

Chapter-5

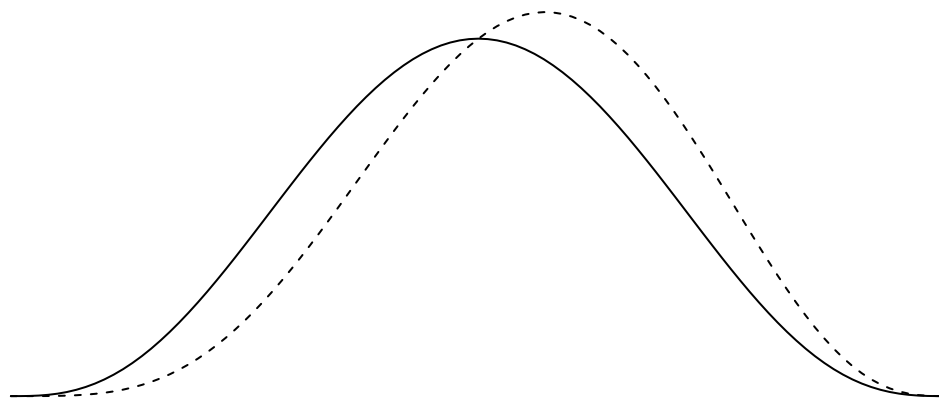
LinMod

Wednesday, September 17, 2014

5-1

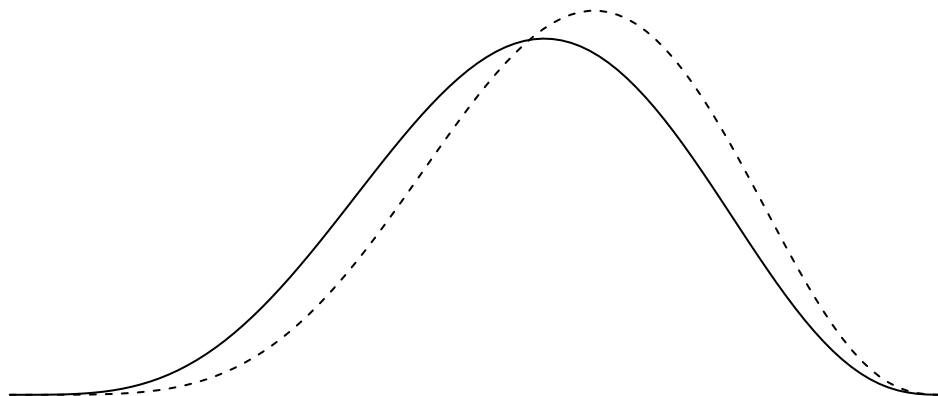
Note: The dashed line represents the posterior distribution, while the solid line represents the prior.

A) Let Y be the event that a coin toss lands on heads. Then $Y \sim B(\theta|4, 4)$ If we flip the coin again and see a head, then $Y \sim B(\theta|4 + 1, 4) = B(\theta|5, 4)$.



The distributions are very similar, though not identical.

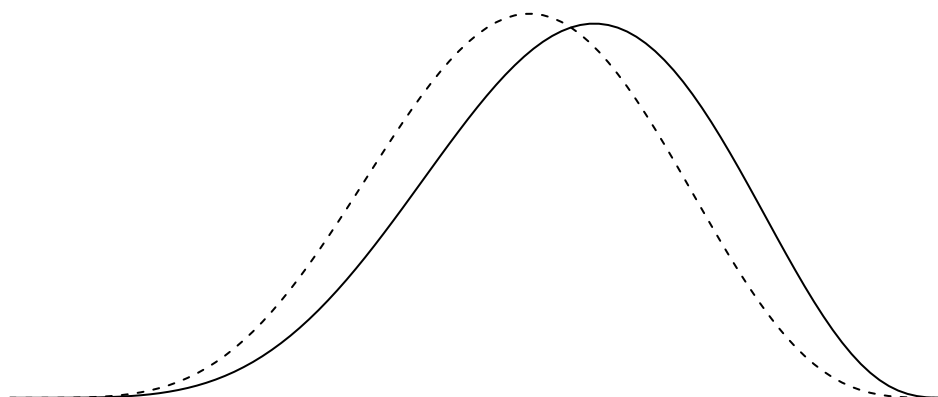
B) Now suppose that $Y \sim B(\theta|5, 4)$. If we flip again and get another head, then our new distribution is $Y \sim B(\theta|6, 4)$.



Again, the distributions are similar, but not the same.

C)

Now, assume we get tails for the next coin flip. As you can see below, the distribution becomes both more symmetric and narrower.



It is important to note here that order does not matter - because the densities are conjugate, they are commutative. Each additional flip causes the posterior distribution to change.

video of chunk plot4