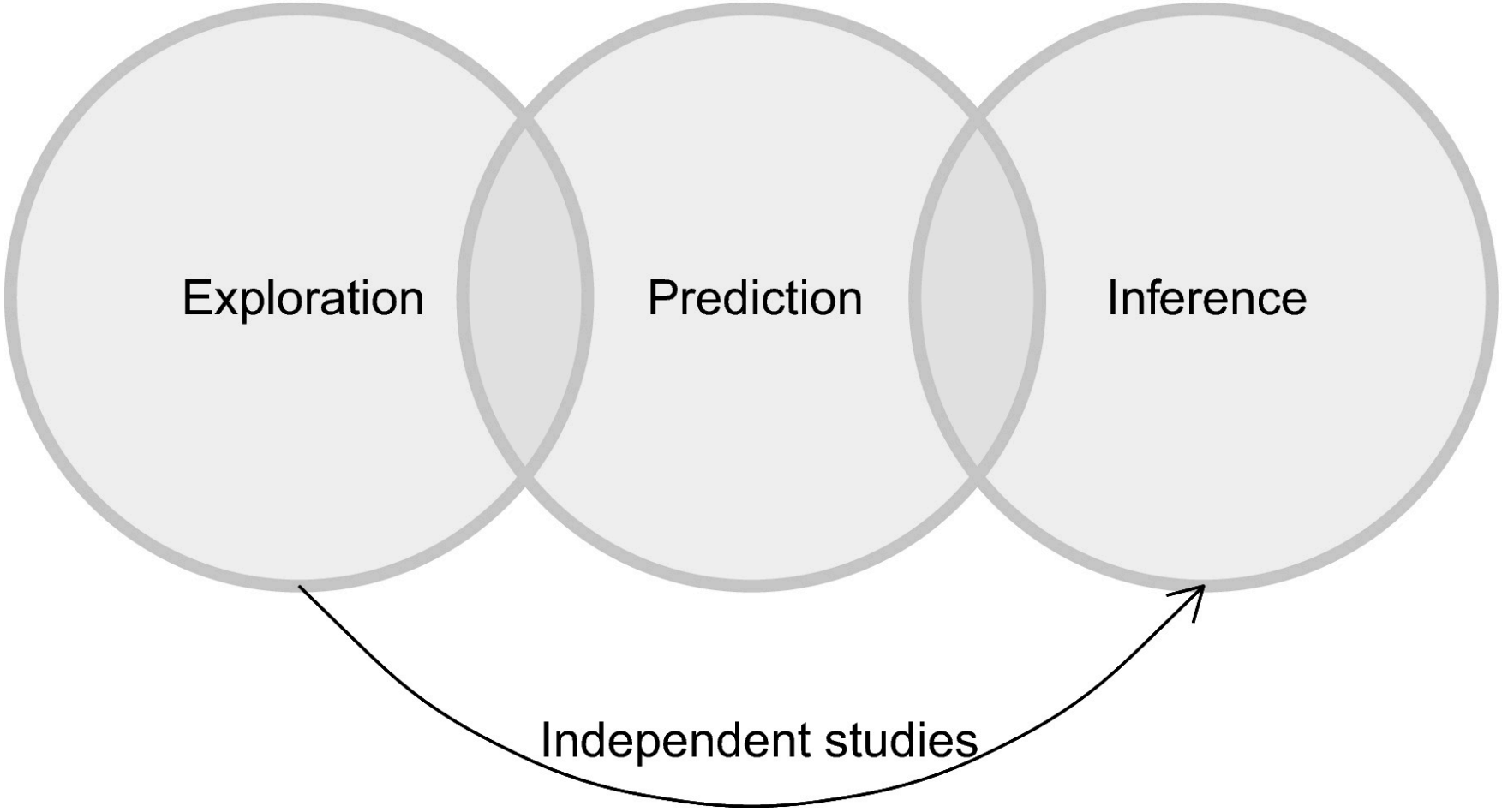
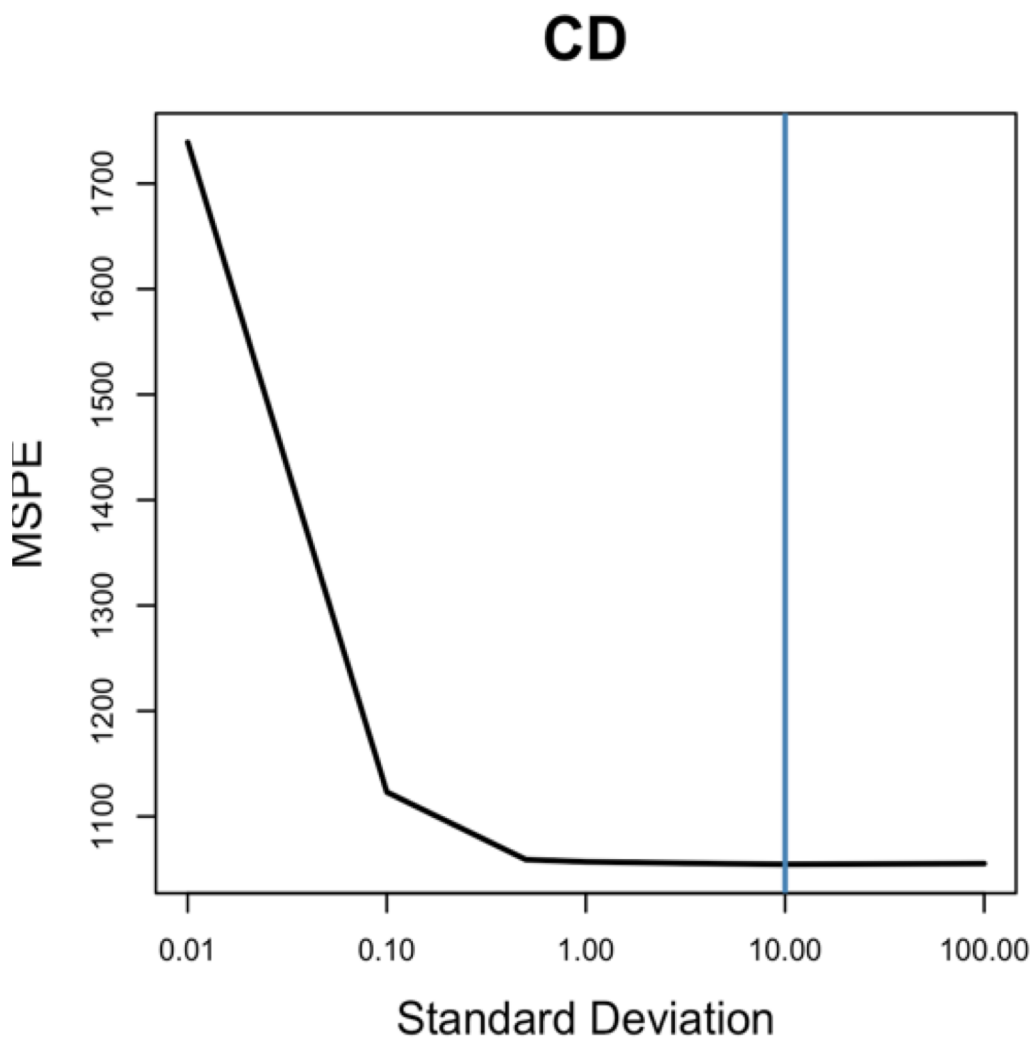
Choosing among models



How do the authors define each of these, How are they different? Why are independent studies needed to move from exploration to inference?

Bayesian regularization

- A simple way to identify the best trade-off between bias and variance in regression-type models.
- Steps:
  - Start of using relatively wide normally distributed priors for regression coef. (e.g. N(0,100))
  - Fit model leaving some portion of the data out.
  - Check predictions using withheld data using MSPE
  - Reduce variance of priors for regression coef. (e.g. N(0,10)) and repeat 2 and 3.
  - Repeat with sequentially smaller prior variance until you ID the amount of prior variance that leads to the best predictions.
  - Refit model with entire data using the “best” prior variance.


CD
MSPE
1100
1200
1300
1400
1500
1600
1700
0.01
0.10
1.00
10.00
100.00
Standard Deviation

Araújo and New describe four sources of uncertainty that ensembling can help account for:

Initial conditions, Model Classes, Model Parameters, Boundary conditions.

In what ways were these already included in your forecasting challenge models?

How could you change your approach?