

## Introduction

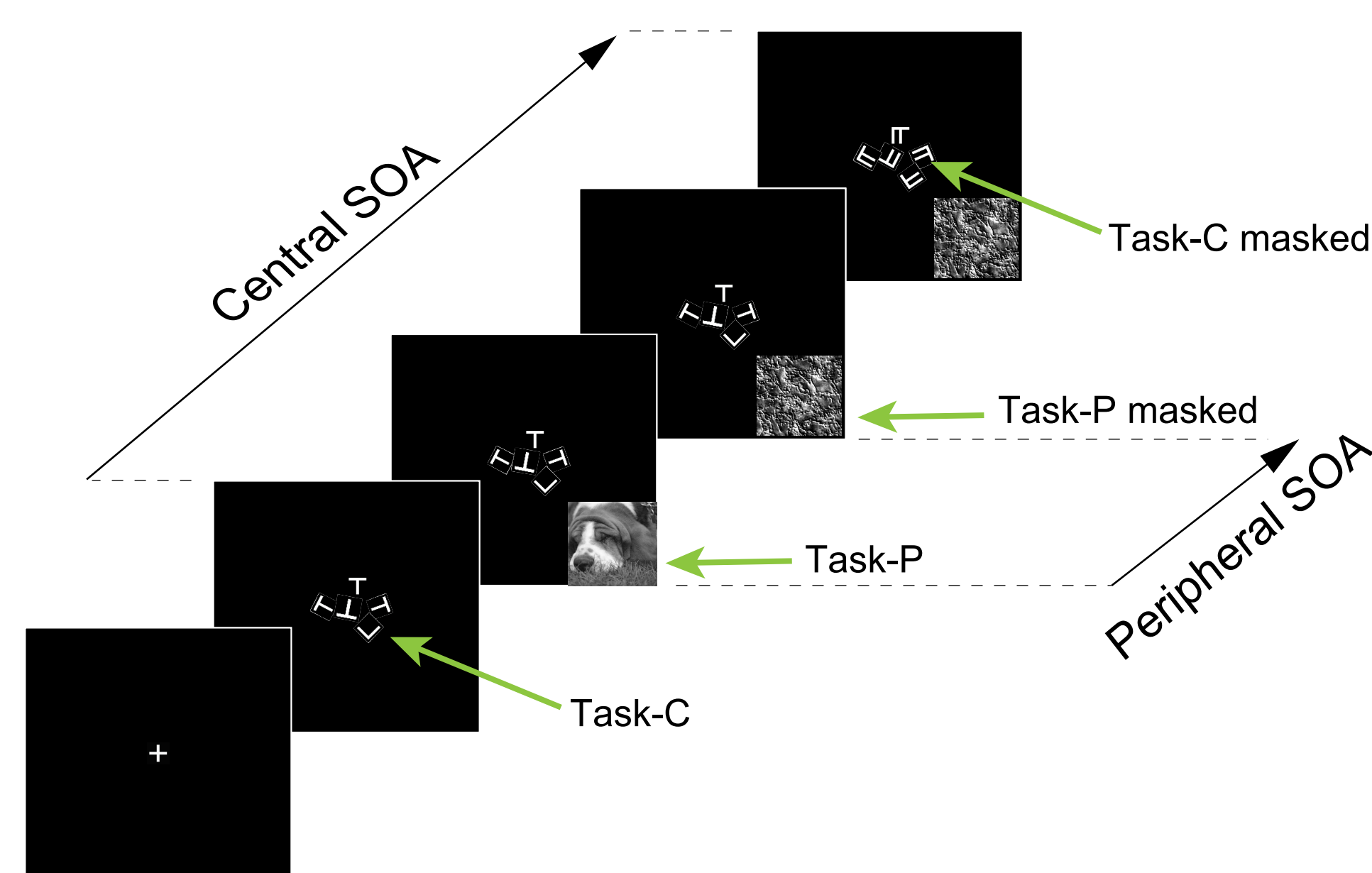
- Superordinate-level categorization (animal/non-animal) can be performed in the near-absence of attention [1].
- Finer categorization (basic-level: dog/non-dog) requires longer reaction times [2].

Can this longer processing time be explained by a necessary allocation of attentional resources?

## Method

Dual task (DT) paradigm:

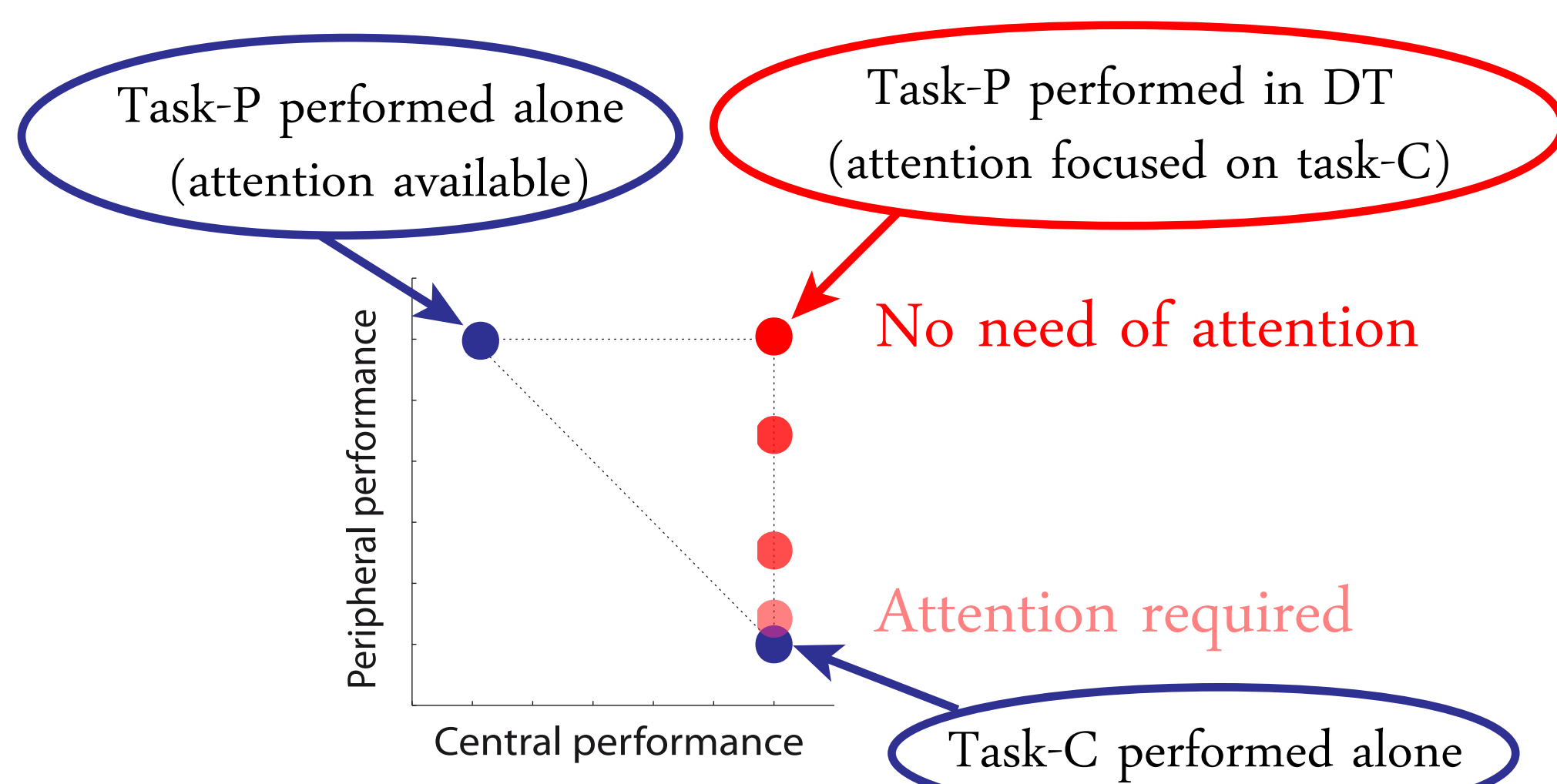
- Central task engaging attention (task-C)
- Categorization task in the periphery (task-P)



SOAs are adjusted for each participant in each task

## Prediction

In DT, priority is given to task-C so that performance on this task should be similar in DT and when performed alone

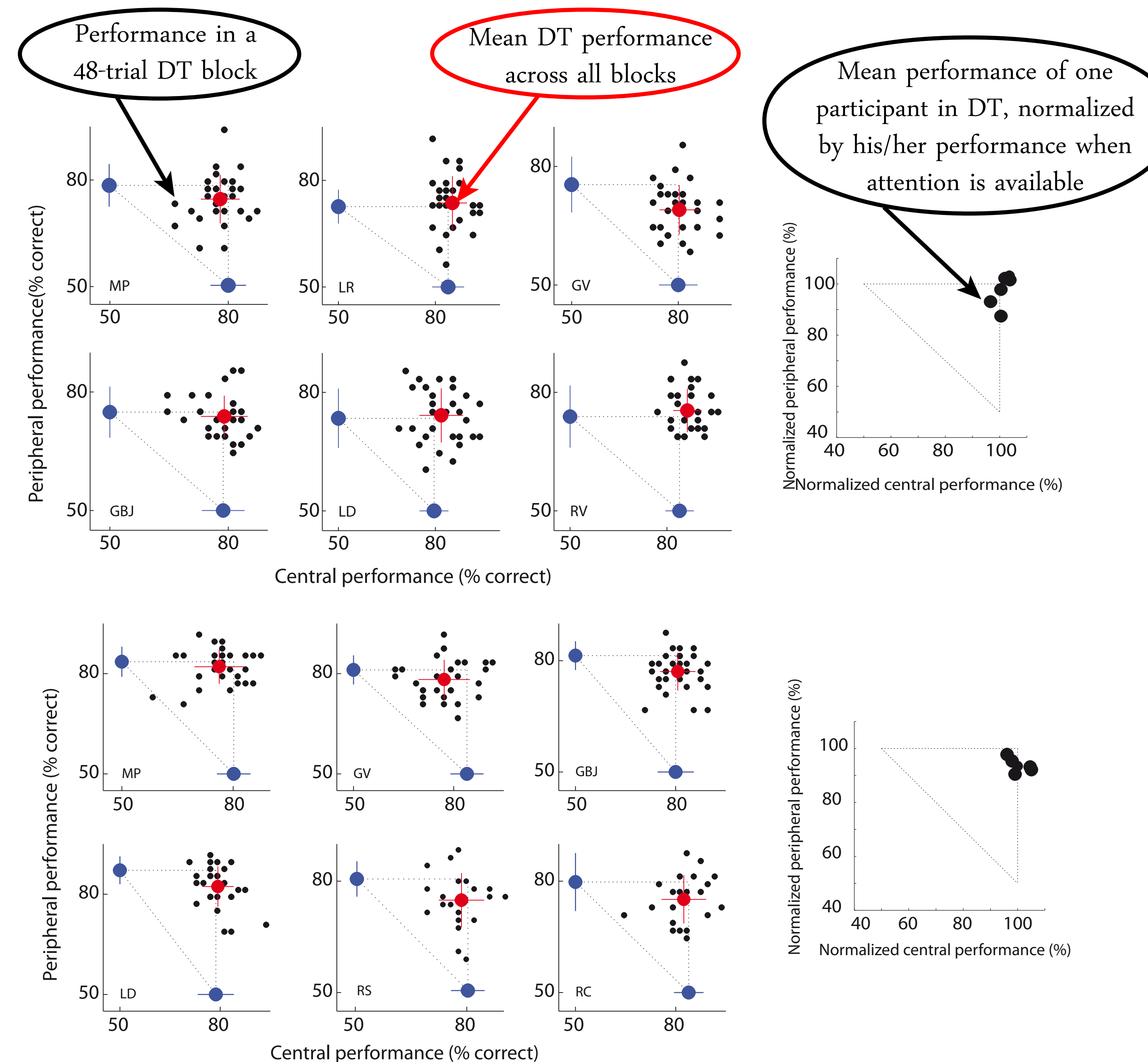


## Basic-level categorization: no need of attention

Dog/non-dog animal  
n=6

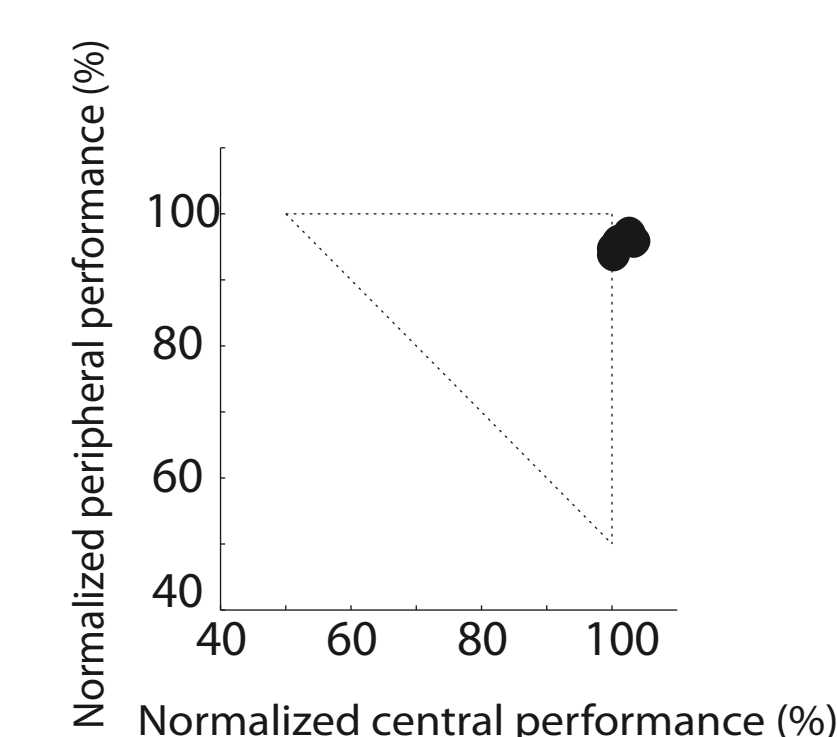


Car/non-car vehicle  
n=6

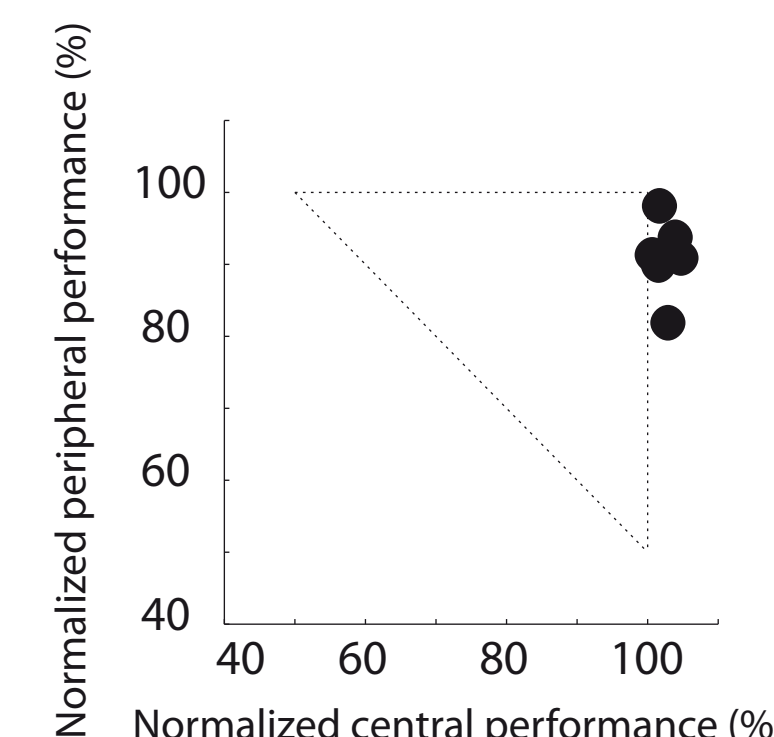
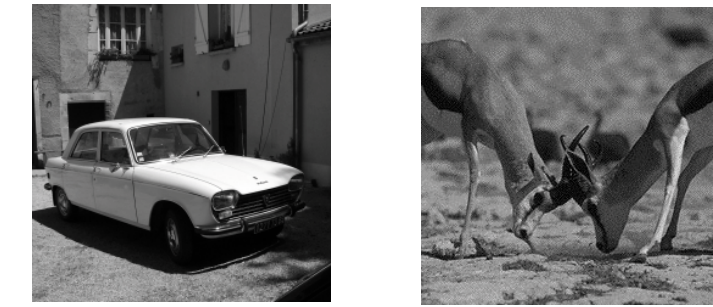


## Superordinate-level categorization

Animal/non-animal  
n=6

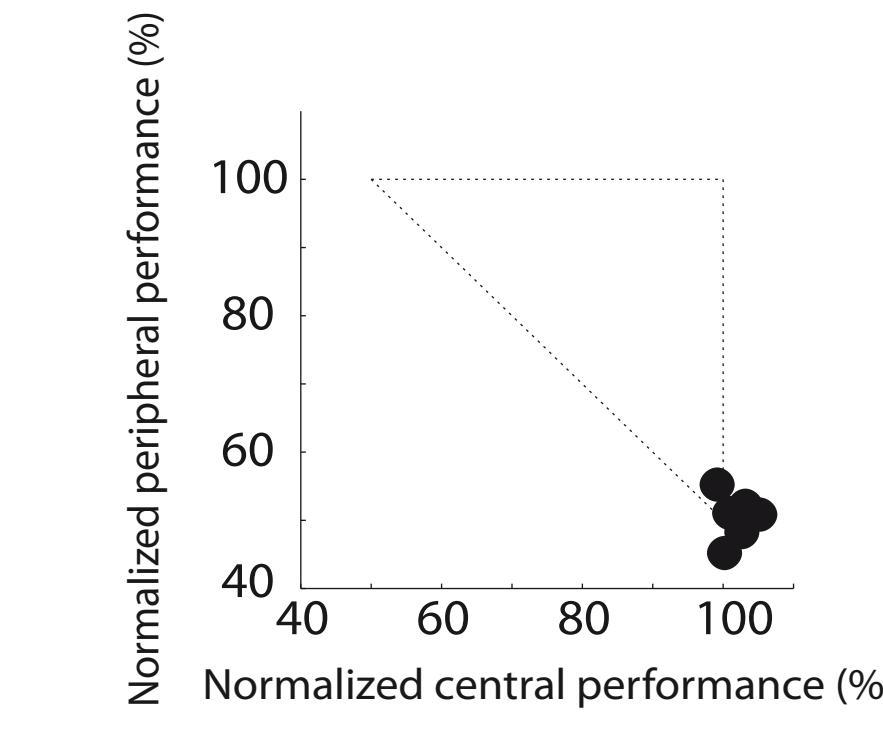
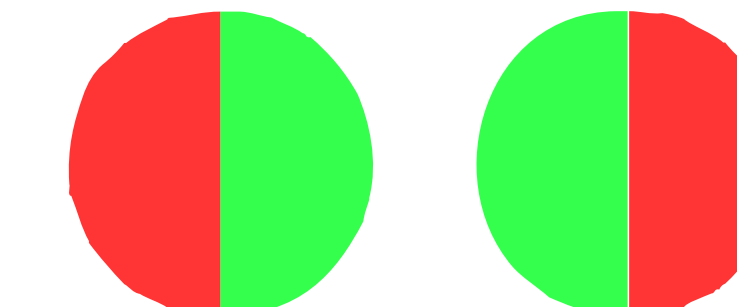


Vehicle/non-vehicle  
n=6



## Attention-demanding task

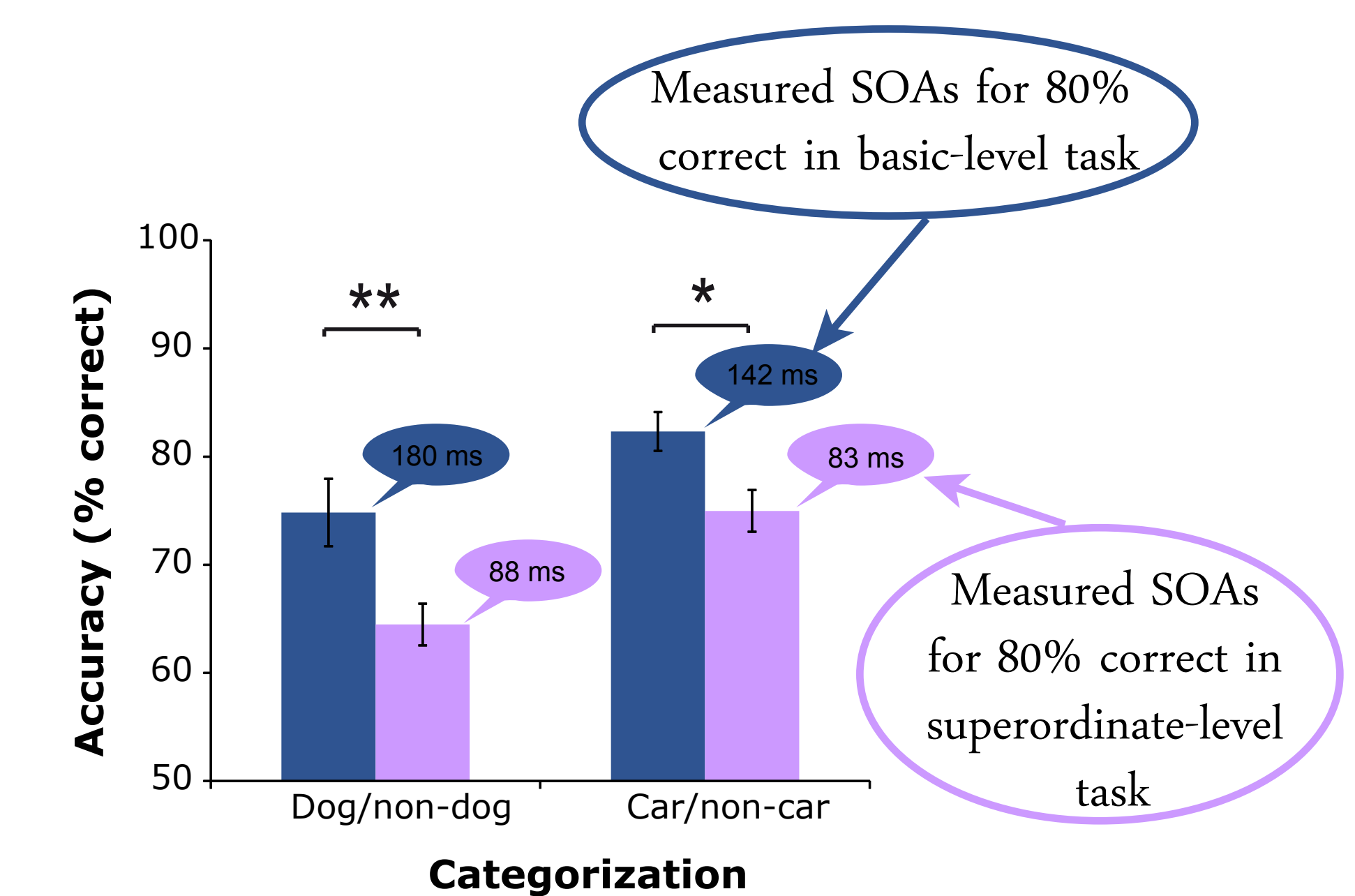
Red half on the left/on the right  
n=6



Replication of previous results [1]

## More information needed

To reach 80% accuracy in task-P performed alone, basic-level categorization requires longer stimulus presentation ( $SOA_{\text{basic-level}} = \sim 2 \times SOA_{\text{superordinate-level}}$ )



We "know" that it is an animal before we "know" that it is a dog

## Conclusion

Access to basic-level representation can be done:

- Without attention
- Regardless of the category (biological or man-made)
- But requires more time for information uptake

In favor of the hypothesis that familiar representations might be supported by hardwired, specialized networks [3]

## References

- [1] Li, F.F., VanRullen, R., Koch, C., and Perona, P. (2002). Rapid natural scene categorization in the near absence of attention. *Proc Natl Acad Sci U S A* 99, 9596-9601.
- [2] Mace, M.J., Joubert, O.R., Nespoulous, J.L., and Fabre-Thorpe, M. (2009). The time-course of visual categorizations: you spot the animal faster than the bird. *PLoS One* 4, e5927.
- [3] VanRullen, R., Reddy, L., and Koch, C. (2004). Visual search and dual tasks reveal two distinct attentional resources. *J Cogn Neurosci* 16, 4-14.