

$$\Pr [\theta = b \mid s_3 = b, v_2 = v_1 = b] > \Pr [\theta = a \mid s_3 = b, v_2 = v_1 = b]$$

$$\Pr [\theta = b \mid s_3 = a, v_2 = v_1 = b] > \Pr [\theta = a \mid s_3 = a, v_2 = v_1 = b]$$