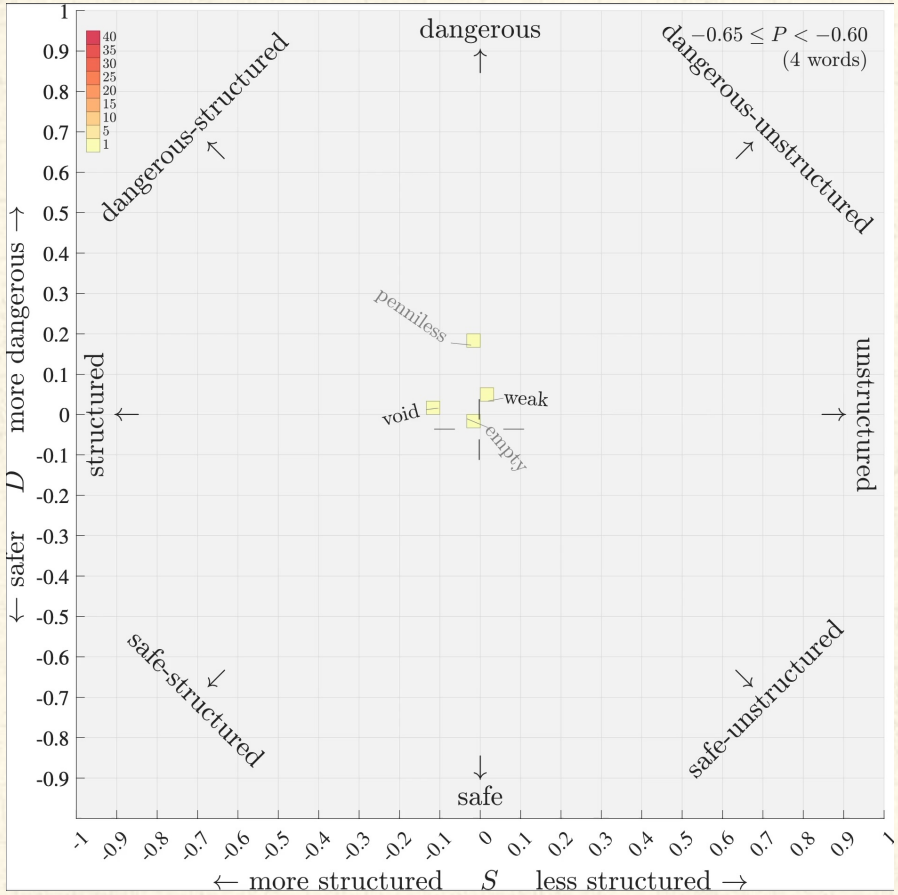
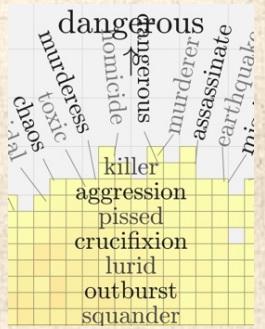


Outline



Extremonyms: Synousionyms and Antousionyms:

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

Synousionyms	Valence	Arousal	Dominance	Goodness	Aggression	Structure	Power	Danger	Structure
Anchor: wisdom	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	Aggression	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 (Aggressive-Good) to Weak (Gentle-Bad) axis:

Synousionyms	Valence	Arousal	Dominance	Goodness	Aggression	Structure	Power	Danger	Structure
Anchor: success	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	Aggression	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:

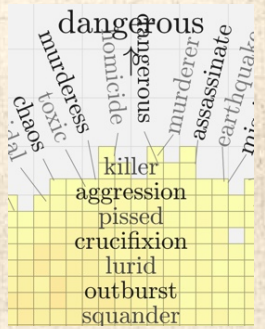
Dangerous-Powerful (Aggressive) to Safe-Weak (Gentle) axis:

Synousionyms	Valence	Arousal	Dominance	Goodness	Aggression	Structure	Power	Danger	Structure
Anchor: volcanic	-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	Aggression	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 (Aggressive-Bad) to Safe (Gentle-Good) axis:

Synousionyms	Valence	Arousal	Dominance	Goodness	Aggression	Structure	Power	Danger	Structure
Anchor: homicide	-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	Aggression	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

Outline



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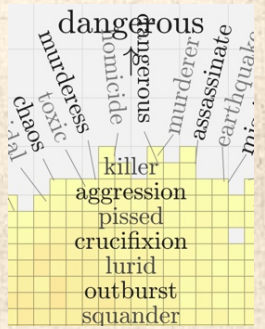

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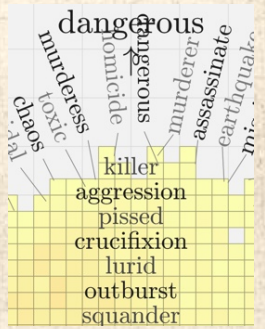

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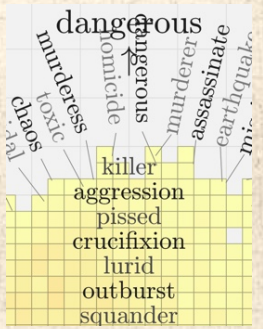

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After much staring at the ceiling:

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- 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-Aggression-Structure (GAS) (okay)

Etymological, taxonomic, and nomenclatural madnesses:

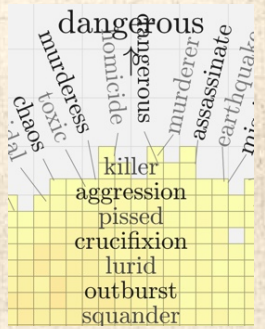
- Physics: Power was once sometimes called Activity
- Danger and Dominance trace back to Dominus (~ lord/ruler/person of power)
- Framing words for EPA, VAD, etc., matter greatly.

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-Aggression-Structure (GAS) (okay)
- Power-Danger-Structure (PDS) (also okay)



Connections between meaning dimensions:

$$\begin{bmatrix} \mathbf{Gd} \\ \mathbf{Ag} \\ \mathbf{St} \end{bmatrix} = \mathbf{U}^{\mathrm{T}} \begin{bmatrix} \mathbf{Va} \\ \mathbf{Ar} \\ \mathbf{Dm} \end{bmatrix} \simeq \begin{bmatrix} +0.86 & -0.15 & +0.48 \\ -0.16 & +0.83 & +0.54 \\ +0.48 & +0.55 & -0.69 \end{bmatrix} \begin{bmatrix} \mathbf{Va} \\ \mathbf{Ar} \\ \mathbf{Dm} \end{bmatrix}$$

$$\begin{bmatrix} \mathbf{Pw} \\ \mathbf{Dg} \\ \mathbf{St} \end{bmatrix} = \mathbf{R}_{\pi/4} \begin{bmatrix} \mathbf{Gd} \\ \mathbf{Ag} \\ \mathbf{St} \end{bmatrix} = \frac{1}{\sqrt{2}} \begin{bmatrix} 1 & 1 & 0 \\ -1 & 1 & 0 \\ 0 & 0 & 1 \end{bmatrix} \begin{bmatrix} \mathbf{Gd} \\ \mathbf{Ag} \\ \mathbf{St} \end{bmatrix}$$

$$\begin{bmatrix} \mathbf{Pw} \\ \mathbf{Dg} \\ \mathbf{St} \end{bmatrix} = \mathbf{R}_{\pi/4}\mathbf{U}^{\mathrm{T}} \begin{bmatrix} \mathbf{Va} \\ \mathbf{Ar} \\ \mathbf{Dm} \end{bmatrix} \simeq \begin{bmatrix} +0.53 & +0.45 & +0.72 \\ -0.70 & +0.71 & +0.07 \\ +0.48 & +0.55 & -0.69 \end{bmatrix} \begin{bmatrix} \mathbf{Va} \\ \mathbf{Ar} \\ \mathbf{Dm} \end{bmatrix}$$

$$\begin{bmatrix} \mathbf{Va} \\ \mathbf{Ar} \\ \mathbf{Dm} \end{bmatrix} = \mathbf{U}\mathbf{R}_{-\pi/4} \begin{bmatrix} \mathbf{Pw} \\ \mathbf{Dg} \\ \mathbf{St} \end{bmatrix} \simeq \begin{bmatrix} +0.53 & -0.70 & +0.48 \\ +0.45 & +0.71 & +0.55 \\ +0.72 & +0.07 & -0.69 \end{bmatrix} \begin{bmatrix} \mathbf{Pw} \\ \mathbf{Dg} \\ \mathbf{St} \end{bmatrix}$$

Neutral Structure

← safe		dangerous →
gentle safe weak	safe safe	good safe powerful
weak weak	neutral neutral	powerful powerful
bad dangerous weak	dangerous dangerous	aggressive dangerous powerful

Danger **Dg**

← weak — Power **Pw** — powerful →

Structured

corrupted structured dangerous weak	authoritarian structured dangerous	tyrannical structured dangerous powerful
frozen structured weak	structured structured	commanding structured powerful
routine structured safe weak	canonical structured safe	wise structured safe powerful

dangerous → / Danger **Dg** / ← safe

← weak — Power **Pw** — powerful →

Unstructured

suffering unstructured dangerous weak	**reckless** unstructured dangerous	**primal** unstructured dangerous powerful
inchoate unstructured weak	**unstructured** unstructured	**frolicsome** unstructured powerful
whimsical unstructured safe weak	**nurturing** unstructured safe	**playful** unstructured safe powerful

dangerous →

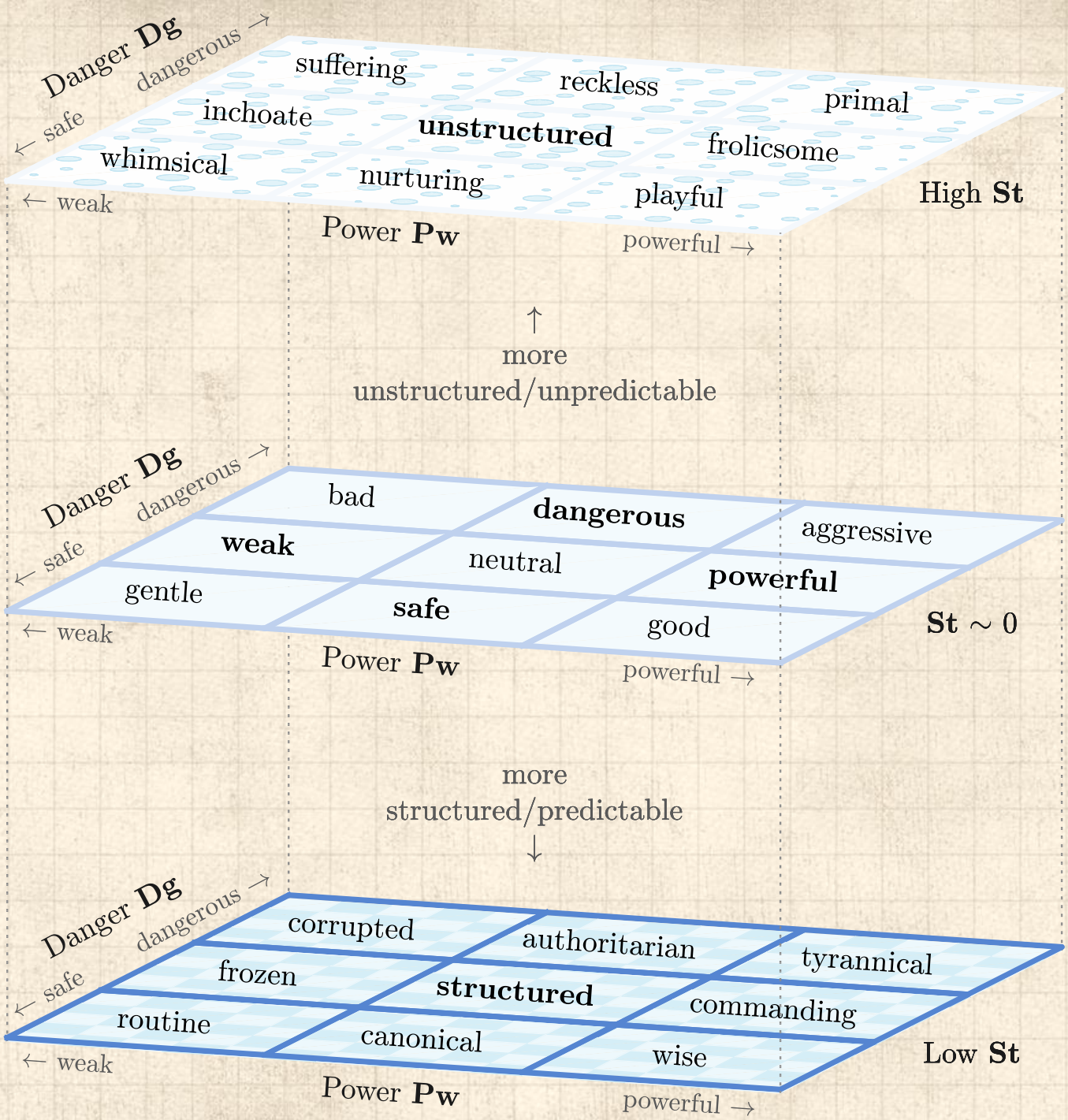
Danger **Dg**

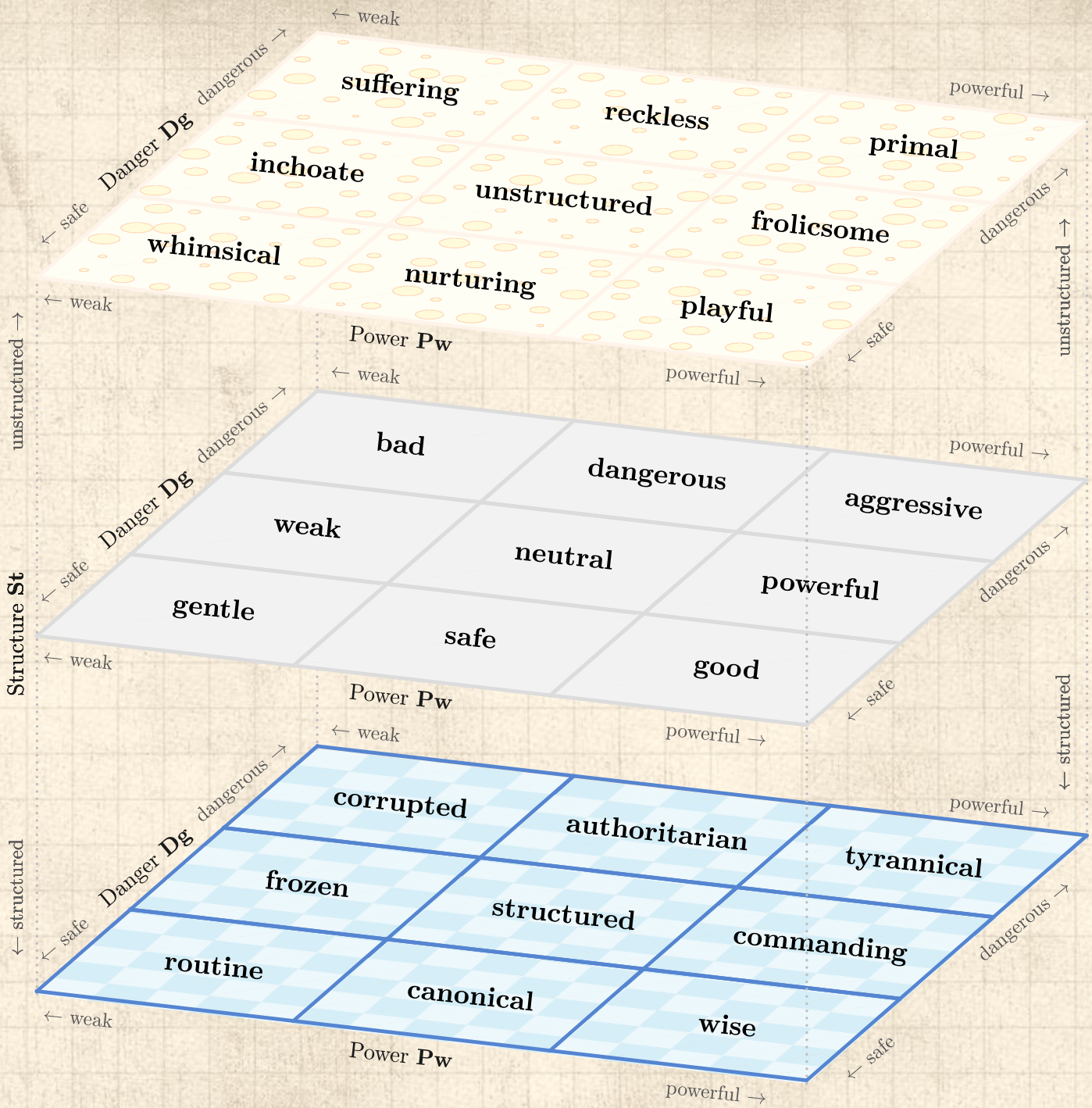
← safe

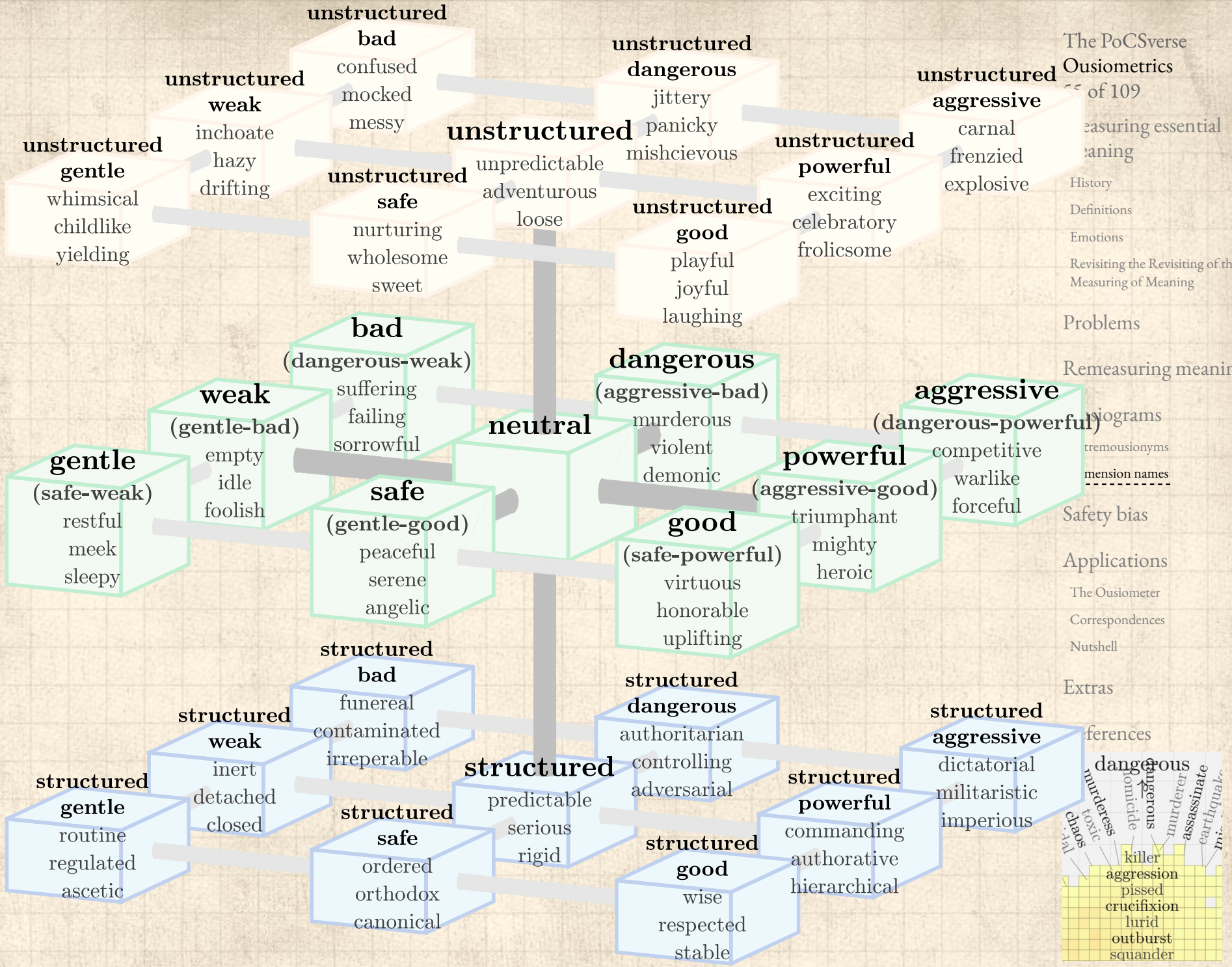
← weak

Power **Pw**

powerful →






unstructured
bad
confused
mocked
messy
unstructured
weak
inchoate
hazy
drifting
unstructured
gentle
whimsical
childlike
yielding
unstructured
safe
nurturing
wholesome
sweet
unstructured
dangerous
jittery
panicky
mishcievous
unstructured
unpredictable
adventurous
loose
unstructured
good
playful
joyful
laughing
unstructured
powerful
exciting
celebratory
frolicsome
unstructured
aggressive
carnal
frenzied
explosive
bad
(dangerous-weak)
suffering
failing
sorrowful
weak
(gentle-bad)
empty
idle
foolish
gentle
(safe-weak)
restful
meek
sleepy
safe
(gentle-good)
peaceful
serene
angelic
neutral
dangerous
(aggressive-bad)
murderous
violent
demonic
good
(safe-powerful)
virtuous
honorable
uplifting
powerful
(aggressive-good)
triumphant
mighty
heroic
aggressive
(dangerous-powerful)
competitive
warlike
forceful
structured
bad
funereal
contaminated
irreperable
structured
weak
inert
detached
closed
structured
gentle
routine
regulated
ascetic
structured
safe
ordered
orthodox
canonical
structured
predictable
serious
rigid
structured
dangerous
authoritarian
controlling
adversarial
structured
good
wise
respected
stable
structured
powerful
commanding
authorative
hierarchical
structured
aggressive
dictatorial
militaristic
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Nutshell
Extras
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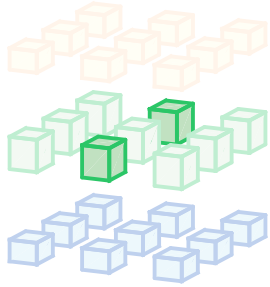
dangerous
murderess
toxic
chaos
homicide
dangerous
murderer
assassinate
earthquake
killer
aggression
pissed
crucifixion
lurid
outburst
squander

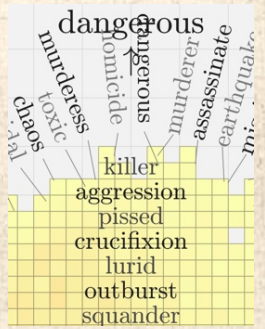
safe ⇐  ⇒ **dangerous**

(gentle-good)
peaceful
serene
angelic

(aggressive-bad)
murderous
violent
demonic

Word	Comp. Size	Size	Angle	Cos.	Pw	Dg	St
1. **calmness**	77.1	77.9	7.9	0.99	-0.05	-0.59	0.07
2. **tranquil**	76.7	78.3	11.6	0.98	-0.09	-0.59	0.08
3. **relaxant**	73.7	75.5	12.5	0.98	-0.11	-0.56	0.05
4. **softness**	73.2	74.1	8.6	0.99	-0.08	-0.56	0.02
5. **calming**	72.7	74.3	12.0	0.98	-0.10	-0.56	0.07
6. **relaxed**	72.0	73.3	10.8	0.98	-0.10	-0.55	0.03
7. **peace**	71.8	74.3	14.9	0.97	0.14	-0.55	-0.06
8. **serenity**	71.5	72.3	8.4	0.99	0.06	-0.55	-0.05
9. **comfortable**	70.8	71.1	5.3	1.00	0.03	-0.54	0.04
10. **peacetime**	70.8	72.7	13.3	0.97	0.13	-0.54	-0.01
11. **peaceful**	69.6	70.7	10.3	0.98	0.05	-0.53	-0.09
12. **stressfree**	69.1	70.1	9.7	0.99	-0.01	-0.53	-0.09
13. **reassurance**	68.5	70.1	12.5	0.98	0.08	-0.52	-0.09
14. **natural**	67.9	68.1	3.6	1.00	-0.02	-0.52	-0.03
15. **sky**	67.8	70.4	15.6	0.96	0.03	-0.52	0.14
16. **harmony**	66.7	68.4	13.0	0.97	0.10	-0.51	0.06
17. **relaxation**	66.4	67.6	10.9	0.98	-0.06	-0.51	0.08
18. **tranquility**	65.3	65.6	5.4	1.00	-0.05	-0.50	0.00
19. **relaxing**	64.4	64.5	0.7	1.00	-0.01	-0.49	-0.00
20. **teatime**	64.4	66.9	15.9	0.96	-0.11	-0.49	0.09

Word	Comp. Size	Size	Angle	Cos.	Pw	Dg	St
1. **homicide**	89.0	89.0	179.0	-1.00	-0.01	0.68	0.01
2. **murderer**	88.5	89.9	169.9	-0.98	0.08	0.68	-0.09
3. **abduction**	86.5	88.8	166.9	-0.97	0.14	0.66	-0.06
4. **murderous**	86.3	88.6	166.8	-0.97	0.10	0.66	-0.12
5. **suicidebombing**	86.2	87.1	171.5	-0.99	0.08	0.66	-0.06
6. **killer**	86.0	86.1	177.5	-1.00	0.03	0.66	0.01
7. **dangerous**	85.9	87.6	168.8	-0.98	0.09	0.66	-0.10
8. **assassinate**	85.9	89.6	163.4	-0.96	0.16	0.66	-0.11
9. **terrorist**	85.1	87.4	166.8	-0.97	0.10	0.65	-0.12
10. **gunfight**	85.0	88.0	165.1	-0.97	0.14	0.65	-0.10
11. **gunshot**	85.0	87.1	167.4	-0.98	0.11	0.65	-0.09
12. **terrorism**	84.9	87.2	167.0	-0.97	0.13	0.65	-0.07
13. **aggresive**	84.8	86.2	169.8	-0.98	0.11	0.65	-0.05
14. **terrorists**	84.5	87.1	165.7	-0.97	0.14	0.65	-0.08
15. **tsunami**	84.3	86.7	166.4	-0.97	0.12	0.65	-0.10
16. **violate**	83.9	84.0	176.6	-1.00	0.02	0.64	0.03
17. **bloodbath**	83.8	84.2	174.2	-0.99	-0.01	0.64	0.06
18. **slaughter**	83.7	84.3	173.2	-0.99	0.07	0.64	-0.04
19. **psychopath**	83.5	83.5	179.2	-1.00	0.01	0.64	-0.00
20. **hell**	83.3	83.6	175.8	-1.00	0.01	0.64	-0.05



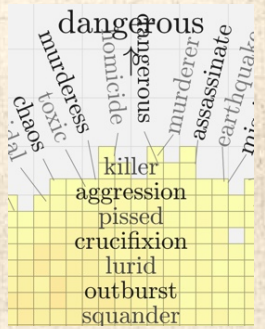
gentle ⇐ ⇒ aggressive

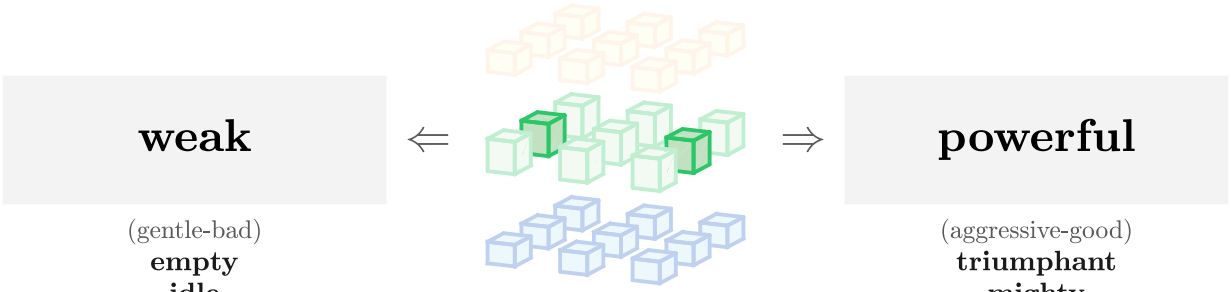
(safe-weak)
restful
meek
sleepy

(dangerous-powerful)
competitive
warlike
forceful

Word	Comp. Size	Size	Angle	Cos.	Pw	Dg	St
1. **couch**	68.4	68.5	2.8	1.00	-0.37	-0.37	0.03
2. **cotton**	67.5	68.0	6.6	0.99	-0.32	-0.41	0.01
3. **tortoise**	66.8	67.9	10.6	0.98	-0.30	-0.43	0.03
4. **mellow**	65.9	66.4	7.5	0.99	-0.31	-0.40	-0.01
5. **pasture**	65.5	67.9	15.2	0.97	-0.31	-0.39	0.12
6. **pillow**	65.1	66.3	11.2	0.98	-0.32	-0.39	0.09
7. **lawn**	63.1	65.3	15.0	0.97	-0.30	-0.39	0.11
8. **quilt**	63.0	63.7	8.3	0.99	-0.31	-0.37	0.05
9. **chair**	62.2	62.5	5.3	1.00	-0.33	-0.34	-0.04
10. **sleeping**	61.6	64.5	17.3	0.95	-0.23	-0.44	0.00
11. **asleep**	61.6	61.8	4.8	1.00	-0.31	-0.36	-0.01
12. **sofa**	61.0	61.0	2.5	1.00	-0.32	-0.34	-0.01
13. **sleepy**	60.3	60.4	3.8	1.00	-0.31	-0.34	0.02
14. **meek**	59.7	60.5	9.2	0.99	-0.37	-0.28	0.03
15. **subtle**	59.5	62.4	17.6	0.95	-0.25	-0.39	0.11
16. **minimized**	58.9	61.1	15.4	0.96	-0.41	-0.23	-0.02
17. **pear**	58.9	60.6	13.7	0.97	-0.26	-0.37	0.08
18. **napkin**	58.5	60.4	14.3	0.97	-0.40	-0.24	-0.01
19. **teacup**	57.9	58.5	8.3	0.99	-0.27	-0.36	0.02
20. **sheep**	57.9	60.2	16.0	0.96	-0.33	-0.29	0.12

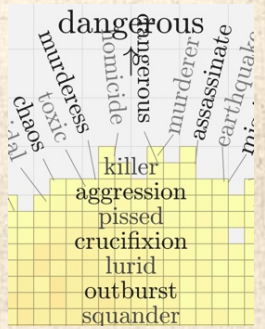
Word	Comp. Size	Size	Angle	Cos.	Pw	Dg	St
1. **battle**	76.8	77.4	172.7	-0.99	0.41	0.42	-0.08
2. **warship**	73.9	76.9	163.9	-0.96	0.36	0.44	-0.15
3. **firepower**	72.1	72.3	175.7	-1.00	0.37	0.41	-0.03
4. **counterattack**	71.8	74.0	166.1	-0.97	0.30	0.48	-0.04
5. **bang**	70.5	73.4	163.7	-0.96	0.27	0.49	-0.03
6. **warrior**	69.4	72.2	163.9	-0.96	0.45	0.30	-0.11
7. **artillery**	68.3	68.9	172.4	-0.99	0.33	0.41	-0.05
8. **dominant**	67.9	70.1	165.5	-0.97	0.41	0.33	-0.12
9. **tornado**	67.8	70.9	162.8	-0.96	0.28	0.46	-0.09
10. **shelling**	67.6	68.5	171.1	-0.99	0.32	0.42	-0.04
11. **hurricanes**	67.4	69.7	165.4	-0.97	0.29	0.44	-0.08
12. **volcanic**	67.3	68.0	171.7	-0.99	0.32	0.41	-0.04
13. **wild**	67.1	68.6	167.9	-0.98	0.29	0.44	-0.03
14. **showdown**	66.2	68.9	163.8	-0.96	0.26	0.46	0.02
15. **revolution**	66.1	66.2	176.8	-1.00	0.37	0.35	-0.03
16. **gunslinger**	66.0	67.8	166.8	-0.97	0.31	0.40	-0.10
17. **fighting**	65.8	68.1	165.4	-0.97	0.29	0.43	-0.08
18. **explode**	65.4	68.2	163.8	-0.96	0.27	0.44	-0.08
19. **overbearing**	65.1	68.2	162.8	-0.96	0.33	0.37	-0.15
20. **combat**	65.0	67.8	163.3	-0.96	0.31	0.40	-0.14

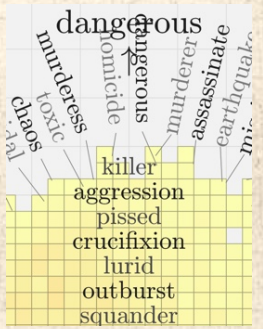


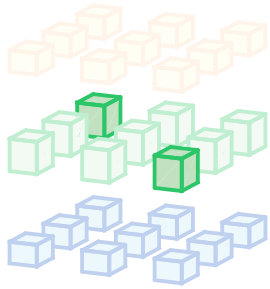


Word	Comp. Size	Size	Angle	Cos.	Pw	Dg	St
1. **weak**	80.0	80.2	3.6	1.00	-0.61	0.03	0.02
2. **void**	79.7	80.9	9.7	0.99	-0.61	0.02	-0.10
3. **empty**	79.7	79.8	3.3	1.00	-0.61	-0.01	-0.03
4. **penniless**	79.4	82.6	15.9	0.96	-0.61	0.17	-0.02
5. **idle**	78.3	78.9	6.6	0.99	-0.60	-0.01	-0.07
6. **sloth**	77.6	78.5	9.0	0.99	-0.59	-0.05	-0.08
7. **nothingness**	77.5	80.4	15.4	0.96	-0.59	-0.09	-0.14
8. **sorrow**	77.4	80.9	16.9	0.96	-0.59	0.13	-0.13
9. **insignificant**	75.7	78.4	15.1	0.97	-0.58	0.15	-0.04
10. **hopeless**	75.7	78.0	13.8	0.97	-0.58	0.14	-0.04
11. **tasteless**	75.3	76.3	9.6	0.99	-0.58	0.03	-0.09
12. **absent**	74.7	75.0	4.9	1.00	-0.57	0.03	-0.04
13. **hairless**	74.3	75.4	9.5	0.99	-0.57	0.07	-0.07
14. **sluggish**	74.0	75.8	12.3	0.98	-0.57	-0.07	-0.10
15. **nought**	73.6	76.7	16.2	0.96	-0.56	-0.16	-0.04
16. **dull**	73.4	75.9	14.6	0.97	-0.56	-0.05	-0.14
17. **unhelpful**	73.1	75.6	14.8	0.97	-0.56	0.15	-0.02
18. **boring**	73.0	73.2	4.4	1.00	-0.56	0.01	-0.04
19. **feeble**	73.0	73.8	8.3	0.99	-0.56	0.08	-0.01
20. **bored**	72.1	74.3	14.1	0.97	-0.55	0.01	-0.14

Word	Comp. Size	Size	Angle	Cos.	Pw	Dg	St
1. **success**	99.0	100.0	171.9	-0.99	0.76	-0.05	0.10
2. **almighty**	95.1	96.1	171.7	-0.99	0.73	-0.04	0.10
3. **triumphant**	94.8	95.8	171.9	-0.99	0.73	-0.07	0.07
4. **awesome**	92.9	96.0	165.4	-0.97	0.71	-0.06	0.18
5. **victorious**	91.2	91.9	172.9	-0.99	0.70	0.01	0.09
6. **champion**	91.1	91.8	172.9	-0.99	0.70	-0.00	0.09
7. **powerful**	90.7	90.8	178.1	-1.00	0.69	-0.02	0.02
8. **triumph**	89.3	91.4	167.7	-0.98	0.68	-0.12	0.09
9. **greatness**	89.3	92.2	165.6	-0.97	0.68	-0.16	0.07
10. **superman**	87.8	89.4	169.3	-0.98	0.67	-0.10	0.08
11. **winning**	87.4	90.0	166.3	-0.97	0.67	-0.16	0.01
12. **richness**	86.4	87.2	172.3	-0.99	0.66	-0.04	0.08
13. **breathtaking**	86.4	87.8	169.4	-0.98	0.66	-0.10	0.08
14. **winner**	85.7	88.2	166.3	-0.97	0.66	-0.10	0.12
15. **mighty**	85.3	85.6	175.3	-1.00	0.65	-0.01	0.05
16. **invincible**	85.0	85.7	172.7	-0.99	0.65	-0.00	0.08
17. **celebration**	84.7	86.8	167.2	-0.98	0.65	-0.08	0.12
18. **successful**	84.6	87.0	166.5	-0.97	0.65	-0.15	0.04
19. **victory**	83.9	85.9	167.5	-0.98	0.64	-0.14	0.04
20. **succeed**	83.9	85.4	169.0	-0.98	0.64	-0.11	0.05





bad ⇐  ⇒ **good**

(dangerous-weak)
suffering
failing
sorrowful

(safe-powerful)
virtuous
honorable
uplifting

Word	Comp. Size	Size	Angle	Cos.	Pw	Dg	St
1. **shitty**	78.8	80.1	10.2	0.98	-0.40	0.46	0.10
2. **shitload**	77.5	78.0	6.2	0.99	-0.43	0.41	0.06
3. **bankruptcy**	77.4	78.7	10.5	0.98	-0.36	0.48	0.07
4. **depressed**	75.5	78.6	16.1	0.96	-0.53	0.29	-0.01
5. **weepy**	75.1	77.0	12.6	0.98	-0.44	0.38	0.12
6. **suffering**	75.1	77.1	13.2	0.97	-0.33	0.49	0.07
7. **bullshit**	75.0	76.3	10.5	0.98	-0.37	0.44	0.10
8. **disagreeable**	74.7	75.5	8.2	0.99	-0.39	0.42	0.08
9. **shame**	74.6	76.3	12.1	0.98	-0.39	0.42	0.12
10. **deceased**	74.4	74.8	6.2	0.99	-0.45	0.36	0.01
11. **abandoned**	74.1	76.5	14.5	0.97	-0.50	0.30	0.03
12. **weep**	73.9	74.7	8.5	0.99	-0.41	0.39	0.08
13. **mourn**	73.7	74.6	9.0	0.99	-0.43	0.36	0.07
14. **neglect**	73.5	74.2	8.2	0.99	-0.45	0.35	0.04
15. **excluded**	73.3	74.8	11.6	0.98	-0.46	0.33	0.06
16. **nauseate**	72.9	74.2	10.6	0.98	-0.38	0.41	0.10
17. **shit**	72.8	74.4	11.6	0.98	-0.31	0.48	-0.00
18. **untrue**	72.5	73.6	9.7	0.99	-0.46	0.33	-0.01
19. **nauseating**	72.5	72.9	6.1	0.99	-0.35	0.43	0.02
20. **idiot**	72.3	74.5	13.9	0.97	-0.45	0.33	0.11

Word	Comp. Size	Size	Angle	Cos.	Pw	Dg	St
1. **perfect**	78.0	79.2	169.7	-0.98	0.49	-0.35	-0.04
2. **generous**	77.6	77.7	177.4	-1.00	0.43	-0.41	-0.02
3. **freedom**	77.5	81.1	162.8	-0.96	0.55	-0.29	-0.03
4. **trustworthy**	76.9	78.3	169.2	-0.98	0.38	-0.45	-0.10
5. **very positive**	75.8	78.2	166.0	-0.97	0.51	-0.31	0.04
6. **wisdom**	75.7	78.5	164.5	-0.96	0.39	-0.43	-0.16
7. **greatly positive**	75.6	78.5	164.4	-0.96	0.52	-0.30	-0.02
8. **honorable**	74.7	75.1	173.7	-0.99	0.43	-0.38	-0.05
9. **positivity**	74.1	77.2	163.5	-0.96	0.52	-0.28	-0.01
10. **positive**	73.9	75.8	167.2	-0.98	0.49	-0.31	-0.02
11. **guarantee**	73.0	74.0	170.5	-0.99	0.37	-0.42	-0.08
12. **healthy**	72.9	74.5	168.1	-0.98	0.36	-0.43	-0.11
13. **respectful**	72.8	73.3	173.6	-0.99	0.40	-0.39	-0.06
14. **optimistic**	72.6	76.0	162.9	-0.96	0.51	-0.28	0.05
15. **brotherhood**	72.2	72.5	174.3	-1.00	0.42	-0.36	0.04
16. **blessing**	71.8	75.0	163.4	-0.96	0.32	-0.46	-0.13
17. **favorable**	71.4	71.7	174.8	-1.00	0.38	-0.40	-0.05
18. **great trust**	71.2	73.6	165.0	-0.97	0.49	-0.28	-0.02
19. **goodness**	69.9	71.3	168.6	-0.98	0.30	-0.45	-0.02
20. **elegance**	69.5	70.4	171.1	-0.99	0.39	-0.36	-0.08

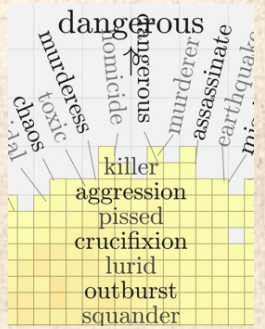
structured ⇐ ⇒ **unstructured**

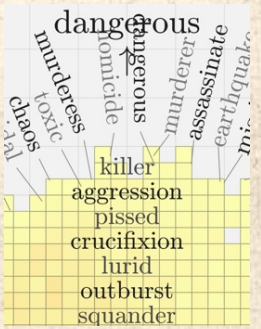
predictable
serious
rigid

unpredictable
adventurous
loose

Word	Comp. Size	Size	Angle	Cos.	Pw	Dg	St
1. **century**	37.8	38.6	11.3	0.98	0.05	-0.03	-0.29
2. **archdiocese**	37.3	37.8	8.7	0.99	0.01	-0.04	-0.29
3. **psychologist**	35.7	36.3	11.0	0.98	-0.04	-0.04	-0.27
4. **staid**	34.2	35.8	17.5	0.95	-0.06	-0.06	-0.26
5. **criterion**	34.1	35.7	16.9	0.96	0.08	0.02	-0.26
6. **metropolitan**	33.6	34.8	14.6	0.97	0.06	0.03	-0.26
7. **monastic**	32.9	34.4	16.8	0.96	0.01	-0.08	-0.25
8. **district**	30.6	31.8	16.1	0.96	0.00	-0.07	-0.23
9. **iron**	29.9	31.1	16.0	0.96	0.03	-0.06	-0.23
10. **coding**	29.7	30.8	15.0	0.97	0.02	-0.06	-0.23
11. **clinical**	29.0	30.3	16.8	0.96	-0.02	0.06	-0.22
12. **diction**	28.9	29.7	13.3	0.97	0.04	-0.04	-0.22
13. **feudal**	27.4	28.2	13.4	0.97	-0.05	0.01	-0.21
14. **conservatism**	27.1	27.3	5.8	0.99	-0.01	-0.02	-0.21
15. **utilitarian**	26.8	27.2	9.8	0.99	-0.00	-0.04	-0.21
16. **ground**	26.7	27.8	16.4	0.96	-0.05	-0.03	-0.20
17. **taxonomy**	26.2	26.7	11.3	0.98	-0.01	0.04	-0.20
18. **tense**	24.8	25.6	14.9	0.97	0.03	0.04	-0.19
19. **indenture**	24.7	25.0	8.7	0.99	0.01	-0.03	-0.19
20. **disinfect**	24.5	25.2	12.9	0.97	0.03	-0.03	-0.19

Word	Comp. Size	Size	Angle	Cos.	Pw	Dg	St
1. **plaything**	40.3	42.0	163.7	-0.96	-0.01	-0.09	0.31
2. **joke**	37.1	38.7	163.8	-0.96	0.02	-0.08	0.28
3. **yaaaay**	36.1	36.3	173.4	-0.99	0.02	0.02	0.28
4. **drum**	34.4	34.9	170.9	-0.99	0.03	0.03	0.26
5. **clown**	34.3	35.1	168.2	-0.98	-0.02	-0.05	0.26
6. **bobsled**	34.2	34.9	168.9	-0.98	0.01	-0.05	0.26
7. **potpourri**	33.3	34.5	164.6	-0.96	-0.04	-0.06	0.25
8. **jump rope**	33.0	33.9	166.8	-0.97	0.06	-0.01	0.25
9. **laughable**	33.0	33.4	170.6	-0.99	-0.04	0.01	0.25
10. **ahhhhhhhh**	32.9	34.5	162.5	-0.95	-0.06	0.06	0.25
11. **weeeee**	32.7	34.0	163.7	-0.96	-0.06	0.04	0.25
12. **yaaay**	32.5	32.9	170.8	-0.99	0.00	-0.04	0.25
13. **fanciful**	31.8	33.2	163.2	-0.96	0.02	-0.07	0.24
14. **yayyyy**	31.4	32.8	163.7	-0.96	0.04	-0.06	0.24
15. **serpentine**	30.5	31.0	169.9	-0.98	-0.02	0.04	0.23
16. **yo-yo**	29.9	30.1	173.7	-0.99	0.00	0.03	0.23
17. **jamboree**	28.7	28.7	178.3	-1.00	0.00	0.01	0.22
18. **clowns**	28.4	29.7	162.6	-0.95	0.05	0.04	0.22
19. **yayy**	28.0	28.7	167.4	-0.98	0.01	-0.05	0.21
20. **cantina**	27.9	28.7	166.4	-0.97	0.04	-0.03	0.21





structured safe ⇐ ⇒ unstructured dangerous

(structured-gentle-good)
ordered
orthodox
canonical

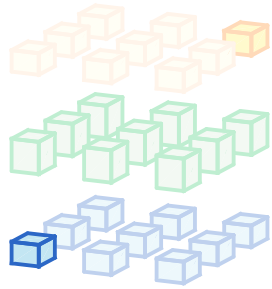
(unstructured-aggressive-bad)
jittery
panicky
mischievous

Word	Comp. Size	Size	Angle	Cos.	Pw	Dg	St
1. **buddhism**	54.4	55.1	9.3	0.99	-0.05	-0.27	-0.32
2. **bishop**	51.5	52.1	8.5	0.99	0.06	-0.28	-0.28
3. **pacific**	51.2	53.6	17.3	0.95	-0.06	-0.35	-0.20
4. **poise**	50.4	52.8	17.4	0.95	0.10	-0.32	-0.22
5. **conservatory**	46.3	48.5	17.4	0.95	0.11	-0.27	-0.23
6. **alphabet**	45.4	45.4	2.5	1.00	0.01	-0.24	-0.25
7. **marble**	45.1	45.5	7.7	0.99	0.03	-0.27	-0.22
8. **statue**	44.7	46.5	16.4	0.96	-0.09	-0.27	-0.22
9. **commonly**	44.4	46.2	16.2	0.96	-0.05	-0.30	-0.18
10. **headline**	43.5	44.9	14.4	0.97	0.07	-0.26	-0.21
11. **full**	42.4	43.7	14.1	0.97	0.08	-0.23	-0.23
12. **document**	41.7	42.2	8.5	0.99	0.04	-0.24	-0.21
13. **sector**	41.6	43.2	16.1	0.96	-0.05	-0.28	-0.17
14. **documentary**	41.2	42.6	14.8	0.97	-0.01	-0.28	-0.16
15. **senor**	40.6	40.8	5.8	0.99	-0.03	-0.21	-0.23
16. **uniform**	39.9	40.0	4.8	1.00	0.03	-0.22	-0.21
17. **therapeutic**	39.2	41.0	17.1	0.96	0.08	-0.24	-0.19
18. **habit**	39.1	40.9	16.8	0.96	-0.01	-0.28	-0.15
19. **storeroom**	38.8	39.5	10.3	0.98	-0.04	-0.23	-0.19
20. **unitary**	38.8	38.9	4.1	1.00	-0.01	-0.20	-0.22

Word	Comp. Size	Size	Angle	Cos.	Pw	Dg	St
1. **nude**	65.4	66.9	167.9	-0.98	-0.02	0.28	0.43
2. **flustered**	63.0	64.4	168.1	-0.98	-0.06	0.40	0.28
3. **edgy**	61.6	64.2	163.5	-0.96	-0.06	0.42	0.24
4. **naked**	60.5	61.9	168.0	-0.98	-0.06	0.38	0.27
5. **jittery**	58.7	60.0	168.1	-0.98	-0.09	0.35	0.29
6. **spook**	58.7	60.1	167.6	-0.98	-0.03	0.38	0.25
7. **madder**	58.1	59.9	166.1	-0.97	-0.09	0.36	0.27
8. **bonkers**	57.2	59.5	164.1	-0.96	-0.09	0.37	0.25
9. **undress**	56.8	57.0	174.4	-1.00	0.04	0.31	0.30
10. **jumpy**	55.6	58.2	162.9	-0.96	-0.13	0.31	0.29
11. **deranged**	53.3	54.1	170.3	-0.99	0.01	0.34	0.24
12. **mischief**	53.1	53.6	172.4	-0.99	-0.05	0.30	0.27
13. **intrigue**	51.1	51.9	169.7	-0.98	-0.04	0.32	0.23
14. **naughty**	49.5	50.0	171.9	-0.99	0.05	0.28	0.26
15. **evacuate**	47.7	49.1	166.3	-0.97	-0.07	0.30	0.22
16. **anal**	47.7	49.6	163.8	-0.96	-0.06	0.32	0.20
17. **gambling**	47.1	48.0	168.4	-0.98	-0.03	0.30	0.21
18. **nudity**	46.7	48.1	166.1	-0.97	0.08	0.28	0.22
19. **eager**	46.7	48.1	166.1	-0.97	0.02	0.19	0.31
20. **sarcastic**	46.4	47.2	169.7	-0.98	-0.06	0.26	0.24

structured
gentle

⇐



⇒

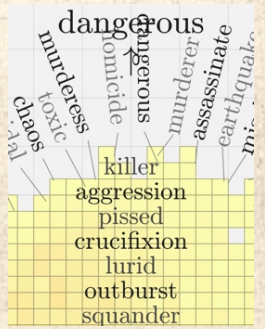
unstructured
aggressive

(structured-safe-weak)
routine
regulated
ascetic

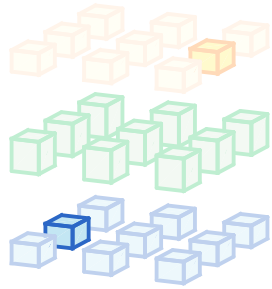
(unstructured-dangerous-powerful)
carnal
frenzied
explosive

Word	Comp. Size	Size	Angle	Cos.	Pw	Dg	St
1. **desk**	47.4	48.8	13.7	0.97	-0.23	-0.26	-0.14
2. **elder**	46.0	46.1	3.6	1.00	-0.22	-0.20	-0.19
3. **nun**	45.7	47.3	15.0	0.97	-0.24	-0.25	-0.13
4. **notebook**	44.3	44.6	7.2	0.99	-0.23	-0.19	-0.17
5. **dune**	43.5	44.5	12.1	0.98	-0.24	-0.20	-0.14
6. **blueprint**	42.8	43.8	12.3	0.98	-0.22	-0.22	-0.13
7. **lineal**	42.3	43.3	12.2	0.98	-0.17	-0.24	-0.15
8. **baseboard**	41.5	43.5	17.5	0.95	-0.26	-0.14	-0.15
9. **regular**	41.2	42.3	13.3	0.97	-0.14	-0.17	-0.24
10. **sample**	40.3	41.4	13.6	0.97	-0.17	-0.23	-0.13
11. **point**	40.2	41.1	12.0	0.98	-0.20	-0.21	-0.12
12. **wrench**	40.2	41.6	15.2	0.97	-0.16	-0.13	-0.24
13. **standstill**	39.5	39.5	3.8	1.00	-0.17	-0.16	-0.19
14. **shingle**	39.1	40.9	17.4	0.95	-0.20	-0.22	-0.10
15. **neutrality**	39.1	39.7	10.3	0.98	-0.20	-0.18	-0.13
16. **monk**	38.6	39.1	9.6	0.99	-0.20	-0.18	-0.13
17. **ancient**	38.4	39.2	11.7	0.98	-0.22	-0.14	-0.15
18. **monogram**	38.2	39.2	12.7	0.98	-0.20	-0.19	-0.12
19. **march**	38.2	39.4	14.3	0.97	-0.14	-0.23	-0.14
20. **zen**	38.0	38.9	12.6	0.98	-0.19	-0.20	-0.11

Word	Comp. Size	Size	Angle	Cos.	Pw	Dg	St
1. **sexual**	61.7	63.6	165.8	-0.97	0.36	0.26	0.19
2. **masturbation**	60.4	60.5	176.5	-1.00	0.25	0.29	0.27
3. **lust**	56.8	58.2	167.6	-0.98	0.21	0.33	0.21
4. **striptease**	56.6	58.1	167.1	-0.97	0.33	0.22	0.20
5. **masturbate**	56.0	56.1	177.0	-1.00	0.23	0.26	0.26
6. **playboy**	54.5	55.7	168.4	-0.98	0.28	0.17	0.27
7. **ejaculate**	53.7	55.2	166.8	-0.97	0.32	0.20	0.19
8. **ejaculation**	53.2	53.8	171.2	-0.99	0.28	0.19	0.24
9. **horny**	52.8	53.9	168.7	-0.98	0.23	0.29	0.18
10. **seduction**	51.4	53.4	164.3	-0.96	0.28	0.27	0.14
11. **entice**	50.5	50.7	174.7	-1.00	0.21	0.25	0.21
12. **jump**	50.1	52.4	163.0	-0.96	0.32	0.17	0.18
13. **vagina**	48.7	48.8	177.3	-1.00	0.20	0.22	0.23
14. **agitated**	48.2	50.4	162.8	-0.96	0.15	0.30	0.19
15. **stripper**	47.0	48.7	165.0	-0.97	0.19	0.15	0.28
16. **spirits**	46.6	47.0	173.2	-0.99	0.24	0.18	0.20
17. **clitoris**	46.6	48.0	165.8	-0.97	0.20	0.15	0.27
18. **bustling**	45.2	45.9	169.8	-0.98	0.18	0.25	0.17
19. **impulse**	45.1	46.9	164.2	-0.96	0.26	0.22	0.12
20. **karate**	44.7	46.0	166.3	-0.97	0.26	0.19	0.14



structured weak ⇐ ⇒ unstructured powerful

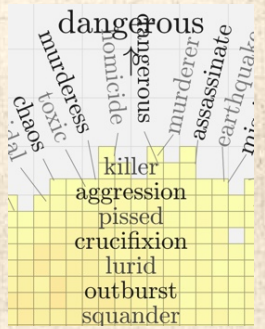


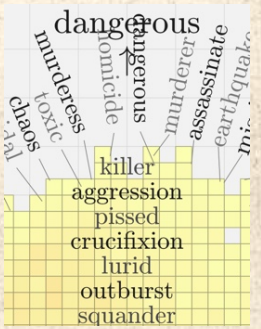
(structured-gentle-bad)
inert
detached
closed

(unstructured-aggressive-good)
exciting
celebratory
frolicsome

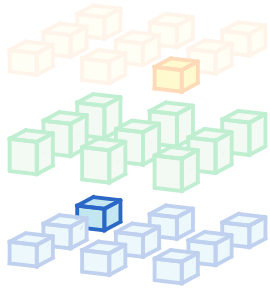
Word	Comp. Size	Size	Angle	Cos.	Pw	Dg	St
1. **no surprise**	56.0	57.3	12.0	0.98	-0.36	0.04	-0.25
2. **lone**	55.6	57.9	16.2	0.96	-0.39	0.01	-0.21
3. **stone**	55.3	56.1	9.7	0.99	-0.25	-0.01	-0.35
4. **trunk**	52.4	54.3	15.0	0.97	-0.34	-0.07	-0.22
5. **closure**	51.2	52.2	11.3	0.98	-0.33	-0.00	-0.22
6. **lethargic**	50.3	52.6	17.3	0.95	-0.35	0.03	-0.19
7. **finalized**	50.0	52.4	17.2	0.96	-0.19	-0.01	-0.35
8. **standby**	48.1	50.0	16.1	0.96	-0.33	-0.02	-0.19
9. **inactivate**	47.8	48.8	11.8	0.98	-0.31	0.00	-0.20
10. **olden**	46.8	47.9	12.3	0.98	-0.30	-0.04	-0.21
11. **unoccupied**	46.2	47.3	12.7	0.98	-0.31	-0.00	-0.19
12. **baton**	45.5	45.7	5.4	1.00	-0.23	-0.02	-0.27
13. **fragment**	43.7	45.7	17.2	0.96	-0.28	0.08	-0.19
14. **abstention**	42.9	43.0	3.0	1.00	-0.22	0.00	-0.24
15. **distance**	41.6	43.6	17.4	0.95	-0.28	0.06	-0.17
16. **anaesthesia**	40.3	42.0	16.1	0.96	-0.23	-0.09	-0.21
17. **celibacy**	39.0	39.1	3.8	1.00	-0.20	-0.01	-0.22
18. **grate**	38.9	40.7	16.8	0.96	-0.26	-0.05	-0.16
19. **delete**	38.1	39.7	16.2	0.96	-0.27	0.01	-0.15
20. **omit**	37.7	38.4	11.3	0.98	-0.23	-0.04	-0.18

Word	Comp. Size	Size	Angle	Cos.	Pw	Dg	St
1. **great surprise**	81.8	84.9	164.6	-0.96	0.57	-0.01	0.32
2. **carnival**	75.3	75.7	174.3	-1.00	0.44	-0.04	0.38
3. **birthday**	75.0	76.6	168.3	-0.98	0.45	-0.10	0.36
4. **applause**	74.9	77.0	166.8	-0.97	0.48	-0.08	0.33
5. **amusing**	73.0	75.8	164.2	-0.96	0.48	-0.10	0.31
6. **amused**	72.9	74.4	168.4	-0.98	0.46	-0.08	0.33
7. **party**	72.6	73.7	170.3	-0.99	0.42	-0.09	0.37
8. **happynewyear**	72.2	74.2	166.8	-0.97	0.43	-0.12	0.36
9. **excite**	72.2	75.6	162.7	-0.95	0.50	0.08	0.28
10. **kiss**	72.1	75.4	163.0	-0.96	0.48	-0.12	0.30
11. **extreme surprise**	71.7	75.1	162.5	-0.95	0.50	0.07	0.28
12. **fun**	70.6	73.9	162.8	-0.96	0.49	-0.06	0.27
13. **surprise**	69.4	69.7	174.6	-1.00	0.41	-0.01	0.34
14. **dancing**	69.3	69.9	172.1	-0.99	0.33	-0.03	0.42
15. **excitable**	69.2	71.7	164.9	-0.97	0.45	0.09	0.30
16. **humorist**	69.0	72.2	163.0	-0.96	0.44	-0.13	0.30
17. **tasty**	68.6	71.0	165.0	-0.97	0.40	-0.13	0.34
18. **dance**	67.8	68.3	173.1	-0.99	0.40	-0.05	0.34
19. **ecstasy**	67.0	70.3	162.5	-0.95	0.46	0.08	0.26
20. **rollercoaster**	66.4	69.4	163.3	-0.96	0.46	0.07	0.26





structured bad ⇐ unstructured good



(structured-dangerous-weak)
funereal
contaminated
irreperable

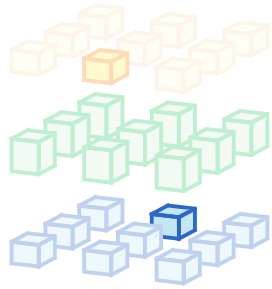
(unstructured-safe-powerful)
playful
joyful
laughing

Word	Comp. Size	Size	Angle	Cos.	Pw	Dg	St
1. misrepresented	58.2	60.0	14.2	0.97	-0.24	0.34	-0.19
2. funeral	57.7	59.6	14.6	0.97	-0.35	0.22	-0.20
3. deletion	56.0	57.4	13.0	0.97	-0.24	0.32	-0.18
4. irreparable	55.5	58.2	17.6	0.95	-0.26	0.34	-0.15
5. improbable	53.8	54.5	8.8	0.99	-0.29	0.23	-0.20
6. opposed	53.4	55.3	15.2	0.96	-0.15	0.27	-0.29
7. coldness	52.9	54.1	12.5	0.98	-0.27	0.27	-0.16
8. bruising	52.8	55.3	17.6	0.95	-0.25	0.31	-0.13
9. vile	52.5	55.1	17.6	0.95	-0.15	0.33	-0.22
10. extinct	49.9	52.0	16.3	0.96	-0.26	0.27	-0.13
11. ineligible	48.8	49.6	10.4	0.98	-0.27	0.17	-0.21
12. skeptic	48.3	48.3	1.8	1.00	-0.21	0.22	-0.21
13. darkened	48.3	48.7	7.9	0.99	-0.25	0.22	-0.17
14. pantheon	48.0	50.1	16.7	0.96	-0.14	0.20	-0.29
15. annulment	47.6	48.7	12.1	0.98	-0.27	0.16	-0.20
16. farewell	47.5	49.8	17.4	0.95	-0.12	0.27	-0.24
17. comatose	47.3	48.1	10.8	0.98	-0.26	0.21	-0.16
18. deflect	47.2	48.0	10.2	0.98	-0.20	0.26	-0.17
19. stereotype	46.8	48.9	17.2	0.96	-0.13	0.20	-0.29
20. halt	46.2	48.0	16.0	0.96	-0.28	0.14	-0.19

Word	Comp. Size	Size	Angle	Cos.	Pw	Dg	St
1. smiling	66.1	69.0	163.3	-0.96	0.42	-0.22	0.24
2. romance	66.0	68.0	166.2	-0.97	0.39	-0.22	0.27
3. honeymoon	65.8	66.8	170.2	-0.99	0.34	-0.22	0.31
4. laugh	65.0	66.2	168.7	-0.98	0.37	-0.25	0.25
5. sweetie	64.0	64.8	171.0	-0.99	0.31	-0.32	0.22
6. laughter	62.6	64.3	167.1	-0.97	0.37	-0.22	0.24
7. scrumptious	62.6	63.6	169.4	-0.98	0.35	-0.23	0.26
8. fiancee	62.0	62.6	171.9	-0.99	0.33	-0.24	0.25
9. liking	61.9	63.0	169.0	-0.98	0.34	-0.26	0.22
10. cheery	61.5	62.1	171.7	-0.99	0.29	-0.22	0.31
11. goodies	60.8	61.7	170.1	-0.99	0.23	-0.24	0.33
12. adorable	60.6	61.6	169.9	-0.98	0.21	-0.33	0.26
13. loving	60.1	62.9	163.1	-0.96	0.37	-0.24	0.18
14. travel	60.0	61.6	166.7	-0.97	0.33	-0.18	0.29
15. lovee	59.8	61.6	166.1	-0.97	0.35	-0.26	0.19
16. hearts	59.6	62.2	163.4	-0.96	0.36	-0.25	0.17
17. lovelovelove	59.4	59.9	173.0	-0.99	0.30	-0.27	0.22
18. happyheart	59.4	61.0	166.7	-0.97	0.34	-0.27	0.18
19. memories	59.0	60.5	167.2	-0.98	0.23	-0.34	0.21
20. delicious	58.4	60.2	166.0	-0.97	0.35	-0.20	0.22

unstructured
safe

⇐



⇒

structured
dangerous

(unstructured-gentle-good)
nurturing
wholesome
sweet

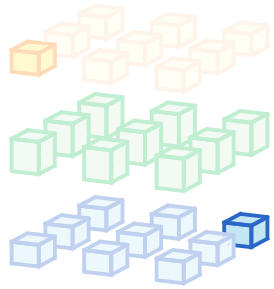
(structured-aggressive-bad)
authoritarian
controlling
adversarial

Word	Comp. Size	Size	Angle	Cos.	Pw	Dg	St
1. **popcorn**	60.6	60.8	4.5	1.00	-0.04	-0.32	0.33
2. **sweetest**	59.7	62.3	16.5	0.96	0.13	-0.34	0.31
3. **fruits**	58.7	60.1	12.4	0.98	-0.06	-0.37	0.26
4. **sweets**	58.6	59.3	8.7	0.99	0.04	-0.36	0.28
5. **butterfly**	58.4	61.0	16.9	0.96	-0.02	-0.41	0.22
6. **toy**	58.2	58.4	4.5	1.00	-0.01	-0.34	0.29
7. **puppy**	57.7	58.3	8.0	0.99	0.06	-0.33	0.30
8. **pet**	57.1	59.6	16.8	0.96	-0.04	-0.40	0.22
9. **candy**	56.6	59.0	16.5	0.96	0.09	-0.37	0.24
10. **childhood**	54.7	55.1	6.9	0.99	0.00	-0.33	0.26
11. **comic**	54.5	56.7	16.1	0.96	0.11	-0.33	0.25
12. **colors**	54.4	56.8	16.5	0.96	-0.00	-0.38	0.21
13. **reminisce**	54.1	55.6	13.3	0.97	0.10	-0.30	0.28
14. **decorative**	53.9	55.8	15.0	0.97	0.10	-0.33	0.26
15. **pizza**	53.8	54.6	9.4	0.99	-0.03	-0.34	0.25
16. **kitten**	53.4	55.7	16.7	0.96	-0.09	-0.35	0.23
17. **nursery**	52.5	54.9	16.9	0.96	0.07	-0.35	0.21
18. **pie**	52.4	54.1	14.3	0.97	0.05	-0.35	0.22
19. **risotto**	52.1	52.9	10.0	0.98	-0.06	-0.26	0.30
20. **fruitcake**	51.0	51.8	10.2	0.98	0.05	-0.31	0.24

Word	Comp. Size	Size	Angle	Cos.	Pw	Dg	St
1. **demolish**	56.9	58.1	168.1	-0.98	0.02	0.37	-0.24
2. **protocol**	55.0	56.2	168.2	-0.98	0.05	0.25	-0.35
3. **rigidity**	49.2	49.4	174.4	-1.00	0.03	0.25	-0.28
4. **irreversible**	48.4	48.6	175.5	-1.00	-0.02	0.27	-0.25
5. **obligation**	46.8	47.8	168.5	-0.98	0.07	0.28	-0.23
6. **narcissist**	46.5	48.3	164.5	-0.96	-0.02	0.32	-0.18
7. **litigant**	45.4	45.9	172.3	-0.99	0.04	0.26	-0.23
8. **jailer**	44.6	46.7	162.7	-0.95	0.01	0.32	-0.17
9. **antagonist**	43.9	45.4	165.2	-0.97	0.07	0.28	-0.20
10. **judging**	43.5	45.3	163.9	-0.96	0.07	0.28	-0.19
11. **carnivorous**	42.3	43.7	165.8	-0.97	0.03	0.28	-0.17
12. **forensics**	42.1	42.2	176.6	-1.00	0.02	0.23	-0.23
13. **curfew**	41.1	42.9	163.1	-0.96	0.01	0.29	-0.15
14. **induce**	40.8	42.1	165.5	-0.97	0.06	0.26	-0.19
15. **python**	40.7	42.7	162.6	-0.95	0.00	0.29	-0.15
16. **penal**	40.7	41.6	167.9	-0.98	-0.03	0.26	-0.18
17. **cardiology**	40.6	41.6	168.0	-0.98	-0.05	0.25	-0.19
18. **critic**	40.1	41.5	165.1	-0.97	0.07	0.25	-0.18
19. **smug**	40.1	41.6	164.4	-0.96	-0.06	0.26	-0.18
20. **revocation**	39.8	41.2	164.8	-0.97	0.06	0.26	-0.17

unstructured
gentle

(unstructured-safe-weak)
whimsical
childlike
yielding

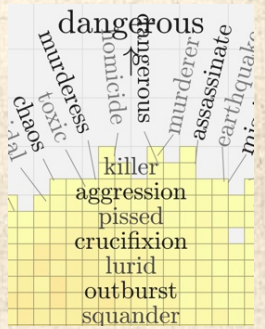


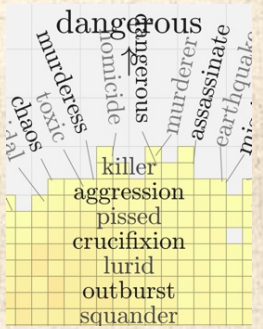
structured
aggressive

(structured-dangerous-powerful)
dictatorial
militaristic
imperious

Word	Comp. Size	Size	Angle	Cos.	Pw	Dg	St
1. **feather**	62.2	64.4	15.3	0.96	-0.31	-0.34	0.17
2. **pudding**	57.5	60.0	16.9	0.96	-0.21	-0.36	0.19
3. **lotion**	57.3	59.1	14.0	0.97	-0.23	-0.34	0.19
4. **wig**	57.3	58.5	11.7	0.98	-0.23	-0.33	0.21
5. **plum**	57.2	57.9	9.1	0.99	-0.22	-0.31	0.23
6. **burrito**	56.3	56.8	7.9	0.99	-0.25	-0.29	0.21
7. **foam**	55.7	58.4	17.5	0.95	-0.24	-0.34	0.15
8. **puree**	54.6	56.7	15.8	0.96	-0.22	-0.33	0.17
9. **bunny**	54.5	55.7	11.8	0.98	-0.19	-0.31	0.23
10. **foaming**	52.9	55.3	16.8	0.96	-0.27	-0.30	0.13
11. **platter**	52.7	55.2	17.4	0.95	-0.23	-0.32	0.14
12. **weave**	52.5	54.4	15.1	0.97	-0.30	-0.25	0.15
13. **shoes**	52.2	53.5	12.3	0.98	-0.18	-0.30	0.21
14. **cream**	52.0	54.1	16.1	0.96	-0.22	-0.31	0.15
15. **crayon**	51.4	53.5	16.2	0.96	-0.29	-0.25	0.14
16. **butter**	50.4	51.4	10.9	0.98	-0.24	-0.26	0.16
17. **sleeveless**	50.1	51.1	11.4	0.98	-0.25	-0.26	0.16
18. **littlethings**	49.9	52.2	17.1	0.96	-0.16	-0.31	0.19
19. **froth**	49.5	50.9	13.1	0.97	-0.27	-0.24	0.15
20. **lego**	49.1	50.5	13.3	0.97	-0.27	-0.23	0.15

Word	Comp. Size	Size	Angle	Cos.	Pw	Dg	St
1. **boss**	65.8	66.4	172.8	-0.99	0.29	0.24	-0.33
2. **dictatorial**	65.7	68.6	163.1	-0.96	0.23	0.41	-0.23
3. **exterminator**	65.0	67.4	164.6	-0.96	0.35	0.34	-0.18
4. **relentless**	63.2	63.5	174.2	-0.99	0.31	0.28	-0.24
5. **imperialist**	61.4	63.9	164.0	-0.96	0.27	0.37	-0.18
6. **army**	60.6	63.4	163.1	-0.96	0.37	0.26	-0.18
7. **political**	60.0	60.8	170.8	-0.99	0.31	0.29	-0.21
8. **cop**	58.7	60.6	165.4	-0.97	0.29	0.33	-0.17
9. **policy**	56.9	58.0	168.9	-0.98	0.27	0.30	-0.19
10. **courtroom**	56.5	57.2	171.2	-0.99	0.30	0.22	-0.23
11. **armada**	56.5	58.6	164.6	-0.96	0.34	0.25	-0.17
12. **military**	56.5	57.7	168.1	-0.98	0.32	0.24	-0.19
13. **commando**	54.0	54.8	170.5	-0.99	0.24	0.29	-0.19
14. **imposing**	53.4	55.1	165.9	-0.97	0.30	0.25	-0.16
15. **demanding**	53.2	55.5	163.4	-0.96	0.30	0.26	-0.14
16. **regimental**	52.2	52.6	172.9	-0.99	0.19	0.26	-0.24
17. **manipulate**	52.2	54.5	163.4	-0.96	0.17	0.33	-0.20
18. **claimant**	51.7	53.3	165.9	-0.97	0.18	0.31	-0.20
19. **politician**	51.6	53.1	166.2	-0.97	0.20	0.18	-0.31
20. **courts**	51.6	52.5	169.2	-0.98	0.26	0.25	-0.17





unstructured weak ⇐ ⇒ structured powerful

(unstructured-gentle-bad)
inchoate
hazy
drifting

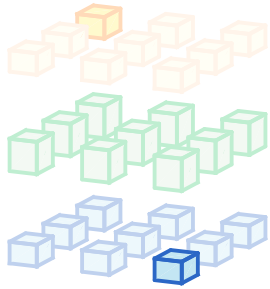
(structured-aggressive-good)
commanding
authorative
hierarchical

Word	Comp. Size	Size	Angle	Cos.	Pw	Dg	St
1. **vagabond**	46.9	49.1	17.3	0.95	-0.30	0.09	0.21
2. **minion**	43.0	44.5	14.6	0.97	-0.28	-0.06	0.19
3. **roll**	42.9	43.1	4.7	1.00	-0.25	0.02	0.22
4. **vanquished**	42.5	42.5	2.4	1.00	-0.22	0.01	0.24
5. **cheesy**	41.8	42.3	9.1	0.99	-0.26	-0.01	0.19
6. **loopy**	40.0	40.8	10.7	0.98	-0.24	0.05	0.19
7. **underestimate**	40.0	42.0	17.6	0.95	-0.28	0.02	0.15
8. **vassal**	40.0	41.3	14.5	0.97	-0.25	0.06	0.18
9. **need**	39.6	40.4	11.4	0.98	-0.18	0.03	0.25
10. **dubious**	39.4	41.1	16.4	0.96	-0.27	0.04	0.16
11. **murmur**	39.4	39.7	7.2	0.99	-0.23	0.03	0.20
12. **juju**	38.4	38.9	8.8	0.99	-0.18	-0.03	0.23
13. **babble**	38.2	40.0	17.5	0.95	-0.22	-0.09	0.20
14. **hide**	37.0	37.8	11.6	0.98	-0.23	0.04	0.17
15. **leftover**	36.1	36.7	11.0	0.98	-0.23	-0.03	0.17
16. **scampi**	35.6	36.9	15.1	0.97	-0.21	-0.07	0.18
17. **hesitate**	35.4	36.0	10.7	0.98	-0.19	0.05	0.19
18. **shin**	35.2	35.6	8.3	0.99	-0.22	0.02	0.17
19. **ska**	33.8	35.2	15.9	0.96	-0.17	0.07	0.20
20. **ahhh**	33.8	34.9	14.3	0.97	-0.15	-0.04	0.22

Word	Comp. Size	Size	Angle	Cos.	Pw	Dg	St
1. **commissioner**	59.0	60.5	167.5	-0.98	0.35	-0.09	-0.29
2. **superintendent**	57.4	59.6	164.1	-0.96	0.40	0.00	-0.22
3. **supervisor**	56.8	58.6	165.9	-0.97	0.36	-0.08	-0.25
4. **business man**	55.9	58.1	164.2	-0.96	0.38	0.06	-0.23
5. **directive**	54.5	56.4	165.2	-0.97	0.37	-0.04	-0.22
6. **producer**	54.1	55.6	166.9	-0.97	0.36	0.02	-0.23
7. **governmental**	52.7	53.3	171.2	-0.99	0.32	0.03	-0.25
8. **administrator**	52.6	52.8	175.4	-1.00	0.30	-0.02	-0.27
9. **magistrate**	52.6	54.2	165.9	-0.97	0.36	-0.02	-0.21
10. **reformer**	52.5	54.2	165.4	-0.97	0.36	0.02	-0.21
11. **patriarch**	52.4	53.8	167.0	-0.97	0.31	-0.09	-0.26
12. **minister**	51.6	52.1	171.7	-0.99	0.28	-0.06	-0.28
13. **controlling**	50.5	50.9	173.6	-0.99	0.25	-0.02	-0.30
14. **warrants**	50.2	51.2	168.8	-0.98	0.27	-0.08	-0.27
15. **colonel**	50.2	52.6	162.7	-0.95	0.31	0.11	-0.24
16. **officer**	49.7	50.4	170.5	-0.99	0.26	-0.06	-0.28
17. **congressman**	49.2	50.0	169.7	-0.98	0.23	0.04	-0.30
18. **juridical**	49.1	49.6	171.9	-0.99	0.25	-0.05	-0.28
19. **patron**	48.7	49.9	167.3	-0.98	0.29	-0.08	-0.24
20. **legislator**	48.6	50.3	165.1	-0.97	0.31	0.08	-0.22

unstructured
bad

⇐



⇒

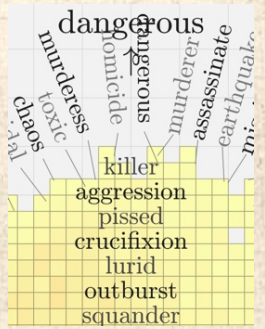
structured
good

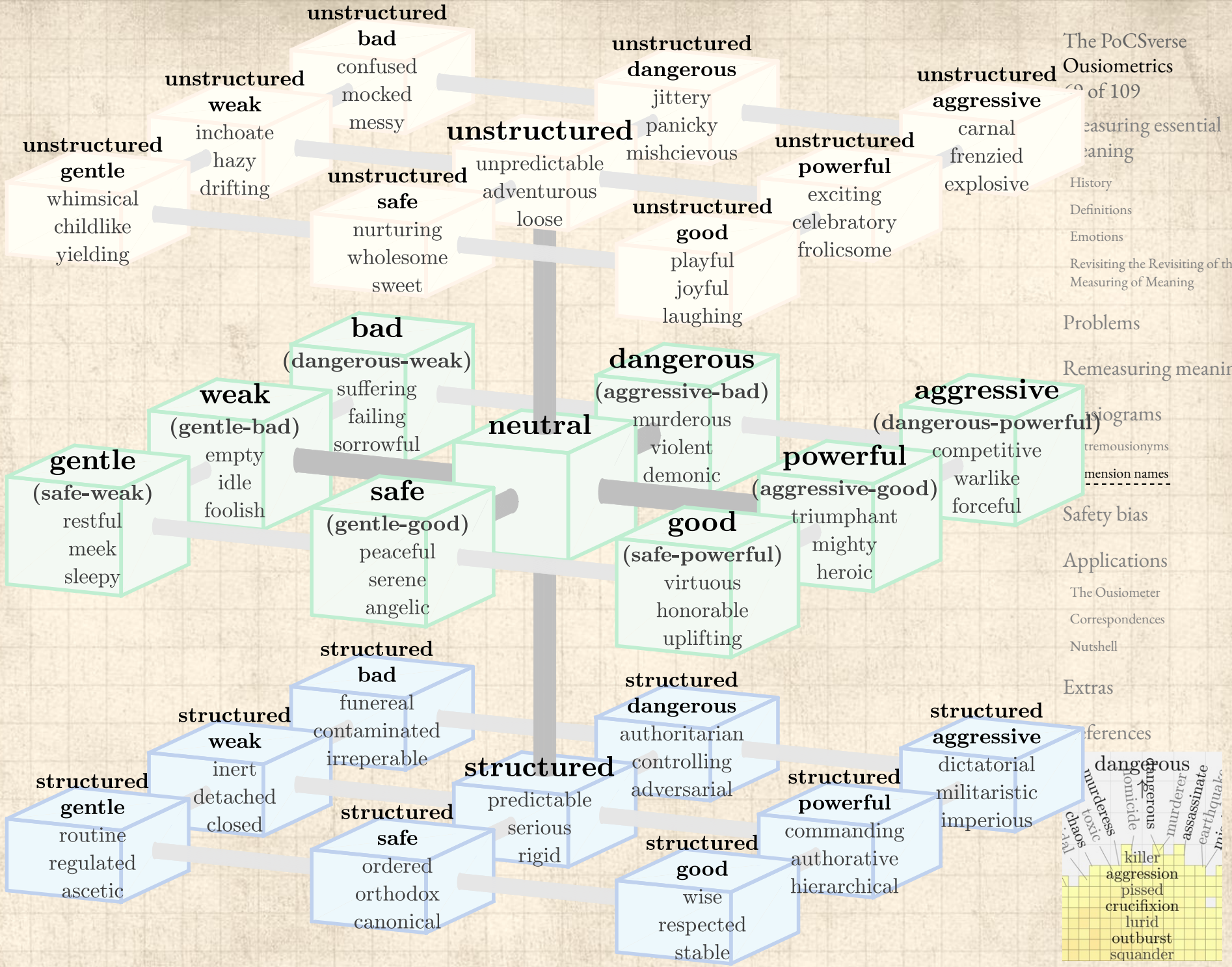
(unstructured-dangerous-weak)
confused
mocked
messy

(structured-safe-powerful)
wise
respected
stable

Word	Comp. Size	Size	Angle	Cos.	Pw	Dg	St
1. **slave**	71.3	73.6	14.2	0.97	-0.28	0.43	0.24
2. **skittish**	71.1	74.5	17.3	0.95	-0.26	0.45	0.23
3. **vomiting**	70.7	73.2	15.2	0.97	-0.29	0.43	0.22
4. **lost**	62.5	64.1	12.9	0.97	-0.33	0.32	0.19
5. **downfall**	62.0	63.8	13.3	0.97	-0.28	0.35	0.19
6. **stifled**	60.1	61.4	12.0	0.98	-0.25	0.34	0.21
7. **mocked**	60.0	61.8	13.7	0.97	-0.23	0.36	0.21
8. **wobbly**	59.6	62.4	17.3	0.95	-0.22	0.38	0.19
9. **inexperience**	58.9	61.3	15.9	0.96	-0.34	0.27	0.16
10. **unsettled**	58.8	60.7	14.1	0.97	-0.31	0.30	0.17
11. **cockroach**	58.4	60.9	16.5	0.96	-0.30	0.33	0.15
12. **messy**	58.3	59.2	9.8	0.99	-0.32	0.25	0.21
13. **queasiness**	58.2	60.6	16.1	0.96	-0.35	0.24	0.17
14. **confused**	57.4	59.0	13.3	0.97	-0.30	0.29	0.17
15. **twit**	57.1	59.6	16.8	0.96	-0.30	0.31	0.15
16. **flee**	56.2	58.8	17.1	0.96	-0.16	0.34	0.25
17. **impotence**	56.2	58.9	17.3	0.95	-0.26	0.34	0.15
18. **unorganized**	56.2	56.8	8.6	0.99	-0.28	0.27	0.20
19. **shiver**	55.8	58.1	15.9	0.96	-0.18	0.34	0.21
20. **shaky**	55.4	56.8	12.7	0.98	-0.21	0.32	0.20

Word	Comp. Size	Size	Angle	Cos.	Pw	Dg	St
1. **confidence**	84.2	88.3	162.6	-0.95	0.44	-0.47	-0.21
2. **reliable**	76.6	80.2	162.6	-0.95	0.35	-0.46	-0.20
3. **wise**	72.7	75.7	163.9	-0.96	0.33	-0.43	-0.20
4. **secure**	68.9	72.0	163.0	-0.96	0.41	-0.31	-0.19
5. **respectable**	68.3	71.1	164.0	-0.96	0.38	-0.34	-0.18
6. **constitute**	68.0	69.7	167.3	-0.98	0.38	-0.31	-0.21
7. **stability**	67.0	68.4	168.0	-0.98	0.30	-0.37	-0.22
8. **autonomy**	64.7	65.9	169.2	-0.98	0.35	-0.29	-0.22
9. **educator**	64.4	66.5	165.4	-0.97	0.32	-0.35	-0.18
10. **soundness**	63.3	65.0	166.7	-0.97	0.36	-0.27	-0.20
11. **sacred**	63.2	66.3	162.4	-0.95	0.37	-0.31	-0.16
12. **parent**	62.8	64.9	165.2	-0.97	0.35	-0.31	-0.18
13. **maestro**	62.3	64.8	163.9	-0.96	0.34	-0.32	-0.16
14. **civilized**	62.3	64.7	164.3	-0.96	0.23	-0.38	-0.21
15. **propriety**	61.8	64.6	163.1	-0.96	0.27	-0.38	-0.17
16. **securities**	61.5	61.9	173.6	-0.99	0.29	-0.30	-0.23
17. **property**	60.8	62.4	167.1	-0.97	0.21	-0.35	-0.25
18. **father**	60.4	62.6	164.8	-0.96	0.31	-0.33	-0.16
19. **proprietary**	60.3	61.4	168.8	-0.98	0.26	-0.34	-0.21
20. **order**	59.8	61.1	168.1	-0.98	0.27	-0.33	-0.19




unstructured
bad
confused
mocked
messy
unstructured
weak
inchoate
hazy
drifting
unstructured
gentle
whimsical
childlike
yielding
unstructured
safe
nurturing
wholesome
sweet
unstructured
dangerous
jittery
panicky
mishcievous
unstructured
unpredictable
adventurous
loose
unstructured
good
playful
joyful
laughing
unstructured
powerful
exciting
celebratory
frolicsome
unstructured
aggressive
carnal
frenzied
explosive
bad
(dangerous-weak)
suffering
failing
sorrowful
weak
(gentle-bad)
empty
idle
foolish
gentle
(safe-weak)
restful
meek
sleepy
neutral
safe
(gentle-good)
peaceful
serene
angelic
dangerous
(aggressive-bad)
murderous
violent
demonic
good
(safe-powerful)
virtuous
honorable
uplifting
powerful
(aggressive-good)
triumphant
mighty
heroic
aggressive
(dangerous-powerful)
competitive
warlike
forceful
structured
bad
funereal
contaminated
irreperable
structured
weak
inert
detached
closed
structured
gentle
routine
regulated
ascetic
structured
safe
ordered
orthodox
canonical
structured
predictable
serious
rigid
structured
dangerous
authoritarian
controlling
adversarial
structured
good
wise
respected
stable
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powerful
commanding
authorative
hierarchical
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dictatorial
militaristic
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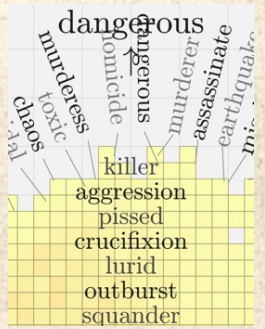
chaos
homicide
dangerous
murderer
assassinate
earthquake
killer
aggression
pissed
crucifixion
lurid
outburst
squander

From types to tokens: [17, ?]

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



From types to tokens: [17, ?]

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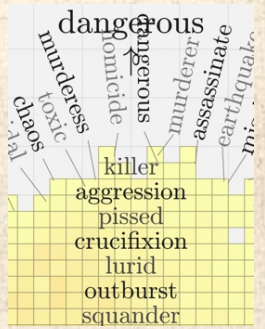
- Must consider how words are used in real texts by frequency: Tokens.



From types to tokens: [17, ?]

- Analysis so far is for a lexicon of types: Each word counts once.
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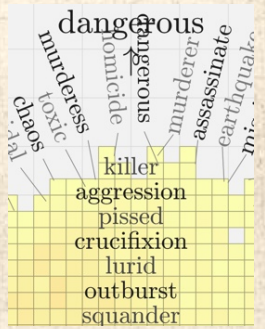
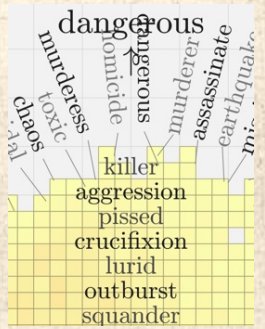
- Rebuild ousiograms with usage frequency incorporated.

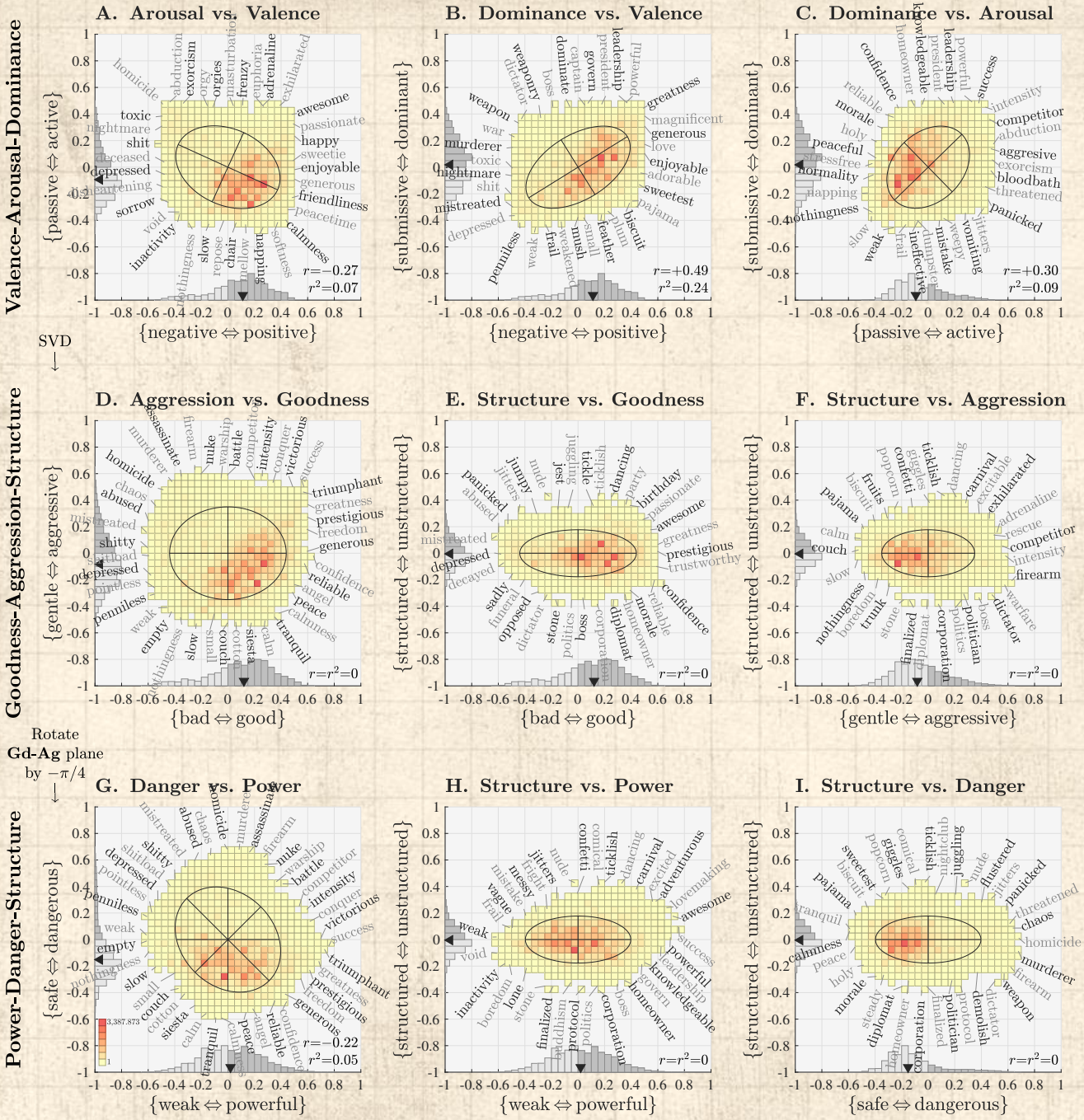


From types to tokens: [17, ?]

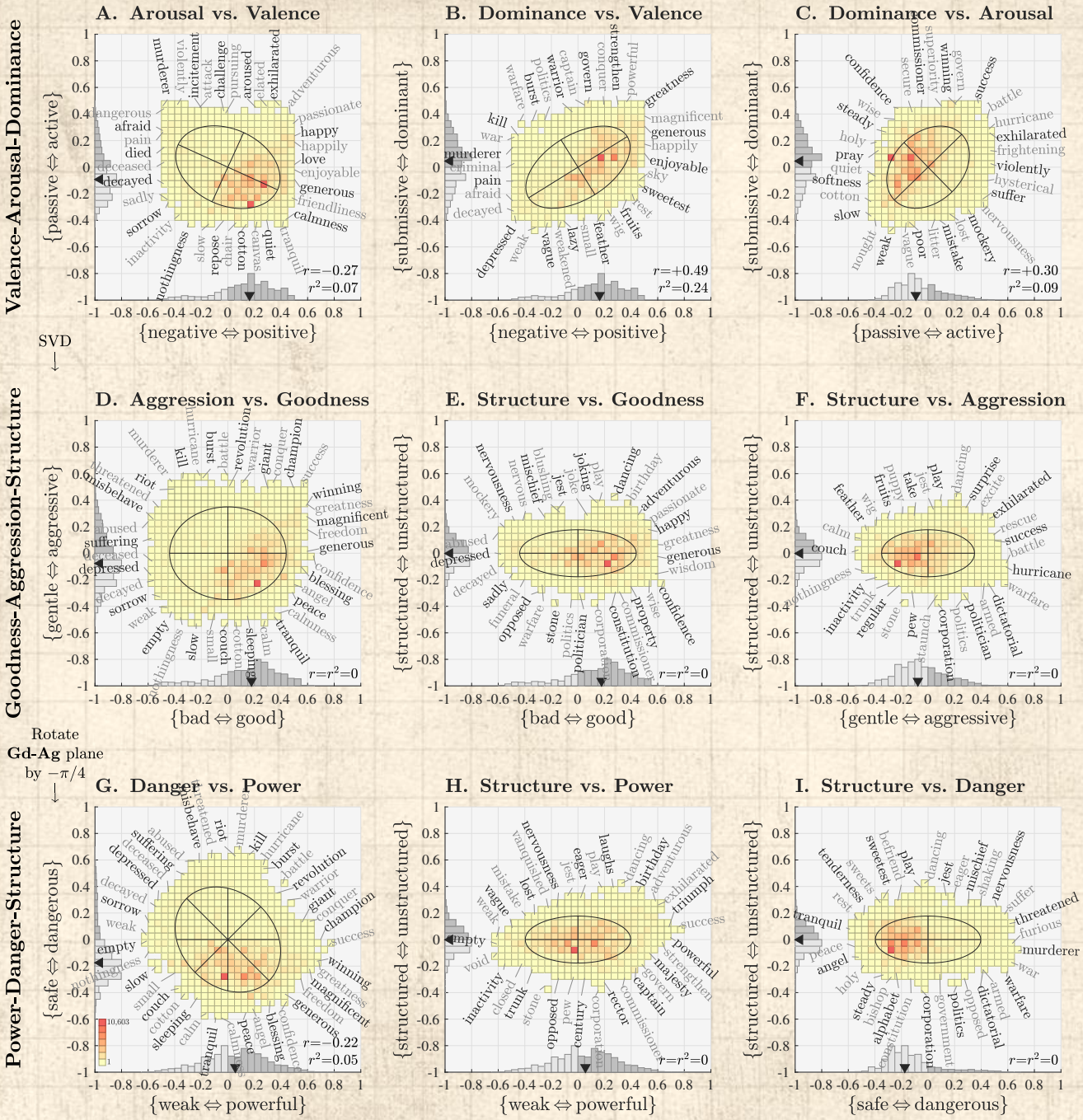
- Analysis so far is for a lexicon of types: Each word counts once.
- Must consider how words are used in real texts by frequency: Tokens.
- Rebuild ousiograms with usage frequency incorporated.
- A set of distinct corpora:
  - English fiction from Google Books (120 years). [11, 16]
  - Jane Austen's novels.
  - Sherlock Holmes stories.
  - New York Times (20 years). [21]
  - Wikipedia (2019/03). [22]
  - RadioTalk: Transcriptions of talk radio. [3]
  - Twitter through Storywrangler. [1]



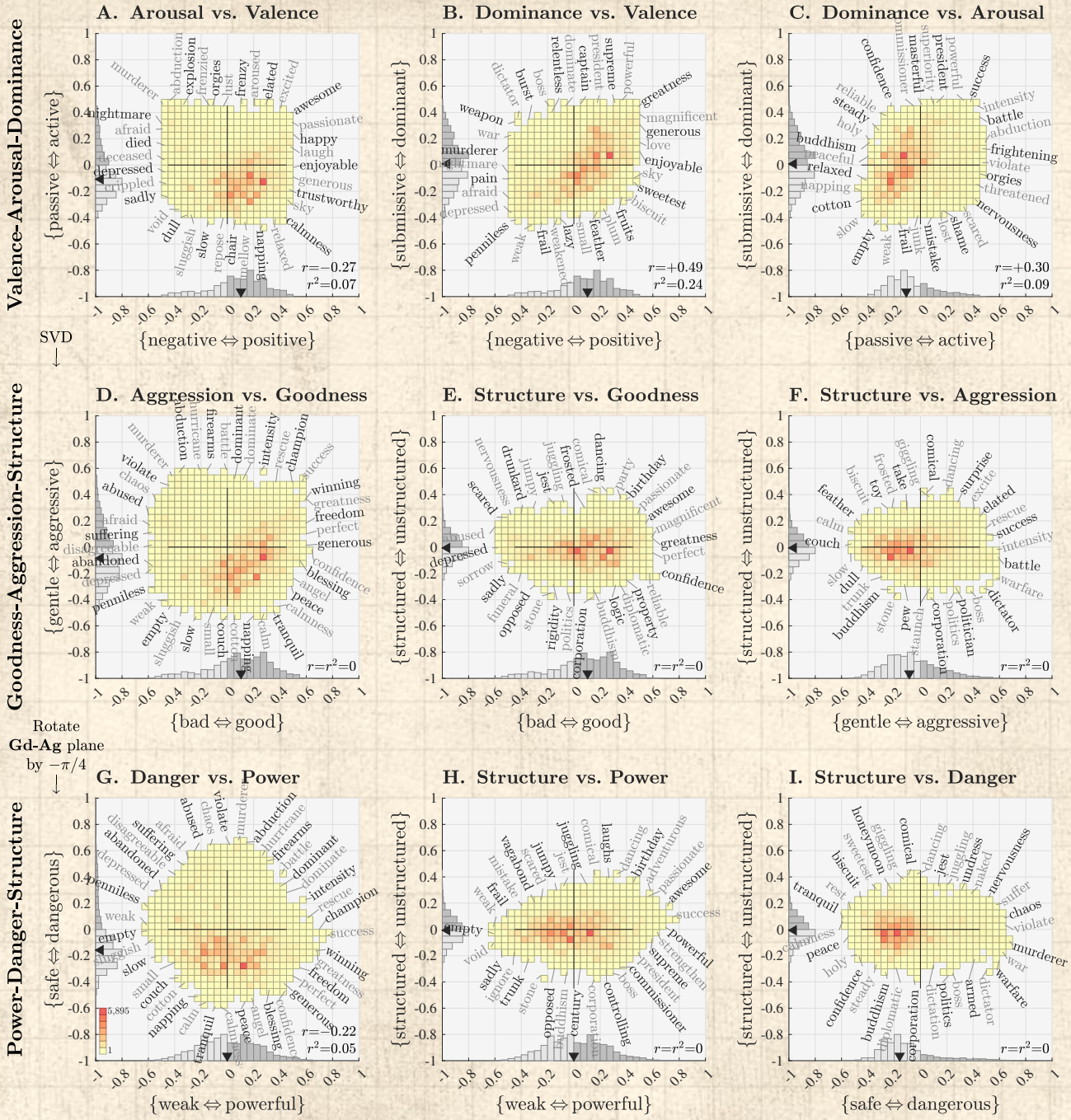
Ousiograms for English fiction in the VAD, GAS, and PDS frameworks:



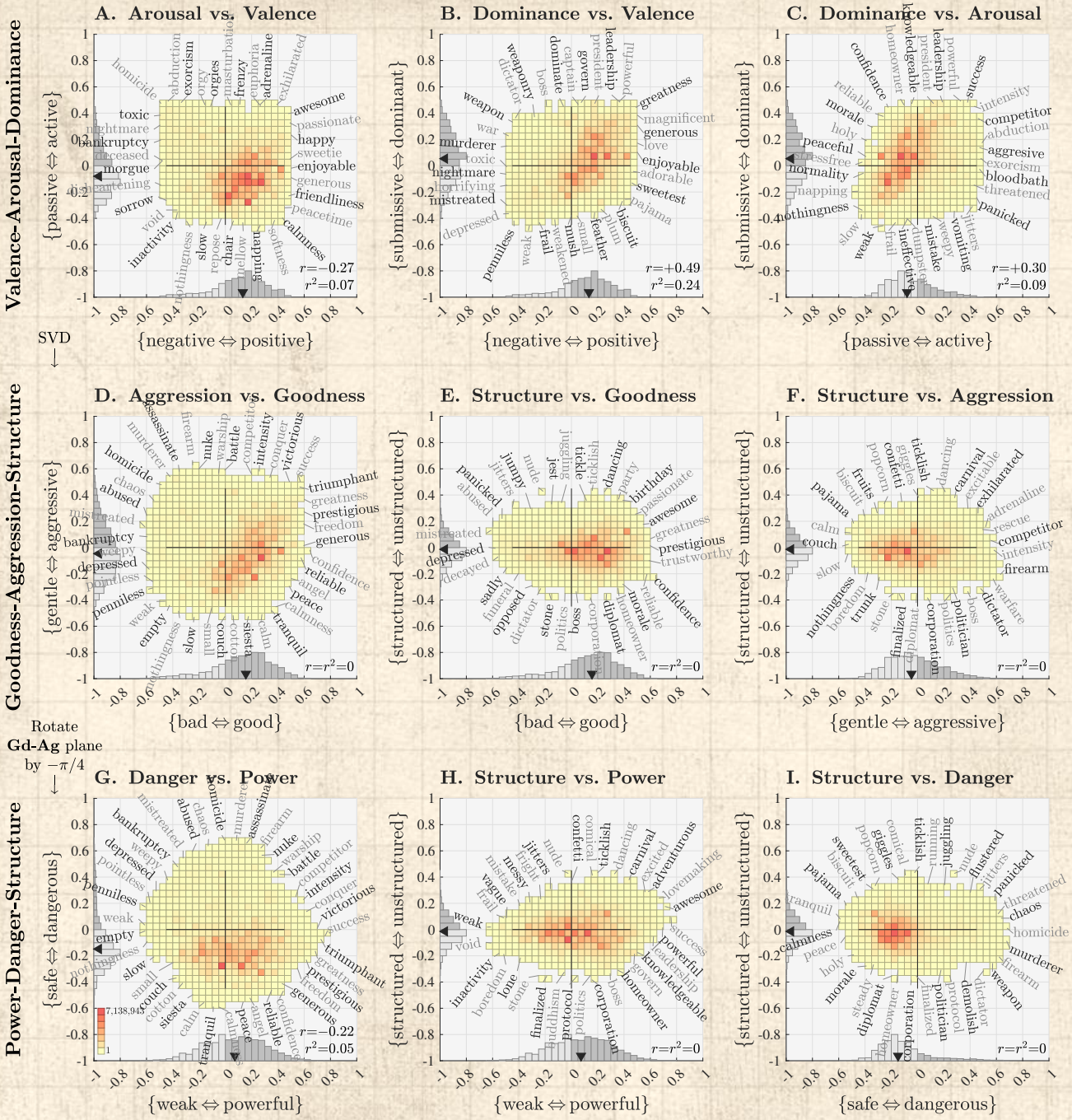
Ousiograms for Jane Austen's novels in the VAD, GAS, and PDS frameworks:

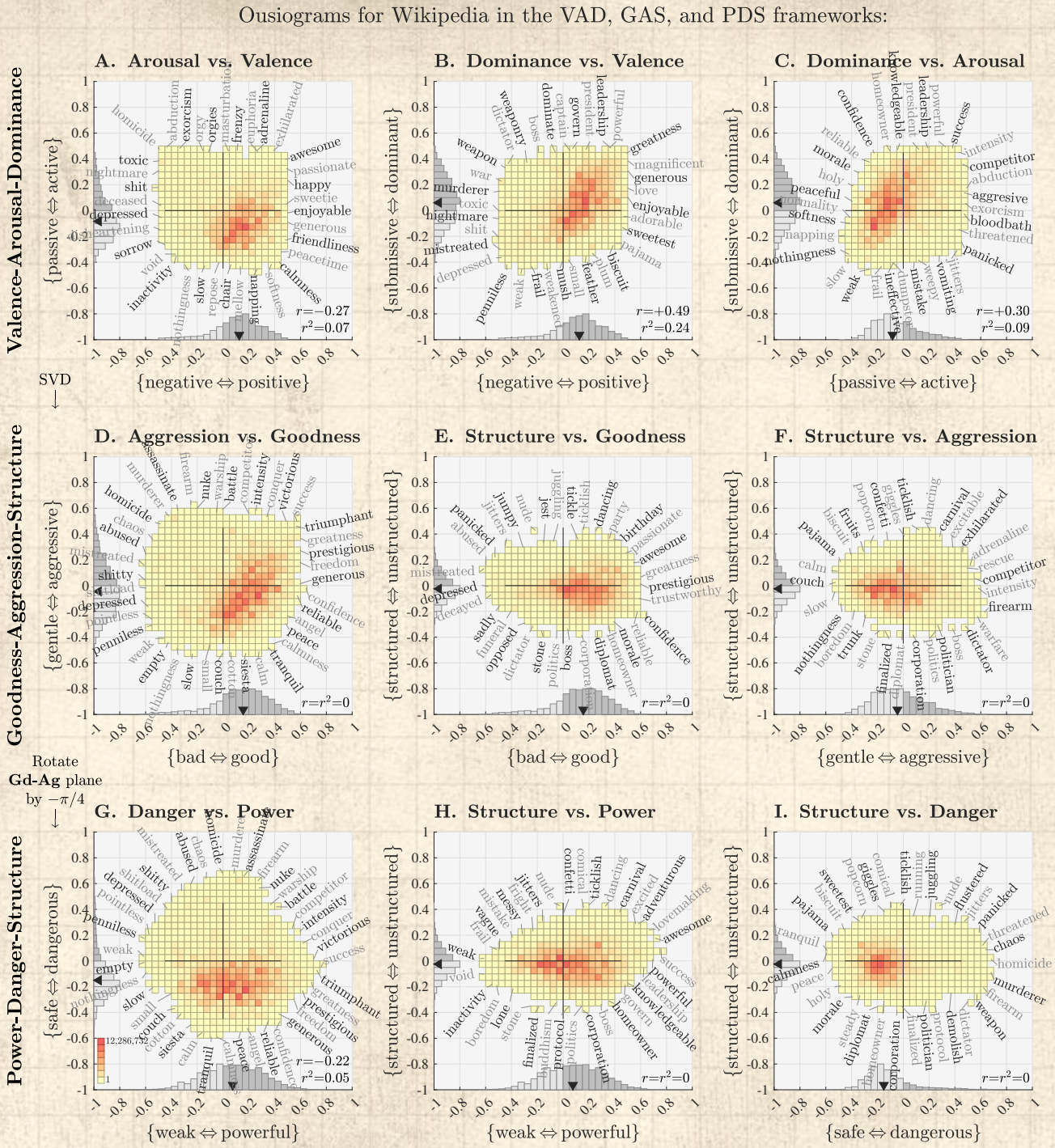


Ousiograms for Sherlock Holmes in the VAD, GAS, and PDS frameworks:



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

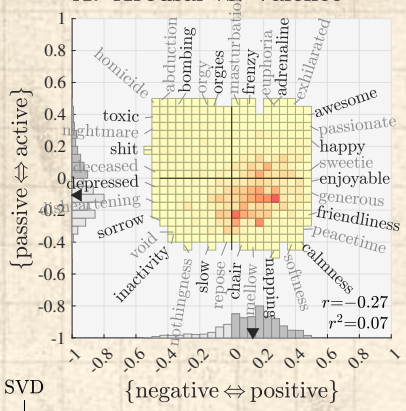




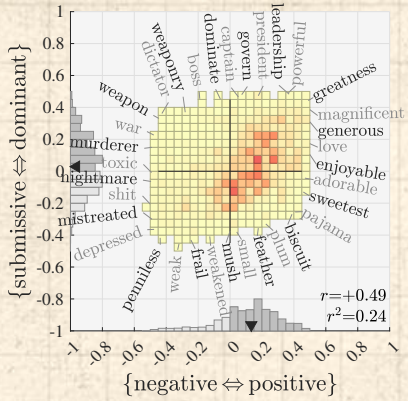
Ousiograms for RadioTalk in the VAD, GAS, and PDS frameworks:

Valence-Arousal-Dominance

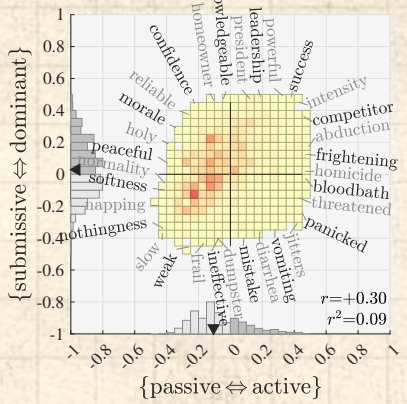
A. Arousal vs. Valence



B. Dominance vs. Valence



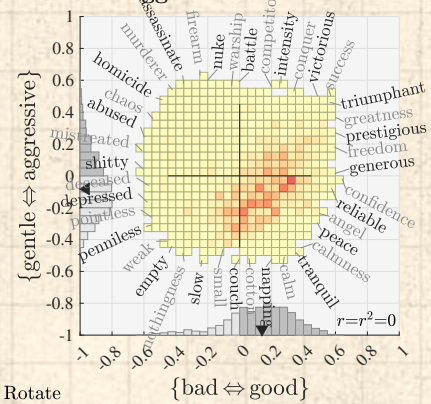
C. Dominance vs. Arousal



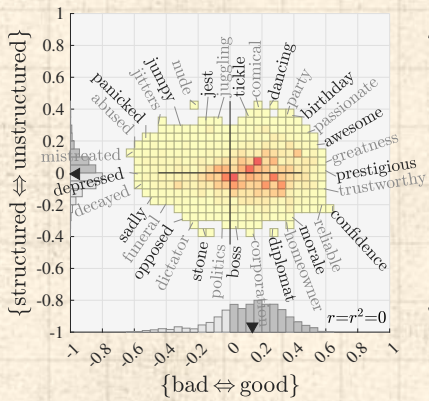
SVD ↓

Goodness-Aggression-Structure

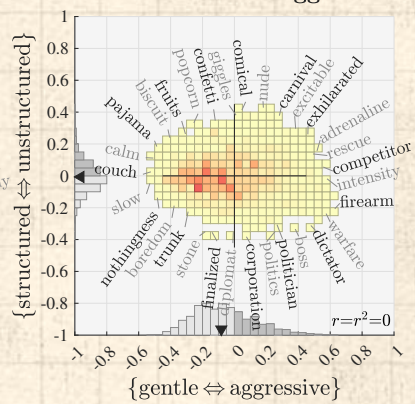
D. Aggression vs. Goodness



E. Structure vs. Goodness



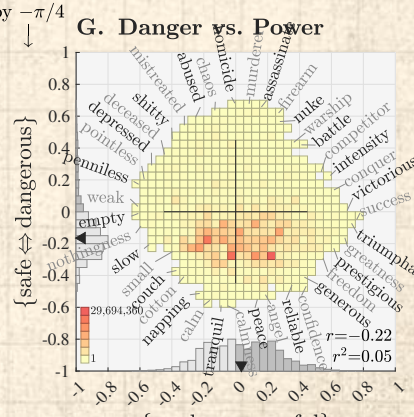
F. Structure vs. Aggression



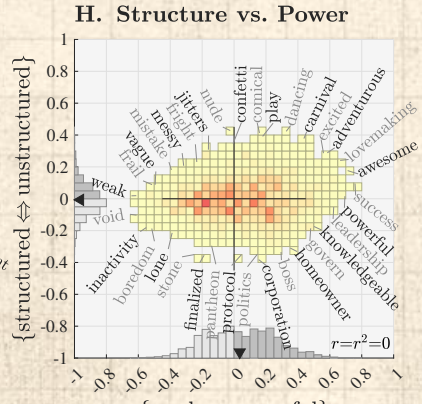
Rotate **Gd-Ag** plane by $-\pi/4$ ↓

Power-Danger-Structure

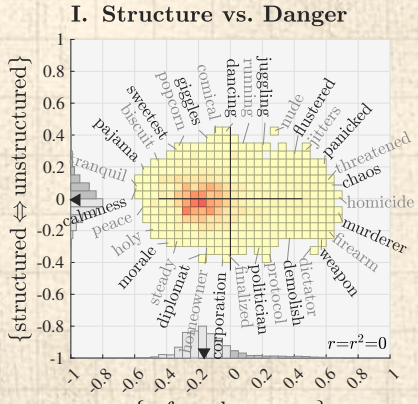
G. Danger vs. Power

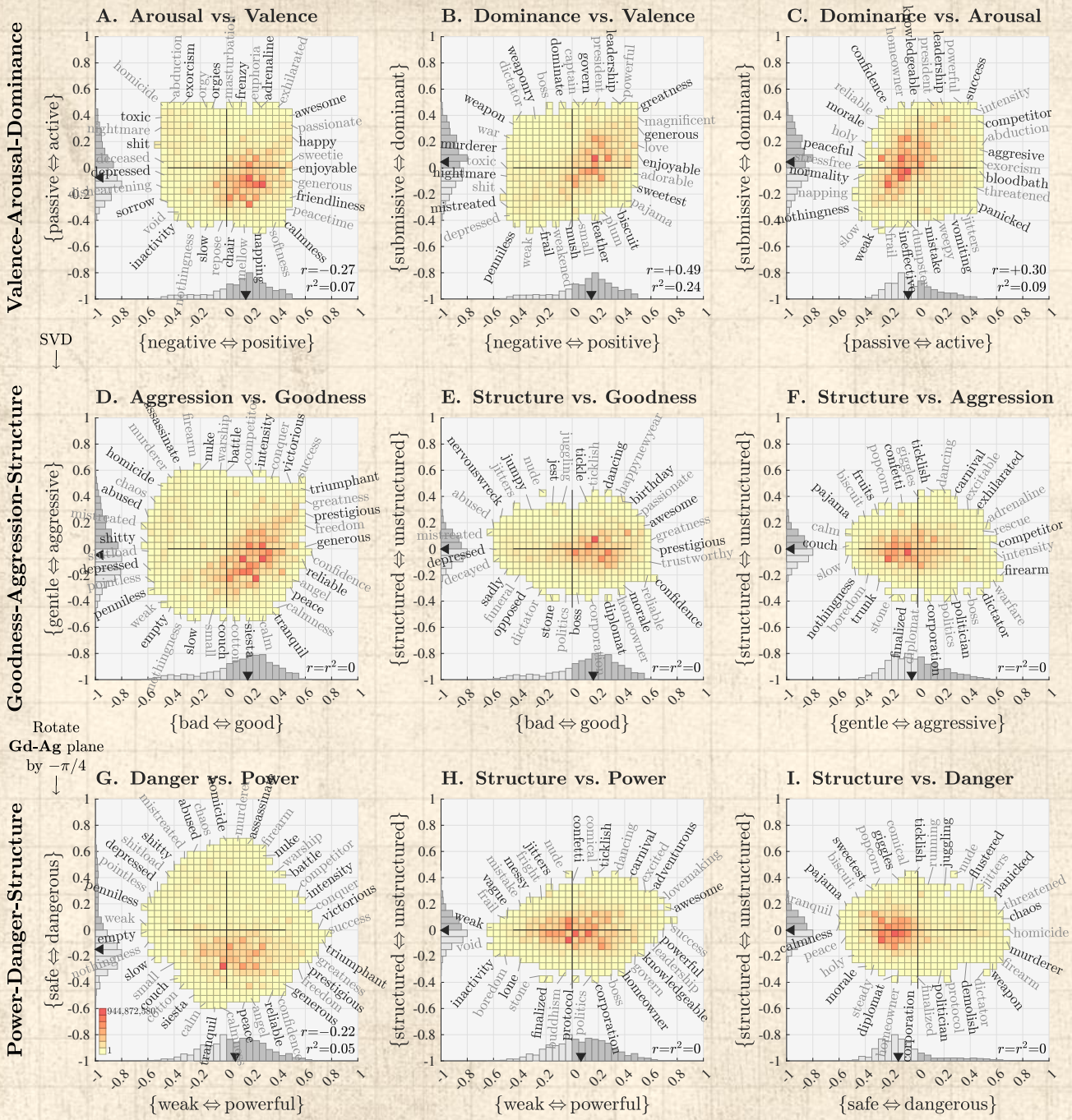


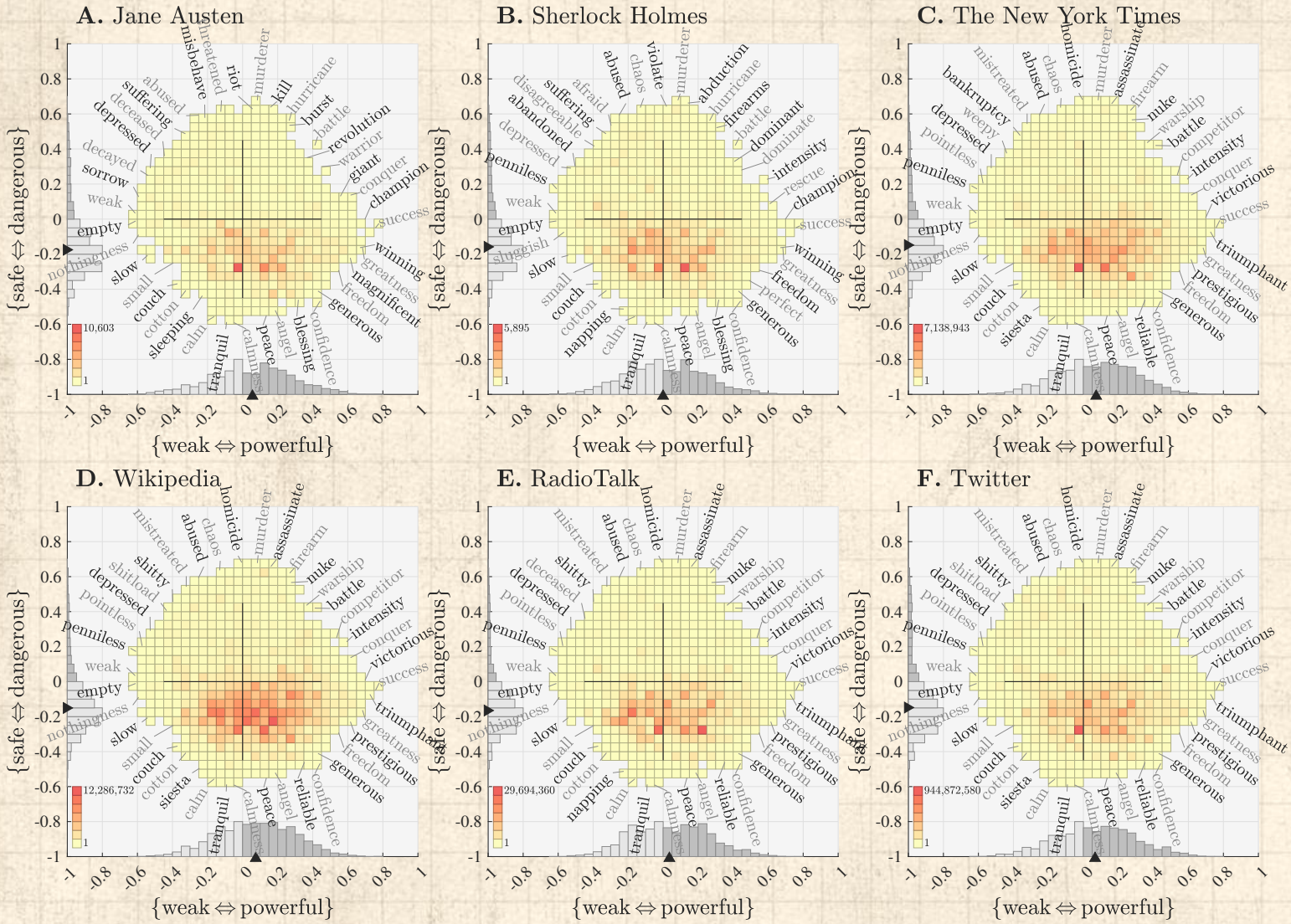
H. Structure vs. Power

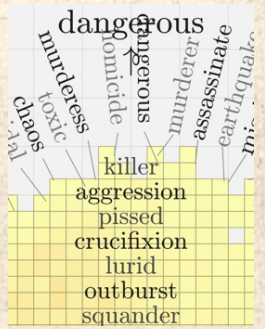


I. Structure vs. Danger



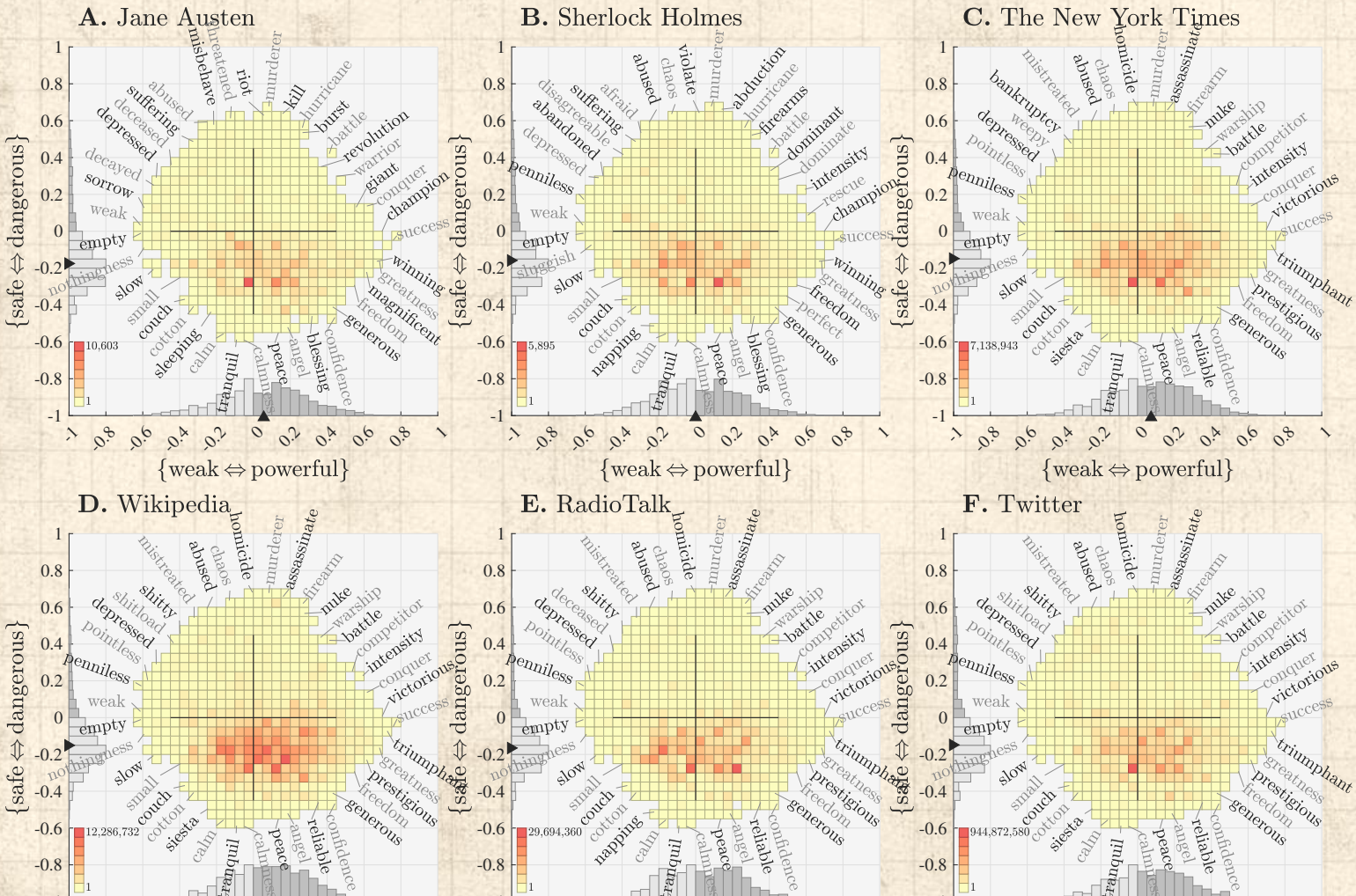


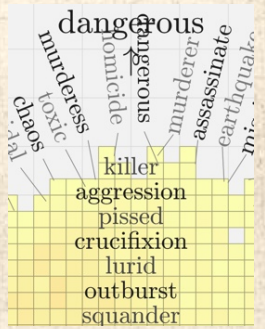




A special thing has happened:

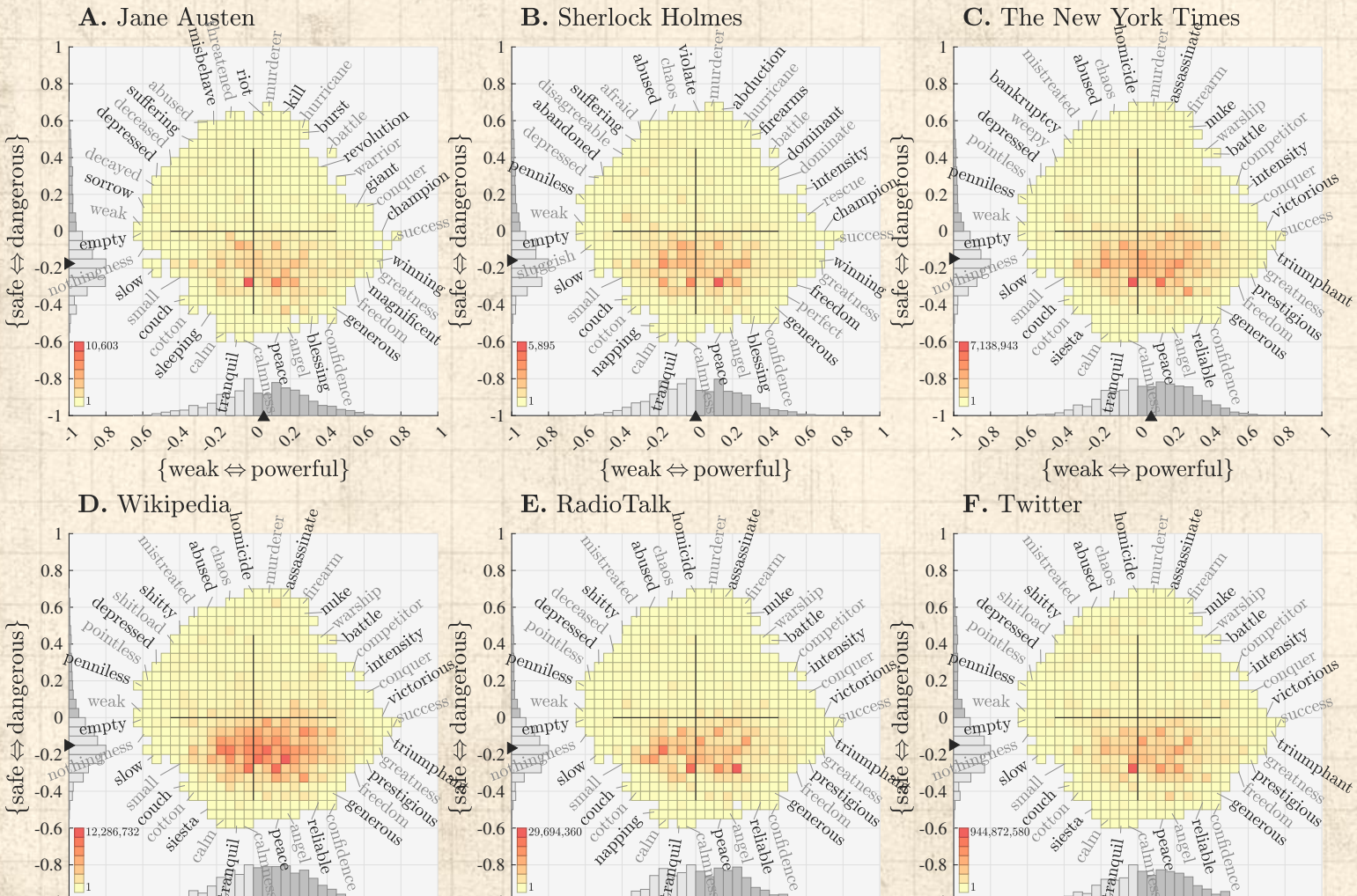
The PDS framework emerged only from analyzing a lexicon (types).

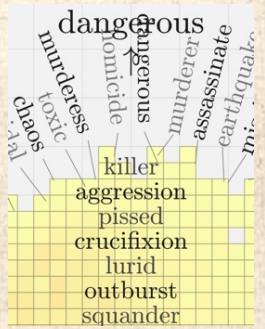




A special thing has happened:

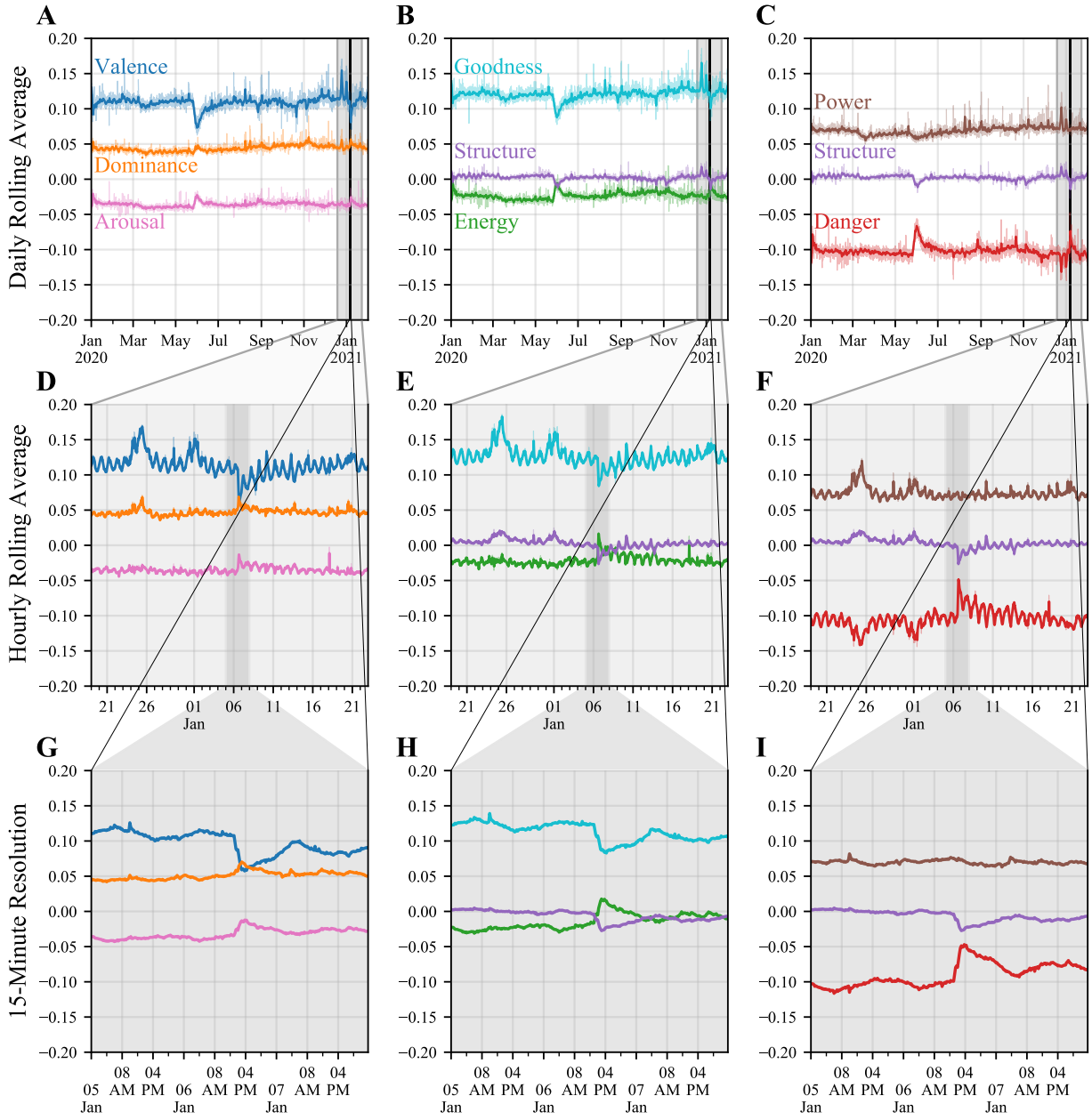
- The PDS framework emerged only from analyzing a lexicon (types).
- Applying PDS framework to disparate corpora (tokens) reveals a linguistic ‘safety bias’.



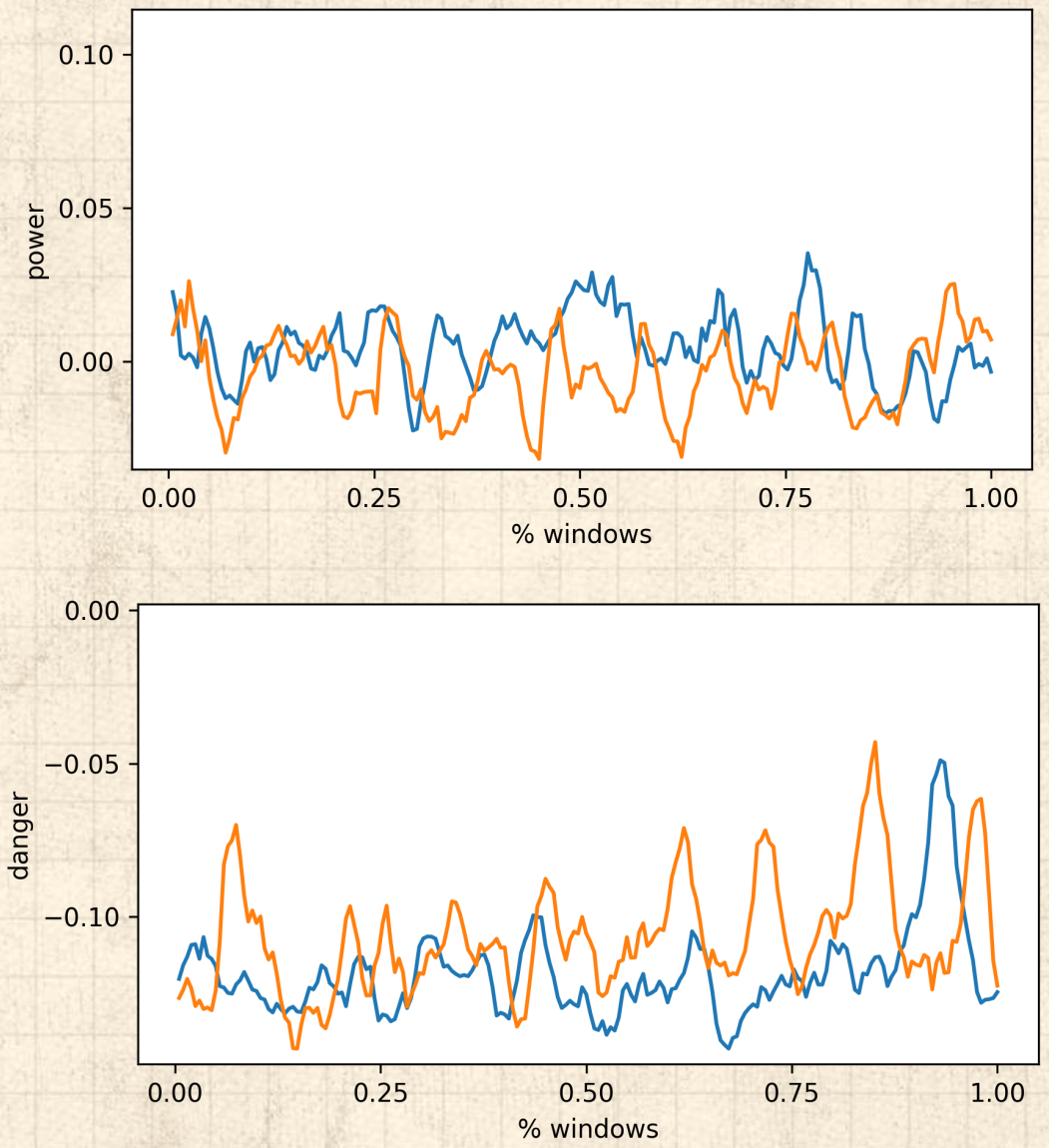


Outline

Prototype ousiometer—Twitter:

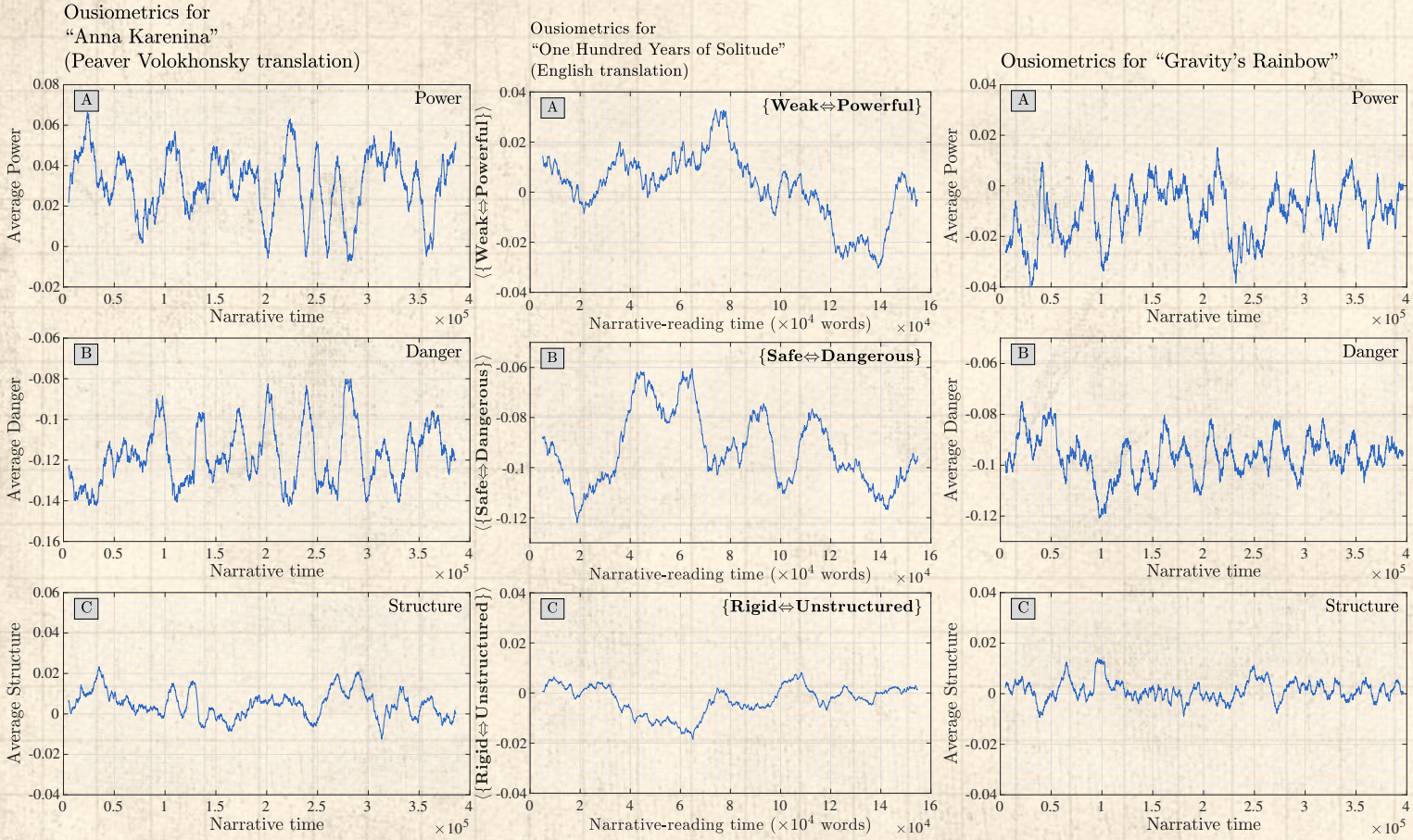


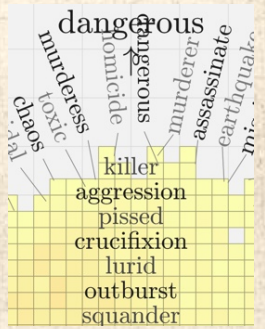
Prototype ousiometer—Harry Potter:



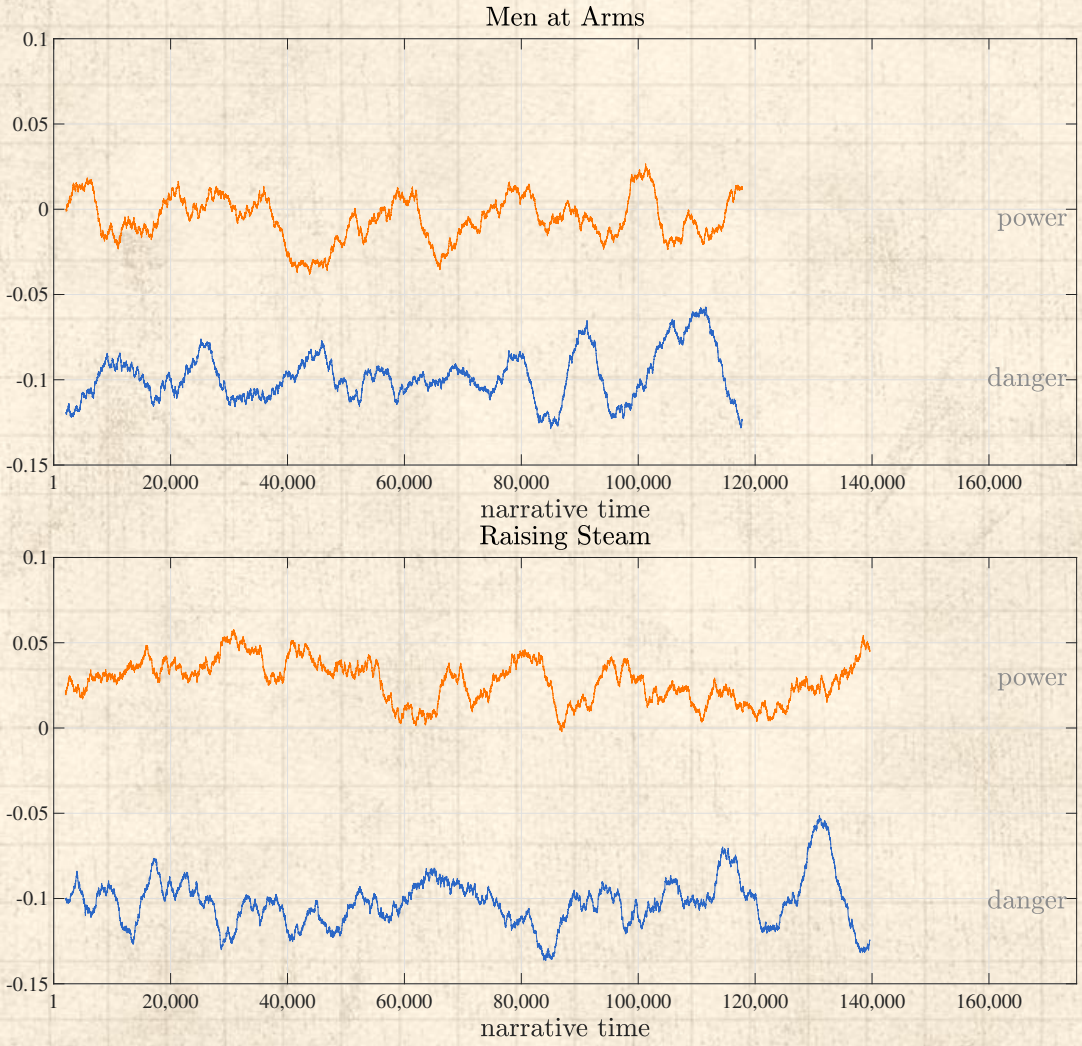
Blue: Harry Potter and the Half-Blood Prince
Orange: Harry Potter and the Deathly Hallows

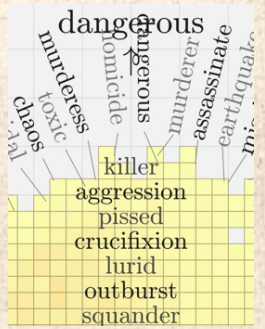
Power and Danger time series for books:

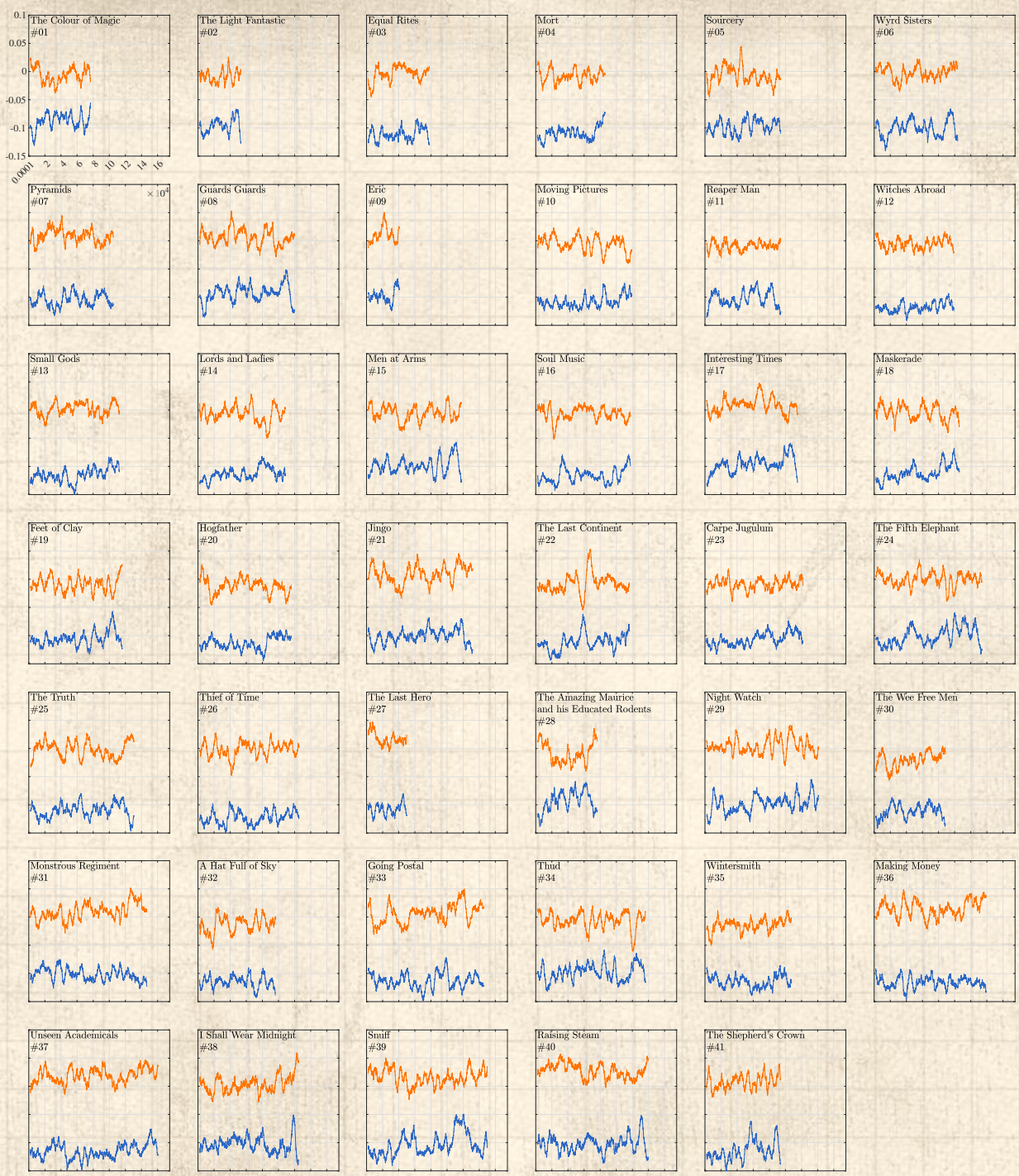


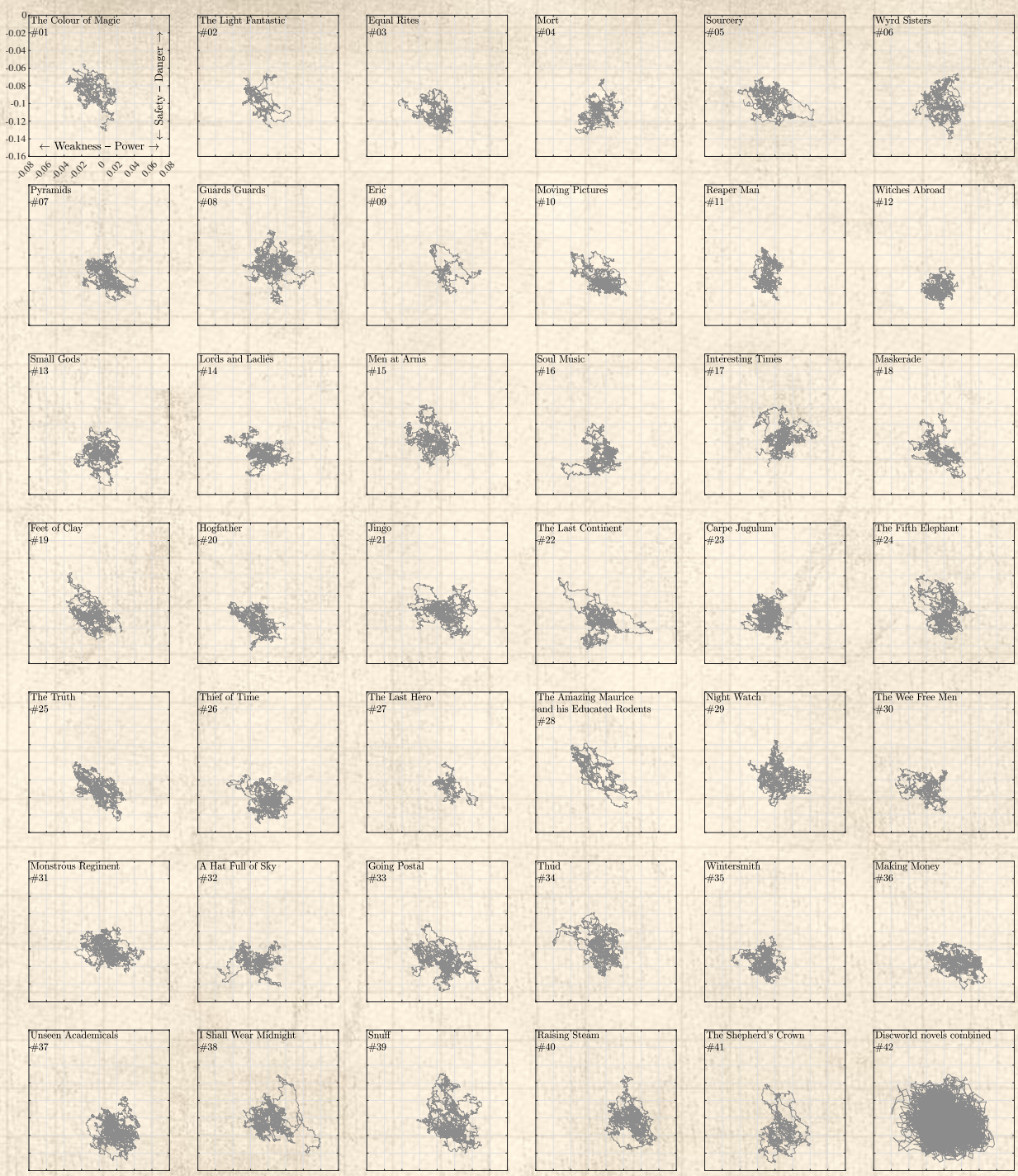


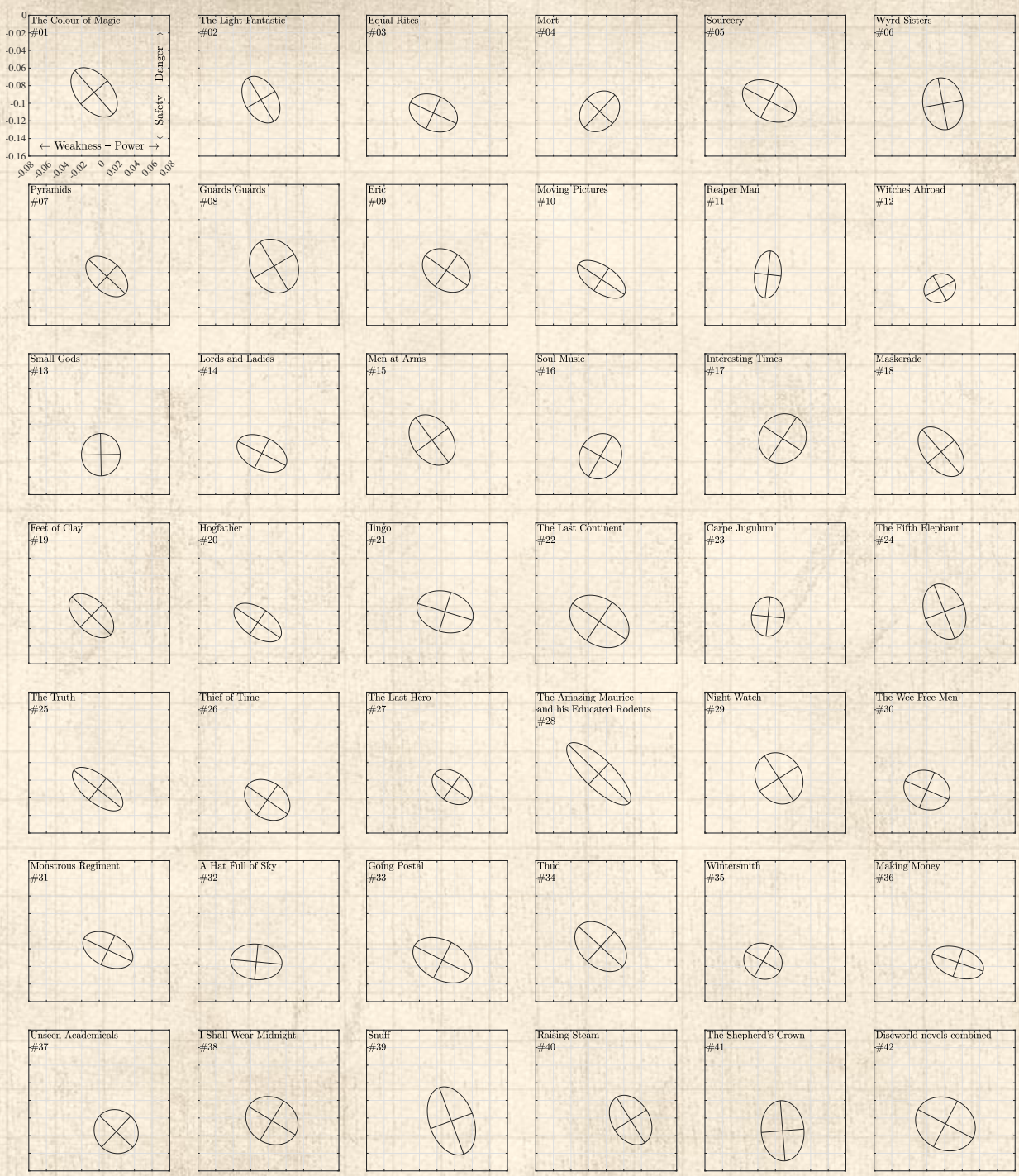
Prototype ousiometer—Terry Pratchett's Discworld:







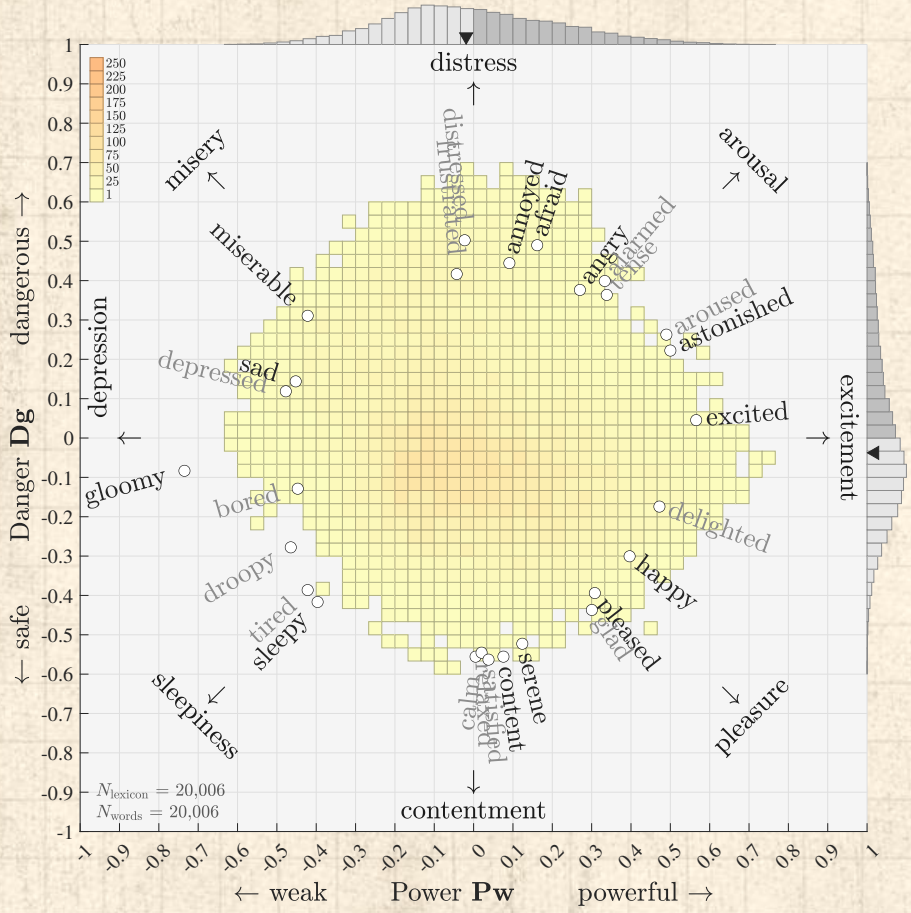




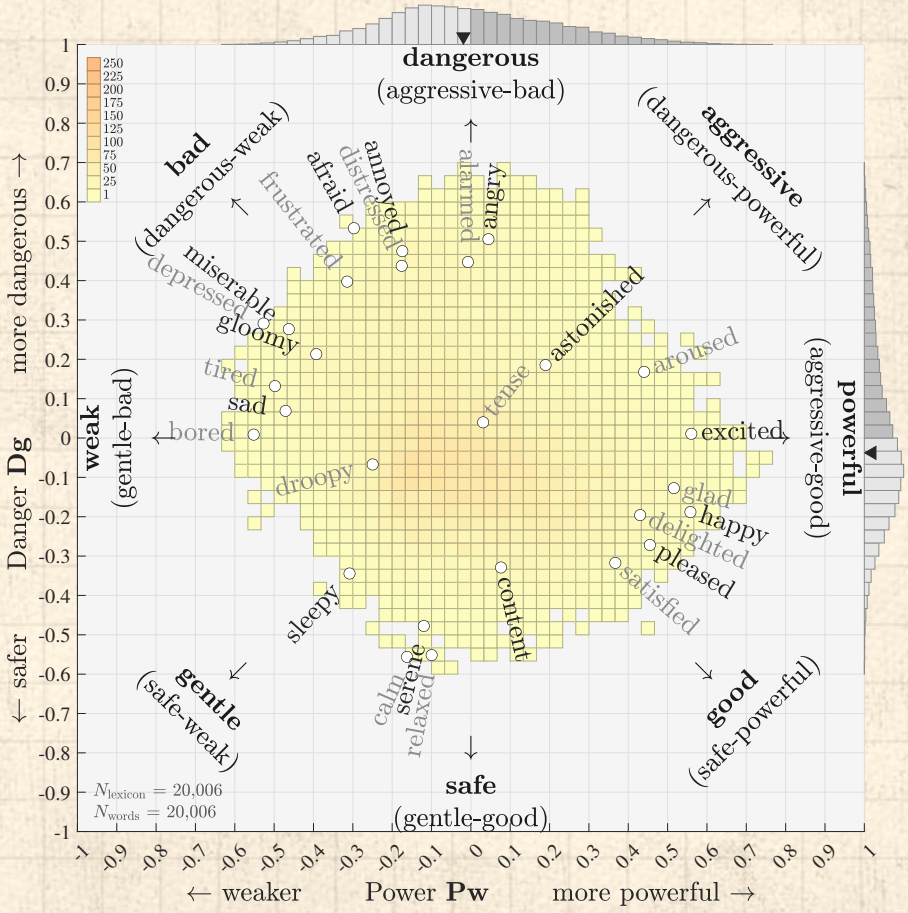
Outline

Rough agreement with Russell's circumplex model, [20] which itself doesn't disagree with a 2-*d* orthogonal framework.

A. Russell's circumplex model of affect:



B. Russell's affect words in DAPG framework:



Dungeons & Dragons—Two alignment axes for character:

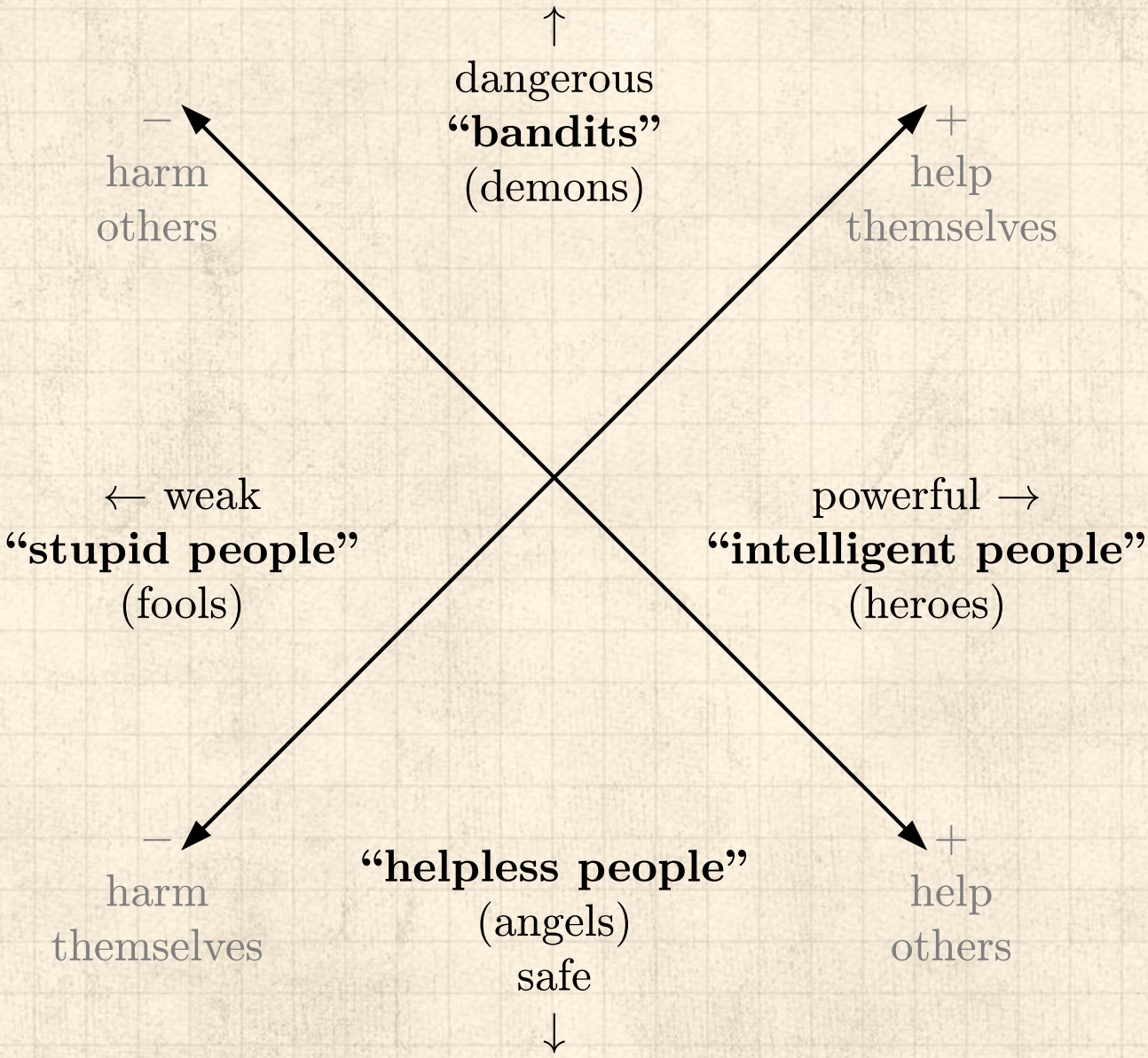
[4]

{lawful ⇔ chaotic} (vertical) and {good ⇔ evil} (horizontal).

[4] 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

Orthogonal frames in political rhetoric.

Outline

Findings, observations, possibilities:

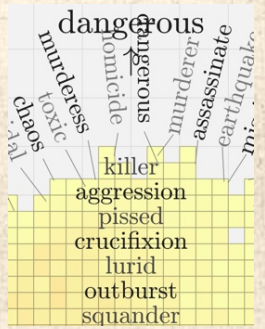
- Power-danger-structure framework emerges in distinct settings, fitting types and tokens.

See concluding remarks in the foundational paper. [5]

Findings, observations, possibilities:

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

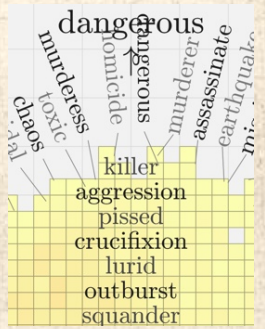
See concluding remarks in the foundational paper. [5]



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

See concluding remarks in the foundational paper. [5]



Findings, observations, possibilities:

- Power-danger-structure framework emerges in distinct settings, fitting types and tokens.
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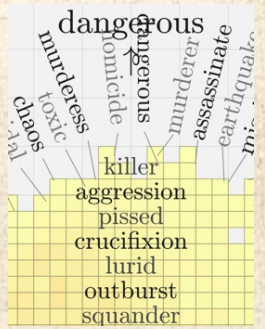
- Happiness/Goodness = Power + Safety
- Ousiometer can be improved and refined.

See concluding remarks in the foundational paper. [5]



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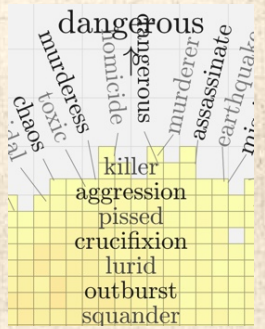
- Power-danger-structure framework emerges in distinct settings, fitting types and tokens.
- Safety bias of communication refines Pollyanna Principle of positivity
- Happiness/Goodness = Power + Safety
- Ousiometer can be improved and refined.
- Possible: Emotions map onto powerful-safe and danger axes.

See concluding remarks in the foundational paper. [5]



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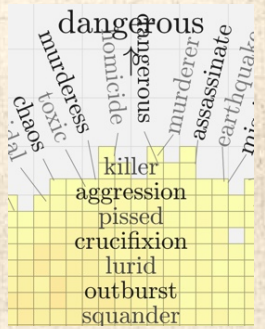
- Power-danger-structure framework emerges in distinct settings, fitting types and tokens.
- Safety bias of communication refines Pollyanna Principle of positivity
- Happiness/Goodness = Power + Safety
- Ousiometer can be improved and refined.
- Possible: Emotions map onto powerful-safe and danger axes.
- Power-danger framework for survival.

See concluding remarks in the foundational paper. [5]



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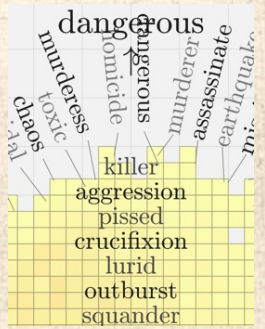
- Possible: Telegnomics for stories—Measuring character arcs, plots.

See concluding remarks in the foundational paper. [5]



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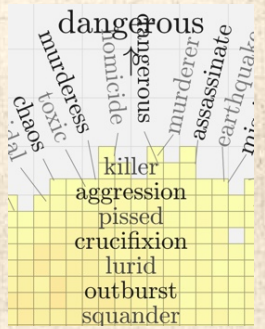
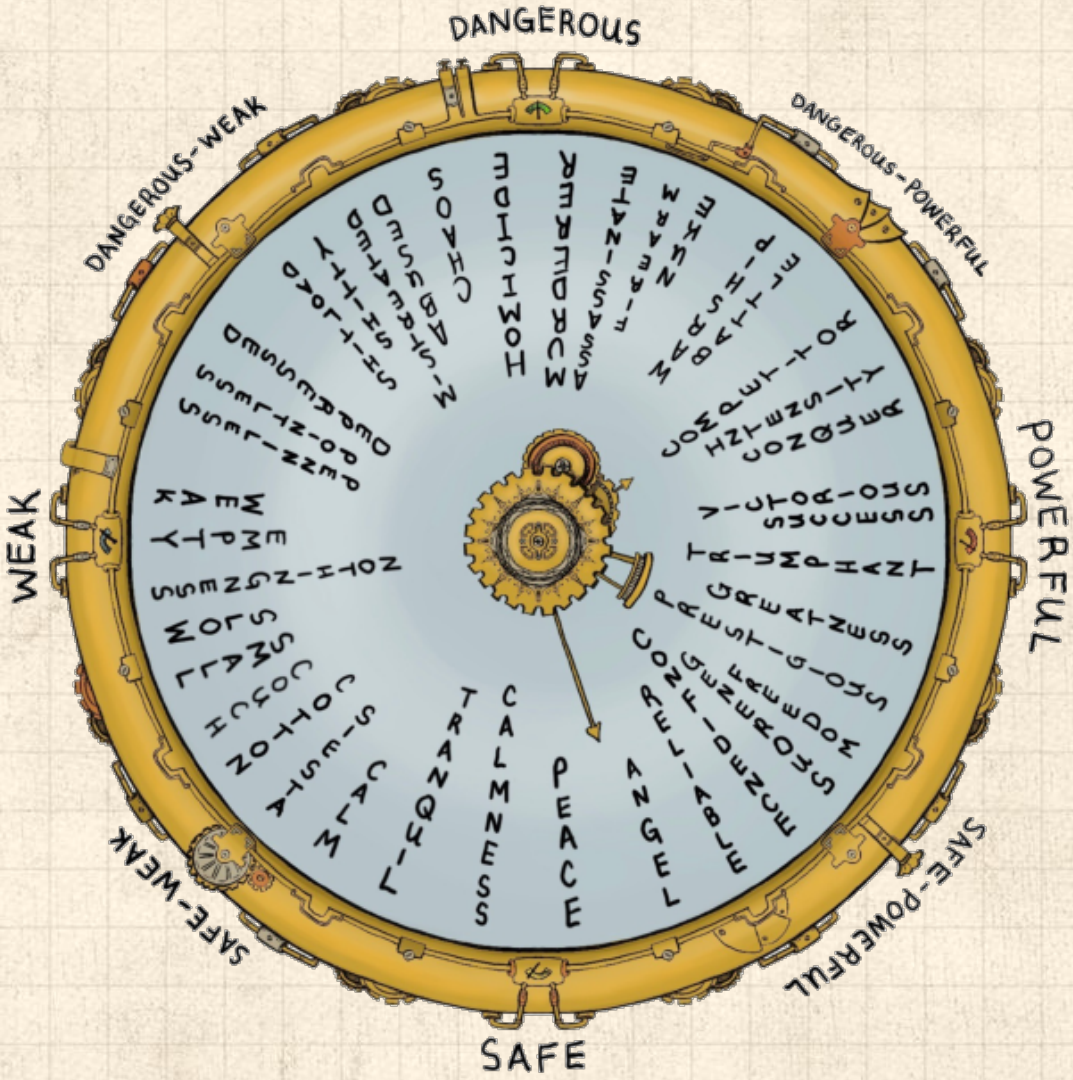
- Ousiometer can be improved and refined.
- Possible: Emotions map onto powerful-safe and danger axes.
- Power-danger framework for survival.
- Possible: Telegnomics for stories—Measuring character arcs, plots.
- Complement to information theory which is meaning-free. [23]

See concluding remarks in the foundational paper. [5]

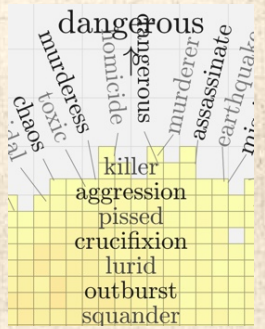


The Compass of Meaning:



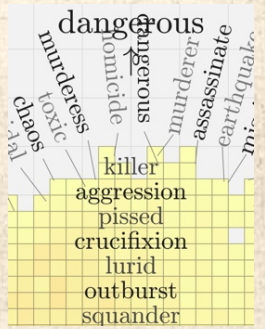
Online appendices: Paper(s), flipbooks, code, ...

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



Troy and Abed

Abed's Uncontrollable Christmas, S2E11 of Community



Synonyms	Valence	Arousal	Dominance	Goodness	Aggression	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. [8]

Dimension	Scale
Evaluation	Good-Bad Pleasant-Unpleasant
Activity	Active-Passive Lively-Still
Potency	Strong-Weak Tough-Tender
Stability	Rational-Emotional Tamed-Untamed

Remeasuring meaning:

Confusion and Conflation:

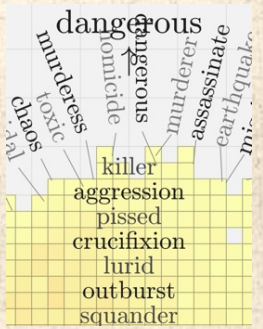
Pleasure, Arousal, Dominance: Mehrabian and Russell revisited

Iris Bakker · Theo van der Voordt · Peter Vink · Jan de Boon

"Pleasure, arousal, dominance: Mehrabian and Russell revisited"

Bakker et al.,
Current Psychology, **33**, 405–421, 2014. [2]

- 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] G. Grand, I. A. Blank, F. Pereira, and E. Fedorenko.
Semantic projection recovers rich human knowledge of multiple object features from word embeddings.
Nature Human Behaviour, 6(7):975–987, 2022. pdf

[7] T. J. Gray, C. M. Danforth, and P. S. Dodds.
Hahahahaha, Duuuuuude, Yeeessss!: A two-parameter characterization of stretchable words and the dynamics of mistypings and misspellings, 2019.
Available online at https://arxiv.org/abs/1907.03920. pdf

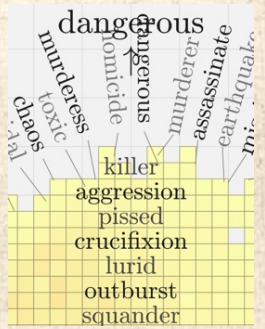
[8] D. R. Heise.
Semantic differential profiles for 1,000 most frequent English words.
Psychological Monographs: General and Applied, 79(8):1, 1965. pdf

References IV

[9] A. Mehrabian and J. A. Russell.
An Approach to Environmental Psychology.
MIT Press, 1974.

[10] A. Mehrabian and J. A. Russell.
The basic emotional impact of environments.
Perceptual and Motor Skills, 38:283–301, 1974. pdf

[11] 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

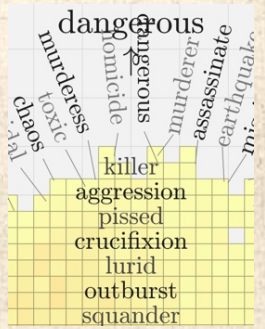


References V

[12] 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

[13] 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

[14] F. Moretti.
Distant Reading.
Verso, New York, 2013.

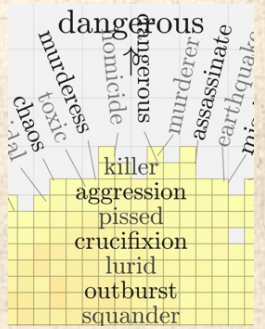


References VI

[15] C. Osgood, G. Suci, and P. Tannenbaum.
The Measurement of Meaning.
University of Illinois, Urbana, IL, 1957.

[16] 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

[17] C. S. S. Peirce.
Prolegomena to an apology for pragmaticism.
The Monist, 16(4):492–546, 1906. pdf



References VII

[18] 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

[19] R. Reisenzein.
Wundt's three-dimensional theory of emotion.
Poznan Studies in the Philosophy of the Sciences and the Humanities, 75:219–250, 2000.

[20] J. A. Russell.
A circumplex model of affect.
Journal of Personality and Social Psychology, 39:1161, 1980.
pdf

References VIII

[21] E. Sandhaus.
The New York Times Annotated Corpus.
Linguistic Data Consortium, Philadelphia, 2008.
Available online at: https://doi.org/10.35111/77ba-9x74.

[22] I. Semenov.
Wikipedia word frequency, 2019.
https://github.com/IlyaSemenov/wikipedia-word-frequency, accessed 2021/04/02.

[23] C. E. Shannon.
A mathematical theory of communication.
The Bell System Tech. J., 27:379–423,623–656, 1948. pdf

References IX

[24] L. M. Solomon.
A factorial study of complex auditory stimuli (passive sonar sounds).
Unpublished Doctoral Dissertation, University of Illinois, 1954. pdf

[25] W. M. Wundt.
Grundriss der Psychologie.
Kröner, 1922.