$$
\begin{aligned}
P(\text{decision error}^+) &= P(\text{treatment does not work} \mid \text{data}) \\
&= P(\text{effect} \leq 0 \mid \text{data}) \\
&= 1 - P(\text{decision error}^-) \\
\text{Type I error} &= P(\text{assertion}^+ \mid \text{effect} = 0) \\
&= P(\text{nominal p value} < 0.05 \mid \text{effect} = 0) \\
\text{False} + &= P(\text{effect} \leq 0 \mid \text{assertion}^+) \\
\textbf{Not} &= \text{Type I error}
\end{aligned}
$$

- Ultimate goal: make best decisions

- Teach optimal Bayes decision rules, incorporating utility/cost/loss function

- Start with mastery of conditional probabilities

- Best approach to teaching these issues to non-statisticians needs to be developed