Appendix A: Summary of Experimental Conditions

Table 1 describes the 44 experimental conditions included in the model comparison, including the number of trials, the number of words presented per trial (Words/Trial), the number of referents presented per trial (Objects/Trial), the number of to-be-learned word-referent pairs (Items), people's overall mean accuracy (p(o|w) across all intended w-o mappings) in each condition (Accuracy), the standard deviation of performance (SD), and the number of participants per condition (N).

Appendix B: Clustering experiments and models by misfit

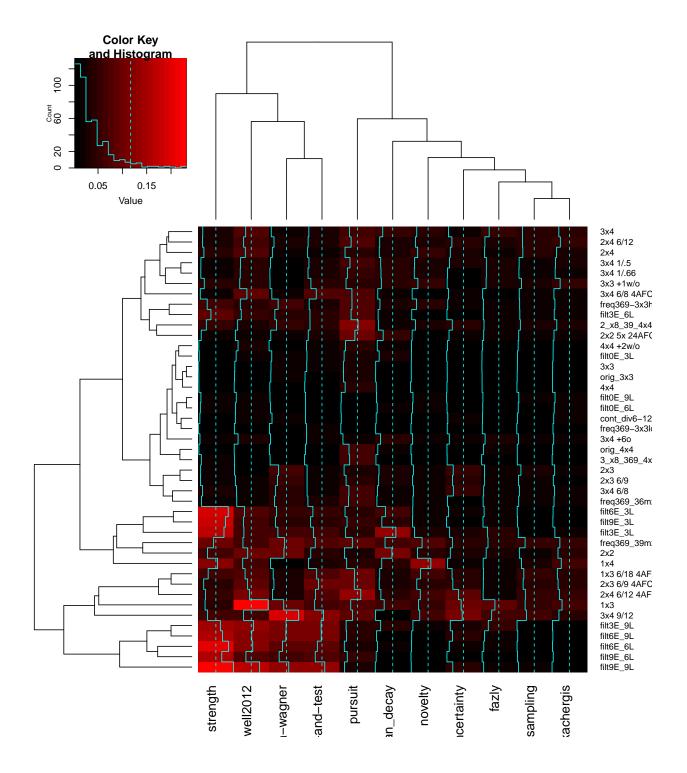
The heatmap below shows cross-validated model fit (SSE; sum of squared error) for each experimental condition. Note that each model has difficulty fitting at least one ore more experimental conditions—and these difficult conditions vary somewhat by model. For example, the strength-biased model has particular difficulty with the filt conditions¹ (Kachergis et al., 2012), which present a group of word-referent pairs early in training which then systematically co-occur with particular novel late-stage word-referent pairs, testing how strictly learners will maintain a mutual exclusivity (ME) constraint. The Trueswell2012 model also shows greater misfit in most of these conditions (except for the filtXE_3L conditions, which have only 3 repetitions of the late-stage pairings, and thus do not overwhelm learners' ME bias).

On the other hand, many experimental conditions are nearly equally well fit by all models, especially those that have a fixed number of repetitions per word-referent pair (e.g., 3x3 and 4x4, although 2x2 presents difficulties for some models).

¹Except for the filt0E_ conditions, which consist only of the late-stage pairs, with no early stage.

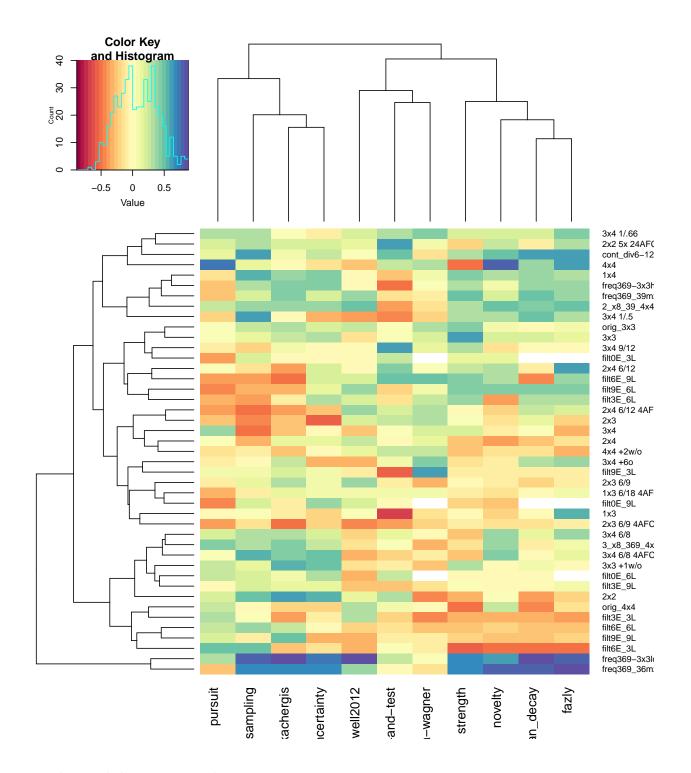
| 3x4 36 3 4 18 0.19 0.12 25 3x4 1/.66 36 3 4 18 0.22 0.11 25 3x4 1/.66 36 3 4 18 0.27 0.12 20 2x4 54 2 4 18 0.30 0.15 33 3x3 + 1w/o 54 2 4 18 0.30 0.15 33 4x4 + 2w/o 54 4 4 18 0.10 0.05 39 1x3 6/18 4AFC 108 1 3 18 0.67 0.10 33 2x3 6/9 4AFC 54 2 3 18 0.69 0.11 38 2x4 6/12 4AFC 54 2 4 18 0.69 0.01 38 1x3 108 1 3 18 0.67 0.01 31 3x4 6/8 4AFC 36 3 4 18 0.69 0.09 | Condition Name | Trials | Words/Trial | Objects/Trial | Items | Accuracy | SD | N |
|--|---|--------|-------------|---------------|-------|----------|------|-----|
| 3x4 1/.5 36 3 4 18 0.22 0.11 25 3x4 1/.66 36 3 4 18 0.21 0.09 25 2x4 54 2 4 18 0.27 0.12 20 2x4 54 2 4 18 0.30 0.15 33 3x3 +1w/o 54 4 4 18 0.17 0.08 39 4x4 +2w/o 54 4 4 18 0.10 0.05 39 1x3 6/9 4AFC 108 1 3 18 0.69 0.11 38 2x4 6/12 4AFC 54 2 3 18 0.69 0.11 38 1x3 108 1 3 18 0.69 0.11 38 2x4 6/12 54 2 4 18 0.69 0.09 36 1x3 18 0.55 0.07 23 3 18 0.55 0.07< | | 36 | , | <u> </u> | 18 | | 0.12 | 25 |
| $\begin{array}{cccccccccccccccccccccccccccccccccccc$ | $3x4 \ 1/.5$ | 36 | | 4 | 18 | 0.22 | 0.11 | 25 |
| 3x4 + 6o 36 3 4 18 0.27 0.12 20 2x4 54 2 4 18 0.30 0.15 33 3x3 + 1 lw/o 54 3 3 18 0.17 0.08 39 4x4 + 2w/o 54 4 4 18 0.10 0.05 39 1x3 6/18 4AFC 108 1 3 18 0.67 0.10 43 2x3 6/9 4AFC 54 2 3 18 0.69 0.11 38 2x4 6/12 4AFC 54 2 4 18 0.69 0.09 36 1x3 108 1 3 18 0.67 0.11 23 2x4 6/12 54 2 3 18 0.55 0.07 23 2x4 6/12 54 2 3 18 0.55 0.07 23 2x4 6/12 54 2 3 18 0.55 0.01 | ' | | | | | | | |
| 2x4 54 2 4 18 0.30 0.15 33 3x3 + 1w/o 54 3 3 18 0.17 0.08 39 1x3 6/18 4AFC 108 1 3 18 0.10 0.05 39 1x3 6/18 4AFC 108 1 3 18 0.67 0.10 43 2x4 6/12 4AFC 54 2 3 18 0.69 0.11 38 2x4 6/12 4AFC 54 2 4 18 0.62 0.12 31 3x4 6/8 4AFC 36 3 4 18 0.62 0.12 31 2x3 54 2 3 18 0.58 0.07 23 2x4 6/12 54 2 3 18 0.58 0.07 23 2x4 6/12 54 2 3 18 0.55 0.01 13 3x4 6/8 36 3 4 18 0.43 0.08 | • | 36 | | 4 | 18 | 0.27 | 0.12 | 20 |
| $\begin{array}{cccccccccccccccccccccccccccccccccccc$ | | 54 | | 4 | 18 | 0.30 | 0.15 | 33 |
| 1x3 6/18 4AFC | 3x3 + 1w/o | 54 | 3 | 3 | 18 | 0.17 | 0.08 | 39 |
| 1x3 6/18 4AFC | | 54 | 4 | 4 | 18 | 0.10 | 0.05 | 39 |
| 2x4 6/12 4AFC 54 2 4 18 0.62 0.12 31 3x4 6/8 4AFC 36 3 4 18 0.69 0.09 36 1x3 108 1 3 18 0.74 0.11 23 2x3 54 2 3 18 0.58 0.07 23 2x4 6/12 54 2 4 18 0.33 0.18 14 3x4 6/8 36 3 4 18 0.42 0.14 13 2x3 6/9 54 2 3 18 0.55 0.11 32 3x4 9/12 54 3 4 18 0.69 0.08 33 1x4 108 1 4 18 0.69 0.08 33 1x4 108 1 3 18 0.43 0.09 0.12 40 4x4 27 4 4 18 0.31 0.07 <t< td=""><td></td><td>108</td><td>1</td><td>3</td><td>18</td><td>0.67</td><td>0.10</td><td>43</td></t<> | | 108 | 1 | 3 | 18 | 0.67 | 0.10 | 43 |
| 3x4 6/8 4AFC 36 3 4 18 0.69 0.09 36 1x3 108 1 3 18 0.74 0.11 23 2x3 54 2 3 18 0.58 0.07 23 2x4 6/12 54 2 4 18 0.33 0.18 14 3x4 6/8 36 3 4 18 0.42 0.14 13 2x3 6/9 54 2 3 18 0.55 0.11 32 3x4 9/12 54 3 4 18 0.69 0.08 33 1x4 108 1 4 18 0.19 0.10 40 1x3 108 1 3 18 0.49 0.08 33 1x4 18 0.19 0.10 40 44 18 0.19 0.10 40 4x4 27 4 4 18 0.31 0.02 </td <td>2x3 6/9 4AFC</td> <td>54</td> <td>2</td> <td>3</td> <td>18</td> <td>0.69</td> <td>0.11</td> <td>38</td> | 2x3 6/9 4AFC | 54 | 2 | 3 | 18 | 0.69 | 0.11 | 38 |
| 1x3 108 1 3 18 0.74 0.11 23 2x3 54 2 3 18 0.58 0.07 23 2x4 6/12 54 2 4 18 0.42 0.14 13 3x4 6/8 36 3 4 18 0.42 0.14 13 2x3 6/9 54 2 3 18 0.55 0.11 32 3x4 9/12 54 3 4 18 0.69 0.08 33 1x4 108 1 4 18 0.19 0.10 40 1x3 108 1 3 18 0.39 0.12 40 4x4 27 4 4 18 0.31 0.07 77 3x3 36 3 3 18 0.43 0.08 36 2x2 5x 24 2 2 18 0.79 0.11 19 | 2x4 6/12 4AFC | 54 | 2 | 4 | 18 | 0.62 | 0.12 | 31 |
| 1x3 108 1 3 18 0.74 0.11 23 2x3 54 2 3 18 0.58 0.07 23 2x4 6/12 54 2 4 18 0.33 0.18 14 3x4 6/8 36 3 4 18 0.42 0.14 13 2x3 6/9 54 2 3 18 0.55 0.11 32 3x4 9/12 54 3 4 18 0.69 0.08 33 1x4 108 1 4 18 0.19 0.10 40 1x3 108 1 3 18 0.39 0.12 40 4x4 27 4 4 18 0.31 0.07 77 3x3 36 3 3 18 0.43 0.08 36 2x2 54 2 2 18 0.79 0.11 19 | 3x46/84AFC | 36 | 3 | 4 | 18 | 0.69 | 0.09 | 36 |
| 2x4 6/12 54 2 4 18 0.33 0.18 14 3x4 6/8 36 3 4 18 0.42 0.14 13 2x3 6/9 54 2 3 18 0.55 0.11 32 3x4 9/12 54 3 4 18 0.69 0.08 33 1x4 108 1 4 18 0.19 0.10 40 1x3 108 1 3 18 0.39 0.12 40 4x4 27 4 4 18 0.31 0.07 77 3x3 36 3 3 18 0.43 0.08 36 2x2 54 2 2 18 0.79 0.11 19 2x2 5x 24AFC 60 2 2 2 4 0.51 0.12 46 filt3E_3L 18 2 2 12 0.72 0.12 30 | • | 108 | 1 | 3 | 18 | 0.74 | 0.11 | 23 |
| 3x4 6/8 36 3 4 18 0.42 0.14 13 2x3 6/9 54 2 3 18 0.55 0.11 32 3x4 9/12 54 3 4 18 0.69 0.08 33 1x4 108 1 4 18 0.19 0.10 40 1x3 108 1 3 18 0.39 0.12 40 4x4 27 4 4 18 0.31 0.07 77 3x3 36 3 3 18 0.43 0.08 36 2x2 54 2 2 18 0.79 0.11 19 2x2 5x 24AFC 60 2 2 24 0.51 0.12 46 filt0E_3L 18 2 2 12 0.38 0.09 31 filt3E_3L 18 2 2 12 0.72 0.12 30 filt6E_3L 36 2 2 12 0.70 0.08 31 | 2x3 | 54 | 2 | 3 | 18 | 0.58 | 0.07 | 23 |
| 2x3 6/9 54 2 3 18 0.55 0.11 32 3x4 9/12 54 3 4 18 0.69 0.08 33 1x4 108 1 4 18 0.19 0.10 40 1x3 108 1 3 18 0.39 0.12 40 4x4 27 4 4 18 0.31 0.07 77 3x3 36 3 3 18 0.43 0.08 36 2x2 54 2 2 18 0.79 0.11 19 2x2 5x 24AFC 60 2 2 24 0.51 0.12 46 filt0E_3L 18 2 2 12 0.38 0.09 31 filt3E_3L 18 2 2 12 0.72 0.12 30 filt6E_3L 36 2 2 12 0.71 0.09 31 | 2x4 6/12 | 54 | 2 | 4 | 18 | 0.33 | 0.18 | 14 |
| 3x4 9/12 54 3 4 18 0.69 0.08 33 1x4 108 1 4 18 0.19 0.10 40 1x3 108 1 3 18 0.39 0.12 40 4x4 27 4 4 18 0.31 0.07 77 3x3 36 3 3 18 0.43 0.08 36 2x2 54 2 2 18 0.79 0.11 19 2x2 5x 24AFC 60 2 2 24 0.51 0.12 46 filt0E_3L 18 2 2 12 0.38 0.09 31 filt3E_3L 18 2 2 12 0.72 0.12 30 filt6E_3L 36 2 2 12 0.71 0.09 30 filt9E_3L 45 2 2 12 0.71 0.09 30 filt9E_3L 45 2 2 12 0.70 0.08 31 </td <td>3x46/8</td> <td>36</td> <td>3</td> <td>4</td> <td>18</td> <td>0.42</td> <td>0.14</td> <td>13</td> | 3x46/8 | 36 | 3 | 4 | 18 | 0.42 | 0.14 | 13 |
| 3x4 9/12 54 3 4 18 0.69 0.08 33 1x4 108 1 4 18 0.19 0.10 40 1x3 108 1 3 18 0.39 0.12 40 4x4 27 4 4 18 0.31 0.07 77 3x3 36 3 3 18 0.43 0.08 36 2x2 54 2 2 18 0.79 0.11 19 2x2 5x 24AFC 60 2 2 24 0.51 0.12 46 filt0E_3L 18 2 2 12 0.38 0.09 31 filt3E_3L 18 2 2 12 0.72 0.12 30 filt6E_3L 18 2 2 12 0.71 0.09 31 filt9E_3L 45 2 2 12 0.70 0.08 31 | 2x3 6/9 | 54 | 2 | 3 | 18 | 0.55 | 0.11 | 32 |
| 1x4 108 1 4 18 0.19 0.10 40 1x3 108 1 3 18 0.39 0.12 40 4x4 27 4 4 18 0.31 0.07 77 3x3 36 3 3 18 0.43 0.08 36 2x2 54 2 2 18 0.79 0.11 19 2x2 5x 24AFC 60 2 2 2 4 0.51 0.12 46 filt0E_3L 18 2 2 12 0.38 0.09 31 filt3E_3L 18 2 2 12 0.72 0.12 30 filt6E_3L 36 2 2 12 0.71 0.09 30 filt6E_3L 36 2 2 12 0.71 0.09 30 filt6E_6L 36 2 2 12 0.47 0.11 27 filt6E_6L 54 2 2 12 0.67 0.11 < | ' | 54 | | 4 | 18 | 0.69 | 0.08 | 33 |
| 4x4 27 4 4 18 0.31 0.07 77 3x3 36 3 3 18 0.43 0.08 36 2x2 54 2 2 18 0.79 0.11 19 2x2 5x 24AFC 60 2 2 24 0.51 0.12 46 filt0E_3L 18 2 2 12 0.38 0.09 31 filt3E_3L 27 2 2 12 0.72 0.12 30 filt6E_3L 36 2 2 12 0.71 0.09 30 filt9E_3L 45 2 2 12 0.71 0.09 30 filt9E_3L 45 2 2 12 0.70 0.08 31 filt0E_6L 36 2 2 12 0.70 0.08 31 filt6E_6L 45 2 2 12 0.67 0.11 27 filt6E_9L 54 2 2 12 0.75 0.09 27< | • | 108 | 1 | 4 | 18 | 0.19 | 0.10 | 40 |
| 3x3 36 3 3 18 0.43 0.08 36 2x2 54 2 2 18 0.79 0.11 19 2x2 5x 24AFC 60 2 2 24 0.51 0.12 46 filt0E_3L 18 2 2 12 0.38 0.09 31 filt3E_3L 27 2 2 12 0.72 0.12 30 filt6E_3L 36 2 2 12 0.71 0.09 30 filt9E_3L 45 2 2 12 0.71 0.09 30 filt9E_3L 45 2 2 12 0.70 0.08 31 filt0E_6L 36 2 2 12 0.47 0.11 27 filt3E_6L 45 2 2 12 0.67 0.11 27 filt9E_6L 63 2 2 12 0.75 0.09 27 filt9E_9L 54 2 2 12 0.54 0.09 < | 1x3 | 108 | 1 | 3 | 18 | 0.39 | 0.12 | 40 |
| 3x3 36 3 3 18 0.43 0.08 36 2x2 54 2 2 18 0.79 0.11 19 2x2 5x 24AFC 60 2 2 24 0.51 0.12 46 filt0E_3L 18 2 2 12 0.38 0.09 31 filt3E_3L 27 2 2 12 0.72 0.12 30 filt6E_3L 36 2 2 12 0.71 0.09 30 filt9E_3L 45 2 2 12 0.71 0.09 30 filt9E_3L 45 2 2 12 0.70 0.08 31 filt0E_6L 36 2 2 12 0.47 0.11 27 filt3E_6L 45 2 2 12 0.67 0.11 27 filt6E_6L 54 2 2 12 0.75 0.09 27 filt0E_9L 54 2 2 12 0.54 0.09 < | 4x4 | 27 | 4 | 4 | 18 | 0.31 | 0.07 | |
| 2x2 54 2 2 18 0.79 0.11 19 2x2 5x 24AFC 60 2 2 24 0.51 0.12 46 filt0E_3L 18 2 2 12 0.38 0.09 31 filt3E_3L 27 2 2 12 0.72 0.12 30 filt6E_3L 36 2 2 12 0.71 0.09 30 filt9E_3L 45 2 2 12 0.71 0.09 30 filt9E_6L 36 2 2 12 0.70 0.08 31 filt0E_6L 36 2 2 12 0.47 0.11 27 filt3E_6L 45 2 2 12 0.67 0.11 27 filt6E_6L 54 2 2 12 0.79 0.09 27 filt0E_9L 54 2 2 12 0.75 0.09 27 filt6E_9L 72 2 2 12 0.83 0.08 | 3x3 | 36 | 3 | 3 | | 0.43 | 0.08 | |
| 2x2 5x 24AFC 60 2 2 24 0.51 0.12 46 filt0E_3L 18 2 2 12 0.38 0.09 31 filt3E_3L 27 2 2 12 0.72 0.12 30 filt6E_3L 36 2 2 12 0.71 0.09 30 filt9E_3L 45 2 2 12 0.70 0.08 31 filt0E_6L 36 2 2 12 0.47 0.11 27 filt3E_6L 45 2 2 12 0.67 0.11 27 filt6E_6L 54 2 2 12 0.67 0.11 27 filt6E_6L 54 2 2 12 0.79 0.09 27 filt0E_9L 63 2 2 12 0.54 0.09 31 filt3E_9L 63 2 2 12 0.83 0.08 31 filt6E_9L 72 2 2 12 0.82 0.09 31 filt9E_9L 81 2 2 12 0.86 0.06 31 2_x8_39_4x4 27 4 | 2x2 | 54 | 2 | | 18 | 0.79 | 0.11 | 19 |
| filtoE_3L 18 2 2 12 0.38 0.09 31 filt3E_3L 27 2 2 12 0.72 0.12 30 filt6E_3L 36 2 2 12 0.71 0.09 30 filt9E_3L 45 2 2 12 0.70 0.08 31 filt0E_6L 36 2 2 12 0.70 0.08 31 filt0E_6L 36 2 2 12 0.47 0.11 27 filt6E_6L 45 2 2 12 0.67 0.11 27 filt6E_6L 54 2 2 12 0.79 0.09 27 filt9E_6L 63 2 2 12 0.75 0.09 27 filt0E_9L 54 2 2 12 0.54 0.09 31 filt3E_9L 63 2 2 12 0.83 0.08 | 2x2 5x 24AFC | 60 | | | 24 | 0.51 | 0.12 | 46 |
| filt6E_3L 36 2 2 12 0.71 0.09 30 filt9E_3L 45 2 2 12 0.70 0.08 31 filt0E_6L 36 2 2 12 0.47 0.11 27 filt3E_6L 45 2 2 12 0.67 0.11 27 filt6E_6L 54 2 2 12 0.79 0.09 27 filt9E_6L 63 2 2 12 0.75 0.09 27 filt0E_9L 54 2 2 12 0.54 0.09 31 filt3E_9L 63 2 2 12 0.83 0.08 31 filt6E_9L 72 2 2 12 0.82 0.09 31 filt9E_9L 81 2 2 12 0.86 0.06 31 2_x8_39_4x4 27 4 4 18 0.41 0.16 30 3_x8_369_3x3loCD 36 3 3 18 0.33 <td< td=""><td>$filt0E_3L$</td><td>18</td><td>2</td><td>2</td><td>12</td><td>0.38</td><td>0.09</td><td>31</td></td<> | $filt0E_3L$ | 18 | 2 | 2 | 12 | 0.38 | 0.09 | 31 |
| filt9E_3L 45 2 2 12 0.70 0.08 31 filt0E_6L 36 2 2 12 0.47 0.11 27 filt3E_6L 45 2 2 12 0.67 0.11 27 filt6E_6L 54 2 2 12 0.79 0.09 27 filt9E_6L 63 2 2 12 0.75 0.09 27 filt0E_9L 54 2 2 12 0.54 0.09 31 filt3E_9L 63 2 2 12 0.83 0.08 31 filt6E_9L 72 2 2 12 0.82 0.09 31 filt9E_9L 81 2 2 12 0.86 0.06 31 2_x8_39_4x4 27 4 4 18 0.41 0.16 30 3_x8_369_4x4 27 4 4 18 0.33 0.08 102 freq369_3x3hiCD 36 3 3 18 0.45 | $filt3E_3L$ | 27 | 2 | 2 | 12 | 0.72 | 0.12 | 30 |
| filtoE_6L 36 2 2 12 0.47 0.11 27 filt3E_6L 45 2 2 12 0.67 0.11 27 filt6E_6L 54 2 2 12 0.79 0.09 27 filt9E_6L 63 2 2 12 0.75 0.09 27 filt0E_9L 54 2 2 12 0.54 0.09 31 filt3E_9L 63 2 2 12 0.83 0.08 31 filt6E_9L 72 2 2 12 0.82 0.09 31 filt9E_9L 81 2 2 12 0.86 0.06 31 2_x8_39_4x4 27 4 4 18 0.41 0.16 30 3_x8_369_4x4 27 4 4 18 0.33 0.06 74 freq369_3x3hiCD 36 3 3 18 0.45 0.16 62 freq369_39mx 36 3 3 18 0.62 | $filt6E_3L$ | 36 | 2 | 2 | 12 | 0.71 | 0.09 | 30 |
| filt0E_6L 36 2 2 12 0.47 0.11 27 filt3E_6L 45 2 2 12 0.67 0.11 27 filt6E_6L 54 2 2 12 0.79 0.09 27 filt9E_6L 63 2 2 12 0.75 0.09 27 filt0E_9L 54 2 2 12 0.54 0.09 31 filt3E_9L 63 2 2 12 0.83 0.08 31 filt6E_9L 72 2 2 12 0.82 0.09 31 filt9E_9L 81 2 2 12 0.86 0.06 31 2_x8_39_4x4 27 4 4 18 0.41 0.16 30 3_x8_369_4x4 27 4 4 18 0.33 0.06 74 freq369_3x3hiCD 36 3 3 18 0.45 0.16 62 freq369_39mx 36 3 3 18 0.62 | filt9E 3L | 45 | 2 | 2 | 12 | 0.70 | 0.08 | 31 |
| filt6E_6L 54 2 2 12 0.79 0.09 27 filt9E_6L 63 2 2 12 0.75 0.09 27 filt0E_9L 54 2 2 12 0.54 0.09 31 filt3E_9L 63 2 2 12 0.83 0.08 31 filt6E_9L 72 2 2 12 0.82 0.09 31 filt9E_9L 81 2 2 12 0.86 0.06 31 2_x8_39_4x4 27 4 4 18 0.41 0.16 30 3_x8_369_4x4 27 4 4 18 0.33 0.06 74 freq369-3x3liCD 36 3 3 18 0.33 0.08 102 freq369_36mx 36 3 3 18 0.45 0.16 62 freq369_39mx 36 3 3 18 0.62 0.14 66 orig_4x4 27 4 4 18 0.27 | $filt0E_6L$ | 36 | 2 | 2 | 12 | 0.47 | 0.11 | 27 |
| filt9E_6L 63 2 2 12 0.75 0.09 27 filt0E_9L 54 2 2 12 0.54 0.09 31 filt3E_9L 63 2 2 12 0.83 0.08 31 filt6E_9L 72 2 2 12 0.82 0.09 31 filt9E_9L 81 2 2 12 0.86 0.06 31 2_x8_39_4x4 27 4 4 18 0.41 0.16 30 3_x8_369_4x4 27 4 4 18 0.33 0.06 74 freq369-3x3loCD 36 3 3 18 0.33 0.08 102 freq369_36mx 36 3 3 18 0.45 0.16 62 freq369_39mx 36 3 3 18 0.62 0.14 66 orig_4x4 27 4 4 18 0.27 0.07 88 | $filt3E_6L$ | 45 | 2 | 2 | 12 | 0.67 | 0.11 | 27 |
| filt0E_9L 54 2 2 12 0.54 0.09 31 filt3E_9L 63 2 2 12 0.83 0.08 31 filt6E_9L 72 2 2 12 0.82 0.09 31 filt9E_9L 81 2 2 12 0.86 0.06 31 2_x8_39_4x4 27 4 4 18 0.41 0.16 30 3_x8_369_4x4 27 4 4 18 0.33 0.06 74 freq369-3x3loCD 36 3 3 18 0.33 0.08 102 freq369-3s3hiCD 36 3 3 18 0.56 0.12 26 freq369_36mx 36 3 3 18 0.45 0.16 62 freq369_39mx 36 3 3 18 0.62 0.14 66 orig_4x4 27 4 4 18 0.27 0.07 88 | $\mathrm{filt}6\mathrm{E}_6\mathrm{L}$ | 54 | 2 | 2 | 12 | 0.79 | 0.09 | 27 |
| filt3E_9L 63 2 2 12 0.83 0.08 31 filt6E_9L 72 2 2 12 0.82 0.09 31 filt9E_9L 81 2 2 12 0.86 0.06 31 2_x8_39_4x4 27 4 4 18 0.41 0.16 30 3_x8_369_4x4 27 4 4 18 0.33 0.06 74 freq369-3x3loCD 36 3 3 18 0.33 0.08 102 freq369-3x3hiCD 36 3 3 18 0.56 0.12 26 freq369_36mx 36 3 3 18 0.45 0.16 62 freq369_39mx 36 3 3 18 0.62 0.14 66 orig_4x4 27 4 4 18 0.27 0.07 88 | $filt9E_6L$ | 63 | 2 | 2 | 12 | 0.75 | 0.09 | 27 |
| filt6E_9L 72 2 2 12 0.82 0.09 31 filt9E_9L 81 2 2 12 0.86 0.06 31 2_x8_39_4x4 27 4 4 18 0.41 0.16 30 3_x8_369_4x4 27 4 4 18 0.33 0.06 74 freq369-3x3loCD 36 3 3 18 0.33 0.08 102 freq369-3x3hiCD 36 3 3 18 0.56 0.12 26 freq369_36mx 36 3 3 18 0.45 0.16 62 freq369_39mx 36 3 3 18 0.62 0.14 66 orig_4x4 27 4 4 18 0.27 0.07 88 | $filt0E_9L$ | 54 | 2 | 2 | 12 | 0.54 | 0.09 | 31 |
| filt9E_9L 81 2 2 12 0.86 0.06 31 2_x8_39_4x4 27 4 4 18 0.41 0.16 30 3_x8_369_4x4 27 4 4 18 0.33 0.06 74 freq369-3x3loCD 36 3 18 0.33 0.08 102 freq369-3x3hiCD 36 3 18 0.56 0.12 26 freq369_36mx 36 3 18 0.45 0.16 62 freq369_39mx 36 3 18 0.62 0.14 66 orig_4x4 27 4 4 18 0.27 0.07 88 | $filt3E_9L$ | 63 | 2 | 2 | 12 | 0.83 | 0.08 | 31 |
| filt9E_9L 81 2 2 12 0.86 0.06 31 2_x8_39_4x4 27 4 4 18 0.41 0.16 30 3_x8_369_4x4 27 4 4 18 0.33 0.06 74 freq369-3x3loCD 36 3 3 18 0.33 0.08 102 freq369-3x3hiCD 36 3 3 18 0.56 0.12 26 freq369_36mx 36 3 3 18 0.45 0.16 62 freq369_39mx 36 3 3 18 0.62 0.14 66 orig_4x4 27 4 4 18 0.27 0.07 88 | $filt6E_9L$ | 72 | 2 | 2 | 12 | 0.82 | 0.09 | 31 |
| 3_x8_369_4x4 27 4 4 18 0.33 0.06 74 freq369-3x3loCD 36 3 18 0.33 0.08 102 freq369-3x3hiCD 36 3 18 0.56 0.12 26 freq369_36mx 36 3 3 18 0.45 0.16 62 freq369_39mx 36 3 3 18 0.62 0.14 66 orig_4x4 27 4 4 18 0.27 0.07 88 | $filt9E_9L$ | 81 | 2 | | 12 | 0.86 | 0.06 | 31 |
| 3_x8_369_4x4 27 4 4 18 0.33 0.06 74 freq369-3x3loCD 36 3 18 0.33 0.08 102 freq369-3x3hiCD 36 3 18 0.56 0.12 26 freq369_36mx 36 3 18 0.45 0.16 62 freq369_39mx 36 3 3 18 0.62 0.14 66 orig_4x4 27 4 4 18 0.27 0.07 88 | 2_x8_39_4x4 | 27 | 4 | 4 | 18 | 0.41 | 0.16 | 30 |
| freq369-3x3hiCD 36 3 18 0.56 0.12 26 freq369_36mx 36 3 18 0.45 0.16 62 freq369_39mx 36 3 18 0.62 0.14 66 orig_4x4 27 4 4 18 0.27 0.07 88 | | 27 | 4 | 4 | 18 | 0.33 | 0.06 | 74 |
| freq369_36mx 36 3 3 18 0.45 0.16 62 freq369_39mx 36 3 3 18 0.62 0.14 66 orig_4x4 27 4 4 18 0.27 0.07 88 | freq369-3x3loCD | 36 | 3 | 3 | 18 | 0.33 | 0.08 | 102 |
| freq369_36mx 36 3 3 18 0.45 0.16 62 freq369_39mx 36 3 3 18 0.62 0.14 66 orig_4x4 27 4 4 18 0.27 0.07 88 | • | | | | | | | |
| freq369_39mx 36 3 3 18 0.62 0.14 66 orig_4x4 27 4 4 18 0.27 0.07 88 | | | | | | | | |
| orig_4x4 27 4 4 18 0.27 0.07 88 | $freq369_39mx$ | | | | | | | |
| | _ | | | | | | | |
| | orig_3x3 | 36 | 3 | 3 | 18 | 0.43 | 0.08 | 104 |
| cont_div6-12 | | | | | | | | |

Table 1: Summary of modeled datasets.



Correlation of model vs. human item-level performance per condition

Each cell displays the correlation coefficient of model vs. human item-level performance in a given experimental condition.



Each Model's Best- and Worst-Fitting Experiment

Table 2 summarizes for each model, what experimental condition is best fit by that model (in terms of correlation, best and best_cond), and what condition has the worst fit for that model (worst and worst_cond). For six models, freq369-3x3loC was the easiest to fit. For four models, filt6E_3Lfazly was the most difficult to fit.

| A.f. 1.1 | 1 , | - | 1 , 1 | , 1 |
|--------------------|------|-------|------------------|--------------|
| Model | best | worst | best_cond | worst_cond |
| Bayesian_decay | 0.88 | -0.53 | freq369-3x3loCD | $filt6E_3L$ |
| fazly | 0.88 | -0.52 | $freq369_36mx$ | $filt6E_3L$ |
| kachergis | 0.84 | -0.52 | freq369-3x3loCD | 2x3 6/9 4AFC |
| trueswell 2012 | 0.84 | -0.43 | freq369-3x3loCD | 2x3 6/9 4AFC |
| novelty | 0.78 | -0.52 | $freq369_36mx$ | $filt6E_3L$ |
| kachergis_sampling | 0.78 | -0.52 | freq369-3x3loCD | 3x4 |
| uncertainty | 0.76 | -0.56 | freq369-3x3loCD | 2x3 |
| pursuit | 0.72 | -0.44 | 4x4 | $filt0E_9L$ |
| strength | 0.69 | -0.53 | freq369-3x3loCD | $filt6E_3L$ |
| guess-and-test | 0.62 | -0.70 | 2x2 5x 24AFC | 1x3 |
| rescorla-wagner | 0.61 | -0.46 | $\rm filt9E_3L$ | 2x2 |

Table 2: Each model's best- and worst-fitting experiment.