(32) (Kahneman, Thinking Fast and Slow)

$A = \{$свидетеля казва синьо$\}$

$H_1 = \{$Таксито е синьо$\}$

$H_2 = \{$Таксито е зелено$\}$

$P(H_1) = \frac{15}{100} \longrightarrow P(H_1|A)$

$P(H_2) = \frac{85}{100} \longrightarrow P(H_2|A)$

$P(A|H_1) = \frac{80}{100}$

$P(A|H_2) = \frac{20}{100}$

$P(H_1|A) = ?$

$P(H_1|A) = \frac{P(H_1 \cap A)}{P(A)}$ $\qquad P(A|H_1) = \frac{P(A \cap H_1)}{P(H_1)}$

$P(A \cap H_1) = P(A|H_1)P(H_1) = \frac{80}{100}\frac{15}{100} = \frac{12}{100}$

$P(A) = P(H_1)P(A|H_1) + P(H_2)P(A|H_2) = \frac{15}{100}\frac{80}{100} + \frac{85}{100}\frac{20}{100} = \frac{12}{100} + \frac{17}{100} = \frac{29}{100}$

$P(H_1|A) = \frac{\frac{12}{100}}{\frac{29}{100}} = \frac{12}{29}$