Let’s go through example of visual areas

V = preferred

A, T = nonpreferred

Ipsi vs. contra

Now there are three options

1. only scaled versions = s; ie. S: a,v means A and V are scaled version

2. completely independent = i

3. scaled + independent = i+s

Now we do it factorially

Factor 1: Do stimuli from different sensory modalities elicit common, independent or partly shared representations

Factor 2: Do stimuli from ipsi vs. contra elicit common, independent or partly shared representations

Factor 3: Do we have additional ipsi vs, contra expression (i.e.you add these final two columns) – 2 levels: yes or no

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
|  | S: A,V,T | S+I:V vs. A,T  S: A, T | I: V vs. (A,T)  S: A,T | I: V vs. (A,T)  S+I: A,T | I:A,V,T |
| S: Ipsi, Contra |  |  |  |  |  |
| I+S: Ipsi, Contra | 2,1 | 2,2 | 2,3 | 2,4 | 2,5 |
| I: Ipsi vs. Contra |  |  |  |  |  |

So when we manipulate ipsi vs. contra we do it factorially ….

I’ve attached a matlab script that specifies model 2,5,1 (i.e. with generic ipsi vs. contra expression)

So we test 30 models! + the free chol model … but importantly, plotting the model evidence factorially (e.g. using imagesc) provides a more clear picture of what really influence those pattern

One may still criticize about this factorial exploration that even when we allow Preferred and Non-preferred signals to induce independent pattern, our exploration assumes that either both of them induce correlated or uncorrelated ipsi and contra-lateral patterns … but for the moment I would keep a bit more simple … otherwise we run into factorial explosion, because in principle A stim may induce lateralized activations, but V do not etc. … but I think once we have the best model we can still look at the parameters … further, we have the cholesky model to check how well our model fits the data and whether there is anything unmodelled.