Appendix C

N x N associative matrices showing associate-to-target and associate-to-associate links for each normed word

Appendix C contains the n x n matrices showing associate-to-target links (resonance) and the associate-to-associate links (connectivity) for thousands of normed words. They are reported in an Excel document arranged in alphabetical order. The matrices provide a concrete representation of associative structure for a given word. For example, as shown in Table 1, the word Dinner has a set of five associates, including supper, eat, lunch, food, and meal. These norms were created by first norming a word such as Dinner, and then, with independent samples of participants, by norming each of that word's associates. The word normed initially is shown in the top left corner of the matrix, and its normed associates are printed in full in the first column, with the first three letters of each associate printed at the top of the remaining columns.

The first row provides the target and the free association probabilities for each of its associates (the self-strength of dinner is assigned a 1.0 for theoretical reasons). The remaining rows should also be read from left to right. In the first column, they show the free association probabilities for each associate-to-target link (e.g., supper produces dinner with a probability of .55). In the remaining columns, they show the probabilities of associate-to-associate links (e.g., supper produces eat with a probability of .02). The associates of DINNER are highly connected, but the associates for most words are sparsely connected. In PIER2 (Nelson & Zhang, 2000), the sum of the strengths in the first column provides an estimate of resonance strength (for Dinner resonance strength is 2.03). The sum of the strengths in the remaining columns provides an estimate of

connectivity strength (for Dinner connectivity strength is .63+.68+.20+1.36+.20=3.06). The sum of resonance and connectivity strength estimates the activation strength of the target when studied (2.03+3.07=5.09). Finally, the absence of a value in the matrix is interpreted as an indication that there is either no connection or that it is too weak to be measured by free association and therefore represents a negligible value that presumably can be ignored.

Table 1

N XN associative matrix for Dinner

CUE	**DIN**	**SUP**	**EAT**	**LUN**	**FOO**	**MEA**
DINNER	1.00	0.54	0.11	0.10	0.09	0.09
SUPPER	0.55	1.00	0.02	0.03	0.17	0.01
EAT			1.00		0.40	0.02
LUNCH	0.27	0.02	0.08	1.00	0.21	0.06
FOOD			0.41	0.01	1.00	0.02
MEAL	0.21	0.06	0.06	0.06	0.49	1.00
Summed Strength	2.03	.62	.68	.20	1.36	.20

The matrices presented in the Excel file present additional information describing the normed target (top row) and its associates (far right columns), but much of this information is already available in Appendices A and B or is irrelevant so the abbreviations will not be defined further. However, not all of the associates were normed for each target, and when there are some, they are listed at the bottom of each matrix.

They are called MIAS, standing for “missing in action.” In general, missing associates represent weak associates in the set of the target, and have a mean rank in the set of 12.62 (SD = 4.78) and a mean strength of connection to the normed word of .02 (SD = .01). The total number of matrices (4,095) presented in this appendix is smaller than the total number of normed targets (5, 019) because any item having a non-normed associate stronger than .04 was eliminated from the pool. Of the words comprising the pool, an average of 92% (SD = 8%) of their associates have been normed.