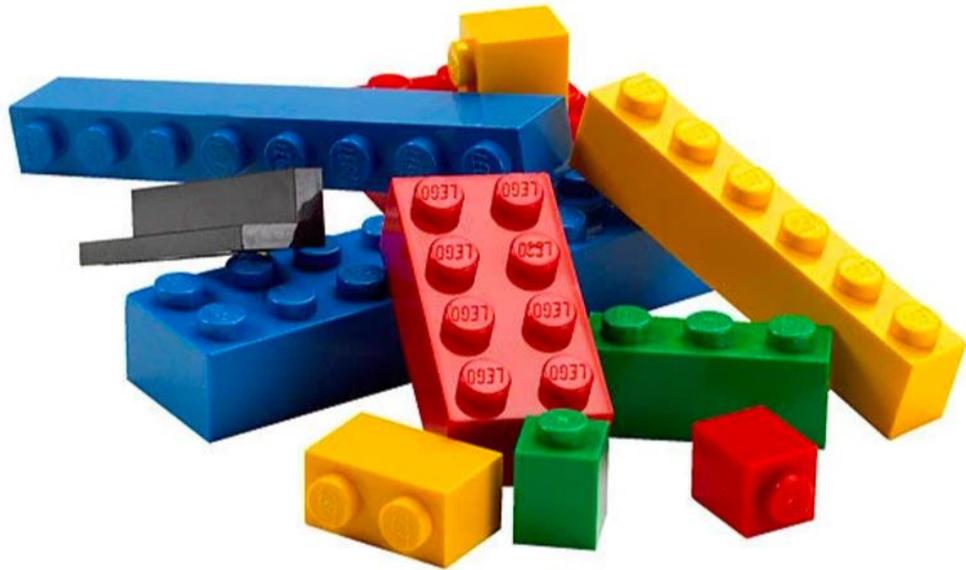


# A PhD student playing with LEGO: Microsimulation for dummies



Vincy Huang  
University of Liverpool

# Materials for the 'Lego city' ...

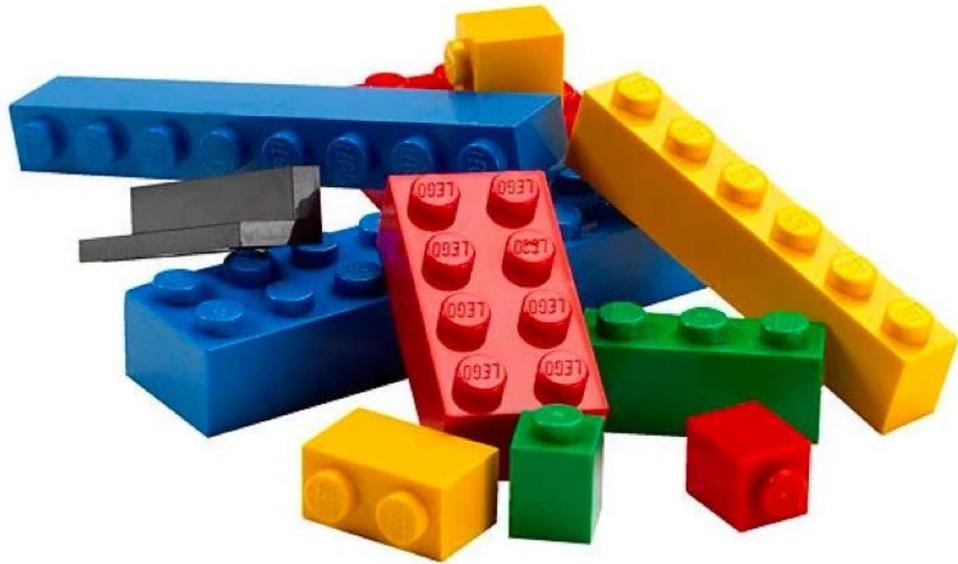


Building Bricks

Mini Figures

Instruction booklets

# Materials for the modeller's 'Lego city' ...



Real-world data  
(survey data etc.)

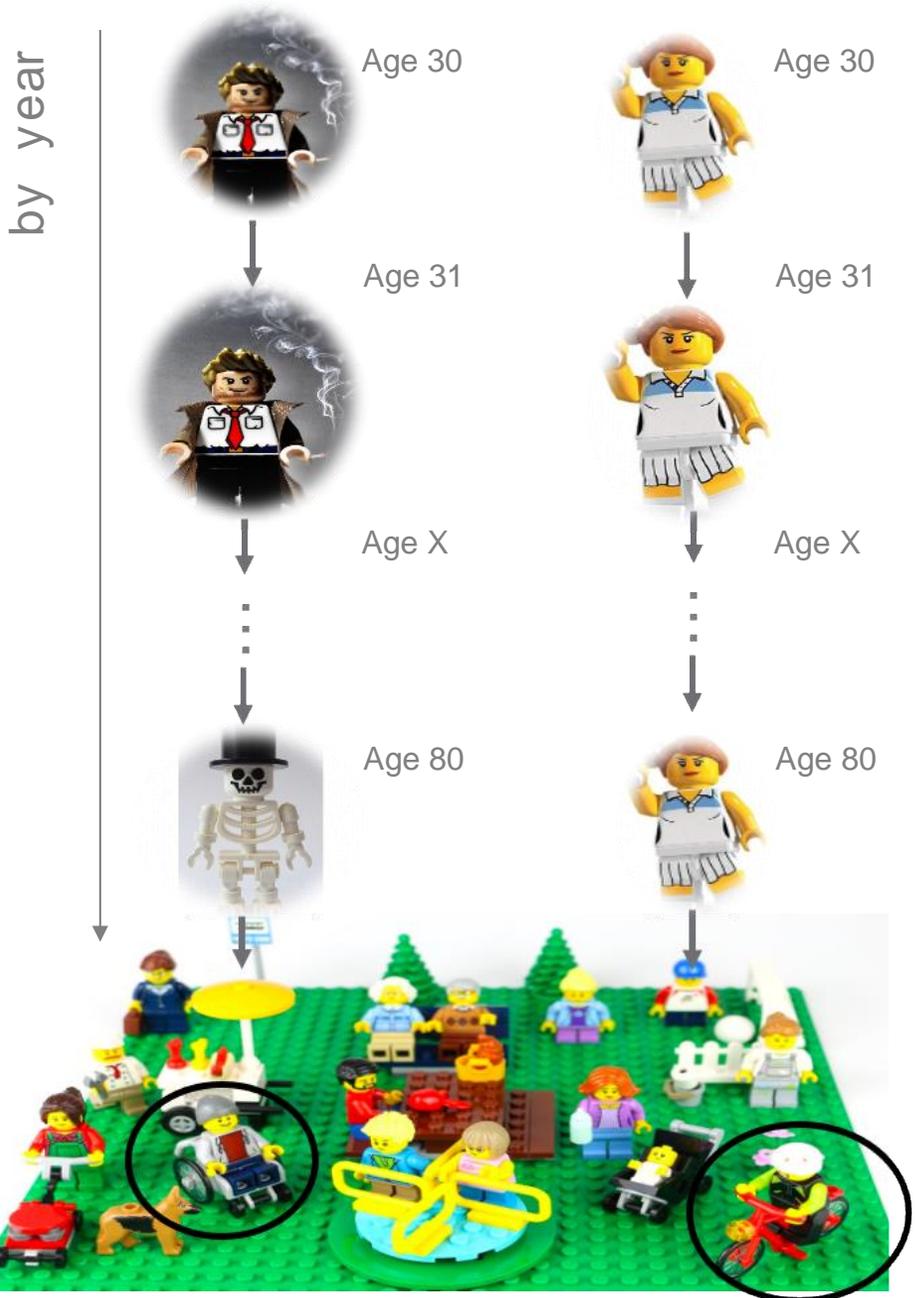


Individual with  
attributes (age, sex,  
income level etc.)



formulae,  
statistical model  
results etc.

# The microsimulation process



- Initial year: create the targeted population with different Individuals equipped with different characters
- Simulate the individual status in a year-by-year step (with or without intervention)
- End of the time cycle: stop the simulation of individuals
- Aggregate individuals to produce health, economics and equity outcomes

# The differences between the Microsimulation & Machine Learning



$$\frac{e}{s} = \frac{g}{ms} = \frac{6}{56} \frac{\pi}{j}$$
$$\frac{\pi}{je} = x$$

*Microsimulation*

*vs*



*Machine Learning*



All models are wrong,  
but some are useful.

*George P.E. Box*