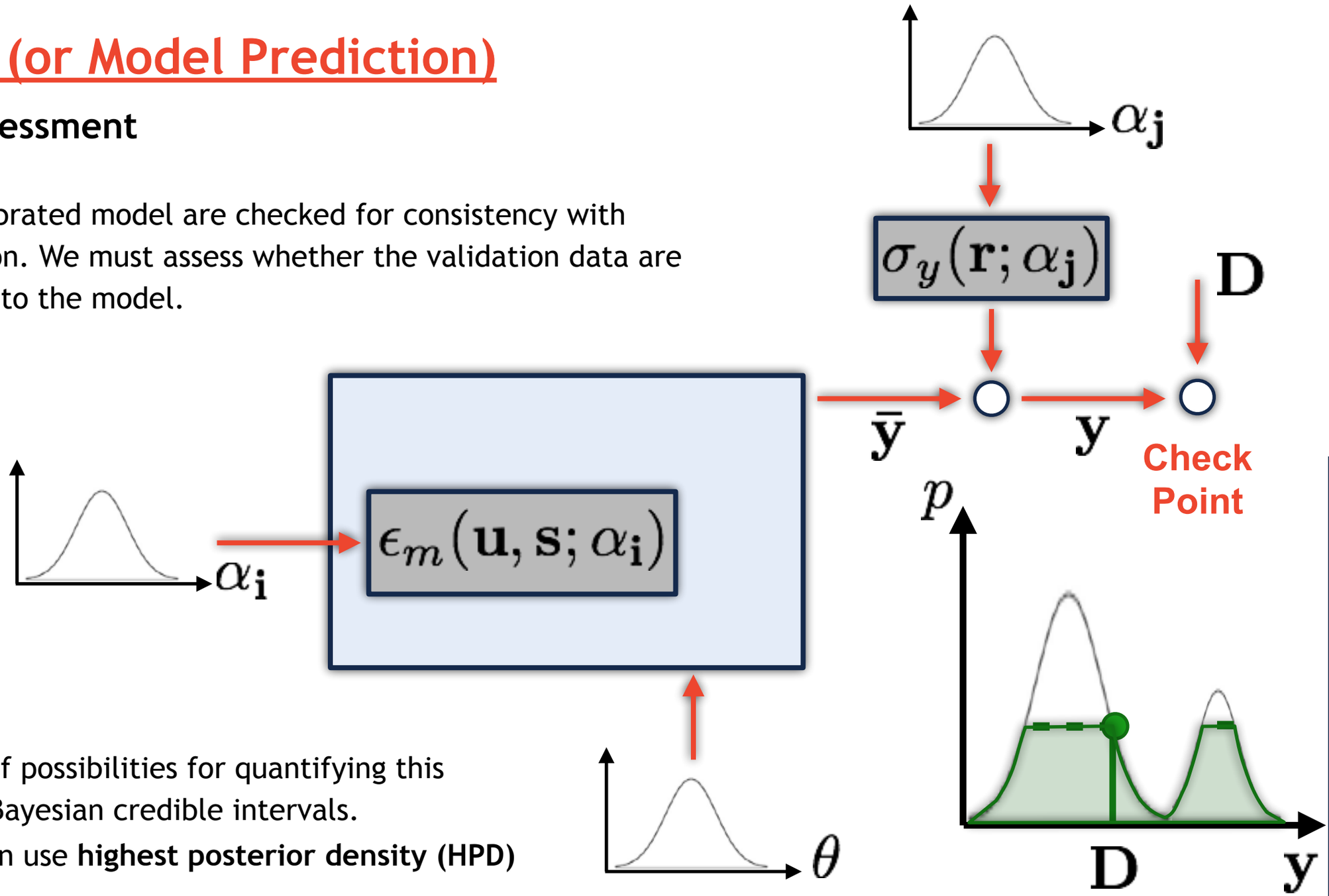
The 3-Steps Reliability Assessment

- **Calibration**
- **Validation (or Model Prediction)**
- **Predictive Assessment**

Outputs from a calibrated model are checked for consistency with available observation. We must assess whether the validation data are plausible according to the model.



There are number of possibilities for quantifying this plausibility, as the Bayesian credible intervals.

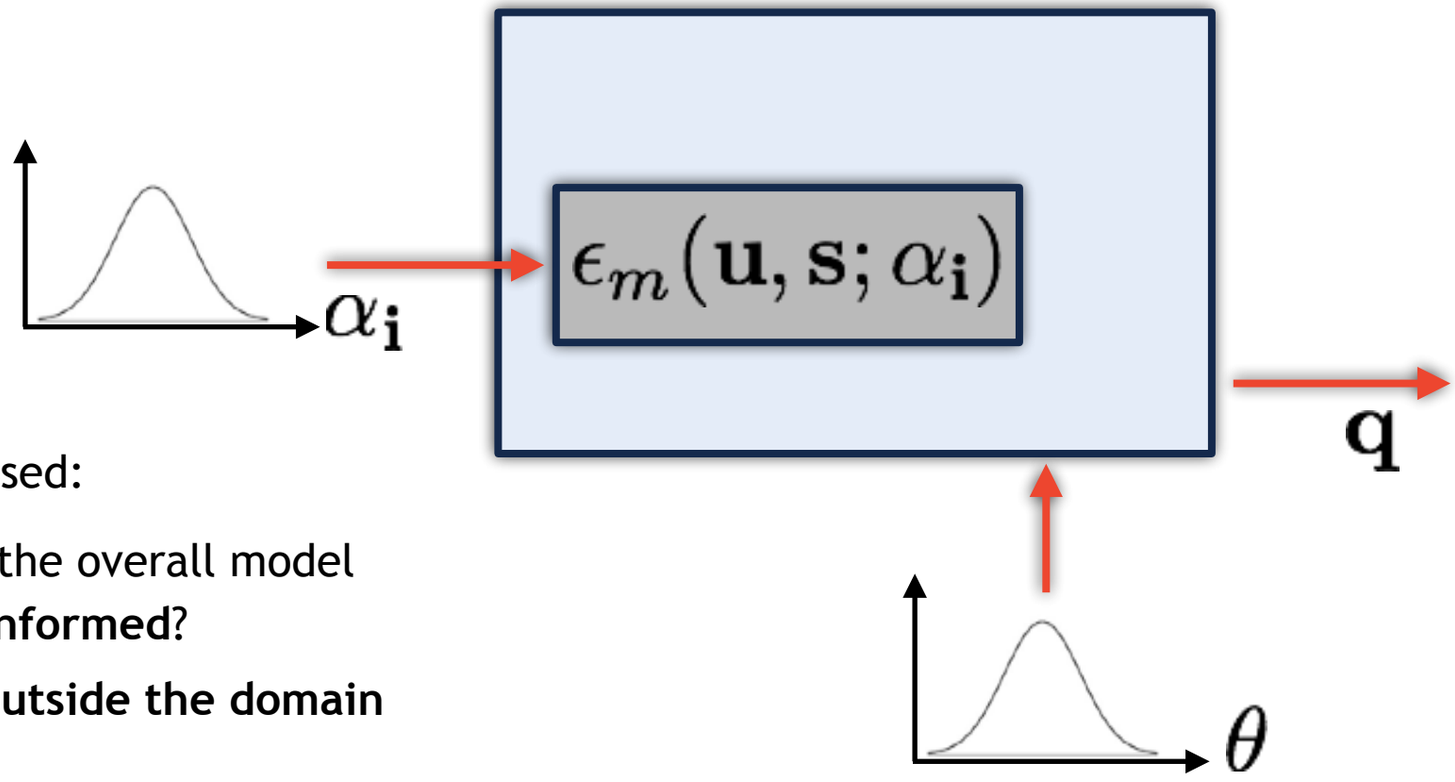
For example, we can use **highest posterior density (HPD)** credibility intervals.

When γ is smaller than some tolerance (e.g., 1.e-3), the data are considered an implausible outcome of the model.

The 3-Steps Reliability Assessment

- **Calibration** or **Inverse Problem**
- **Validation**
- **Predictive Assessment (or Estimation of the Validation Regime)**

Determines whether the calibration and validation phases were sufficiently informative and challenging to provide confidence in the reliability of the predictions of the Qols.



Two primary questions need to be addressed:

- Are **Qols sensitive to aspects** of the overall model that have **not been effectively informed**?
- Is the overall model being used **outside the domain of applicability**?

Moreover, is the prediction is determined to be credible, does it have **sufficiently small uncertainty** for our purposes?