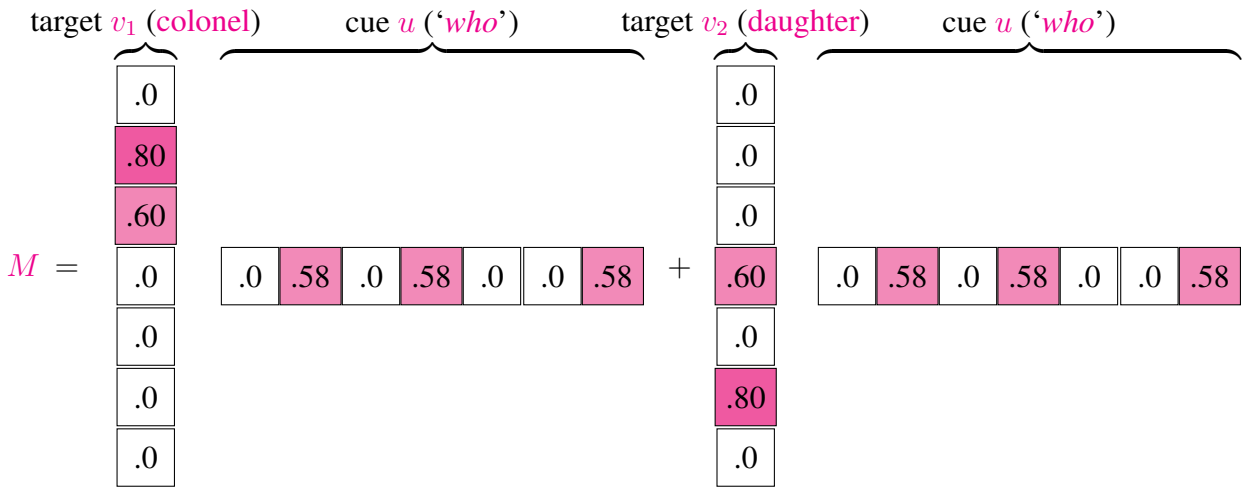
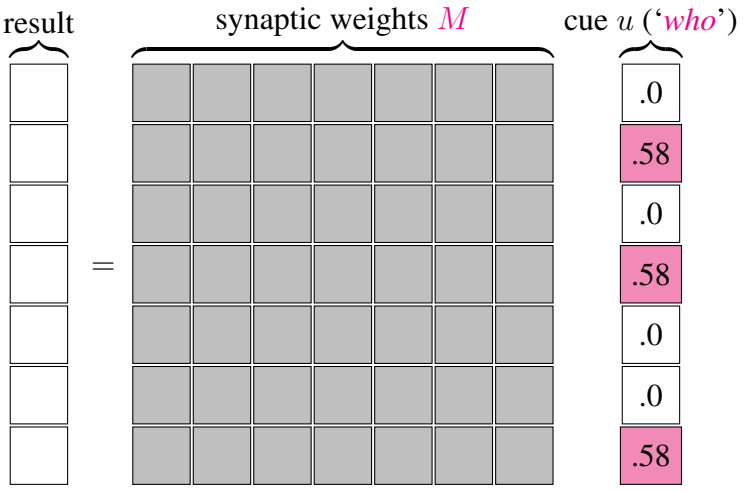
Ling 3701H / Psych 3371H: Problem Set 4

Due via Carmen dropbox at 11:59 PM 4/20.

1. (a) [7 pts.] If associative memory M is made from one cue u and two targets v_1 and v_2:

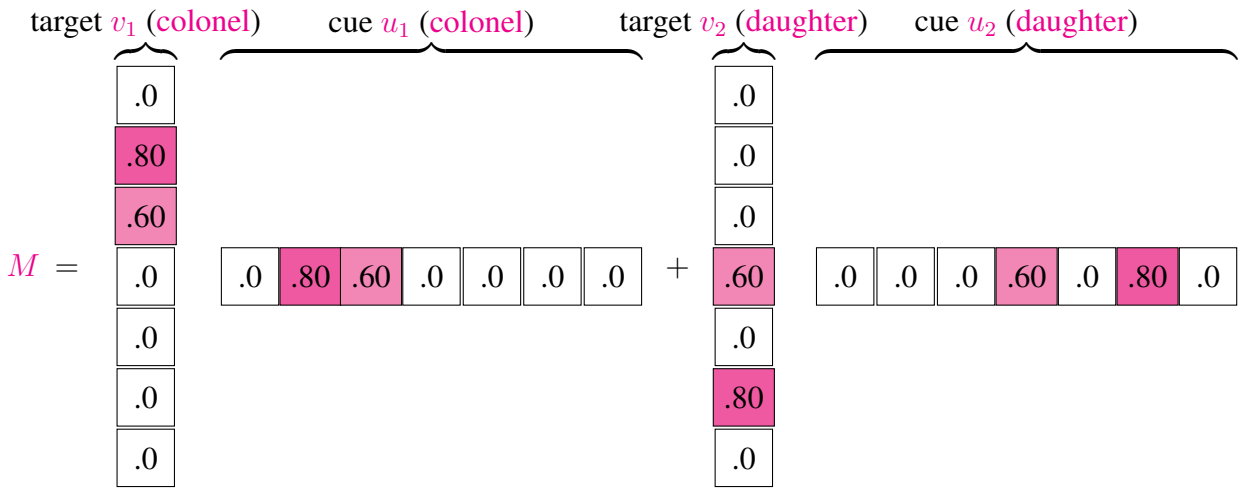


what is the result of cueing M with u? (HINT: You don't need to calculate the matrix!)

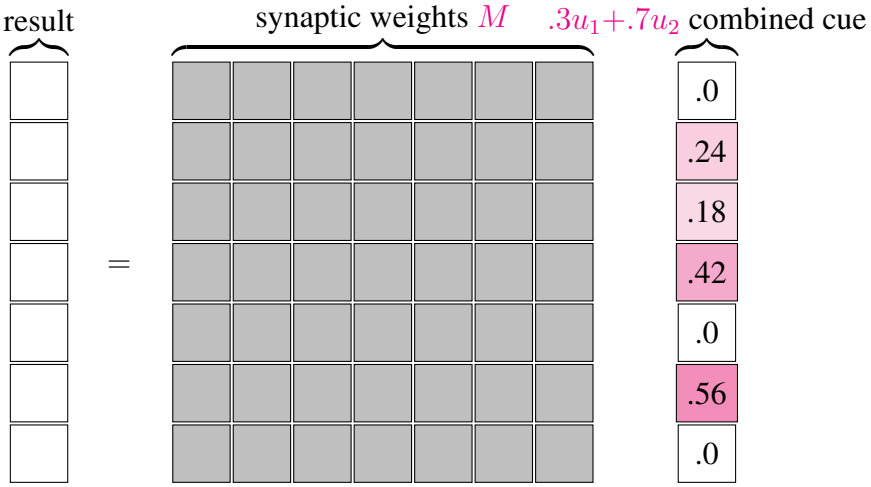


(b) [3 pts.] Describe the result in terms of v_1 and v_2.

2. (a) [7 pts.] If associative memory M is made from cues u_1 and u_2 and targets v_1 and v_2:

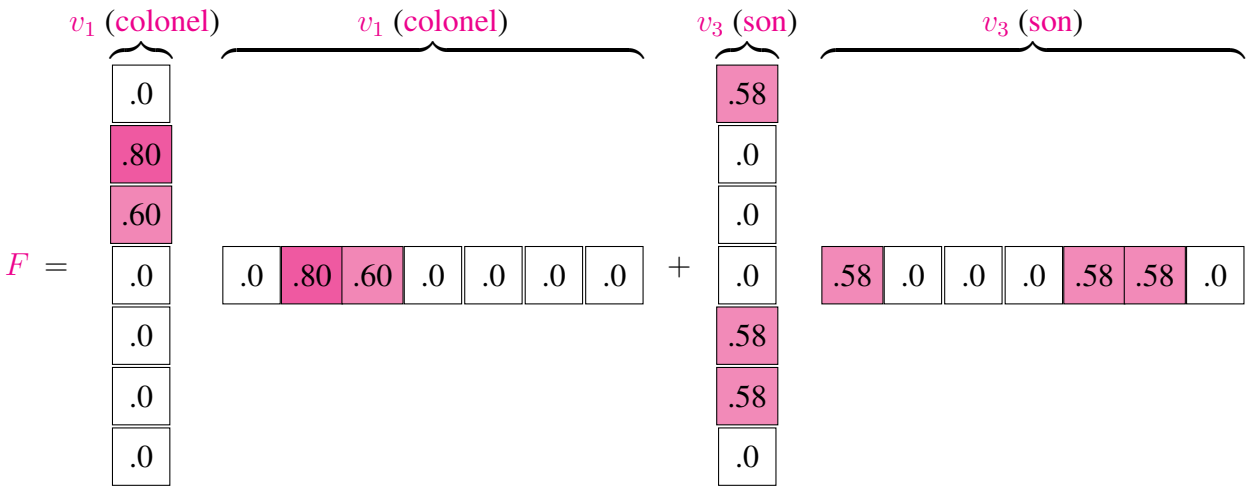


what results from cueing M with a mixture of $.3u_1 + .7u_2$? (You needn't calculate the matrix!)

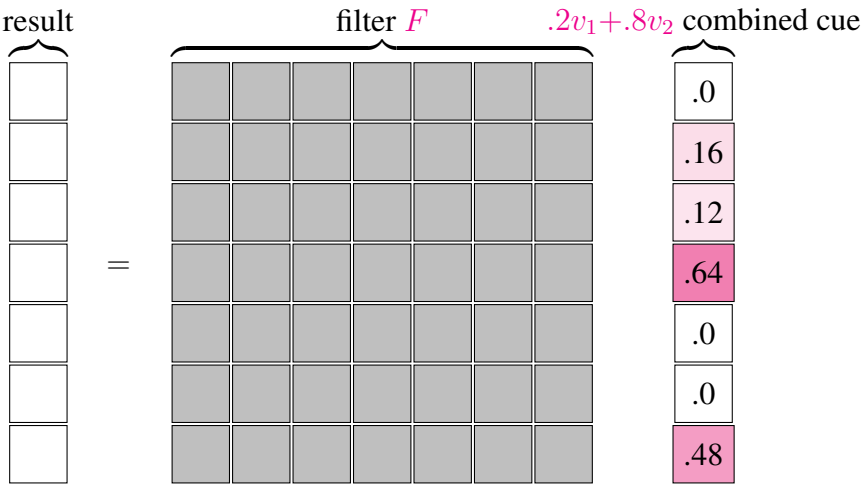


(b) [3 pts.] Describe the result in terms of v_1 and v_2.

3. [10 pts.] If a filter F is made from auto-associated vectors v_1 and v_3 (NOTE variable names!):



what is the result of cueing F with a mixture of $.2v_1 + .8v_2$? (You needn't calculate the matrix!)



4. [10 pts.] Consider the example sentences mentioned in the Levy 2008 reading (p. 1153):

   (a) The daughter of the colonel who shot himself on the balcony had been very sad. (slow)

   (b) The son of the colonel who shot himself on the balcony had been very sad. (fast)

   Why might the ambiguity propagation and resolution implemented in the above memory model predict the last sentence to be read faster than the first?