

Psychophysical scaling reveals a unified theory of visual memory strength

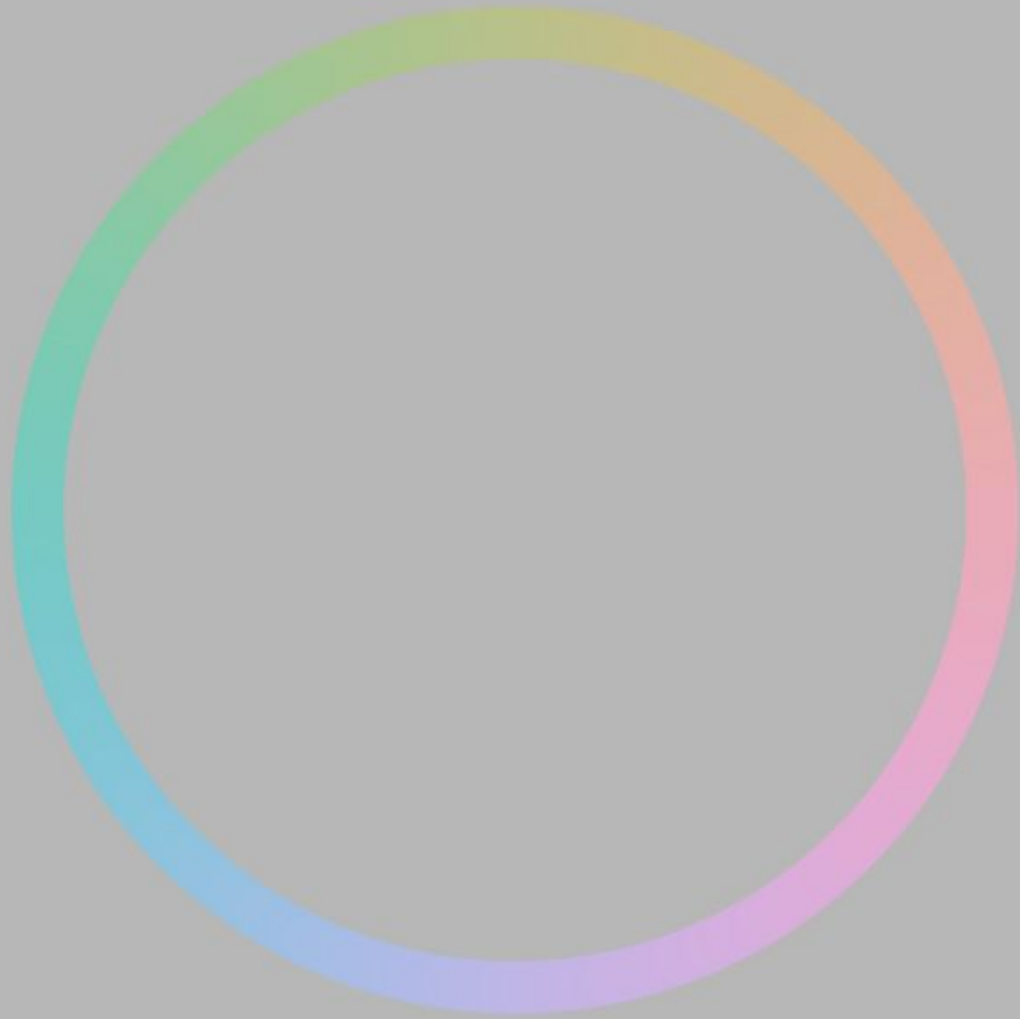
Schurgin, Wixted, Brady (2020)

<https://doi.org/10.1038/s41562-020-00938-0>

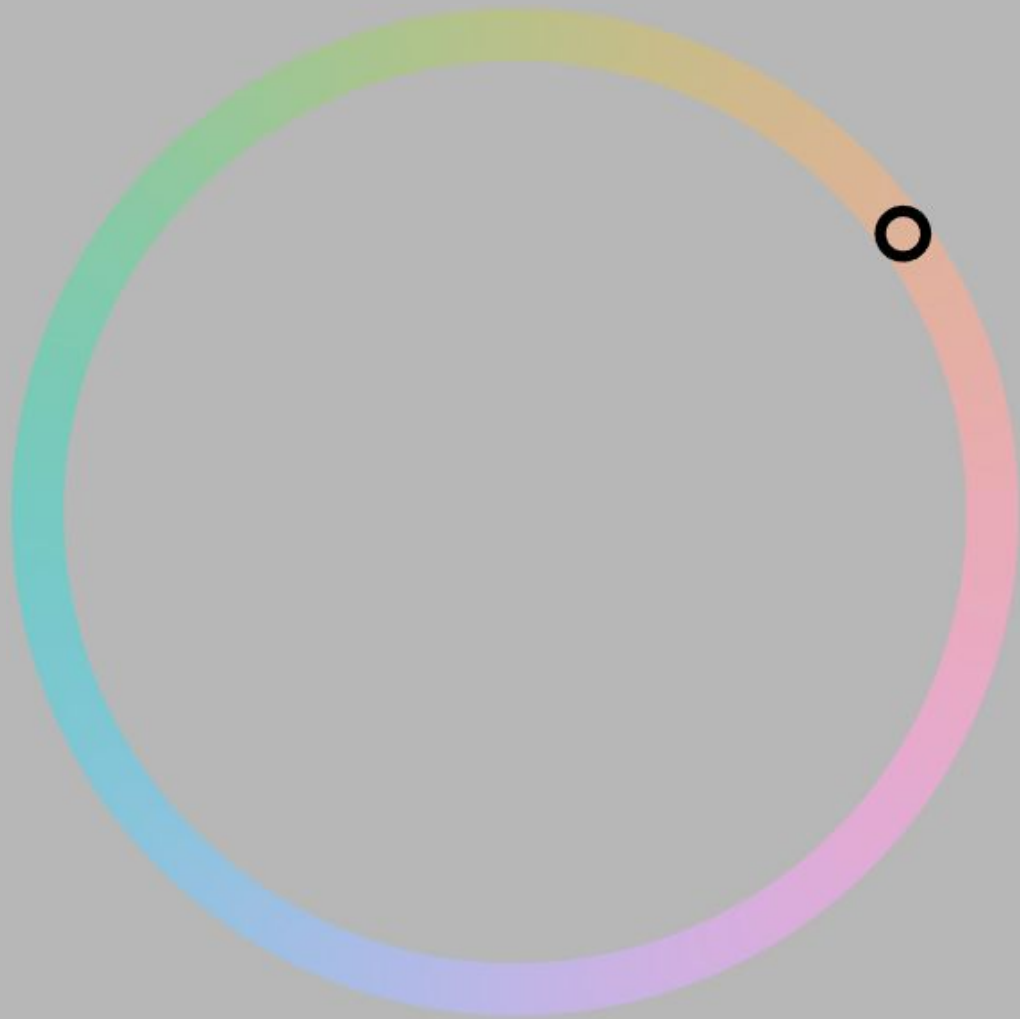
Cue



Choice

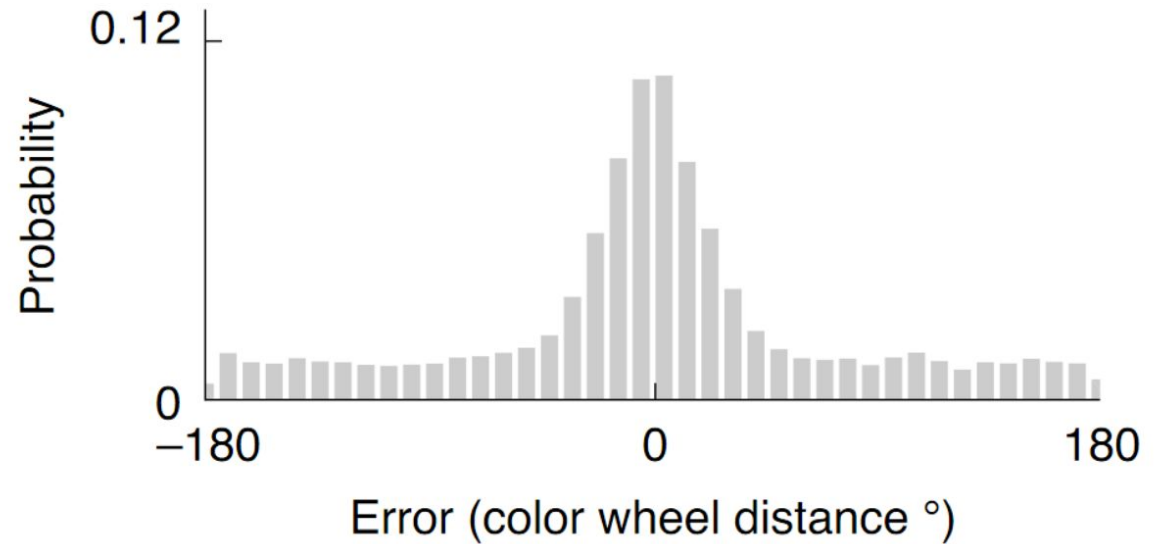


Choice

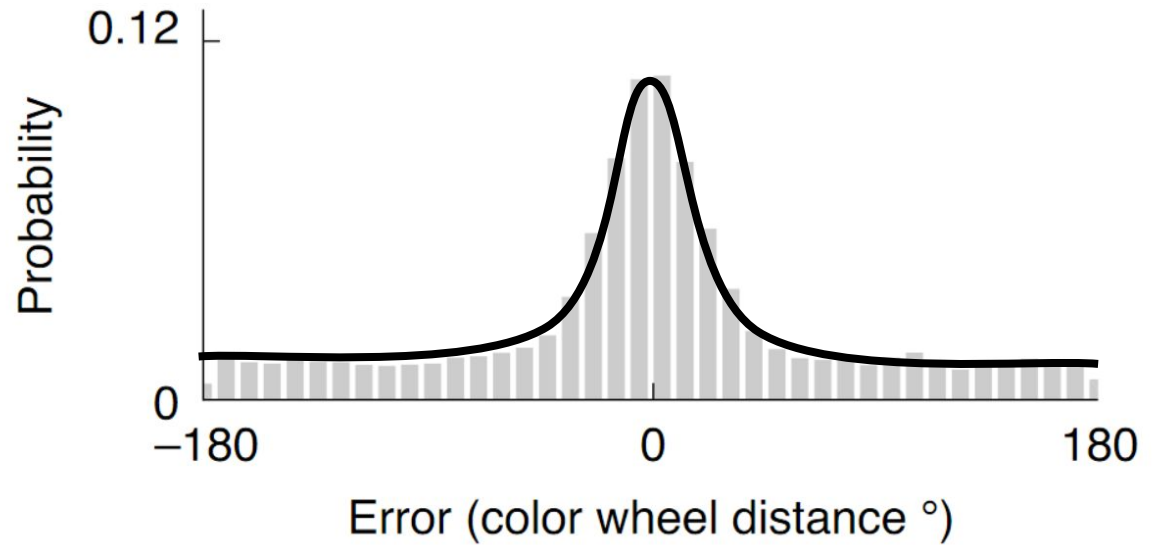


Modelling - a “mixture model”

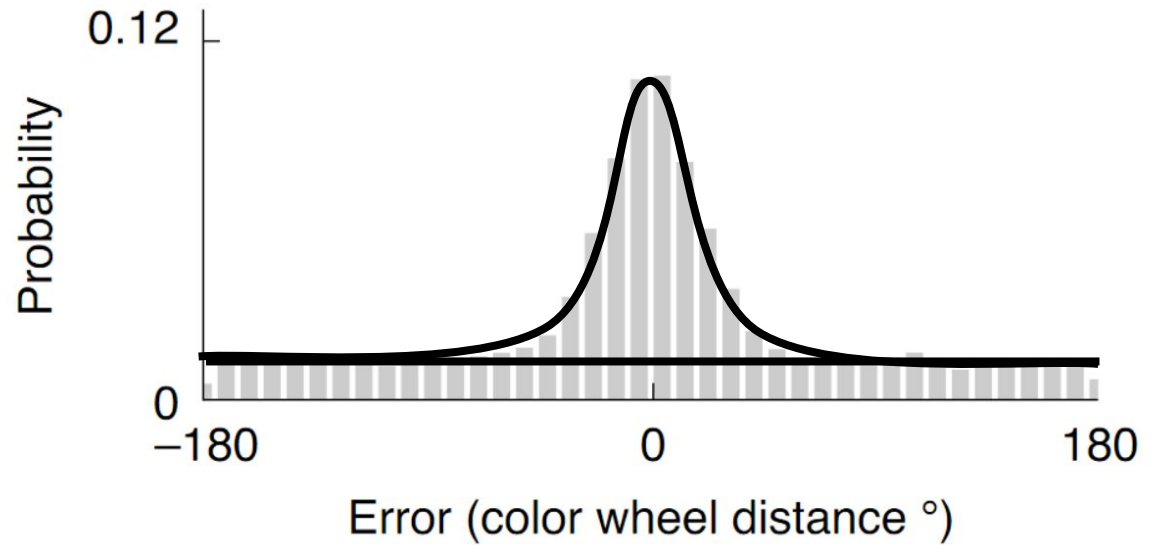
Modelling - a “mixture model”



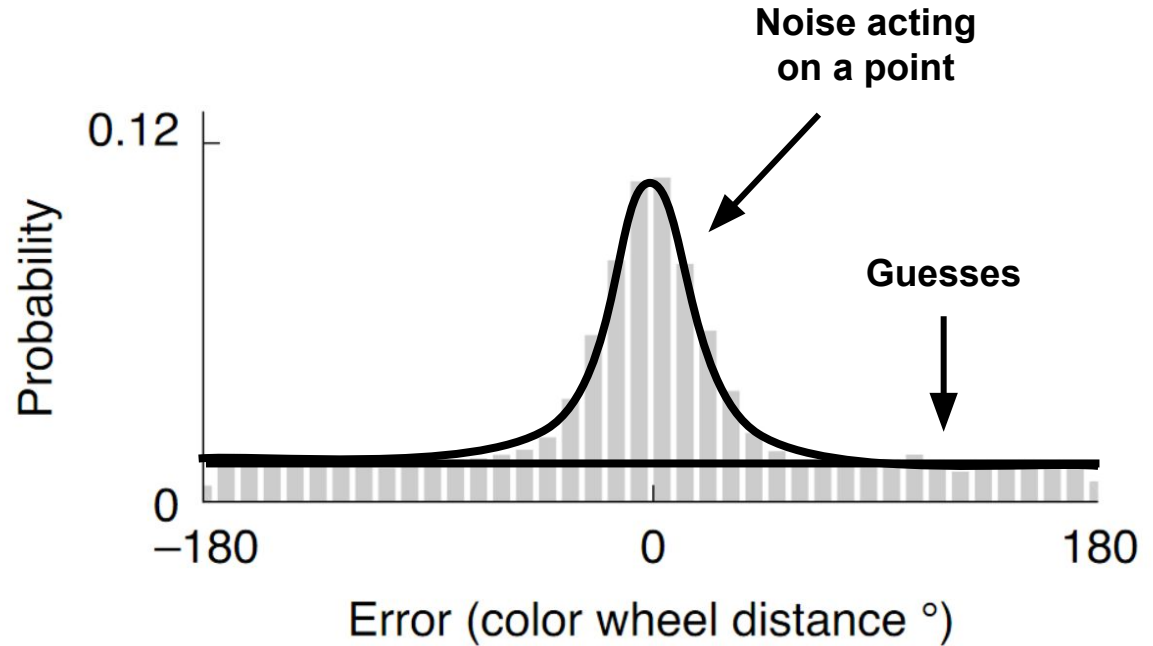
Modelling - a “mixture model”



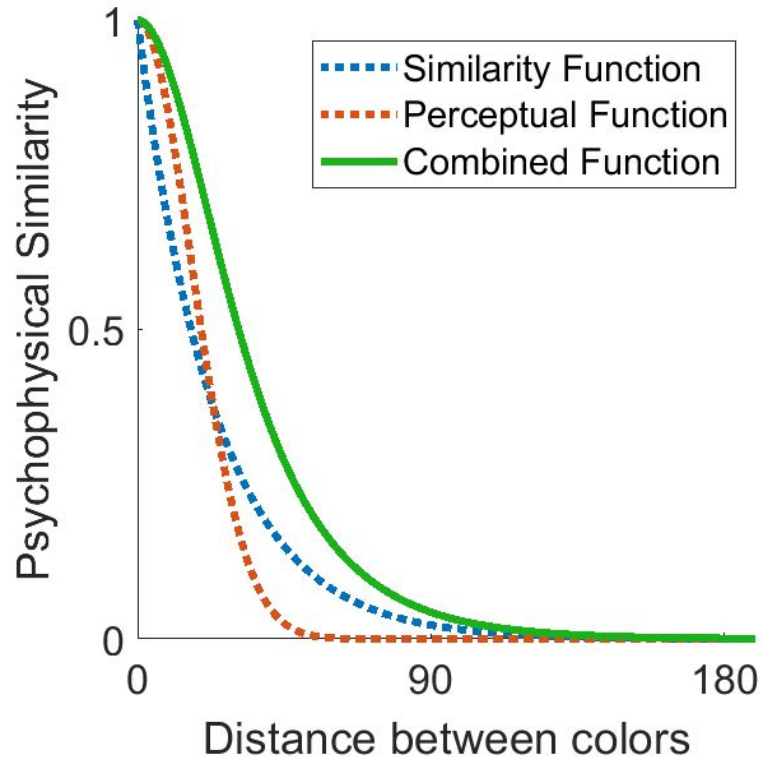
Modelling - a “mixture model”



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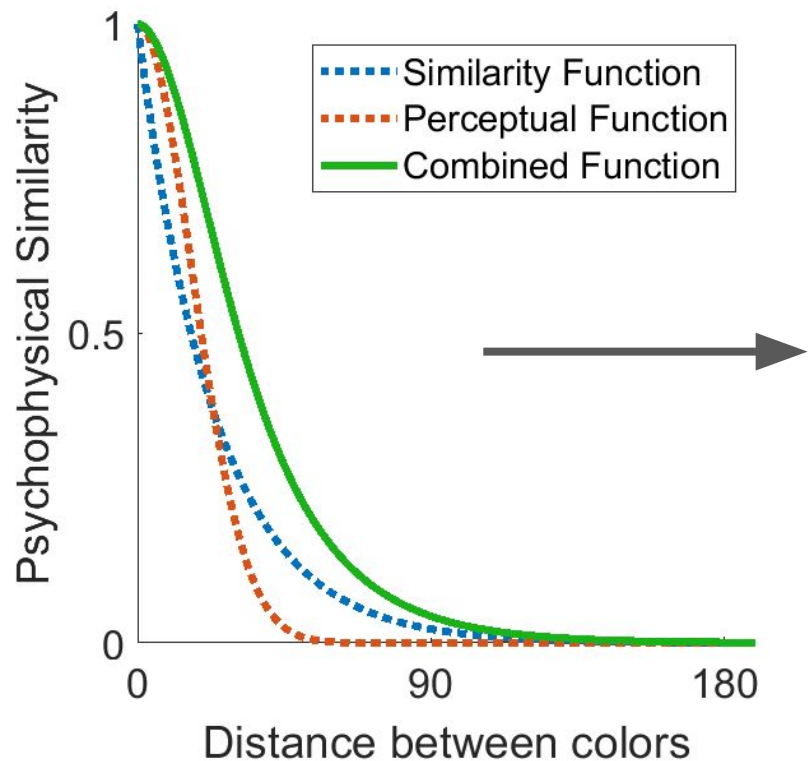


Modelling - TCC model

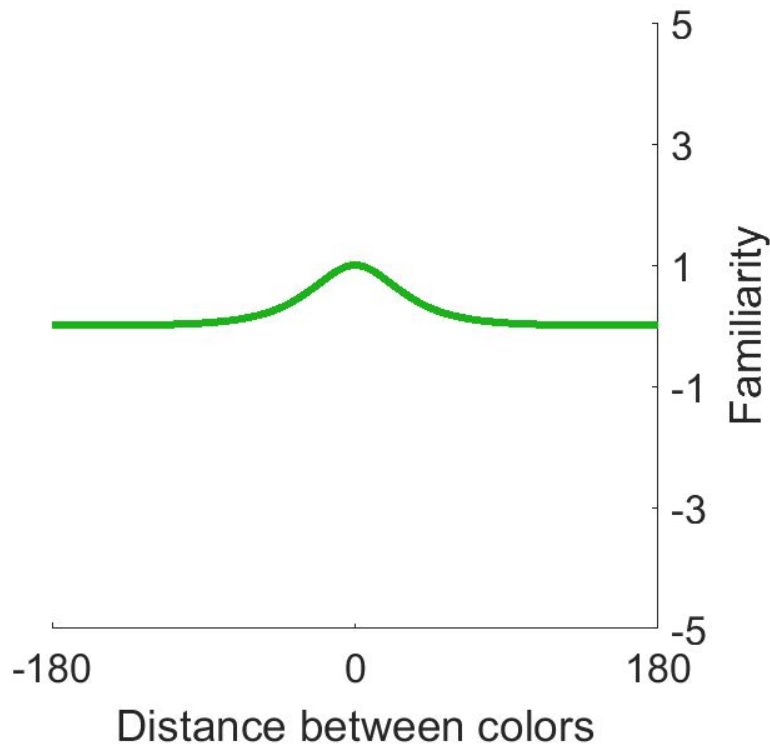


Based on F1F

Modelling - TCC model

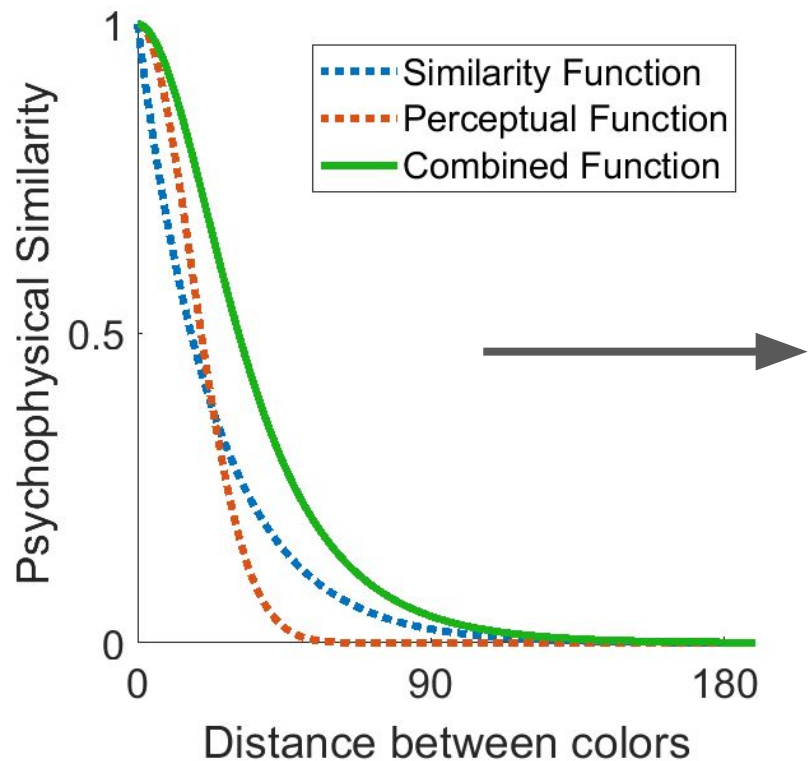


Based on F1F

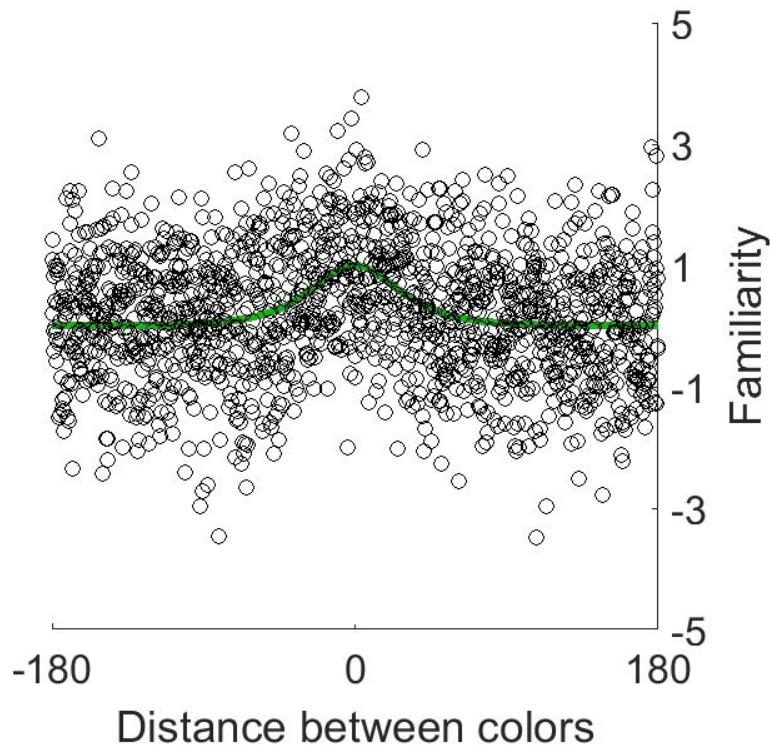


Based on F2B

Modelling - TCC model

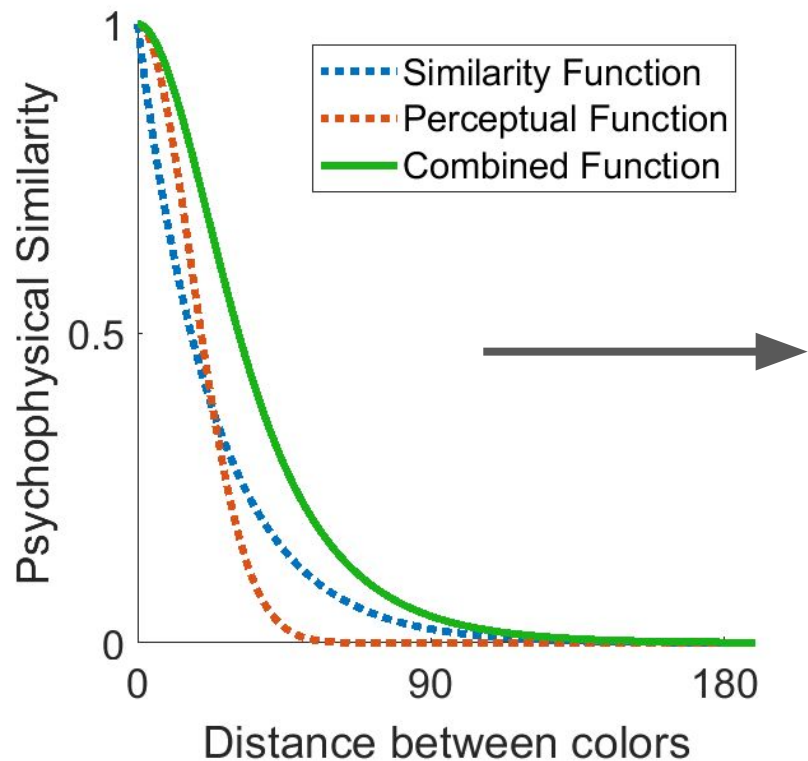


Based on F1F

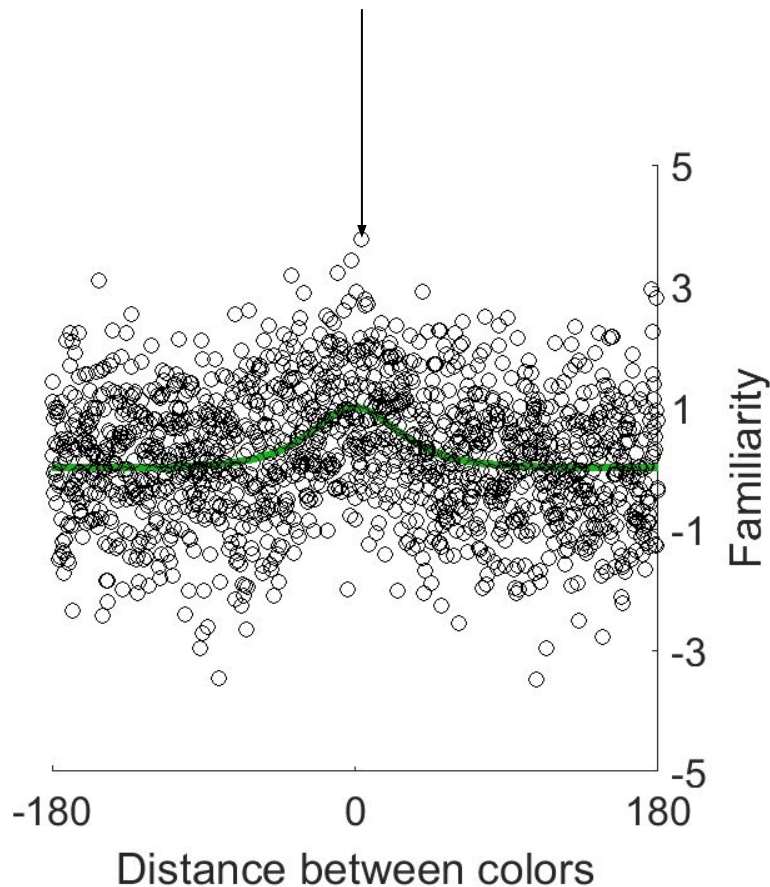


Based on F2B

Modelling - TCC model

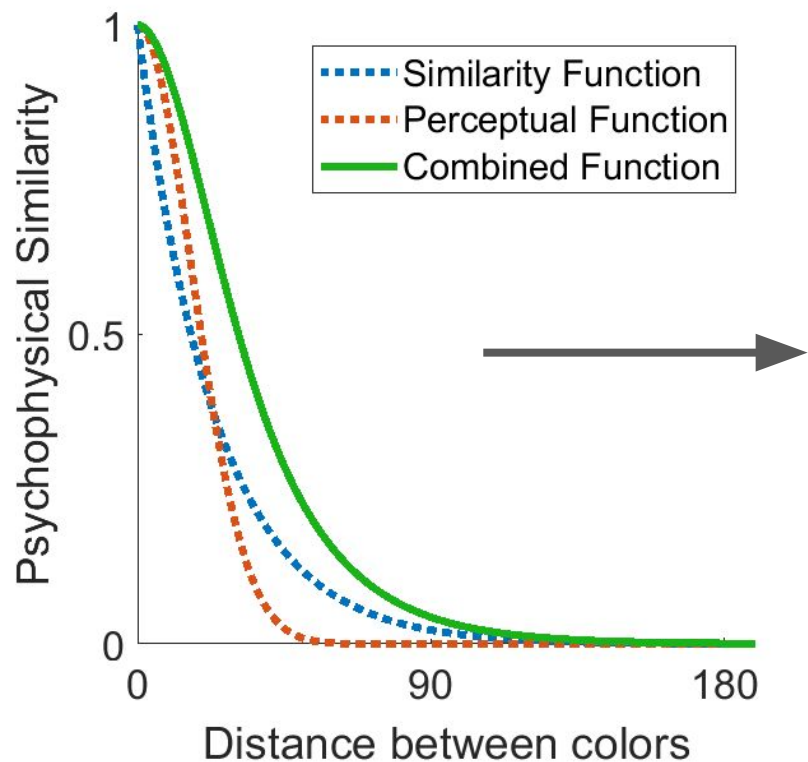


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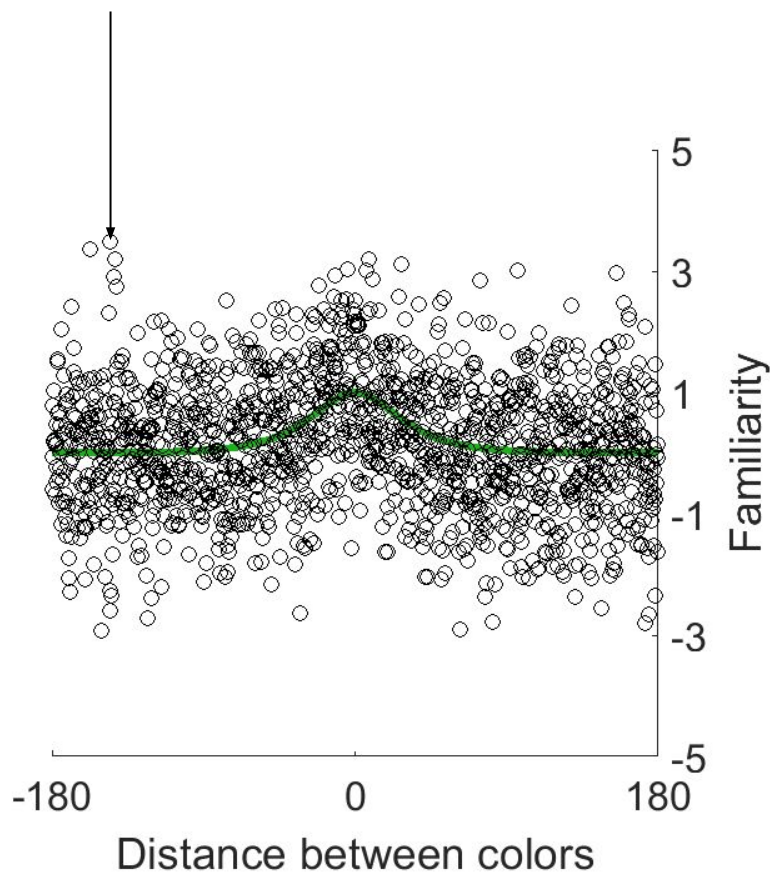


Based on F2B

Modelling - TCC model

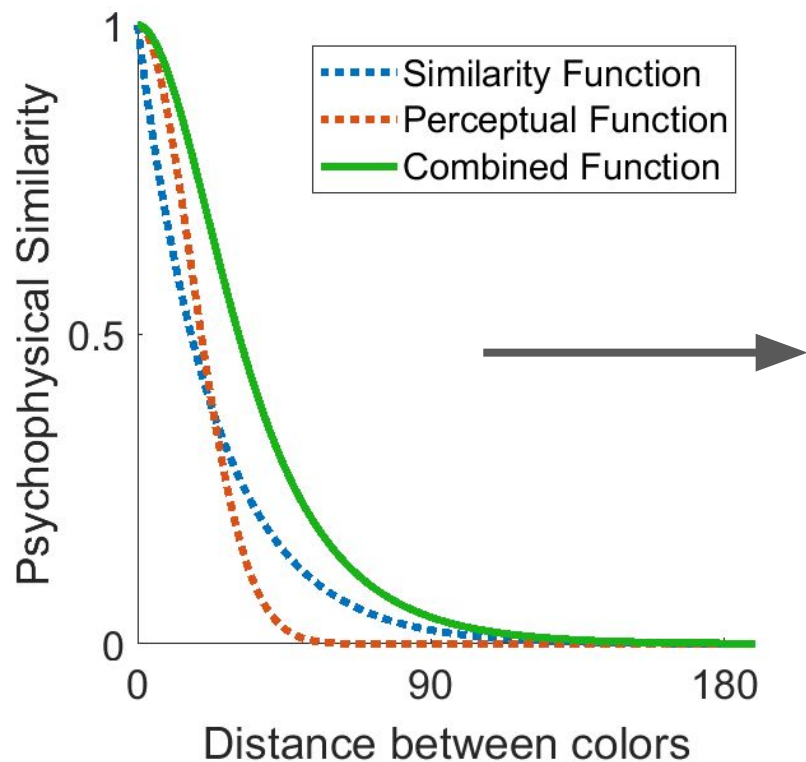


Based on F1F

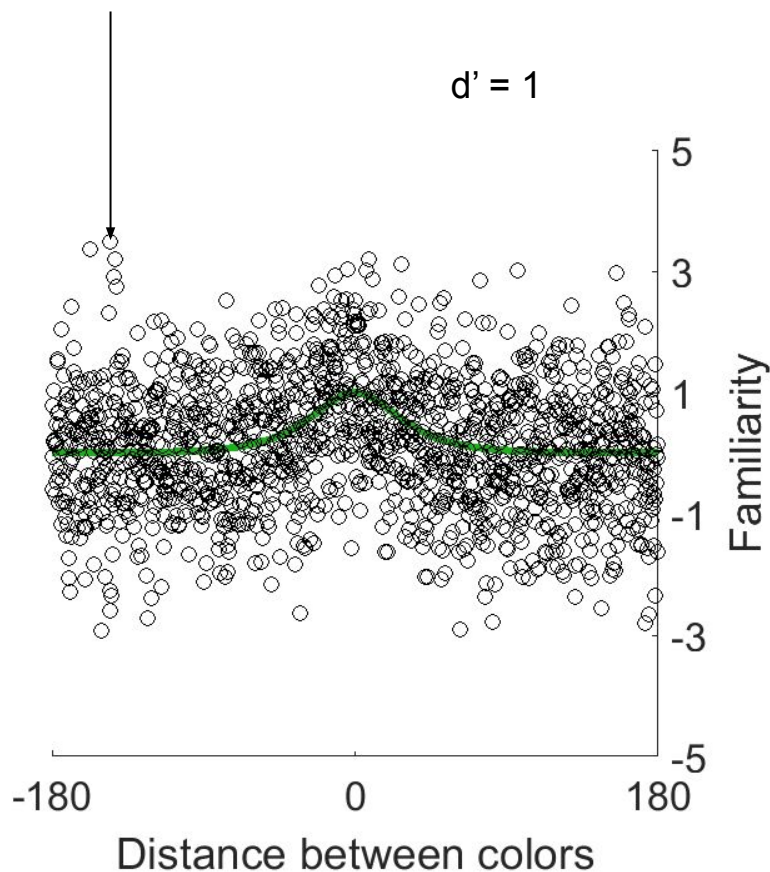


Based on F2B

Modelling - TCC model

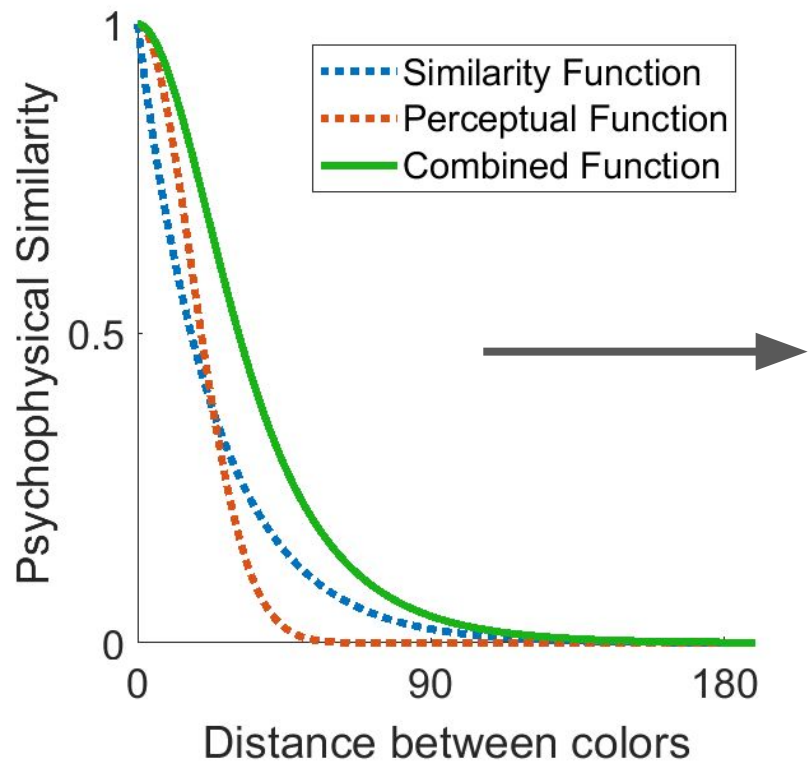


Based on F1F

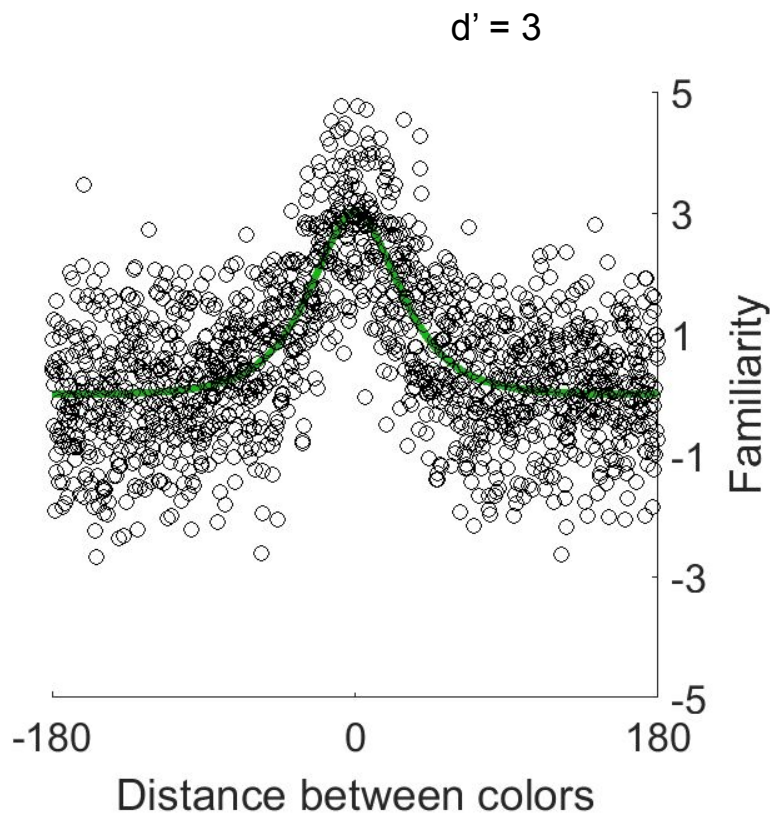


Based on F2B

Modelling - TCC model

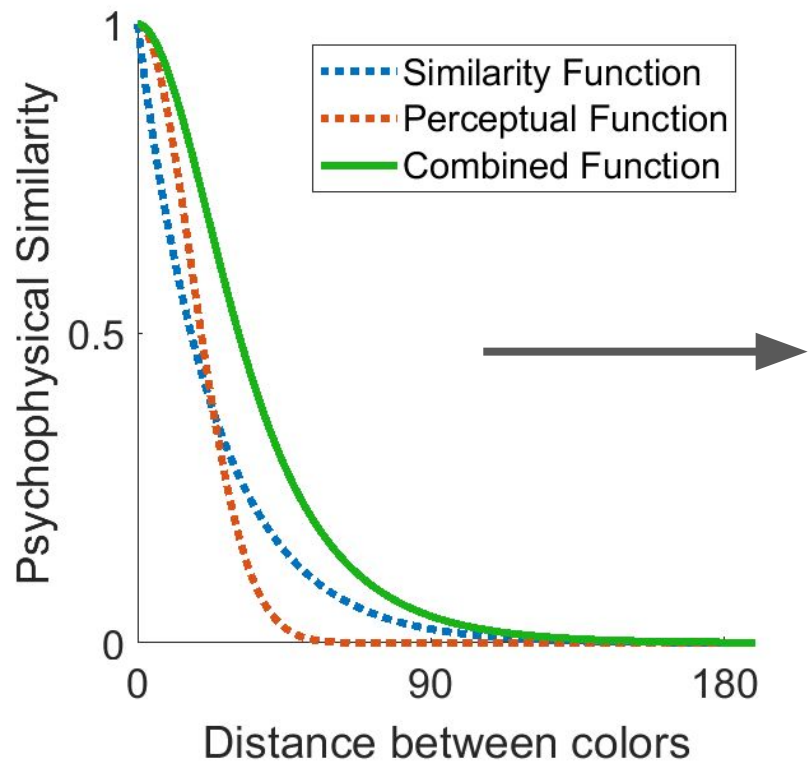


Based on F1F

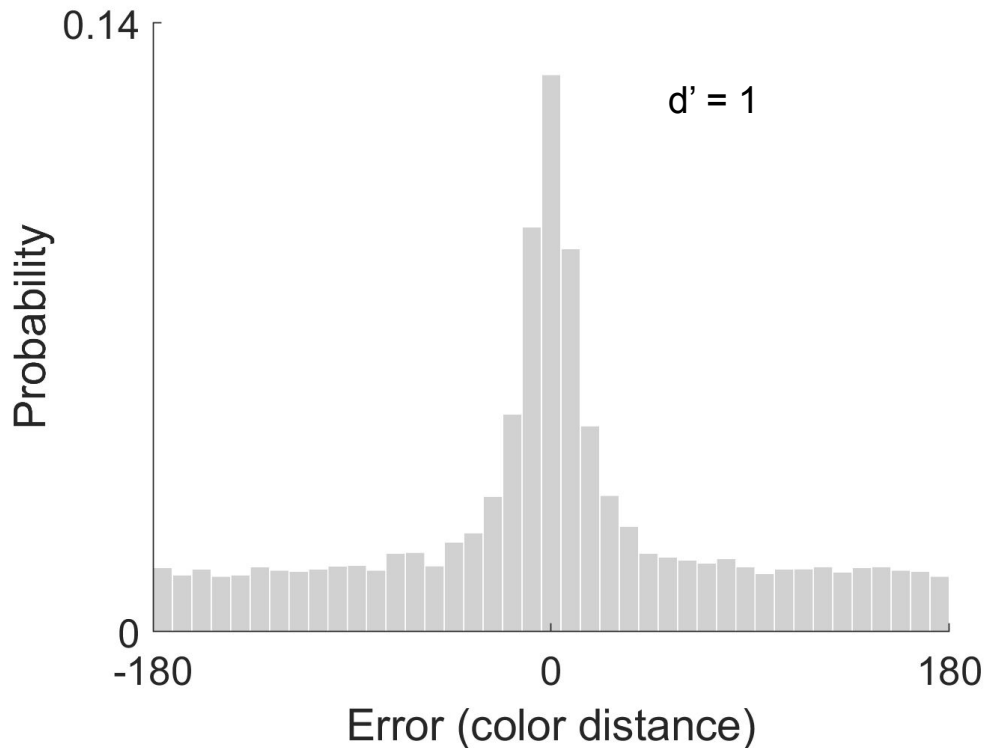


Based on F2B

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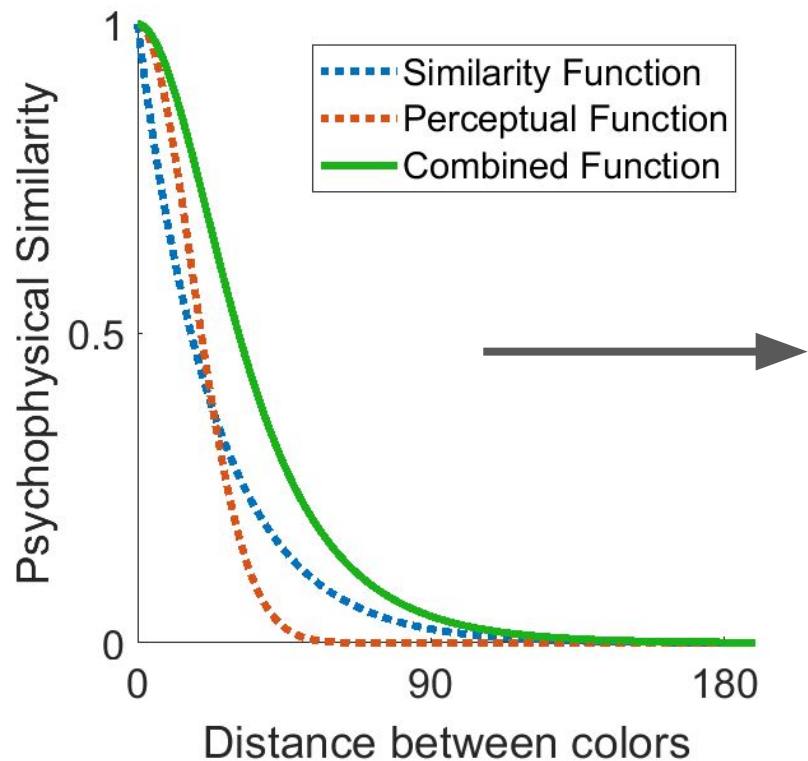


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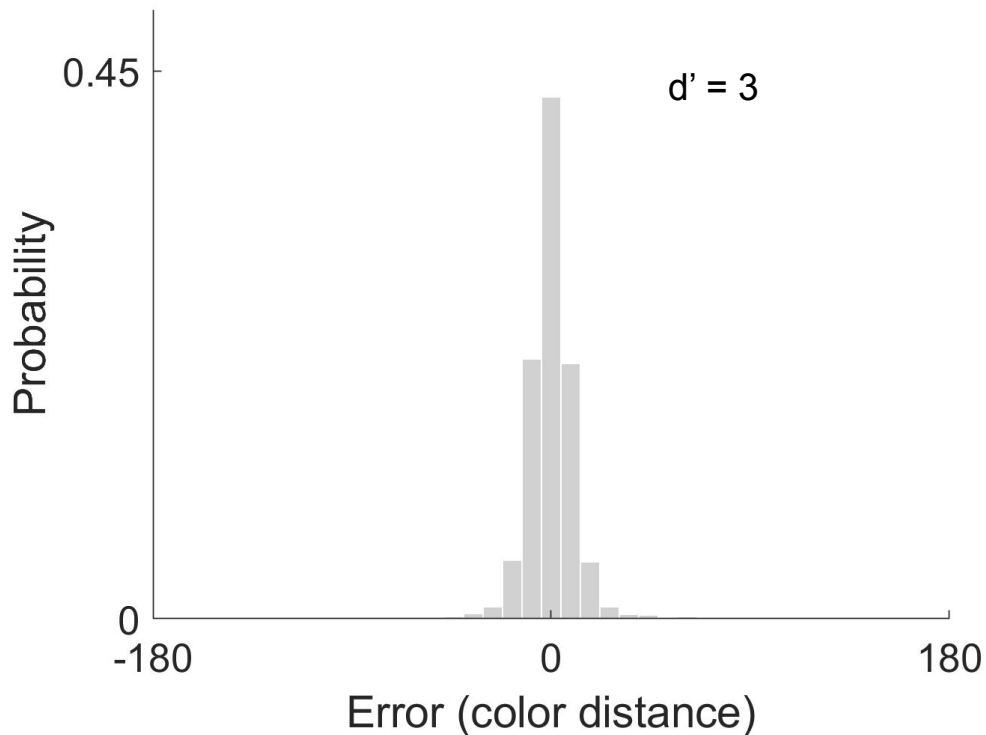


Based on F1B

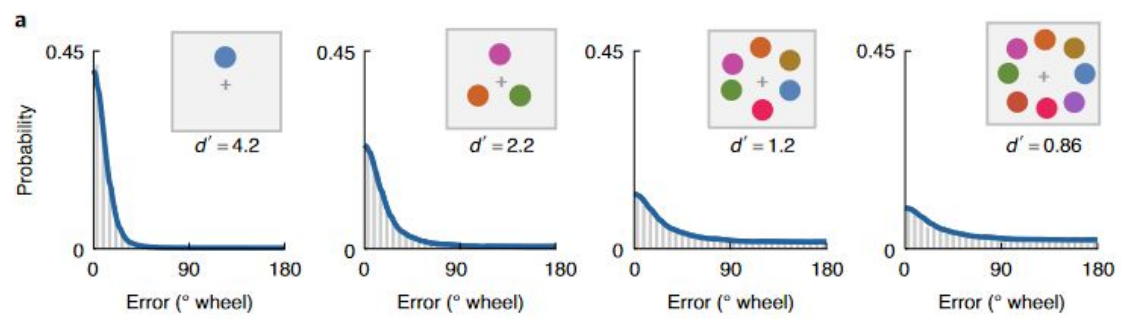
Modelling - TCC model

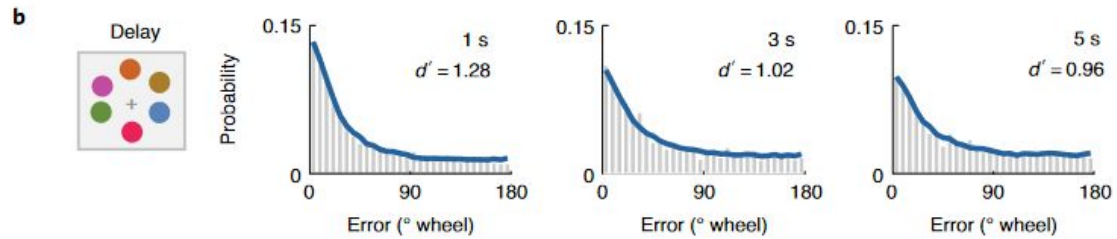
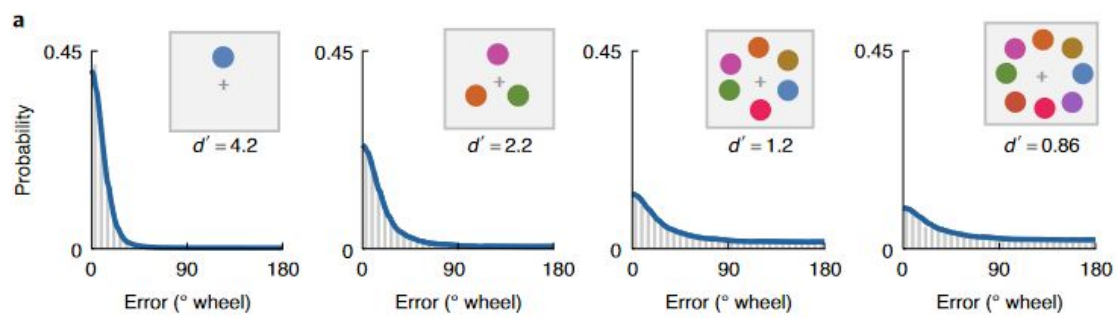


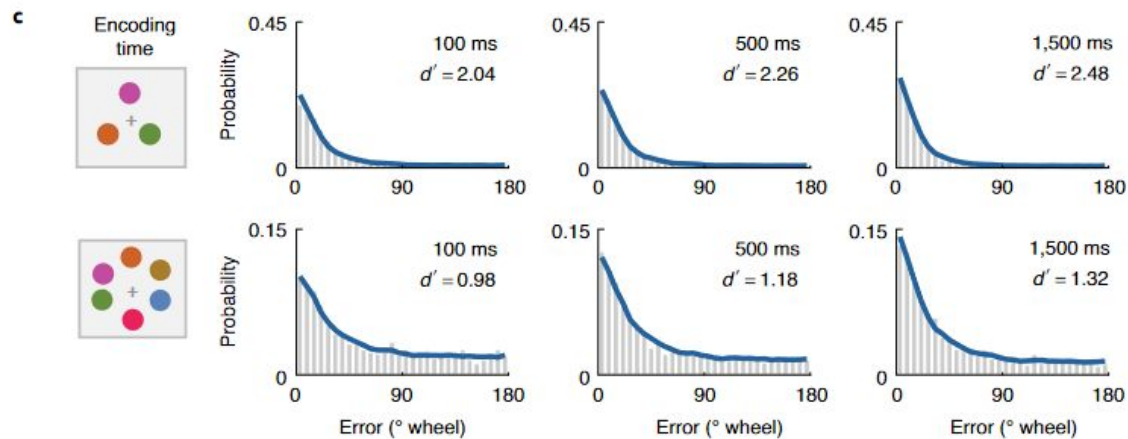
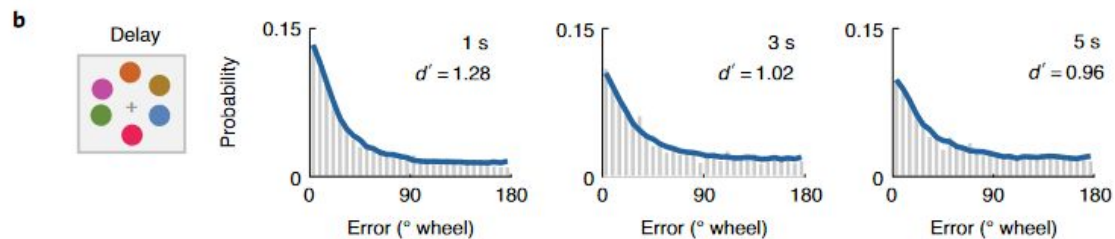
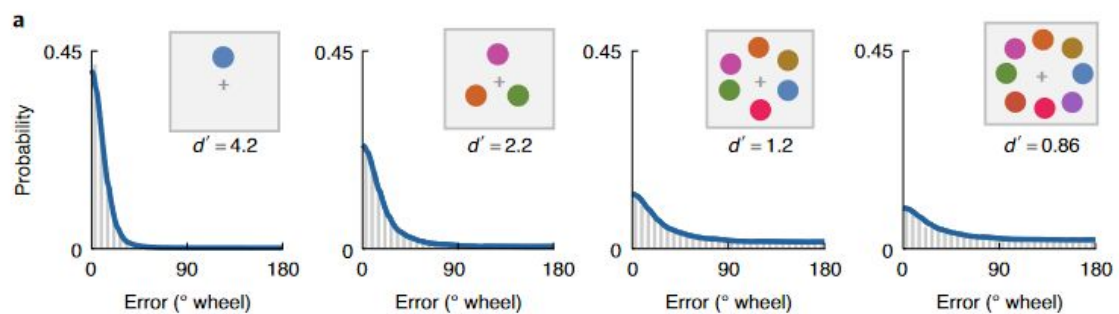
Based on F1F




Based on F1B

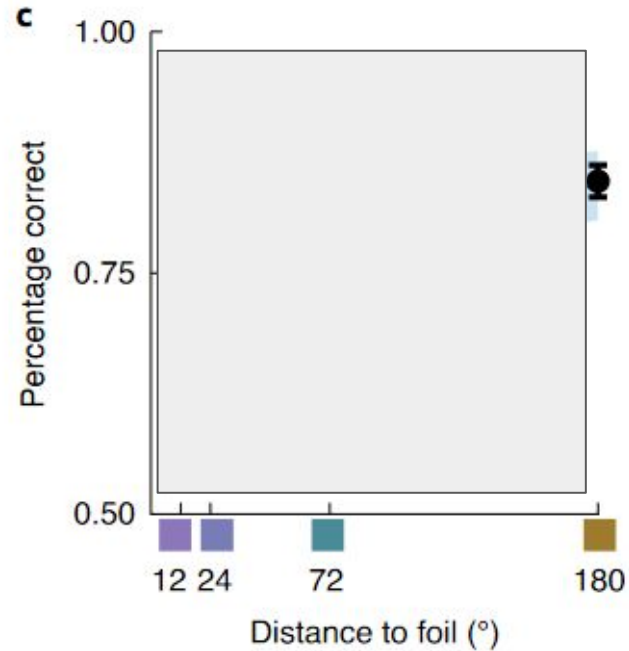






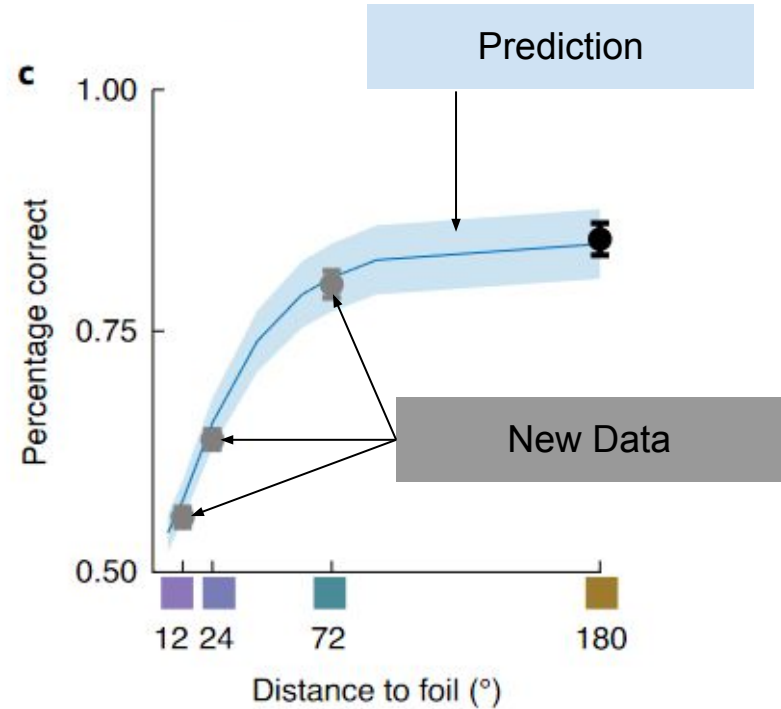
Predicting performance across the space **just from d'**

 Encoded colour



Predicting performance **just from d'**

Encoded colour



Biases in working memory responses

***Why some colors appear more memorable than others:
A model combining categories and particulars in color working memory.***

Bae, Olkkonen, Allred, Flombaum
(2015)

<https://doi.org/10.1037/xge0000076>

Error-correcting dynamics in visual working memory

Panichello, DePasquale, Pillow, Buschman
(2019)

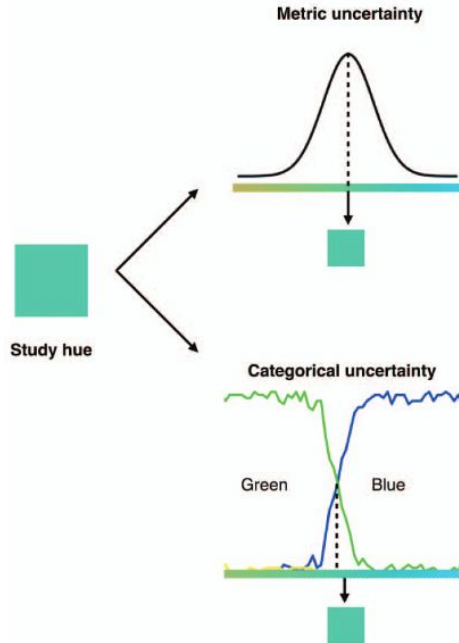
<https://doi.org/10.1038/s41467-019-11298-3>

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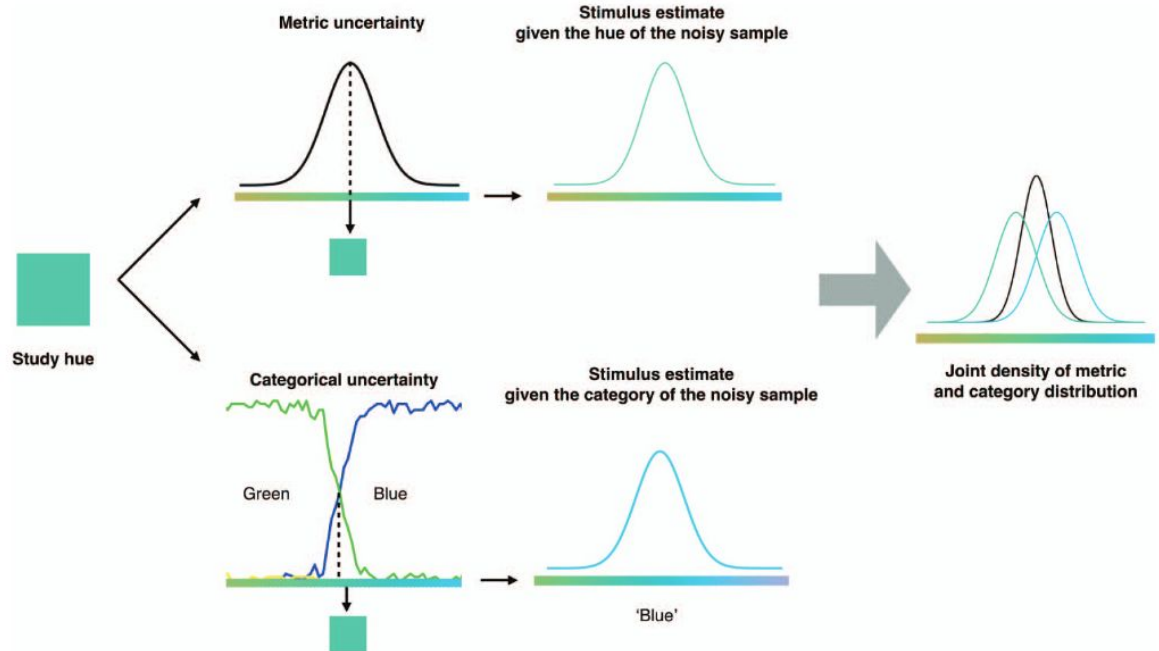


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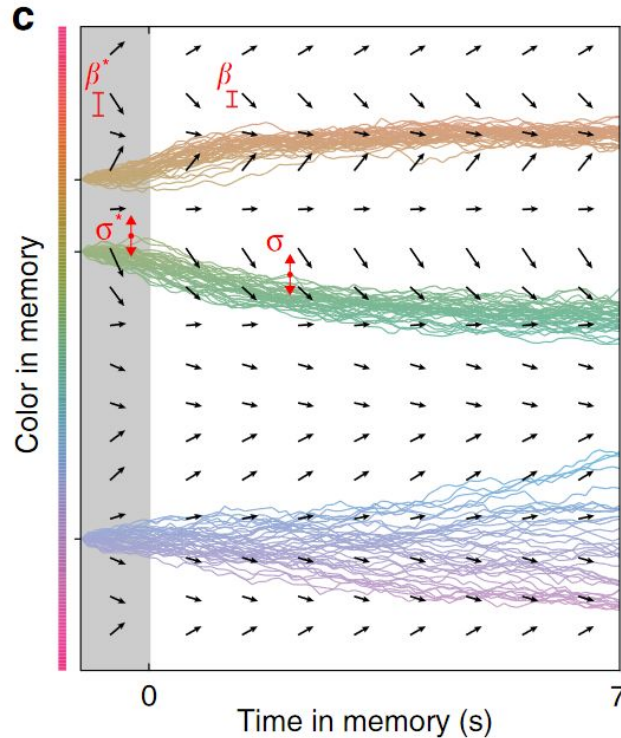
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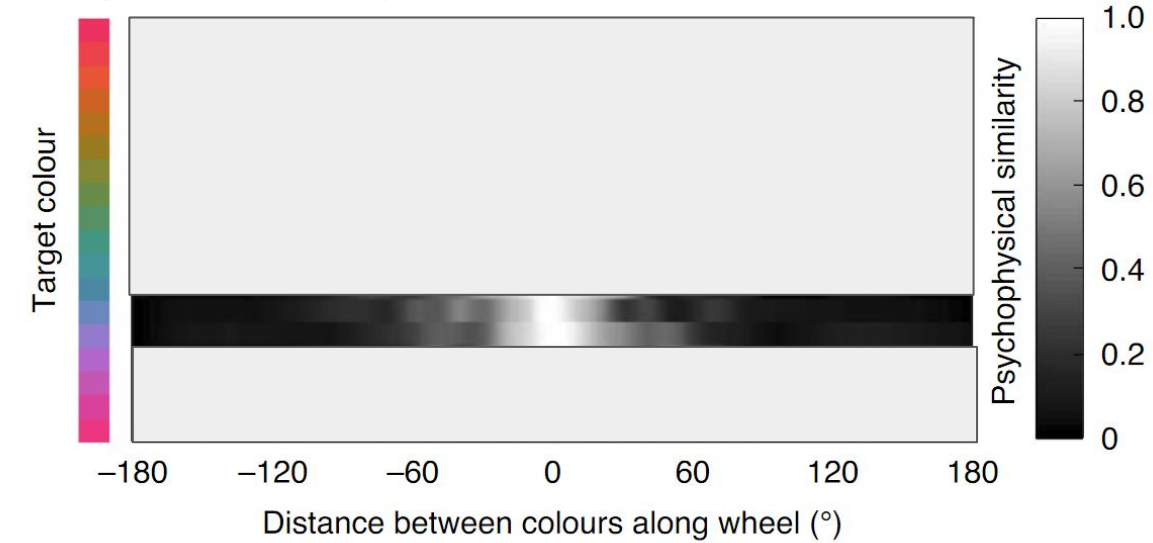
Biases in working memory responses

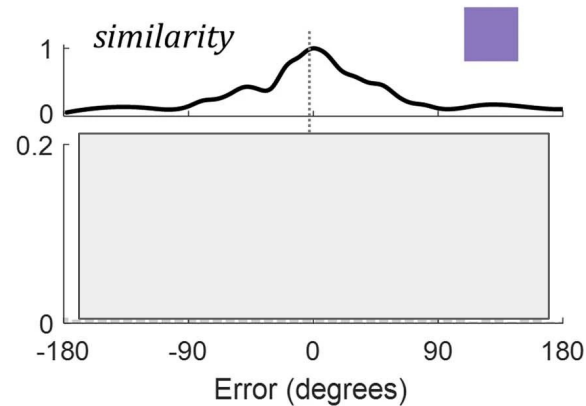
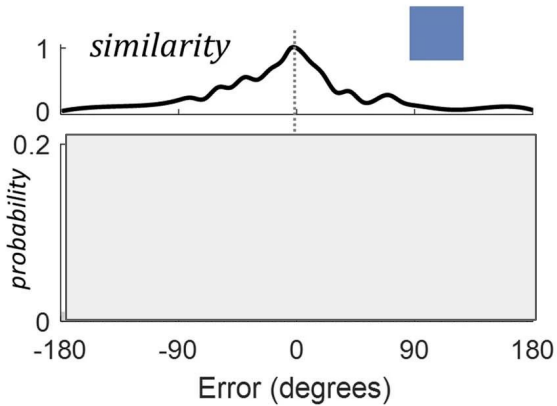
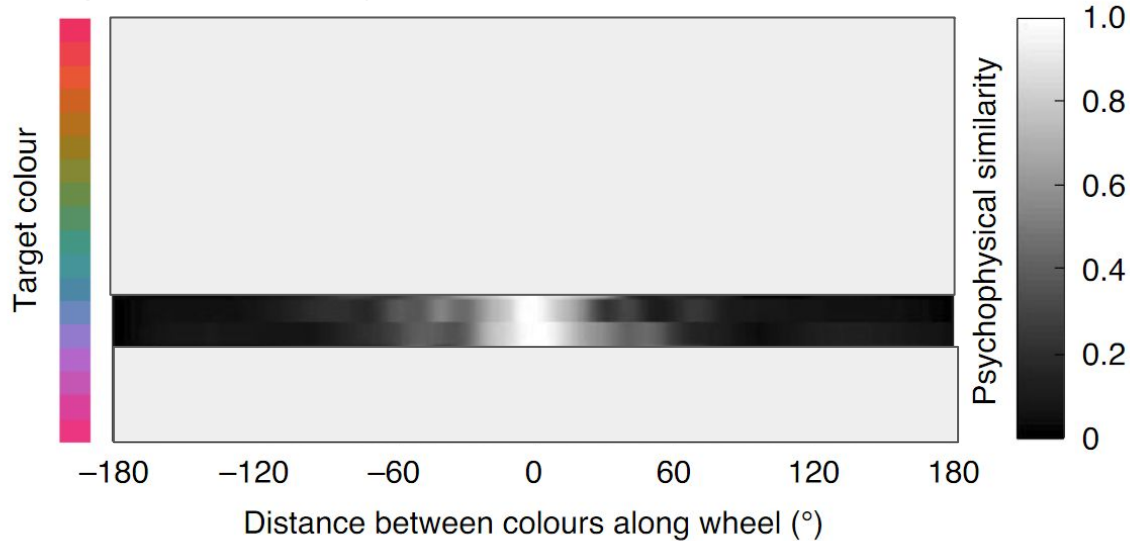


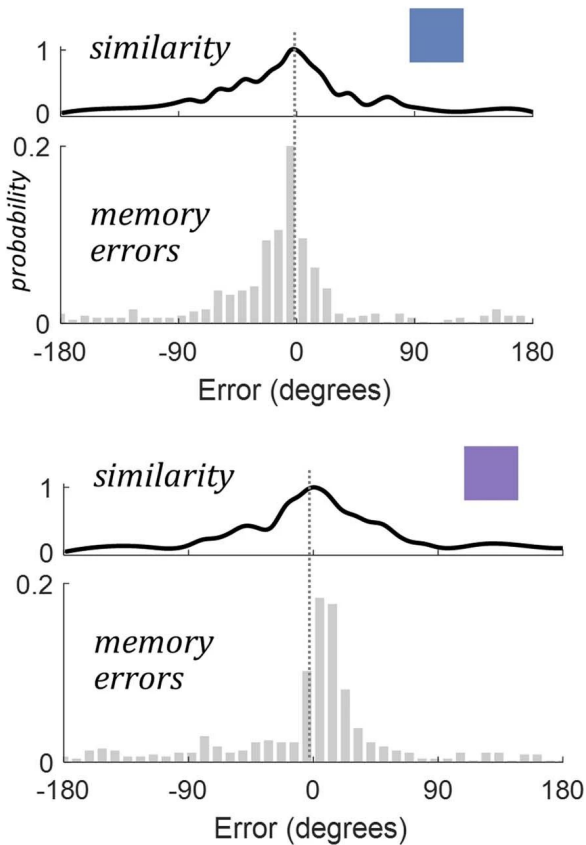
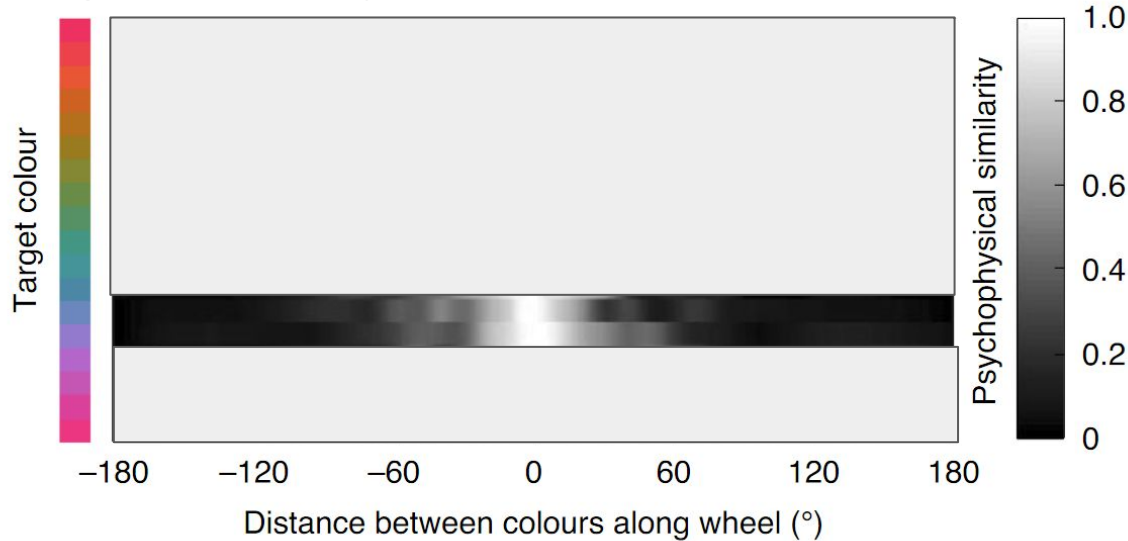
***Error-correcting dynamics
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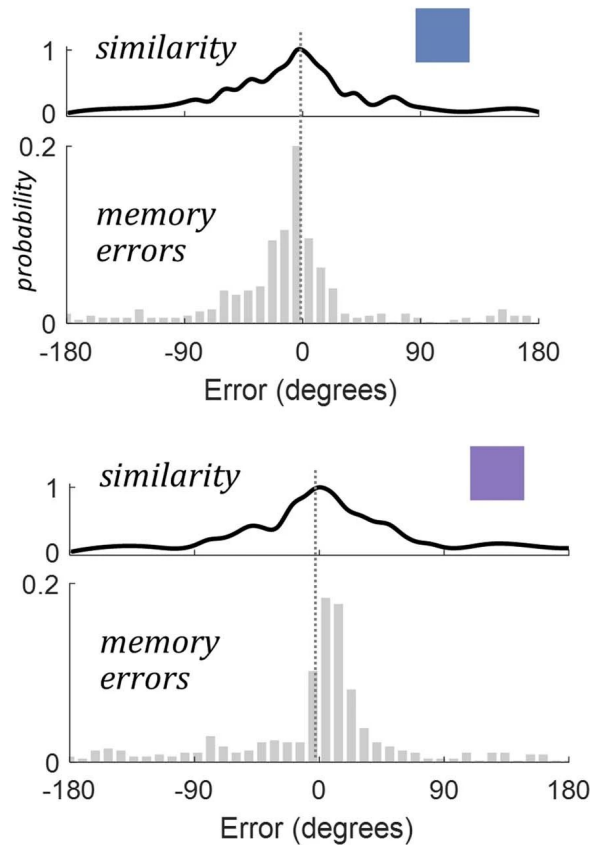
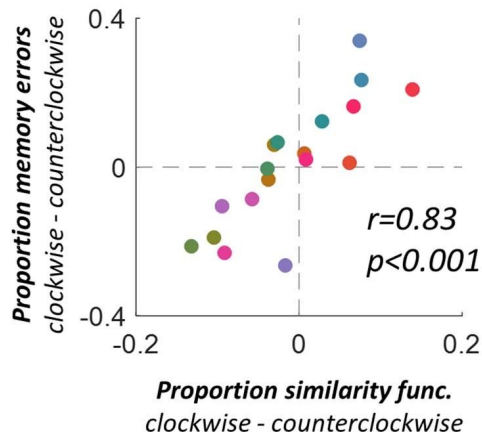
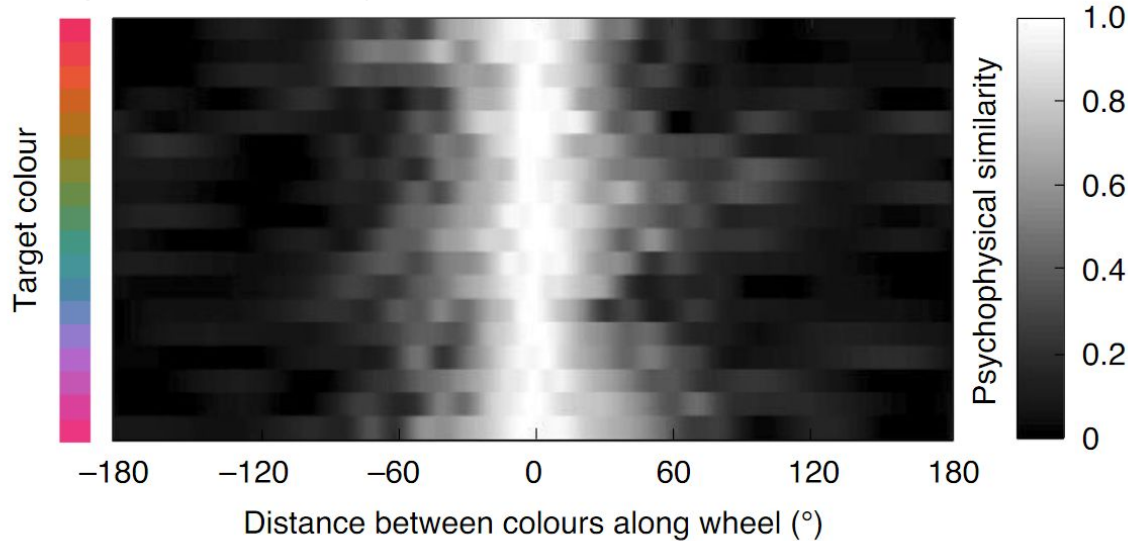
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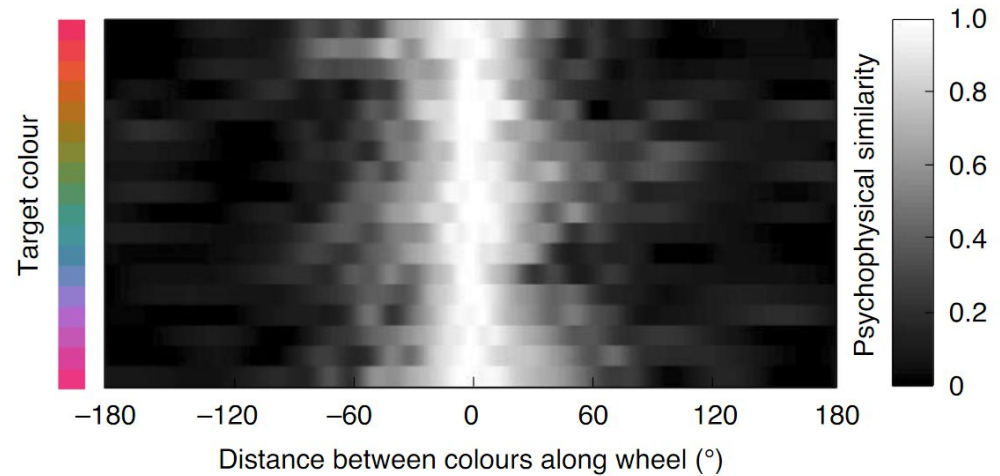




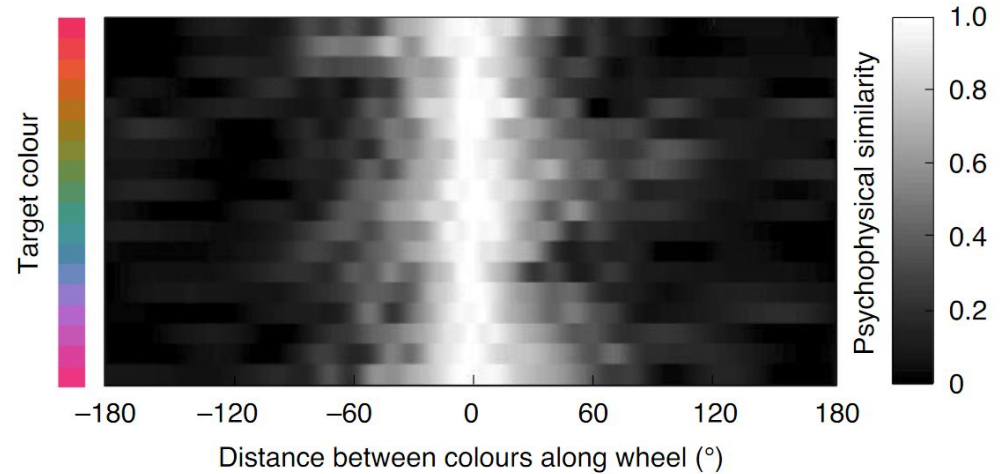
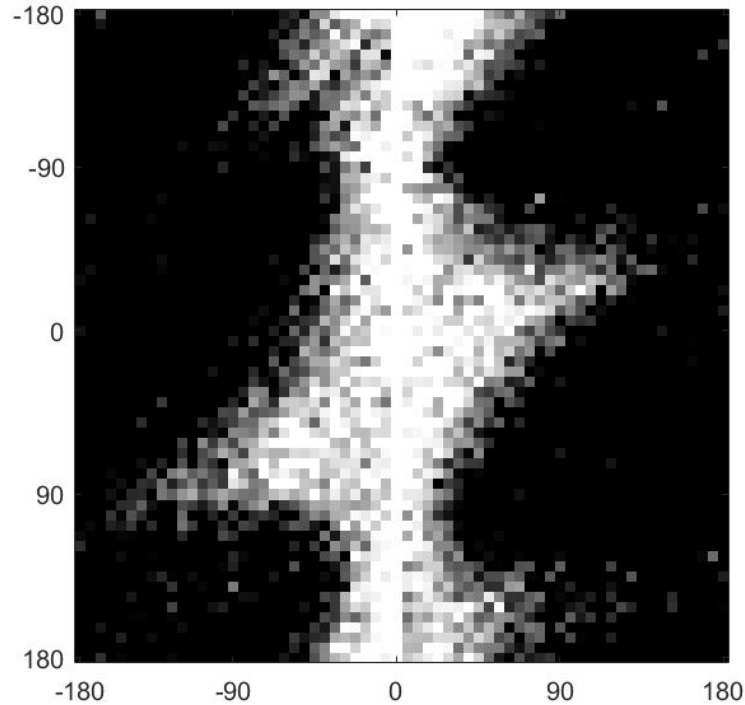
Multiple different similarity functions (in current space)?
Or a single similarity function in a modified space?



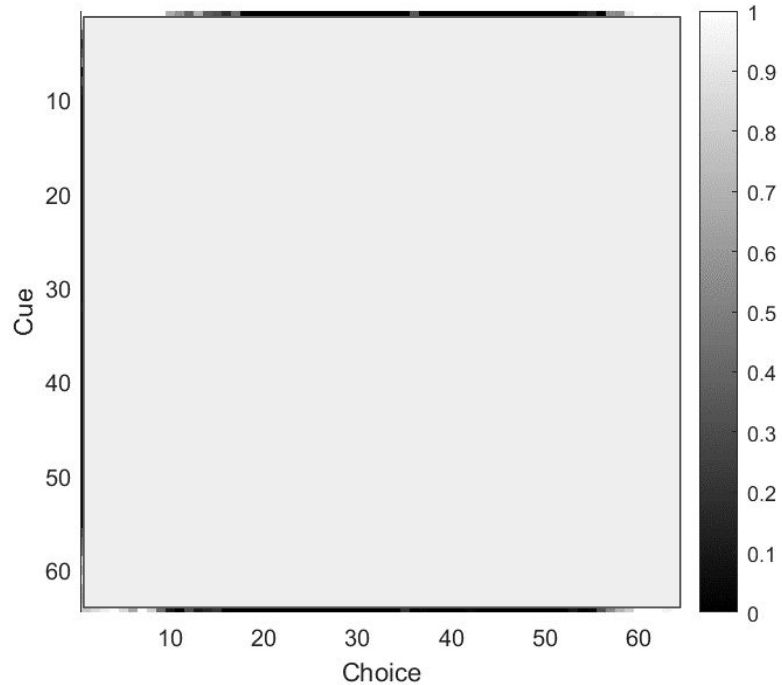
Modelling data collected in *our* lab



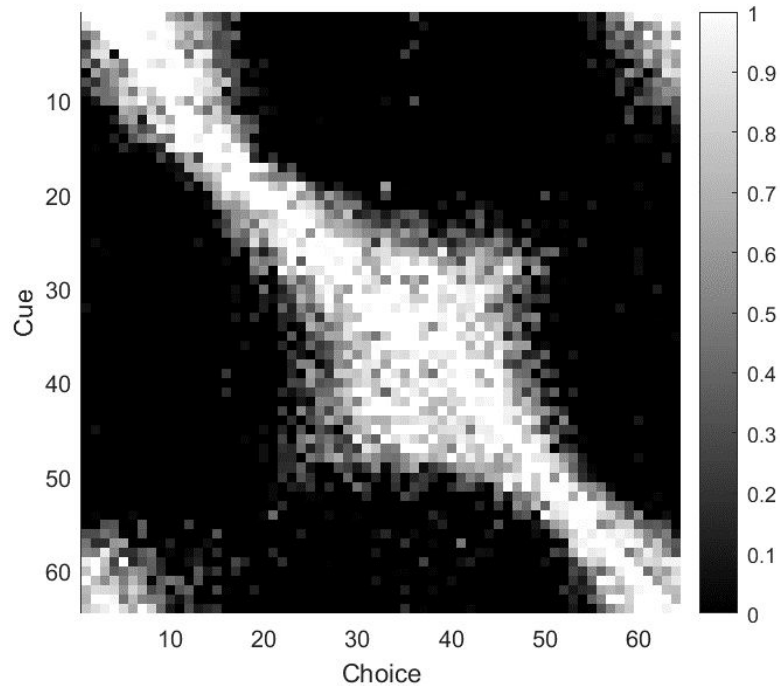
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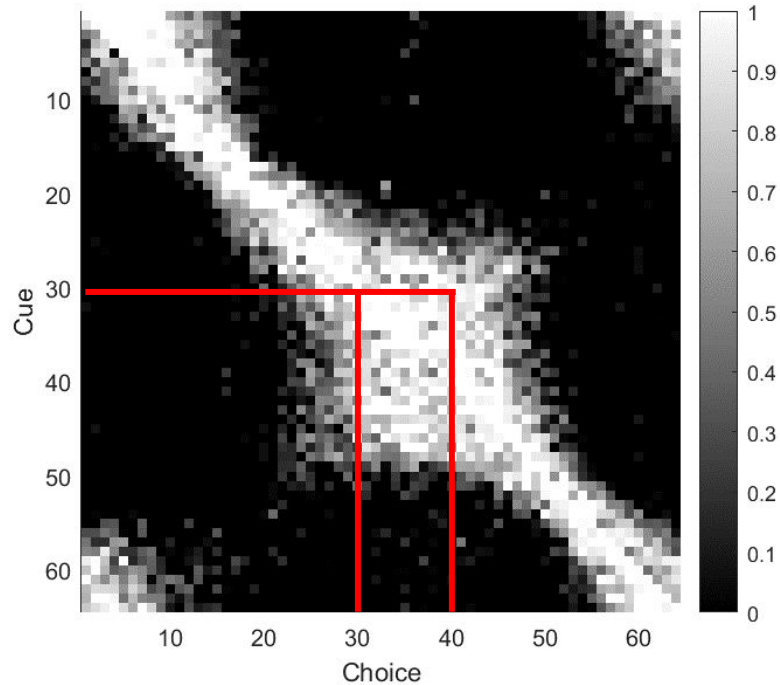
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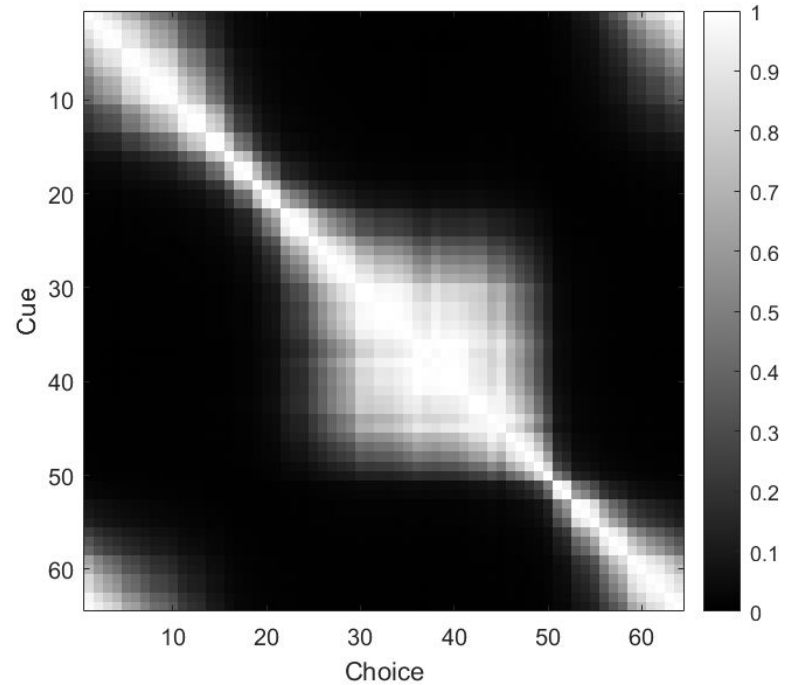
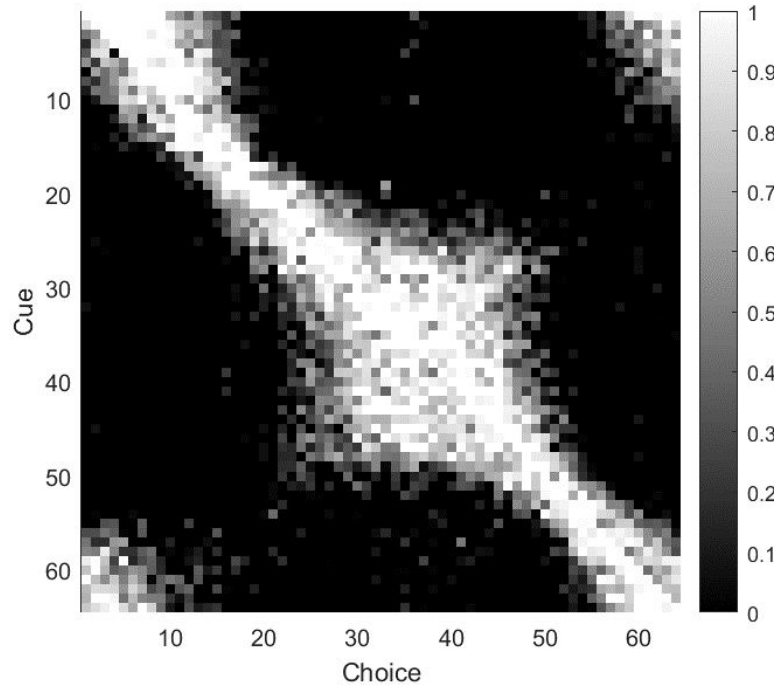
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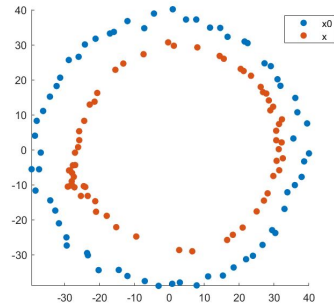
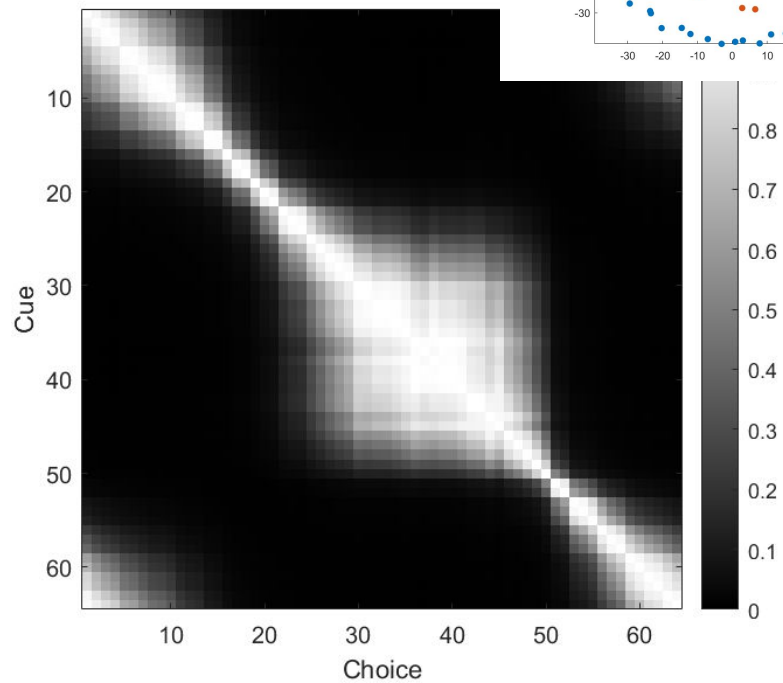
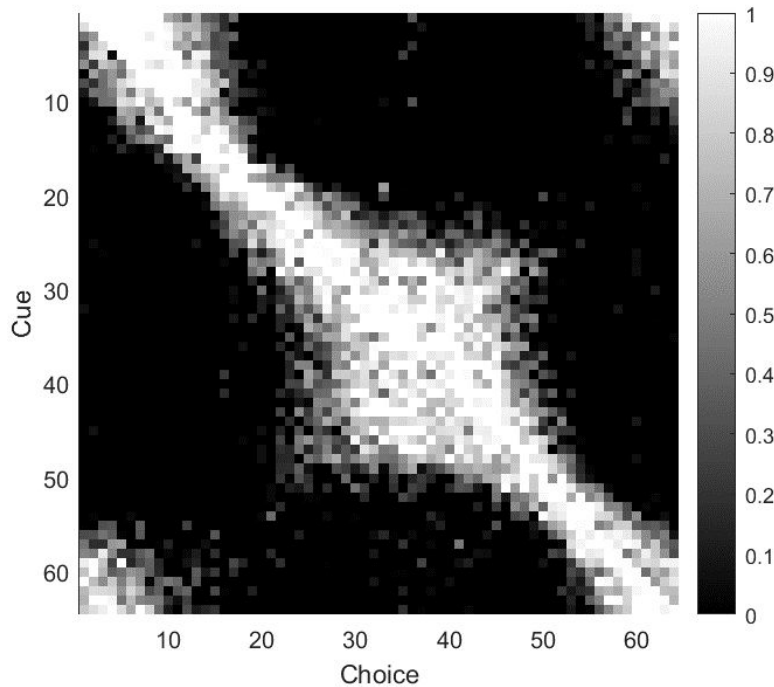
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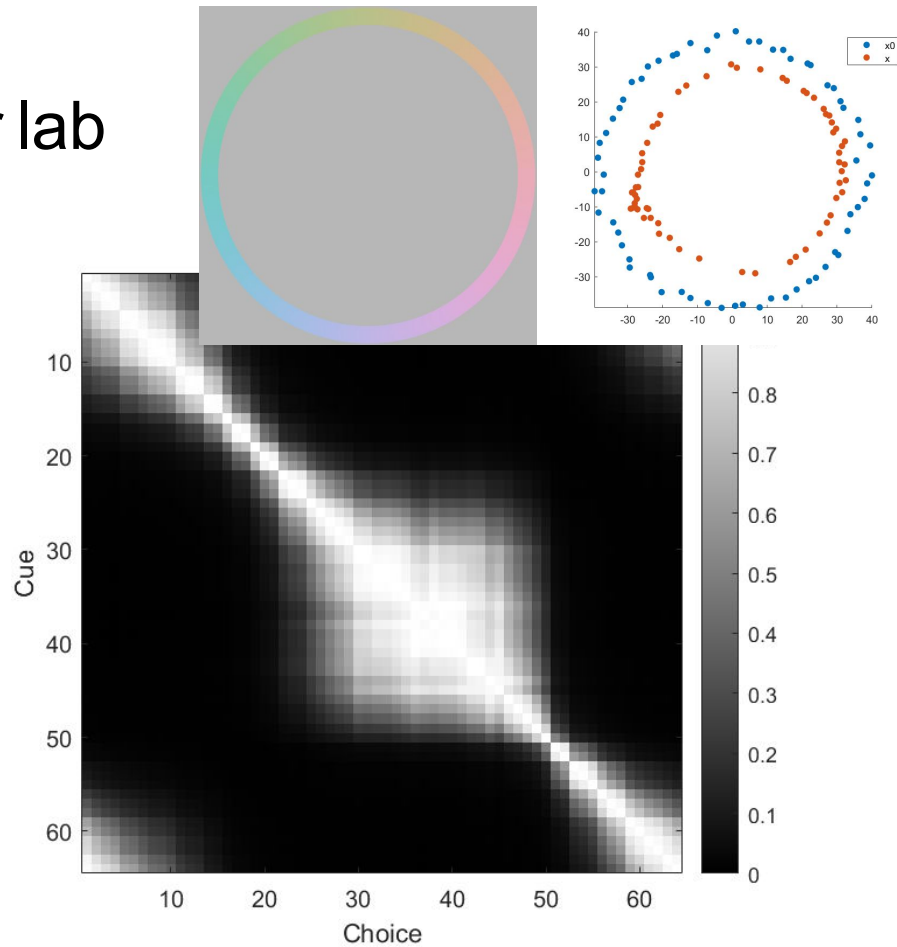
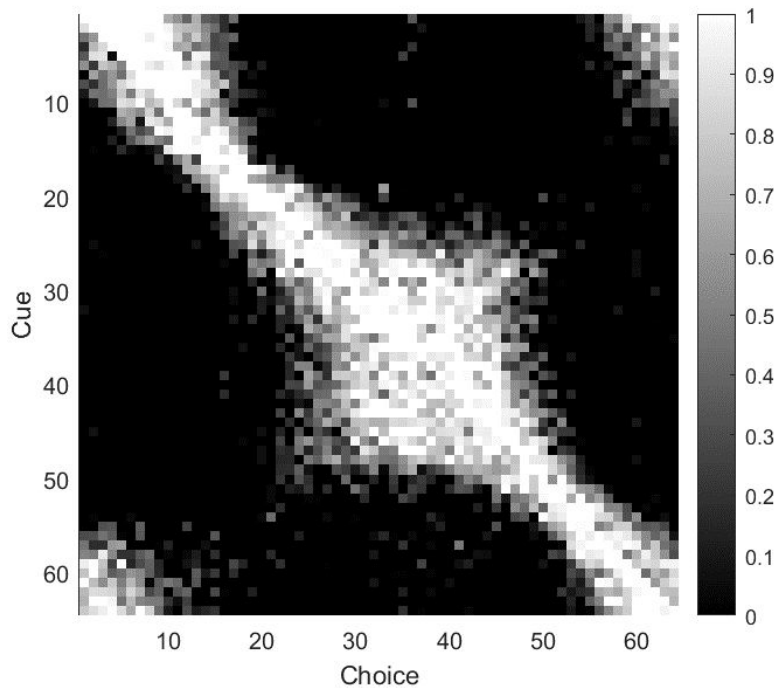
Modelling data collected in *our* lab



Modelling data collected in *our* lab



Modelling data collected in *our* lab



Conclusions

- Nice model
 - Parsimonious
 - Biologically plausible (?)
- Building on it for our work looking at bias

If anyone has good ideas/experience extracting confidence/likelihood intervals from models with many correlated parameters, help!?