

POSTER SAMPLES ARE EVERYTHING!

- ML methods use estimated values for parameters for everything
 - $\mu = f(\hat{\theta})$
- Bayesian methods use the posterior distribution of the parameters for everything

```
> samples
```

```
# A tibble: 2,000 × 3
```

	a	b	sigma
	<dbl[1d]>	<dbl[1d]>	<dbl[1d]>
1	115.	0.889	4.78
2	109.	1.02	5.30
3	112.	0.928	5.07
4	111.	0.949	5.30
5	111.	0.955	5.04
6	115.	0.872	5.19
7	109.	1.01	5.13
8	117.	0.844	5.00
9	115.	0.882	4.94
10	112.	0.939	4.95

```
# ... with 1,990 more rows
```

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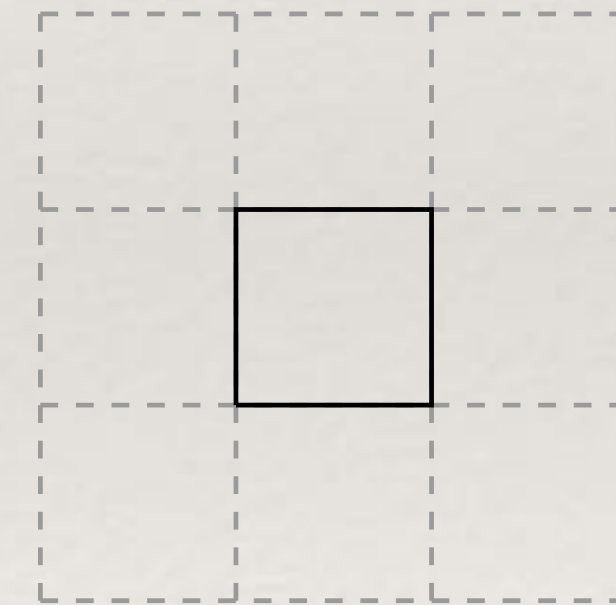
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HOW TO GET POSTERIOR SAMPLES?

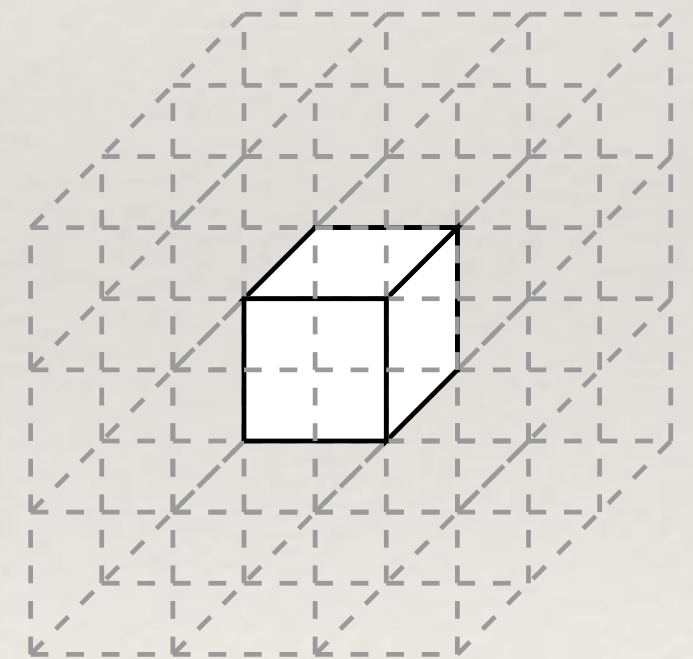
- There is no general method to find high probability regions in arbitrary probability distributions.
- This mean most models are fit using purely computational methods.
- For simple parameters spaces, we can do grid search or some brute force method to find high probability regions
- This breaks down quickly as the number of parameters increases



(a)



(b)



(c)