How do we learn vowels?

Till Poppels
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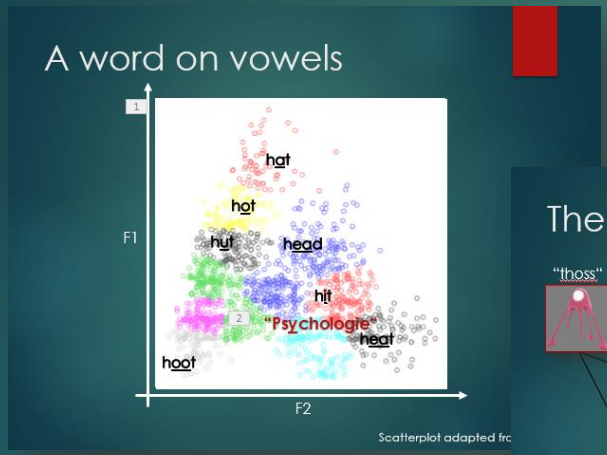
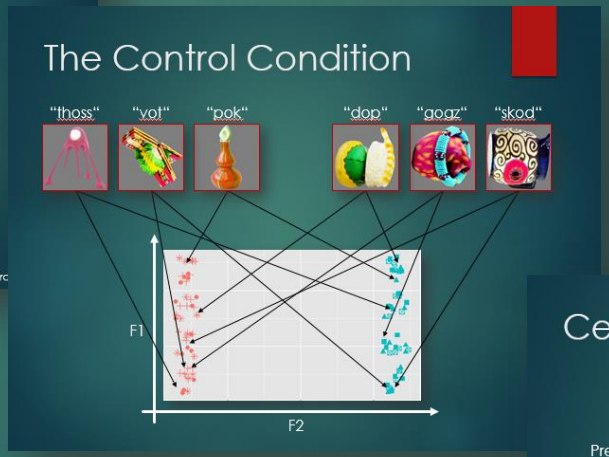
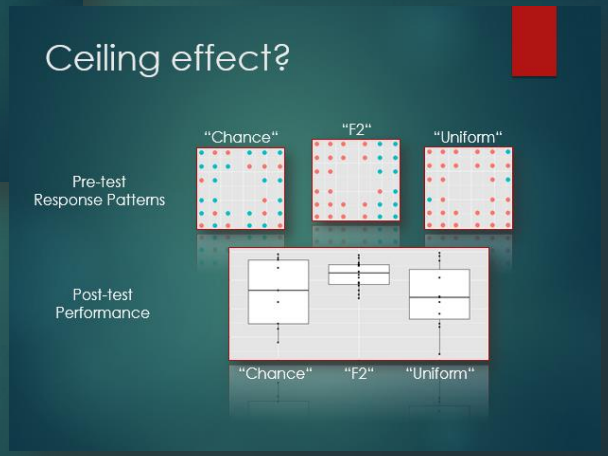
1. Vowels



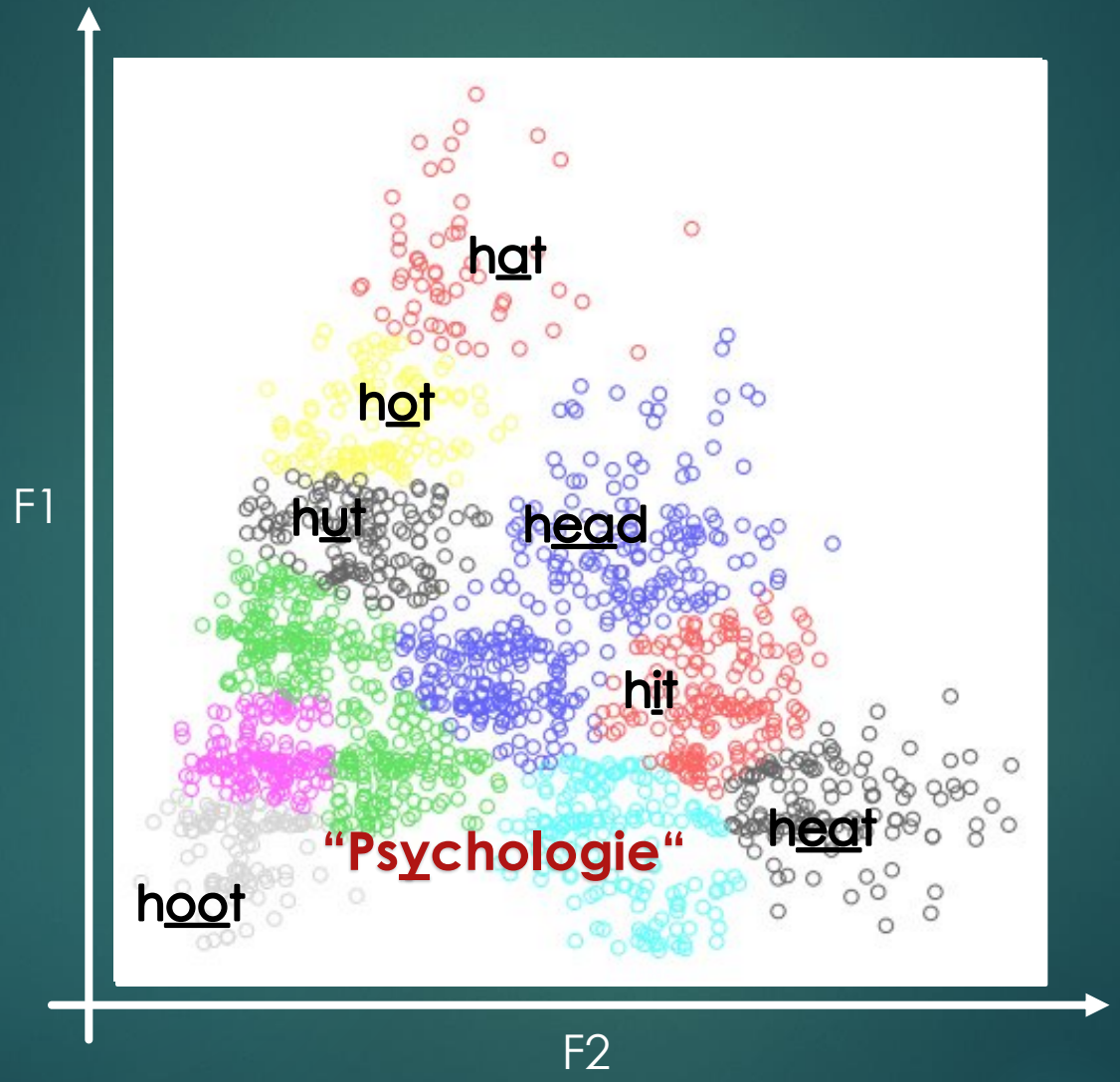
2. Design



3. Results

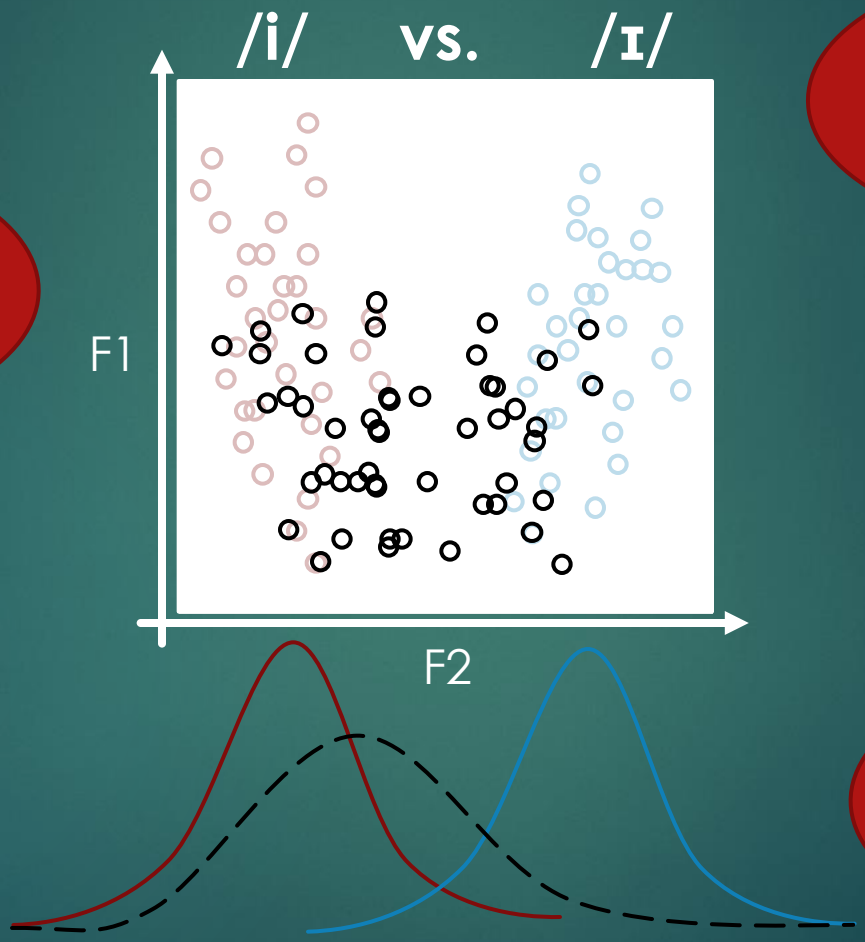


A word on vowels



Scatterplot adapted from Yang (2012)

Learning by Listening



Infants doing Statistics? Really?!

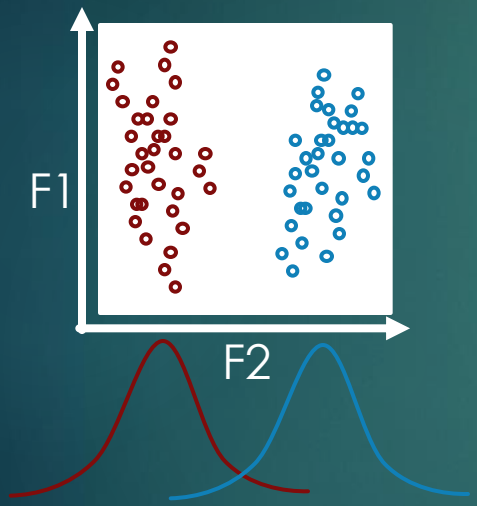
Yes! And adults do it, too.

And: words help!

How can we test this?

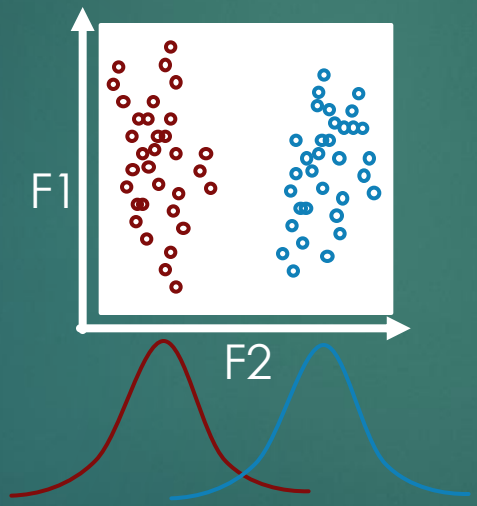
Training → Test: Categorization

"Aligned" Condition



"thoss" "pok"
"thoss" "pok"
... ...

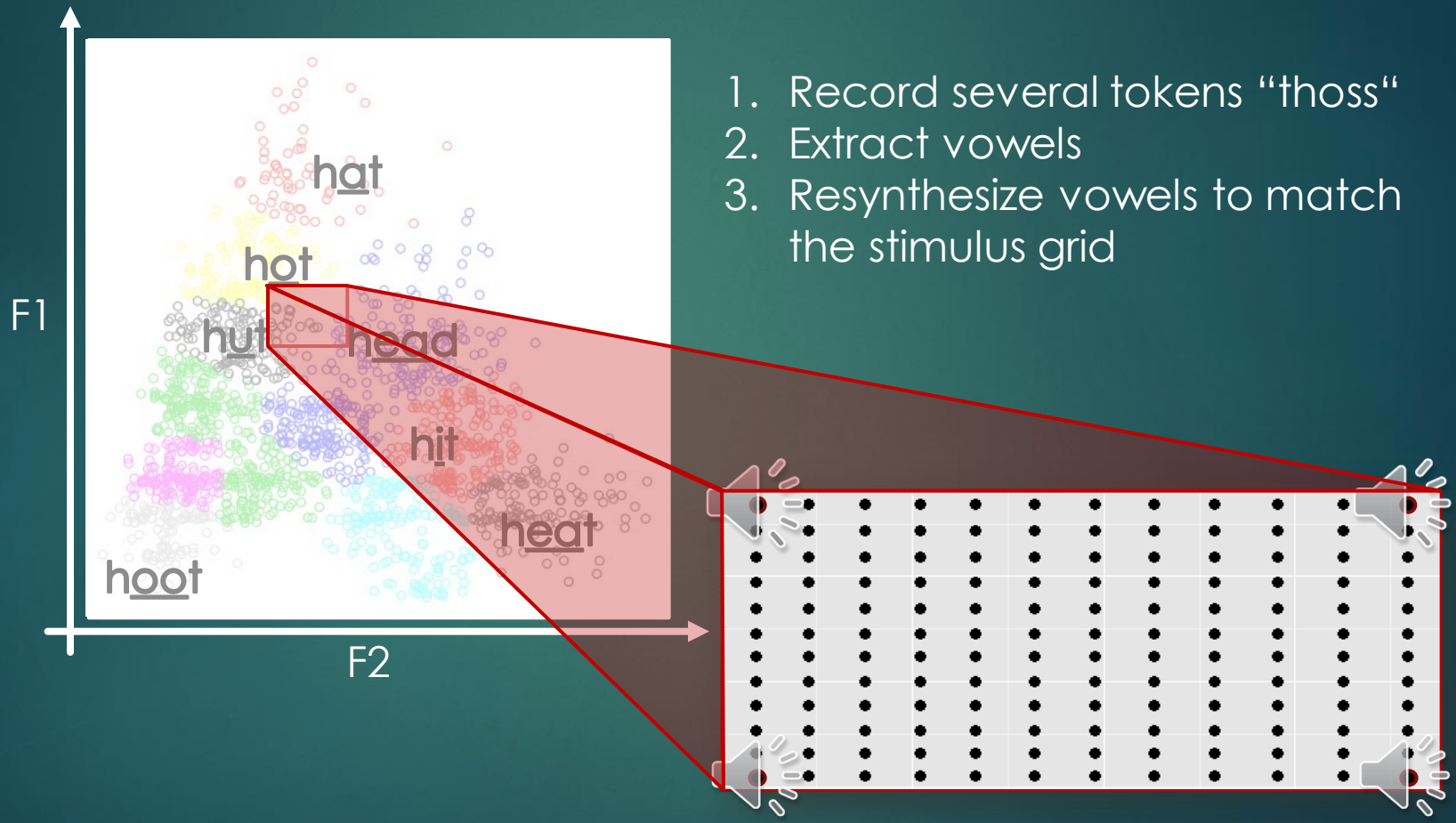
"Control" Condition



"thoss" "pok"
"pok" "thoss"
... ...

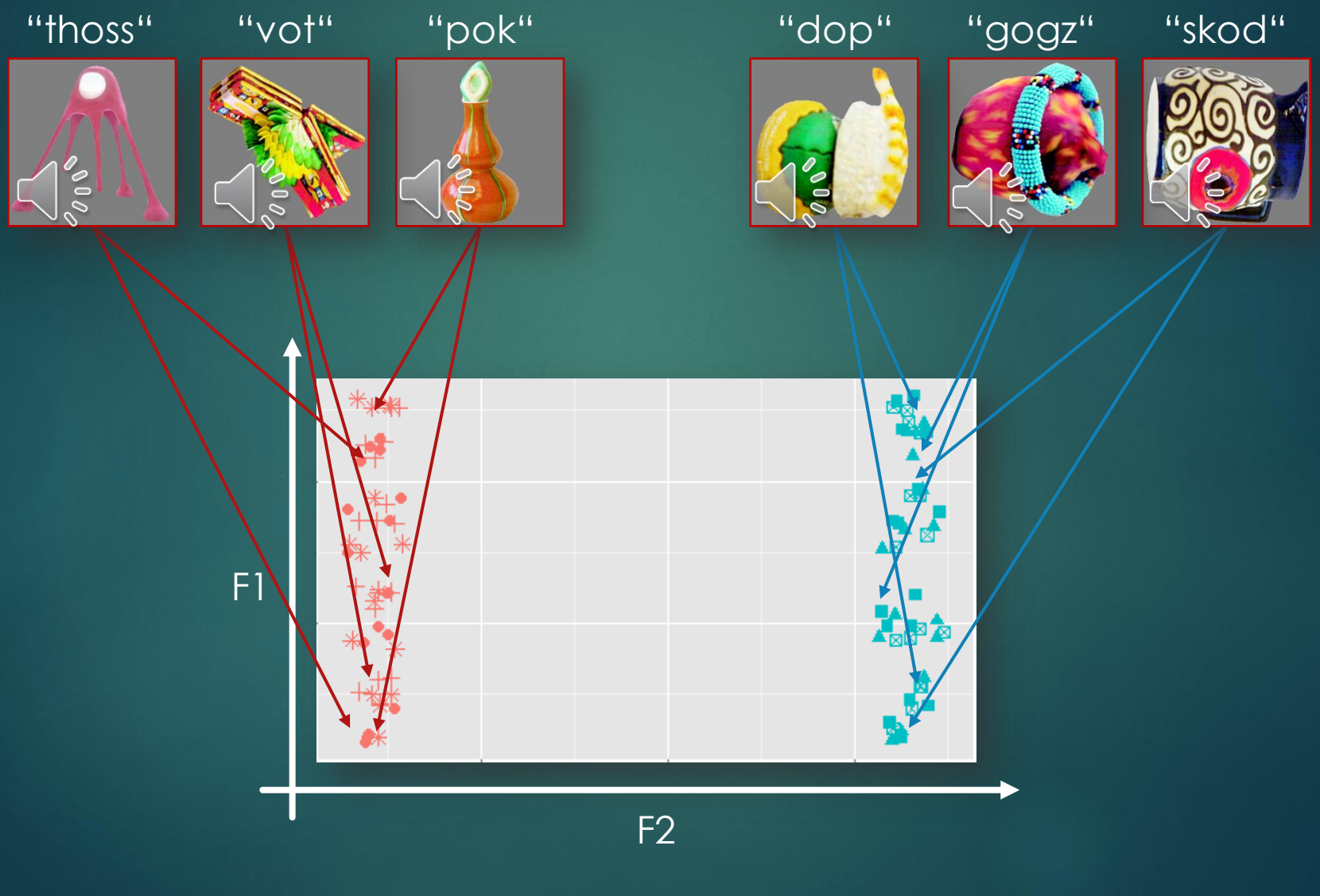
Hypothesis:
Learners in the "Aligned" condition will perform better at test.

Creating Stimuli

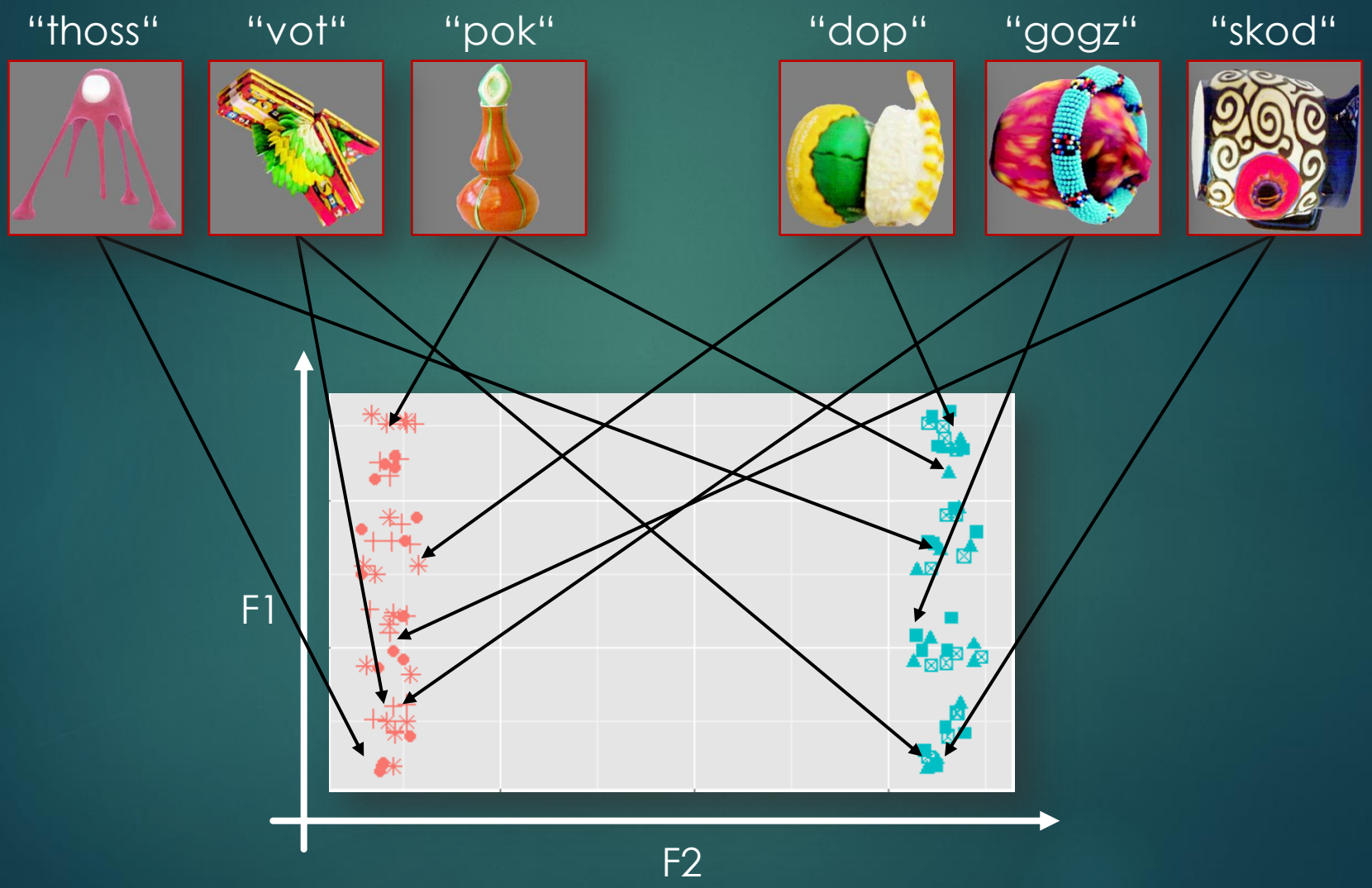


1. Record several tokens "thoss"
2. Extract vowels
3. Resynthesize vowels to match the stimulus grid

The Aligned Condition



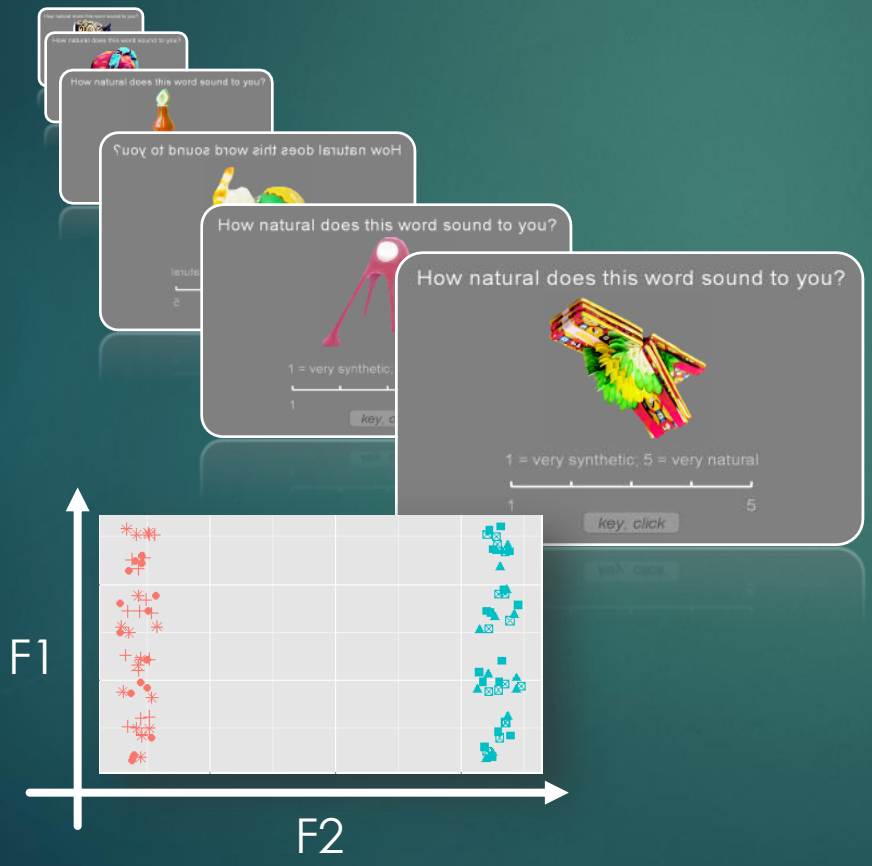
The Control Condition

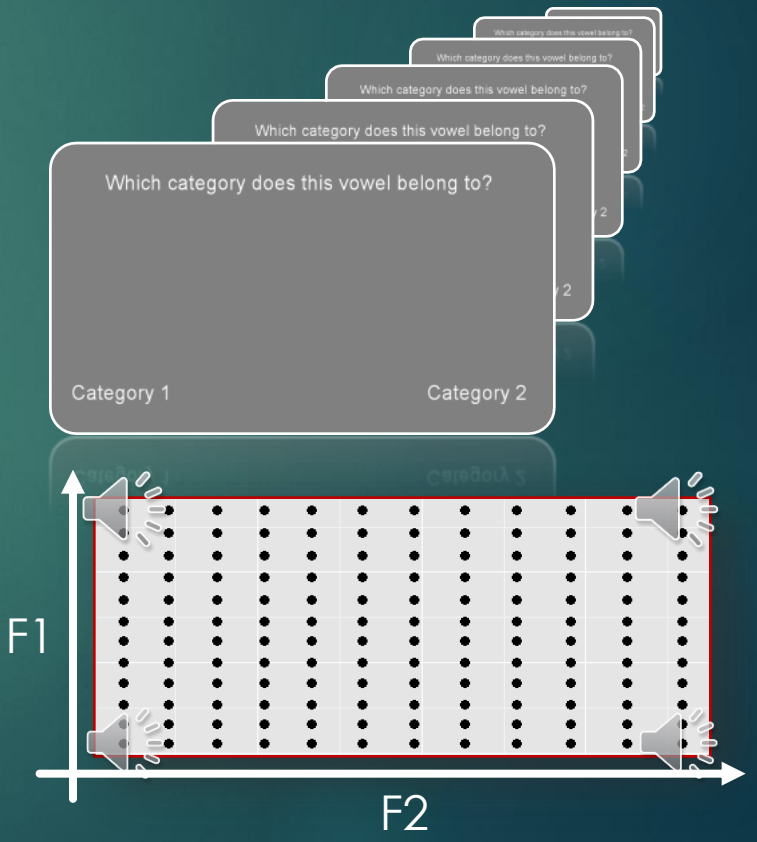


Procedure

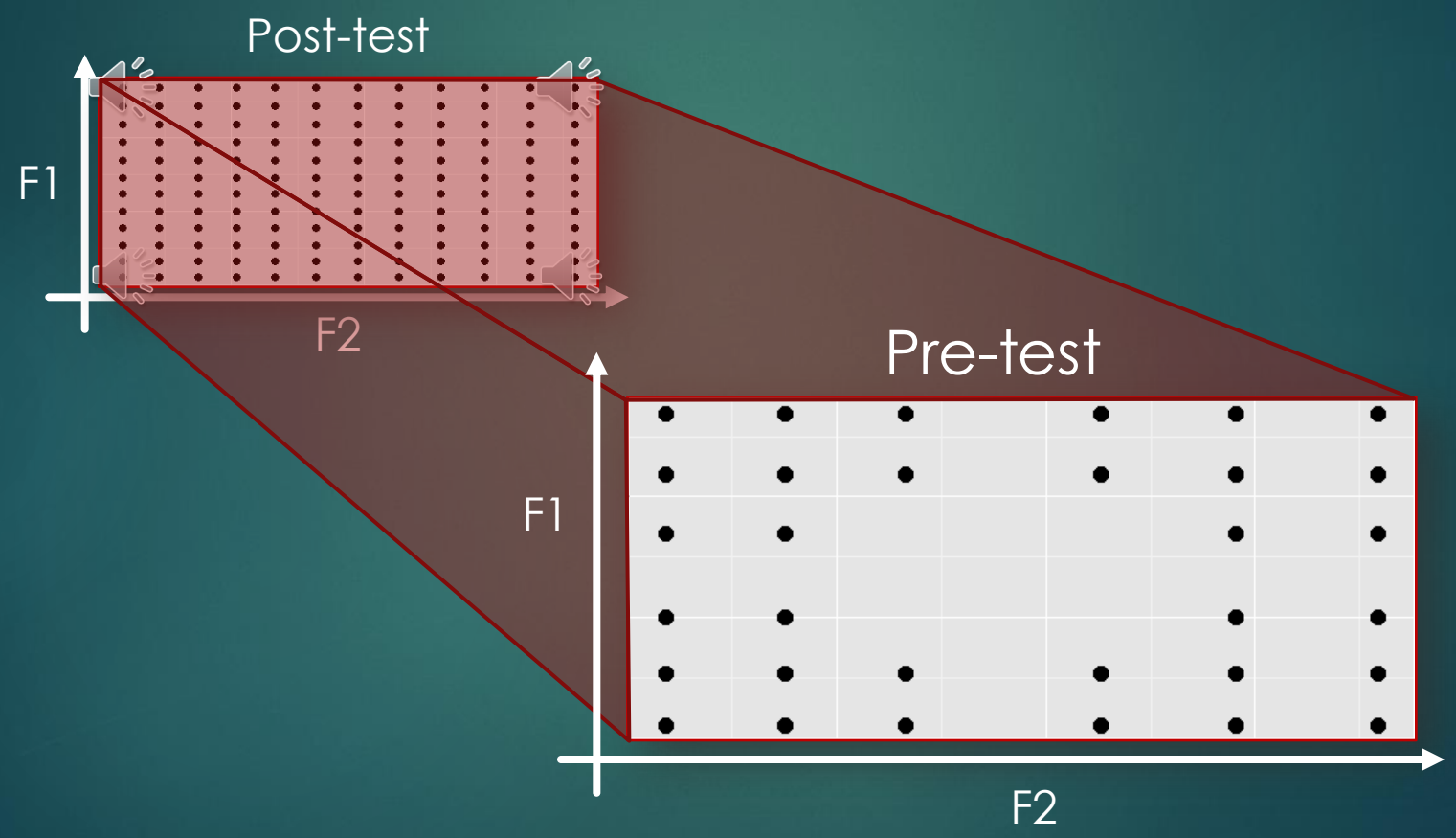
Training

Test: Categorization





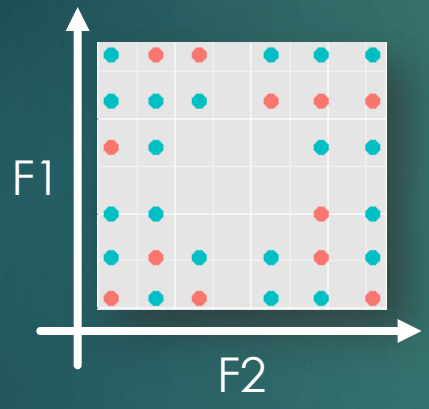
Before training: Pre-test

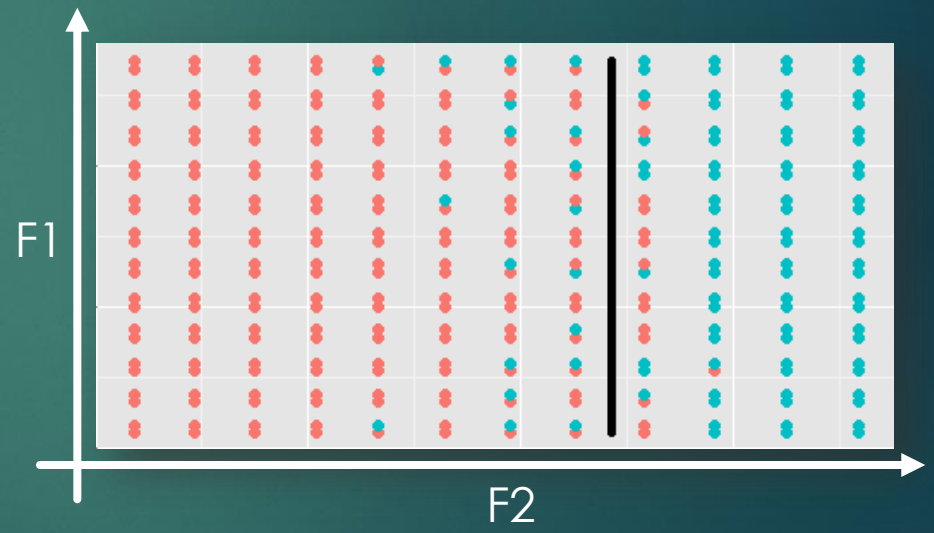


Individual Performance

Pre-test

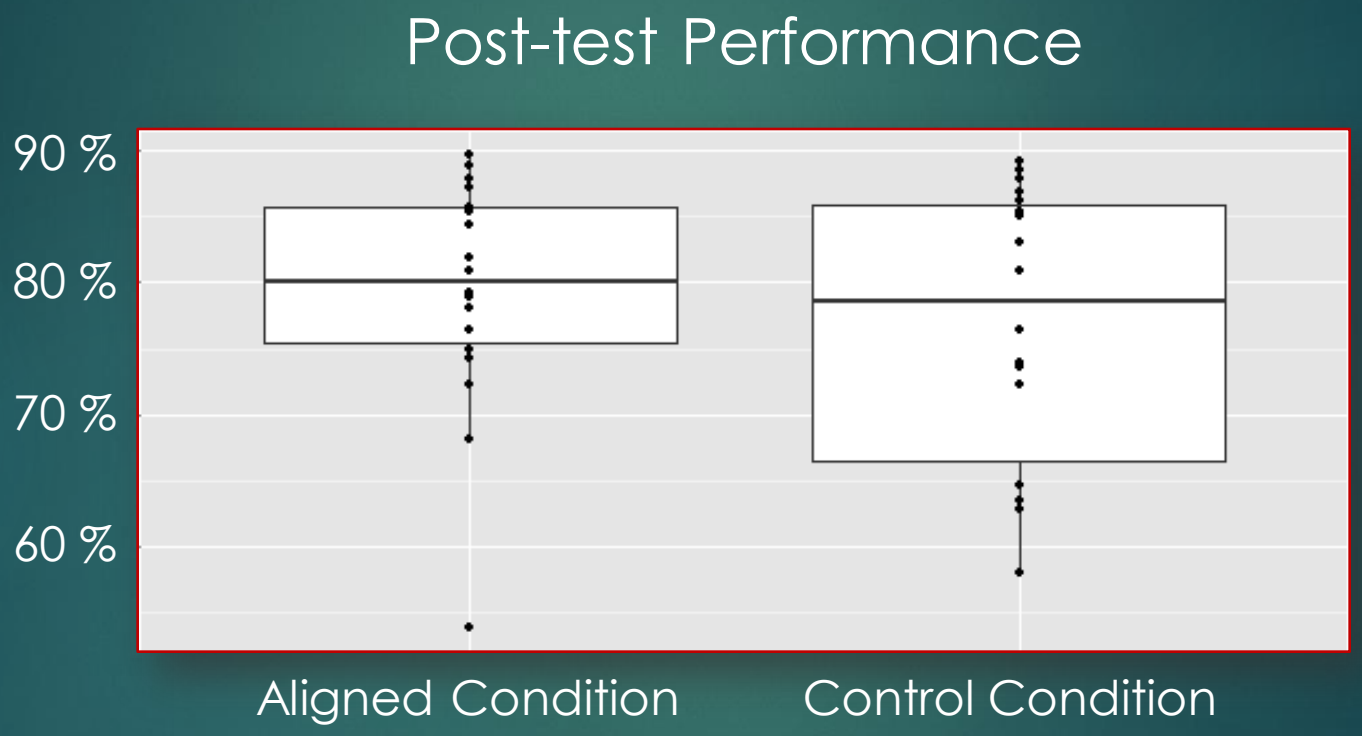
Post-test





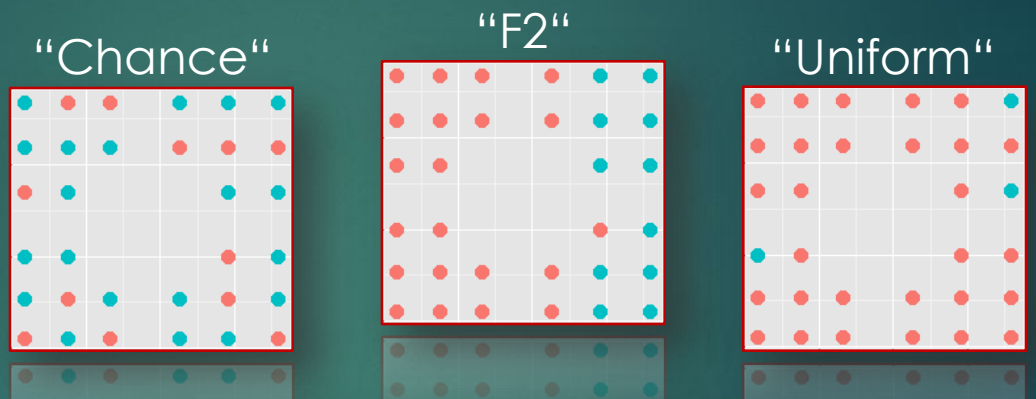
...color indicates response: left/right

Group Results

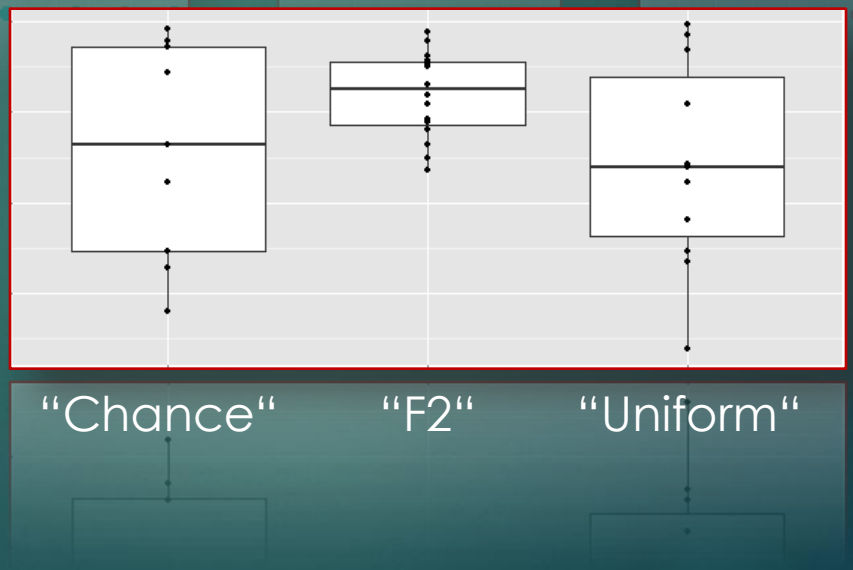


Ceiling effect?

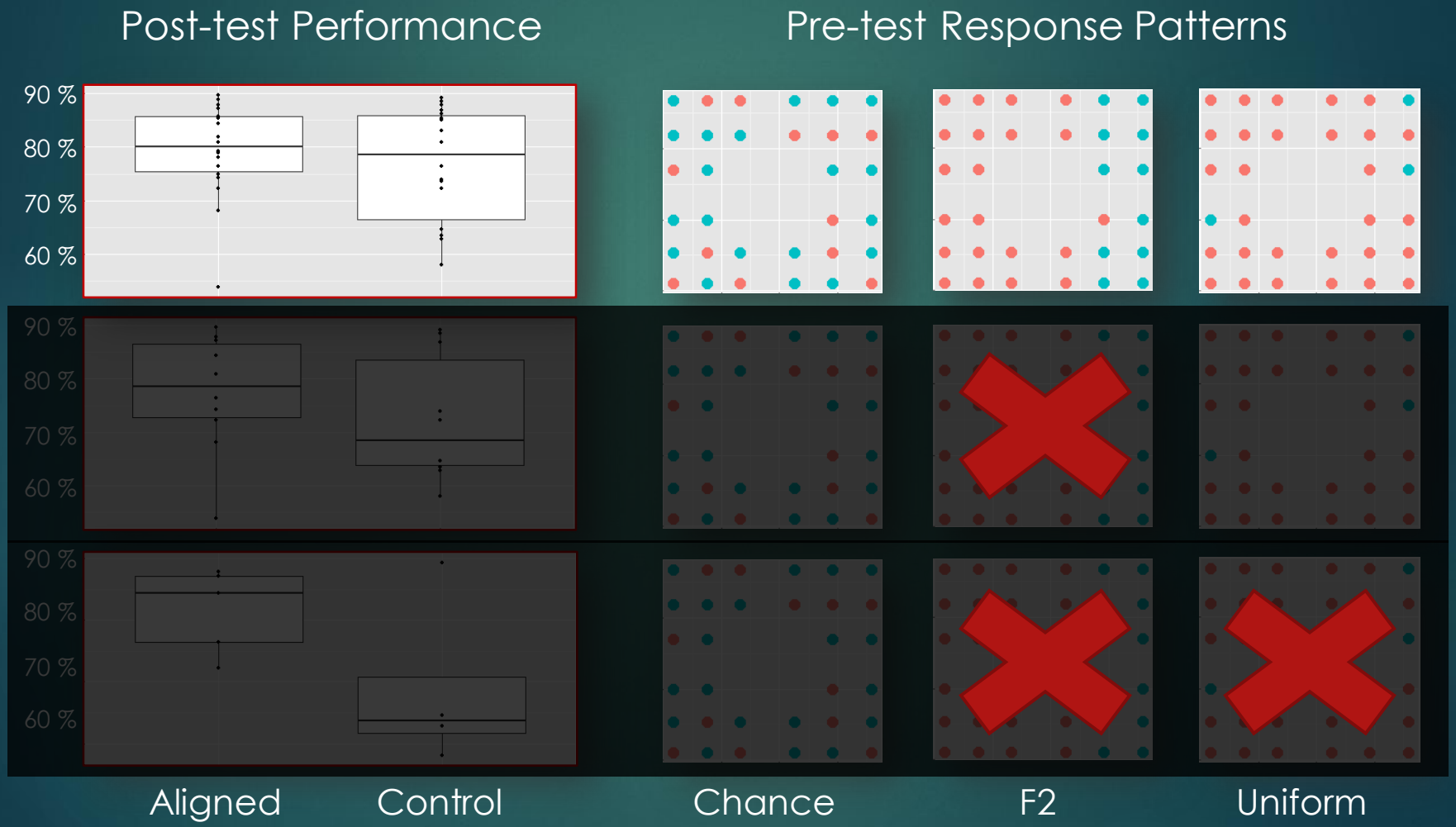
Pre-test
Response Pattern



Post-test
Performance



Group Results (revisited)



If I did this again…

3 things to try:

- Increase spread of F1 – to make it more compelling for categorization
- Change categorization task – possibly a same/different task?
- Target F1

Thanks for listening!