

$$P(E=+e|+a,+c,+d,+f,+g,+i) = \alpha P(E,+a,+c,+d,+f,+g,+i)$$

$$\uparrow \quad BHD = \text{Holland} \quad = \alpha \sum_b \sum_c \sum_d P(+a) P(B) P(+c) P(+d) \cdot$$

$$P(E|+a,B) P(+f) P(+g|+c,+d) \cdot$$

$$P(H|E,+f,+g) P(+i) \cdot$$

$$P(J|H,+i)$$

$$= \alpha P(+a) P(+c) P(+d) P(+f) P(+i) P(+g|+c,+d) \sum_b P(B) P(E|+a,B) \sum_c P(H|E,+f,+g) \sum_d P(J|H,+i)$$

$$= \alpha \sum_b P(B) P(E|+a,B) \sum_c P(H|E,+f,+g) \sum_d P(J|H,+i)$$

$$= \alpha \sum_b \left[ \frac{P(+b) P(E|+a,+b)}{P(-b) P(E|+a,-b)} \right] \sum_c \left[ \frac{P(+h|E,+f,+g)}{P(-h|E,+f,+g)} \right] \sum_d \left[ \frac{P(+j|+h,+i)}{P(-j|+h,+i)} \right] \left[ \frac{P(+j|-h,+i)}{P(-j|-h,+i)} \right]$$

sums to 1

sums to 1

$$= \alpha [0.11 < P(+e|+a,+b), P(-e|+a,+b) > + 0.89 < P(+e|+a,-b), P(-e|+a,-b) >]$$

$$[ < P(+h|+e,+f,+g), P(+h|-e,+f,+g) > + < P(-h|+e,+f,+g), P(-h|-e,+f,+g) > ]$$

$$= \alpha [0.11 < 0.14, 0.86 > + 0.89 < 0.15, 0.85 >] [ < 0.23, 0.27 > + < 0.77, 0.73 > ]$$

$$= \alpha [ < 0.0154, 0.0946 > + < 0.1335, 0.7565 > ]$$

$$= \alpha < 0.1489, 0.8511 >$$

sums to 1

$$P(+e|+a,+c,+d,+f,+g,+i) = 14.89\%$$