

OF COURSE we don't need to overcomplicate by implementing all of these, but I think for this particular model we need to introduce a lot of stochasticity if we hope to observe phenomena beyond those we explicitly choose to program

How do decisions of individuals lead to overall traffic phenomena?

Potential Car Parameters

1) Speed

- $U(0,1)$ squares / time step

2) Reaction time

- $U(0,1)$

↳ See pedestrian

↳ Light says go

3) Stopping Rule

- Car has vision v

- If car and pedestrian in the grid



↳ At a particular time step

↳ New position after perception:

$$\text{Speed} \times \Delta t + \text{Reaction time}$$

Pedestrian Parameters

1) Willingness to go on red (^{two-stage decision?})

(i) Binary: based on random draw

i.e Am I an old lady who never will or, am I a student that considers it

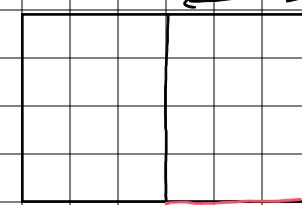
(ii) Some function of (a) Existence of car

(b) It's Distance (c) It's speed

(d) Width of road / time to cross

2) Goal: Minimize time in system

e.g Walkway of width 3



• Maybe agents can only see the road to check for cars at a, b or c

They try to occupy a, b or c

- Randomly generated on any letter?
- On a, b or c only?

a	b	c
d	e	f
g	h	i

Example of potential dynamics:

→ Old women occupy a and b

→ Student generated at d
(it takes 3 time steps)
(to go to c)

Idea

Pedestrians know time until next green

↳ Make above decision on this basis

((Could get very complicated))