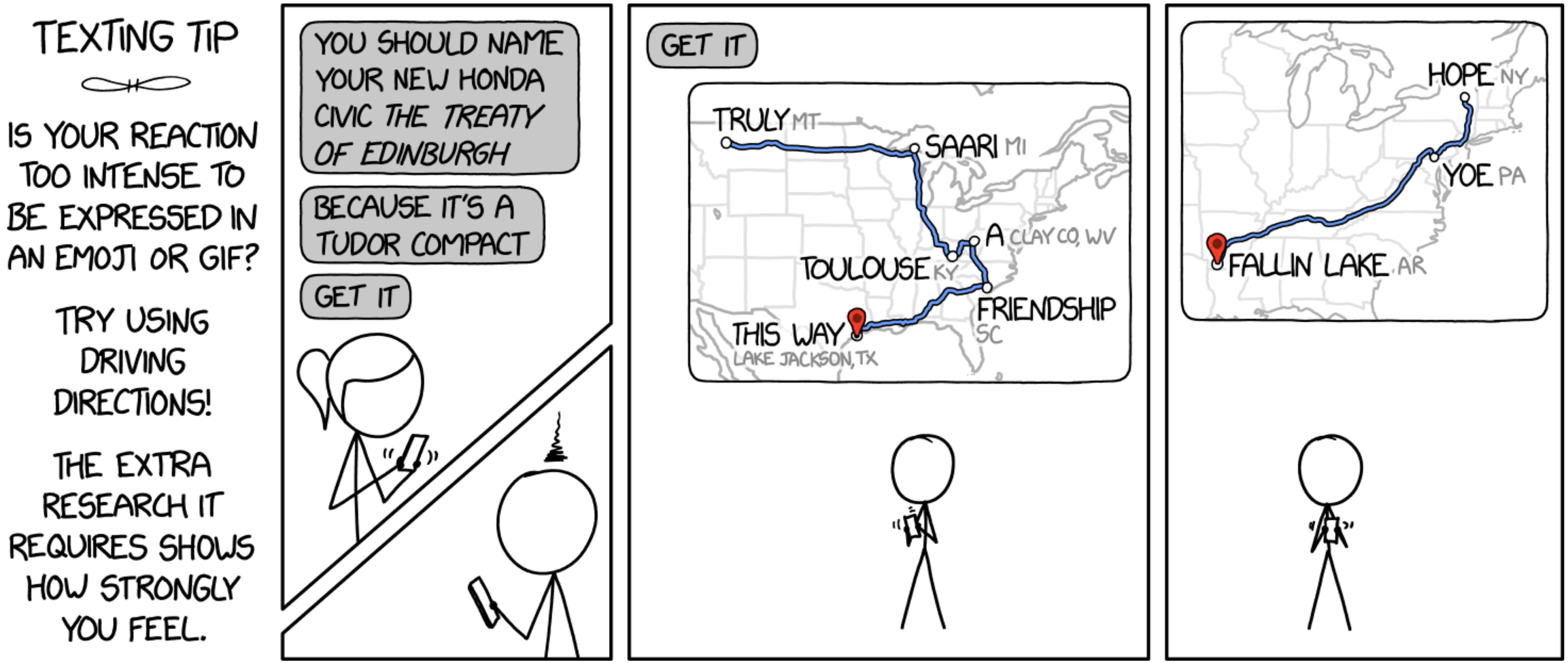
What is so special about navigation?

Readings for today

- Whittington, J. C., Muller, T. H., Mark, S., Chen, G., Barry, C., Burgess, N., & Behrens, T. E. (2020). The Tolman- Eichenbaum machine: Unifying space and relational memory through generalization in the hippocampal formation. Cell, 183(5), 1249-1263.

How do you learn to get from $A \rightarrow C$ via B?

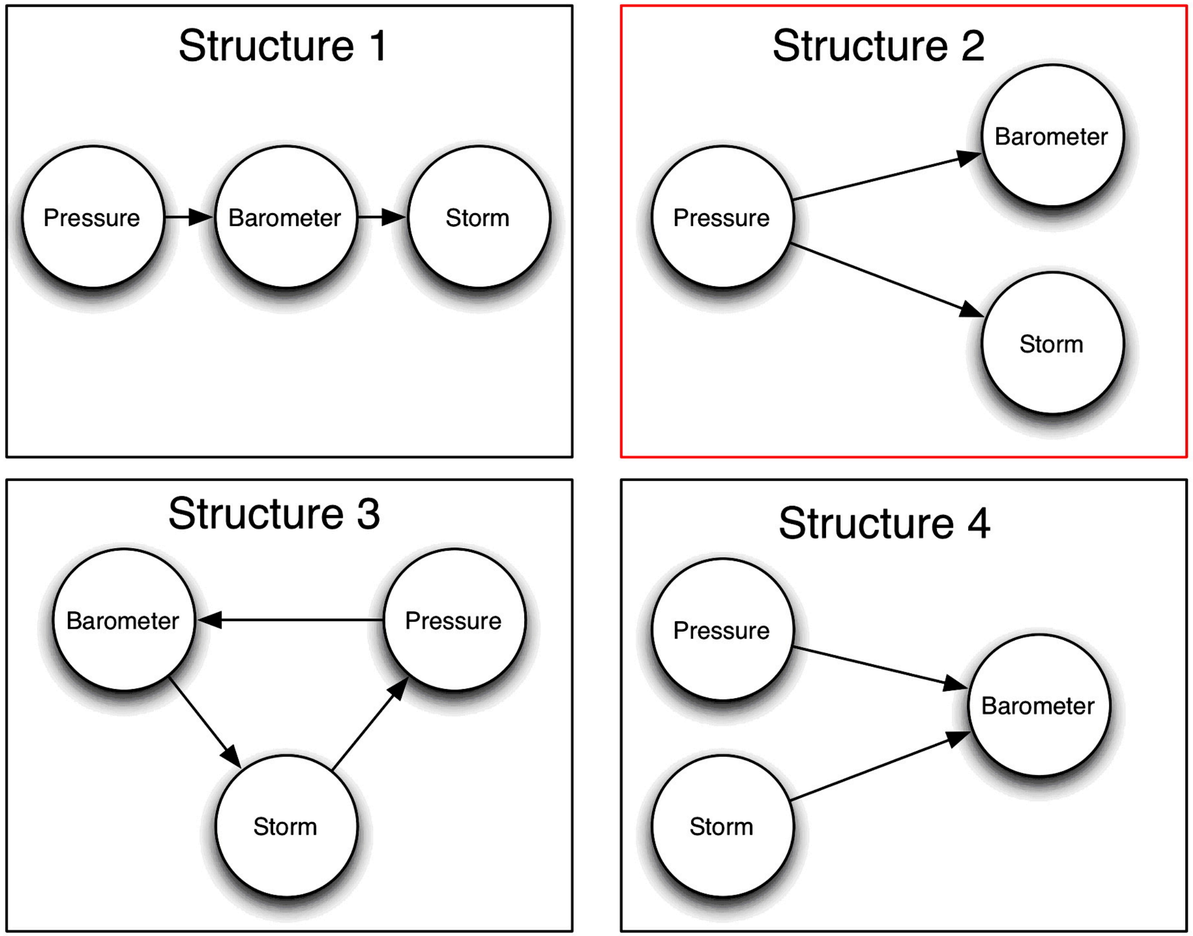


In the authors’ own words.

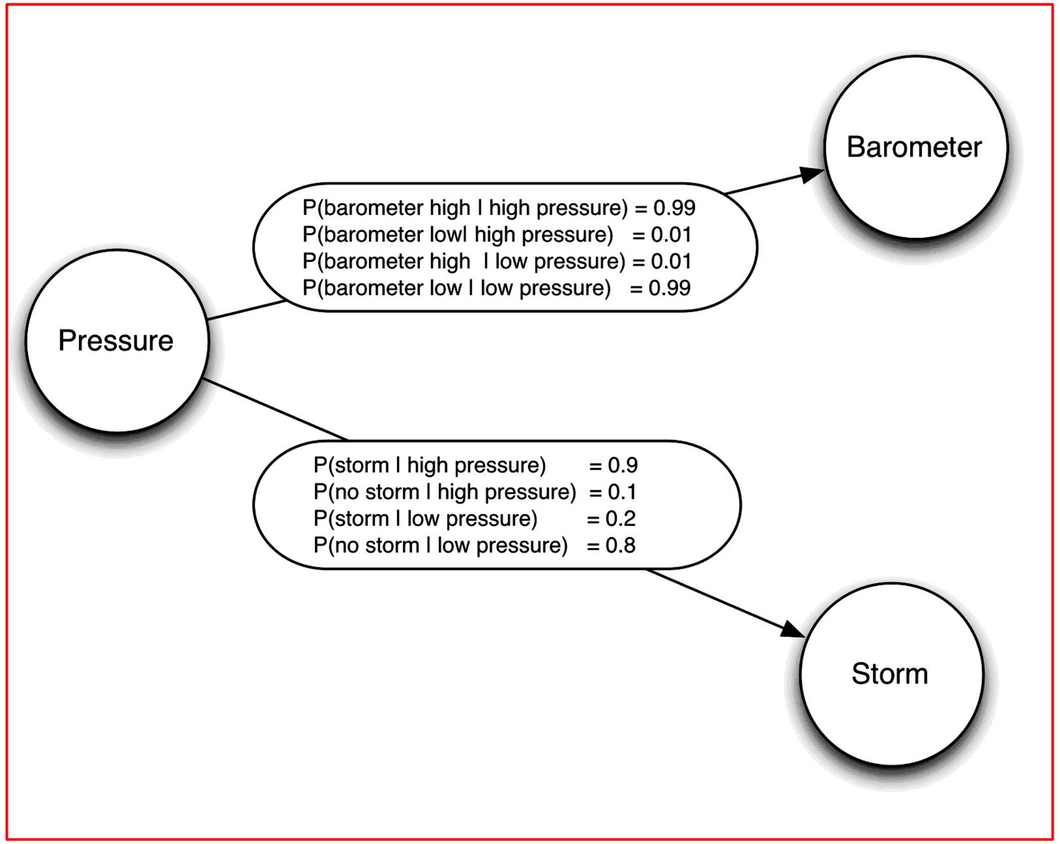
(Whittington et al. 2020)

Structure learning

(A) Structure Learning



(B) Parametric Learning



(Braun et al. 2010)

Secret ingredients

Relational structure

+

Relational memory

} Path integration

(Whittington et al. 2020)

Break out discussion

- Whittington & colleagues make the case that a relational learning system (the TEM), evolved for spatial navigation, provides the infrastructure for general relational knowledge. **What *limitations* could this produce on our understanding of non-spatial relations?**