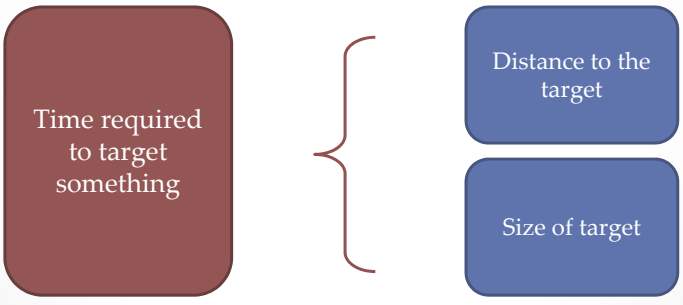
Fitts' and Hick's Laws

CompSci 345 / SoftEng 350

Fitts' Law

- Paul Fitts – 1954
- Model physical movement



Fitts' Law (2)

- Mathematically expressed in many ways
- Common form:

$$T = a + b \log_2 \left(1 + \frac{D}{W}\right)$$

T = Movement time

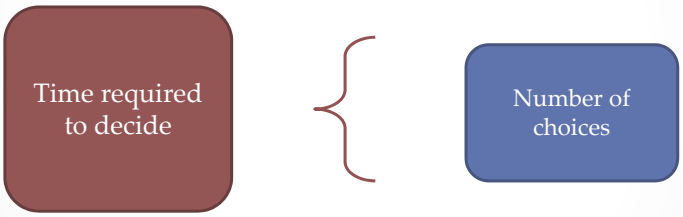
a, b = constants (found empirically)

D = distance from start to centre of target

W = width of target in direction of movement

Hick's Law

- William Edmund Hick – 1952
- Model decision-making



Hick's Law (2)

- Mathematically expressed as:

$$T = b \cdot \log_2(n+1)$$

T = Reaction time
b = constant (found empirically)
n = number of equally probable choices

Fitts' Law Demo

- Work in small groups (2 or 3)
- Constants depend on input device and skill of user. For our demo, we can use:

$$T = 200 \text{ x } \log_2\left(1 + \frac{D}{W}\right)$$

- Download and run "Fitts Law Demo" (in Visual Studio)
- Record actual and calculated times in a spreadsheet:

D	W	Actual Time	Fitts' Time