Franz Knoll, Ing. Dr. Sc. Dr. h.c.
GENESIS, PEPETUATION, CORRECTION OF ERRORS

- **Error generated**
- **Error caught + corrected**
- **Error takes effect**
BUILDING CODE DEVELOPMENT

1970

2018

?
PENNY - WISE DECISIONS

\[ - \Delta \quad \$ \]

\[ + \Delta \quad $ \]
"load factor"  "resistance factor"

mean/median exposure  mean/median resistance
theory, probability of failure $10^{-5}$ to $10^{-6}$

(reality, frequency of failure $10^{-2}$ to $10^{-3}$, including effect of errors

(what the code committee has in mind)
ROBUSTNESS THROUGH DEFORMABILITY

- FAILURE COLLAPSE

max. resistance excessive exposure, flawed structure

brittle, unforgiving robust, resilient

1.0

deflection displacement damage