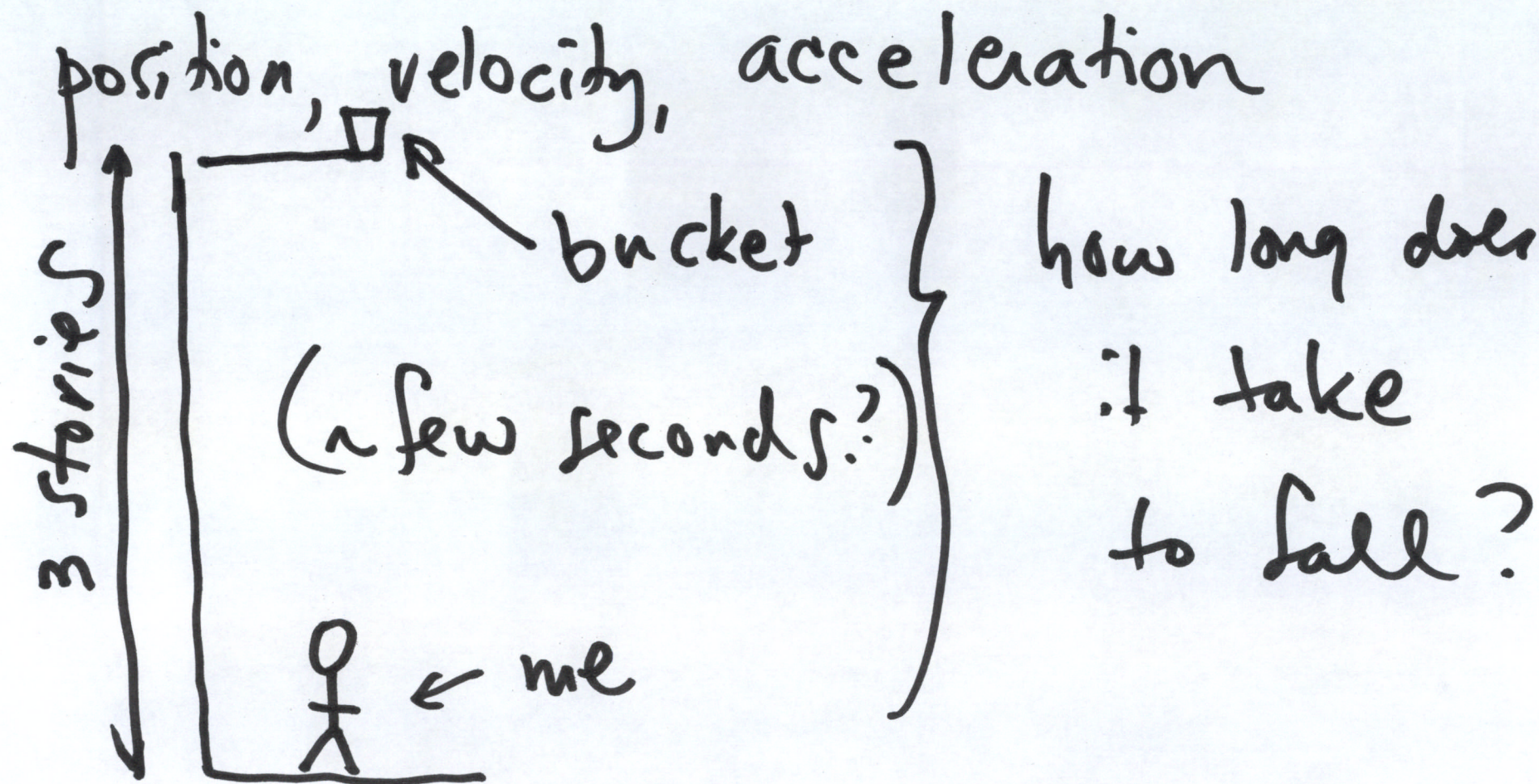


David W. Hogg

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David W. Hogg

<http://cosmo.nyu.edu/hogg/gp1/>



What can matter?

- mass, density, contents? spin?

- height

$$h = 12 \text{ m}$$

- initial conditions.

- acceleration due to gravity $|\vec{g}| = 9.8 \text{ ms}^{-2}$

time $\sim \sqrt{\frac{h}{|\vec{g}|}}$ all the "dimensions" or "units"

$$t = \text{☺}$$

$$\sqrt{\frac{h}{g}}$$

dimensionless ($\sqrt{2}$)

air resistance what matters?

- surface area of bucket
cross-sectional
- wind speed
(and falling speed)

- air { humidity, T, P
 → density ρ → matters for
 viscosity? → "large" things
 → matters for
 "small" things.

