



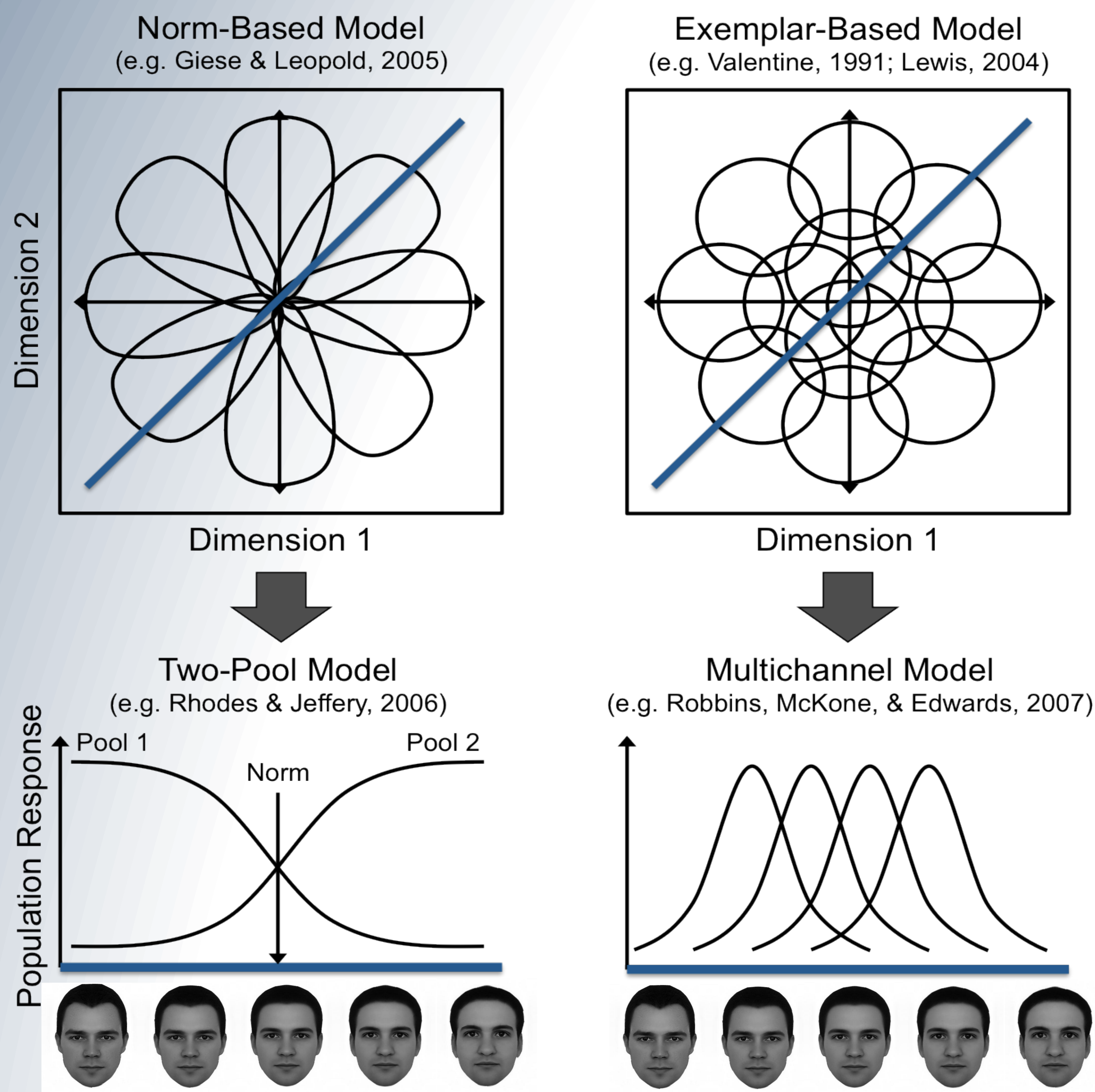
# Face Adaptation: Comparing Norm- and Exemplar-Based Models

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"To have one's hunches about how a simple combination of processes will behave repeatedly dashed by one's own computer program is a humbling experience that no experimental psychologist should miss. Surprises are likely when the model has properties that are inherently difficult to understand, such as variability, parallelism, and nonlinearity – all, undoubtedly, properties of the brain." - Hintzman, 1990

## Norm versus Exemplar Models

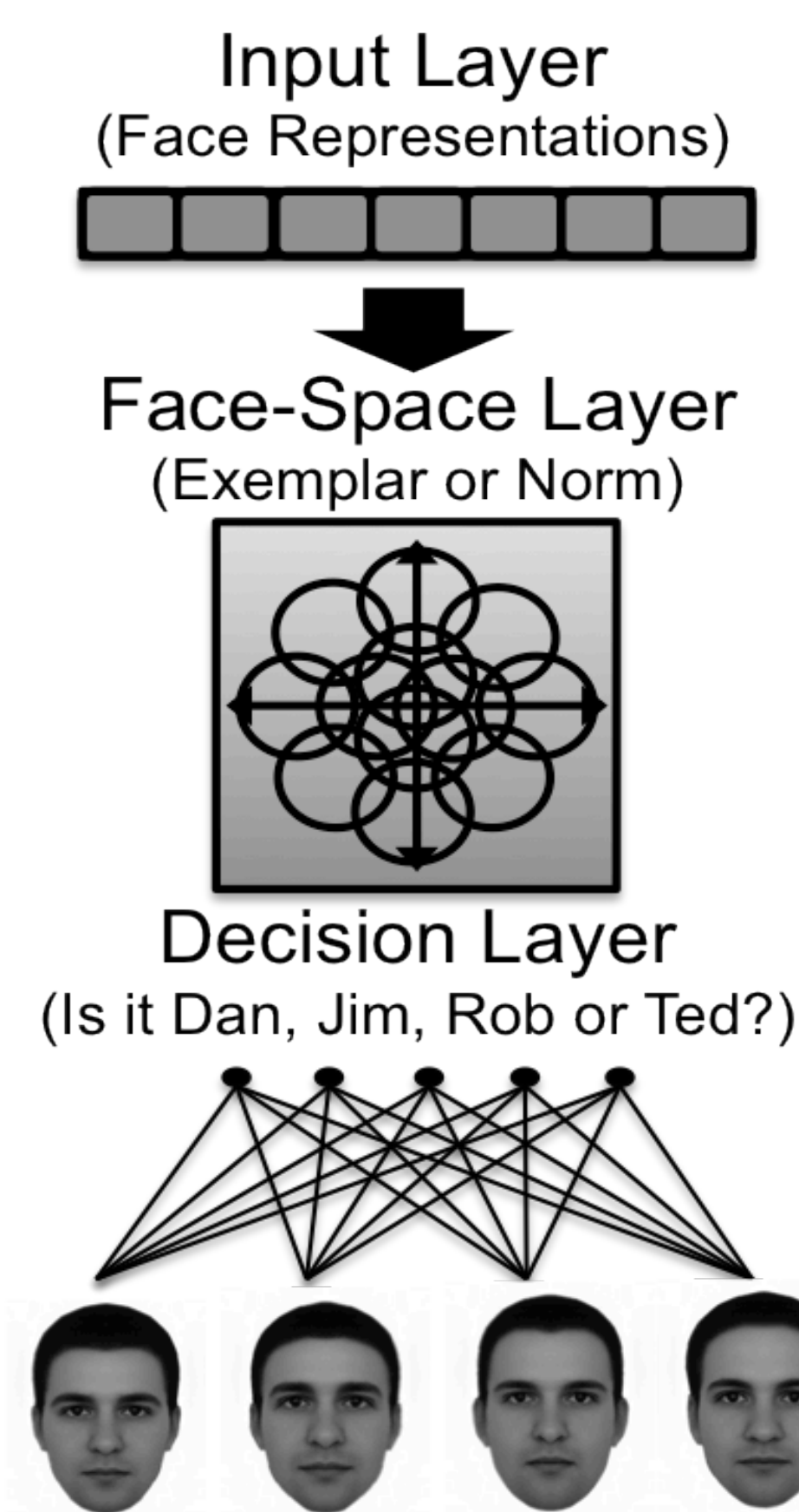


## Research Rationale and Objectives

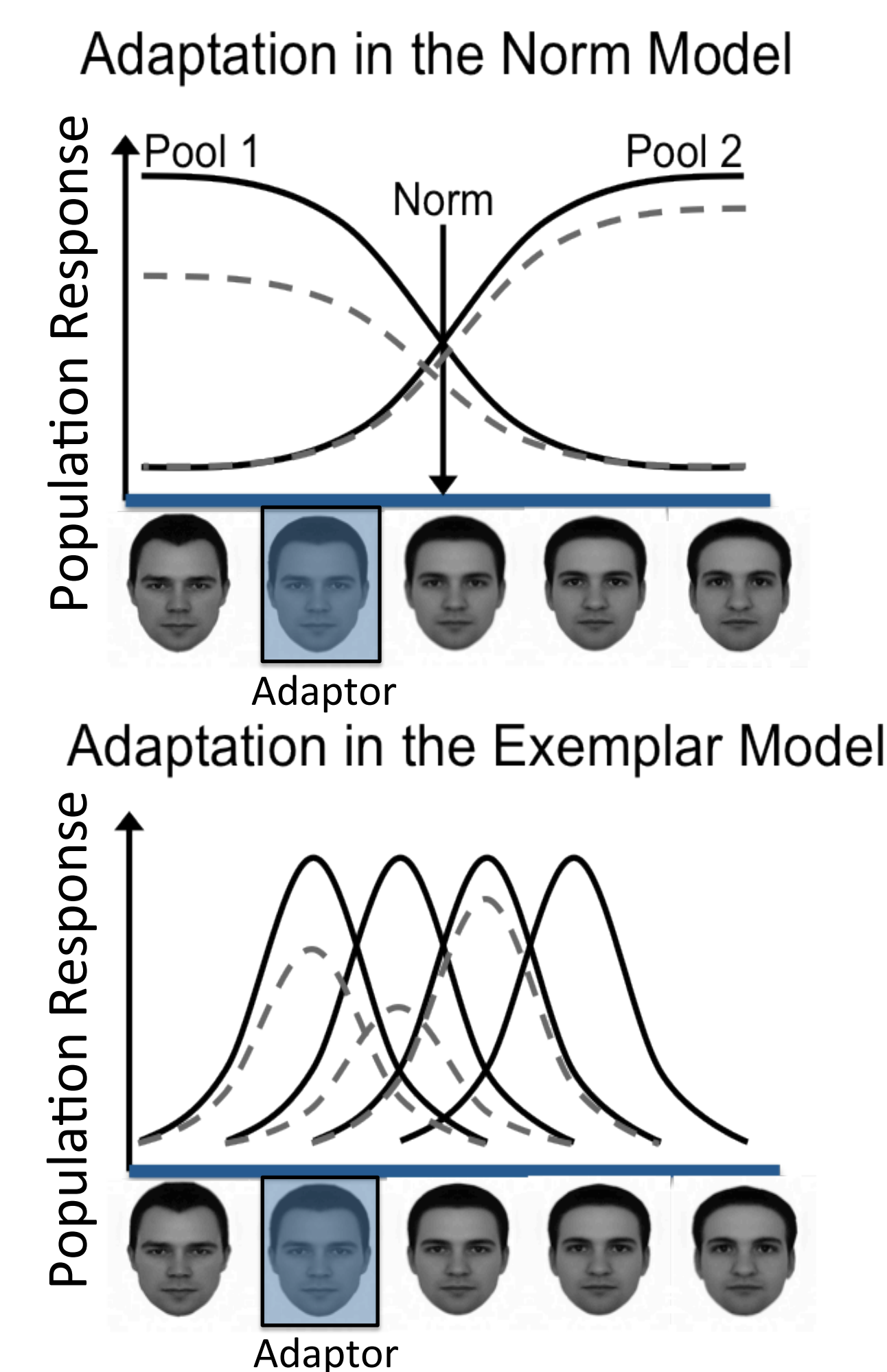
Research into face adaptation has led to consensus in the literature in favor of a two-pool model of face representation, with some researchers claiming that the evidence is conclusive (e.g. Susilo, McKone, & Edwards, 2010).

- Predictions about norm and exemplar models have not been tested using explicit computational models.
- We aimed to test predictions by implementing norm- and exemplar-based models.
- Models were tested on a wide range of adaptation paradigms described in the literature.

## Model Architecture

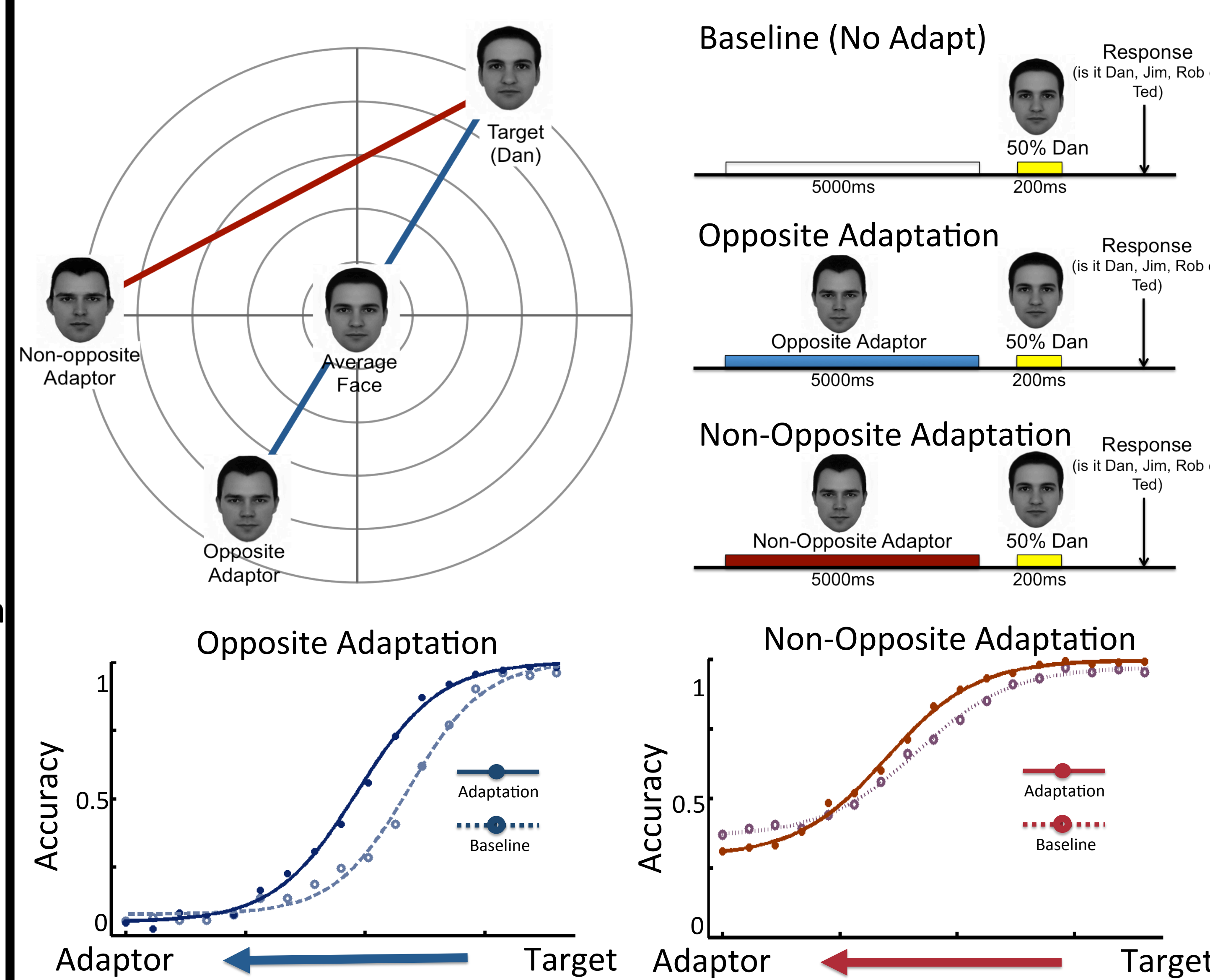


## Implementing Adaptation



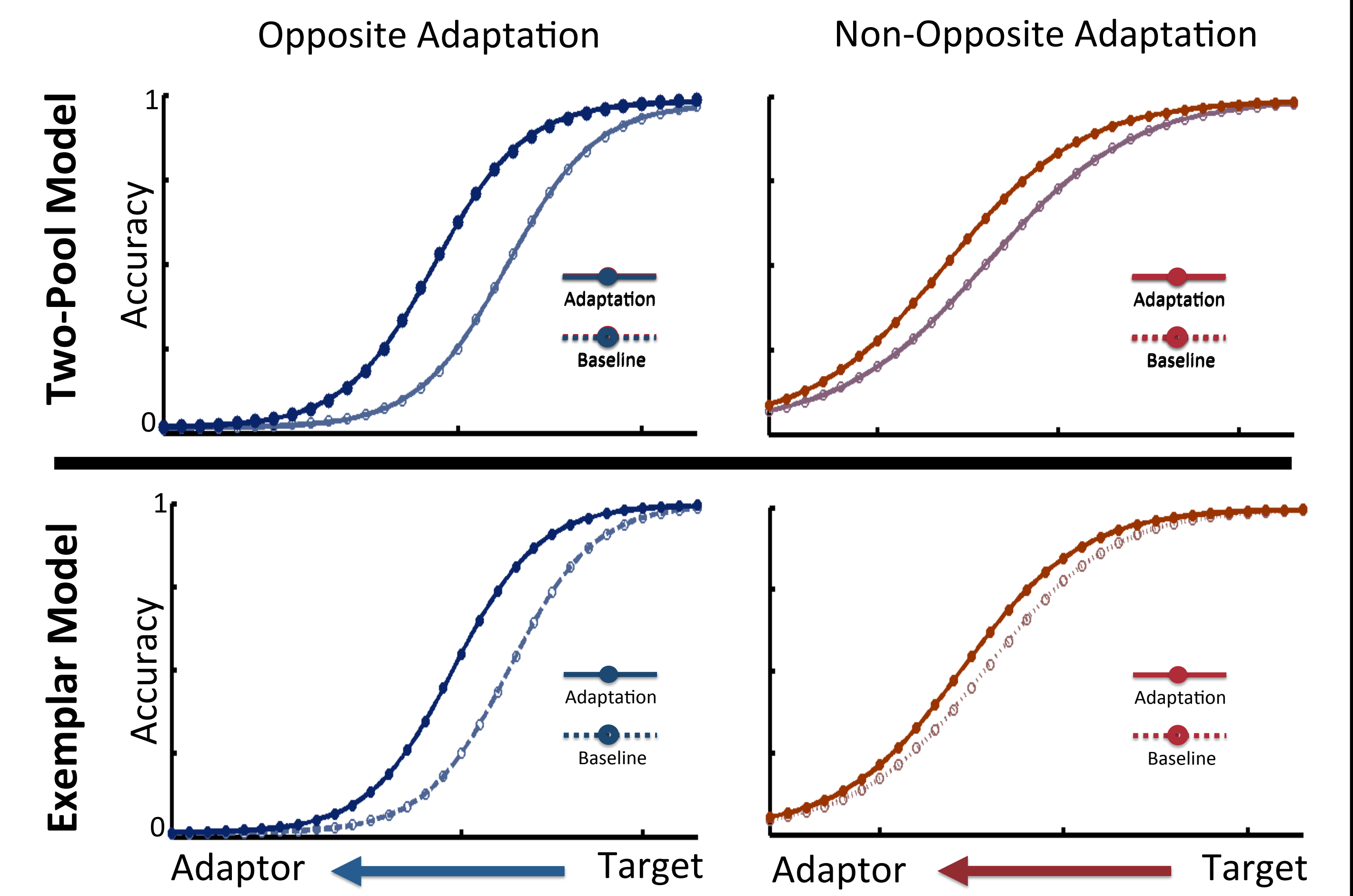
- Adaptation was implemented as a reduction in response of the face-space units in proportion to prior activation.

## Rhodes & Jeffery (2006)



- Less adaptation in the non-opposite condition is taken as support for the norm-based model because it suggests a special status for trajectories that pass through the norm.

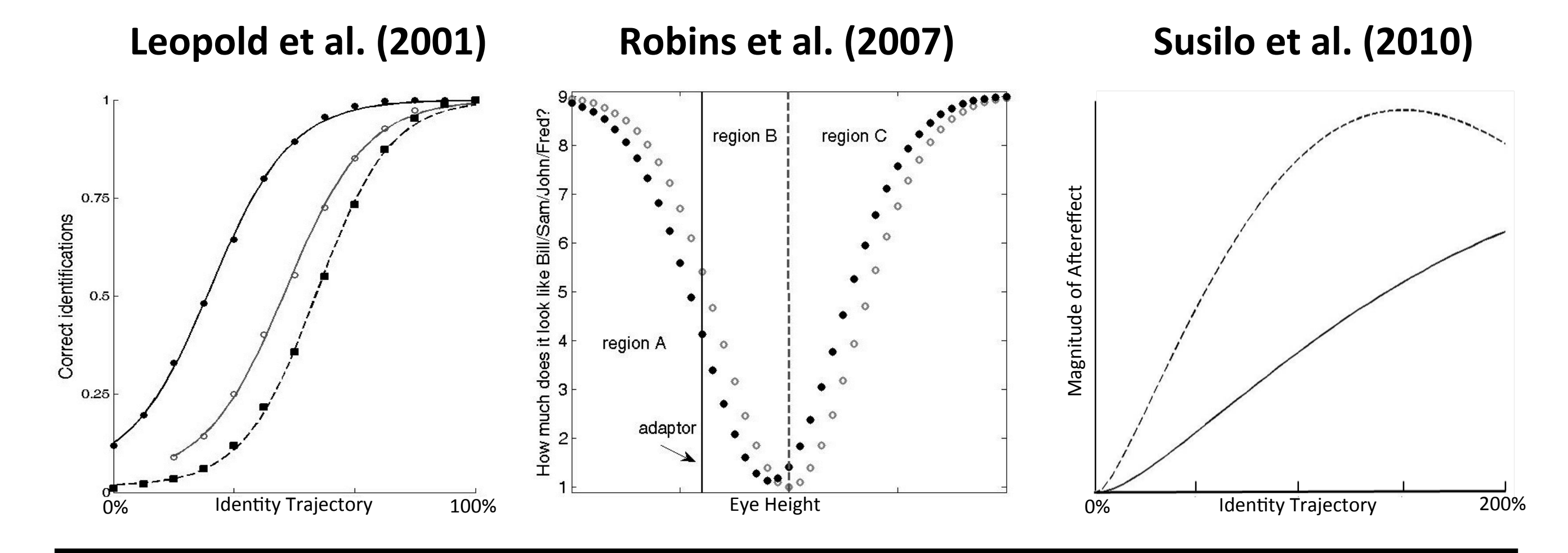
## Results of Modeling



## Conclusions

- The Two-Pool Model and the Exemplar Model predicted that there would be more adaptation in the opposite condition
- The Exemplar Model also provides qualitatively accurate predictions on a range of other adaptation paradigms (see below)
- Current adaptation paradigms are insufficient to differentiate norm and exemplar based models

## Other Results from the Exemplar Model



## References & Acknowledgments

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