McCormick

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AUTONOMOUS VEHICLES:
Adoption Factors, Activity System Impacts

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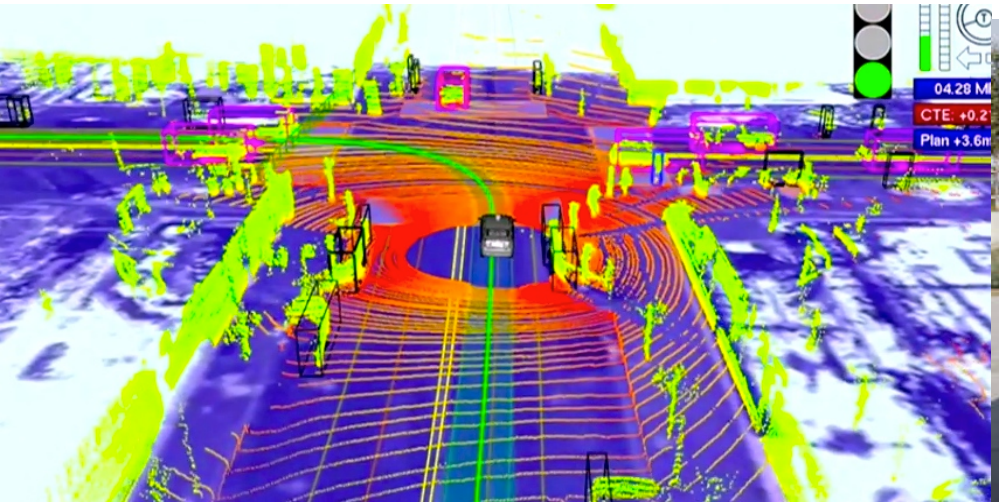
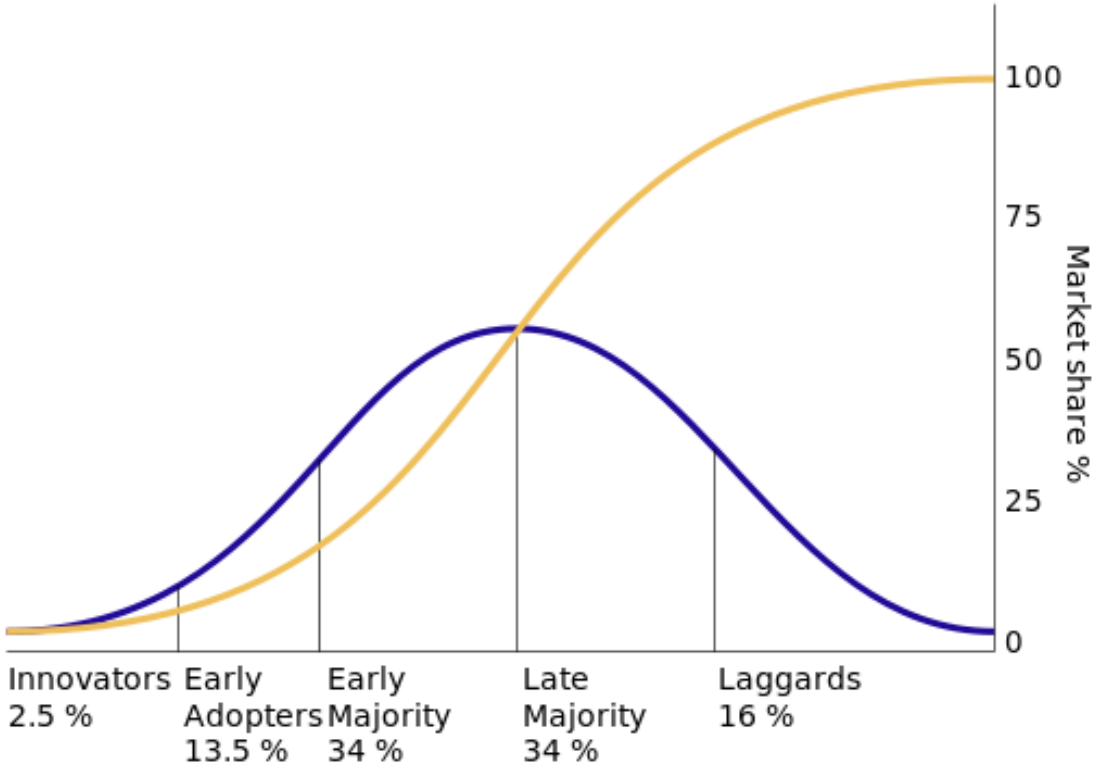


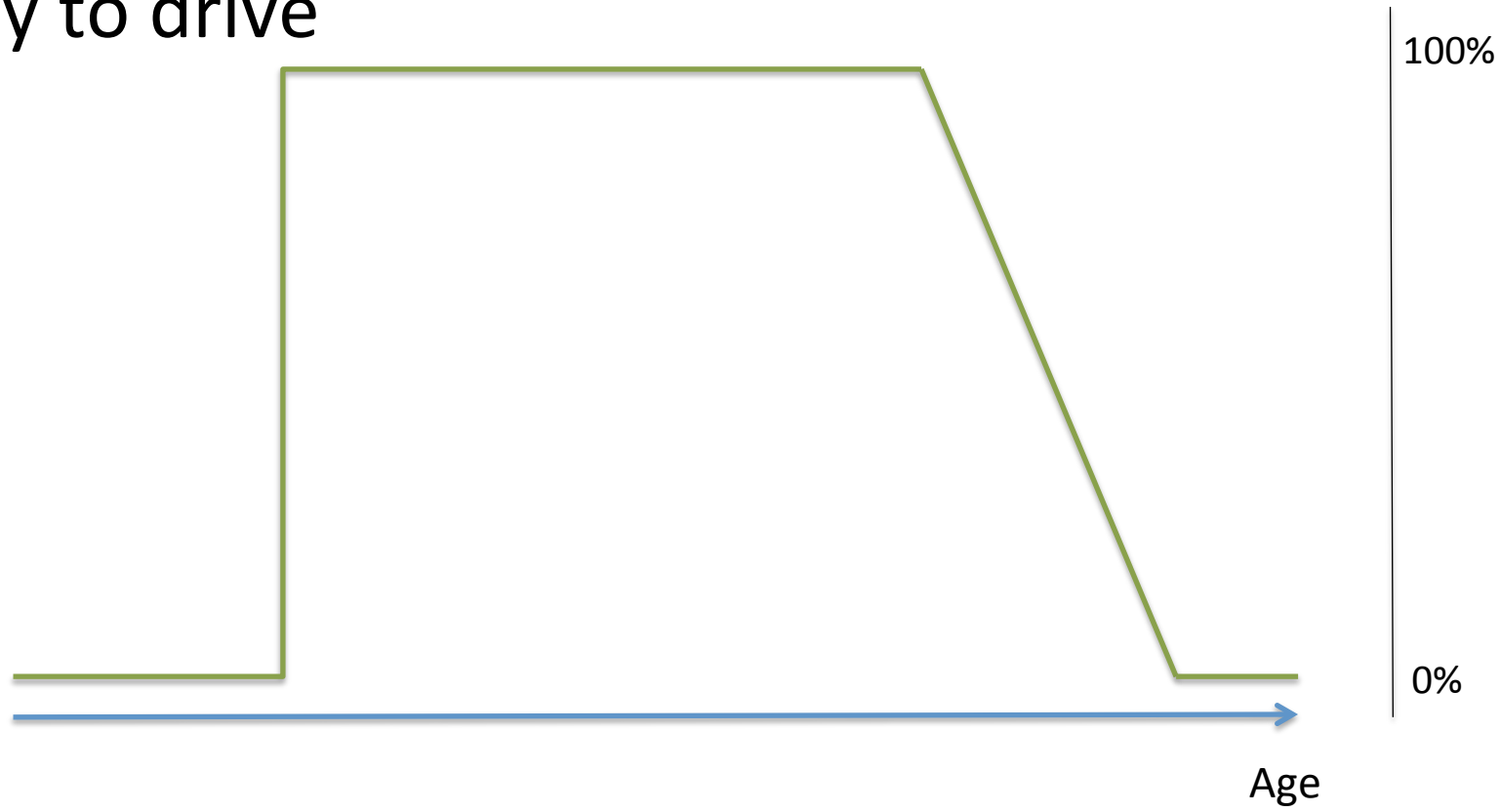
- WILL CLASSIC ROGERS' ADOPTION CURVE HOLD?



KEY ADOPTION FACTORS

- ABILITY TO DRIVE
- TRUST
- BENEFIT PERCEPTION
  - Safety
  - Mobility
  - Efficiency (time saving, constraint reduction)
- AFFORDABILITY

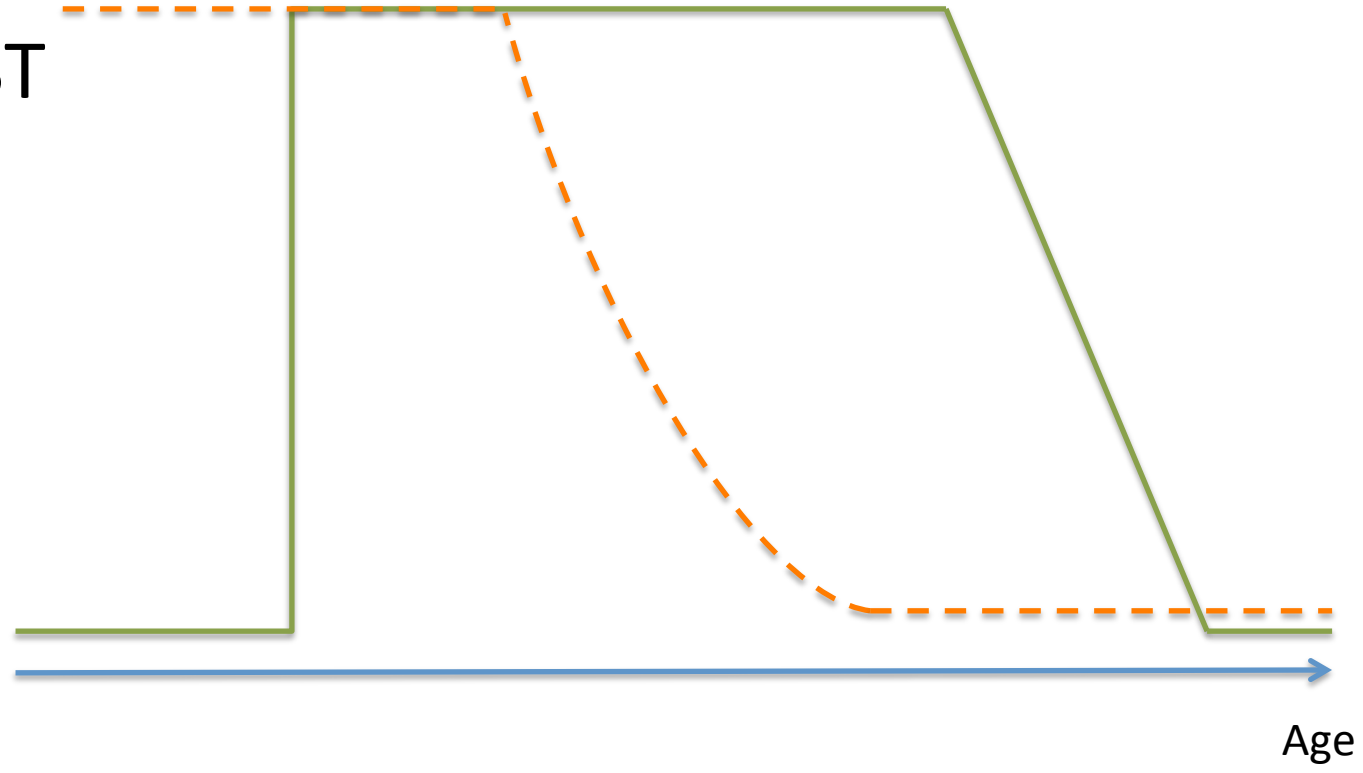
- Ability to drive



YOU and DRIVING

- THOSE WHO CANNOT DRIVE
- THOSE WHO PREFER NOT TO DRIVE
- THOSE WHO PREFER TO DRIVE
- THOSE WHO LOVE TO DRIVE

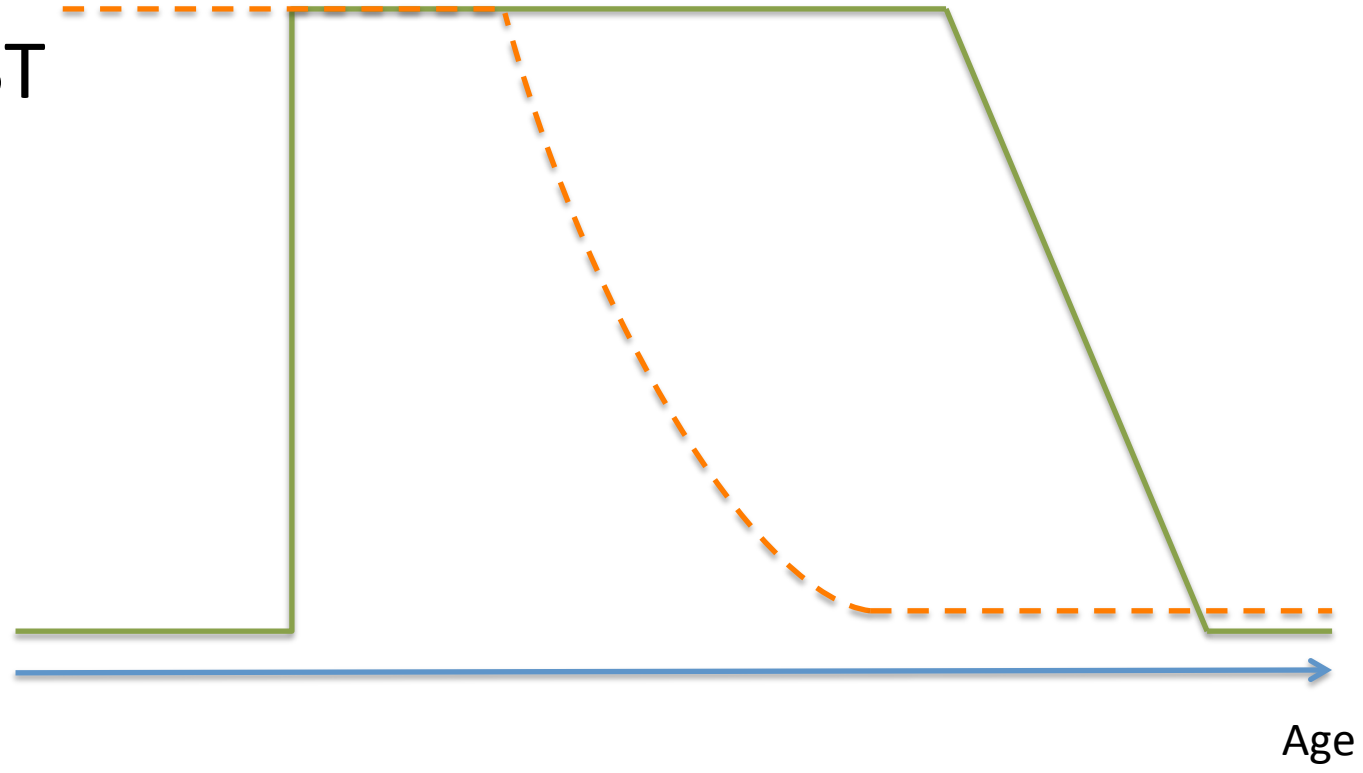
- Ability to drive
- TRUST

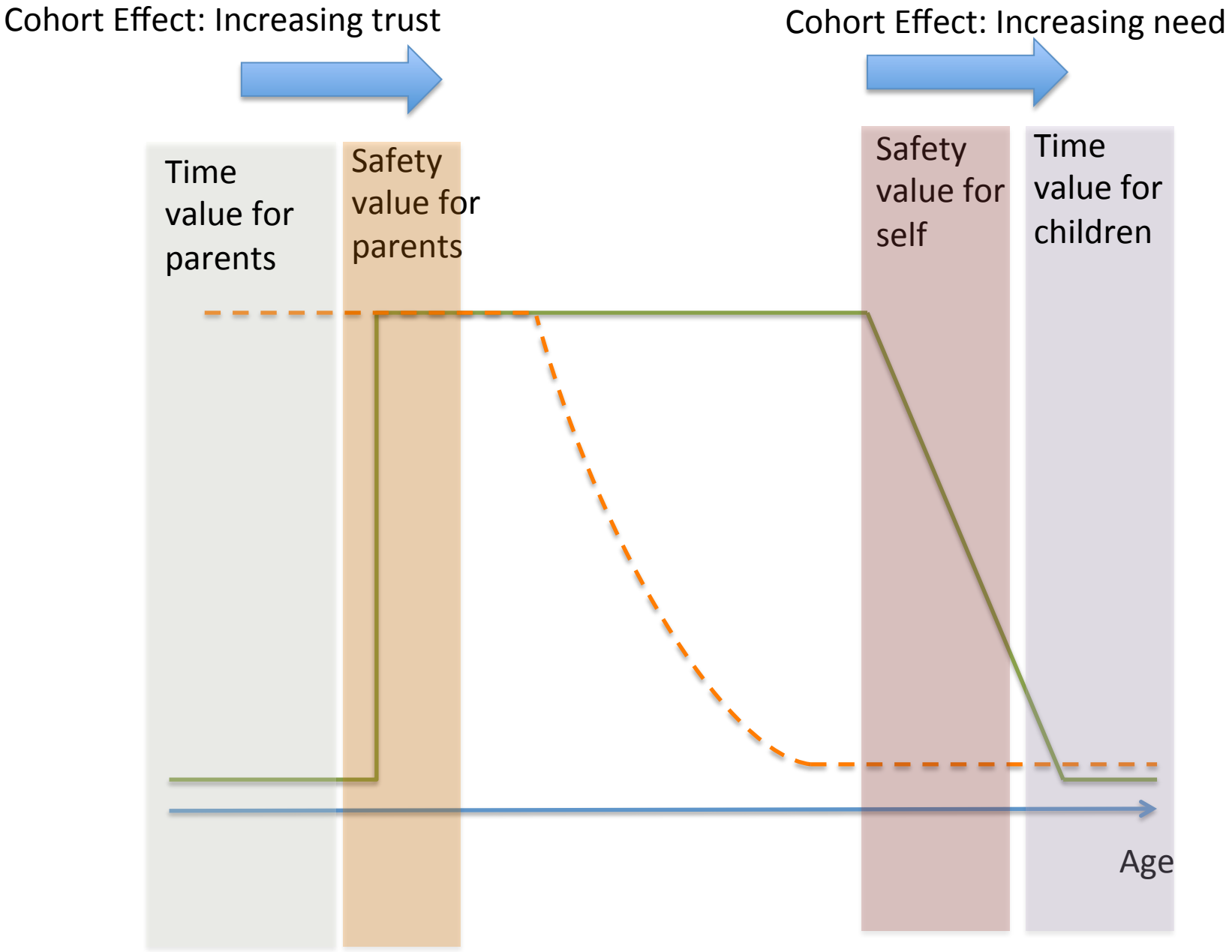


TRUST

- THOSE WHO TRUST
- THOSE WHO MAY TRUST FOR CERTAIN SITUATIONS
- THOSE WHO MAY REQUIRE CERTAIN GARANTEES
- THOSE WHO WILL NEVER TRUST

- Ability to drive
- TRUST

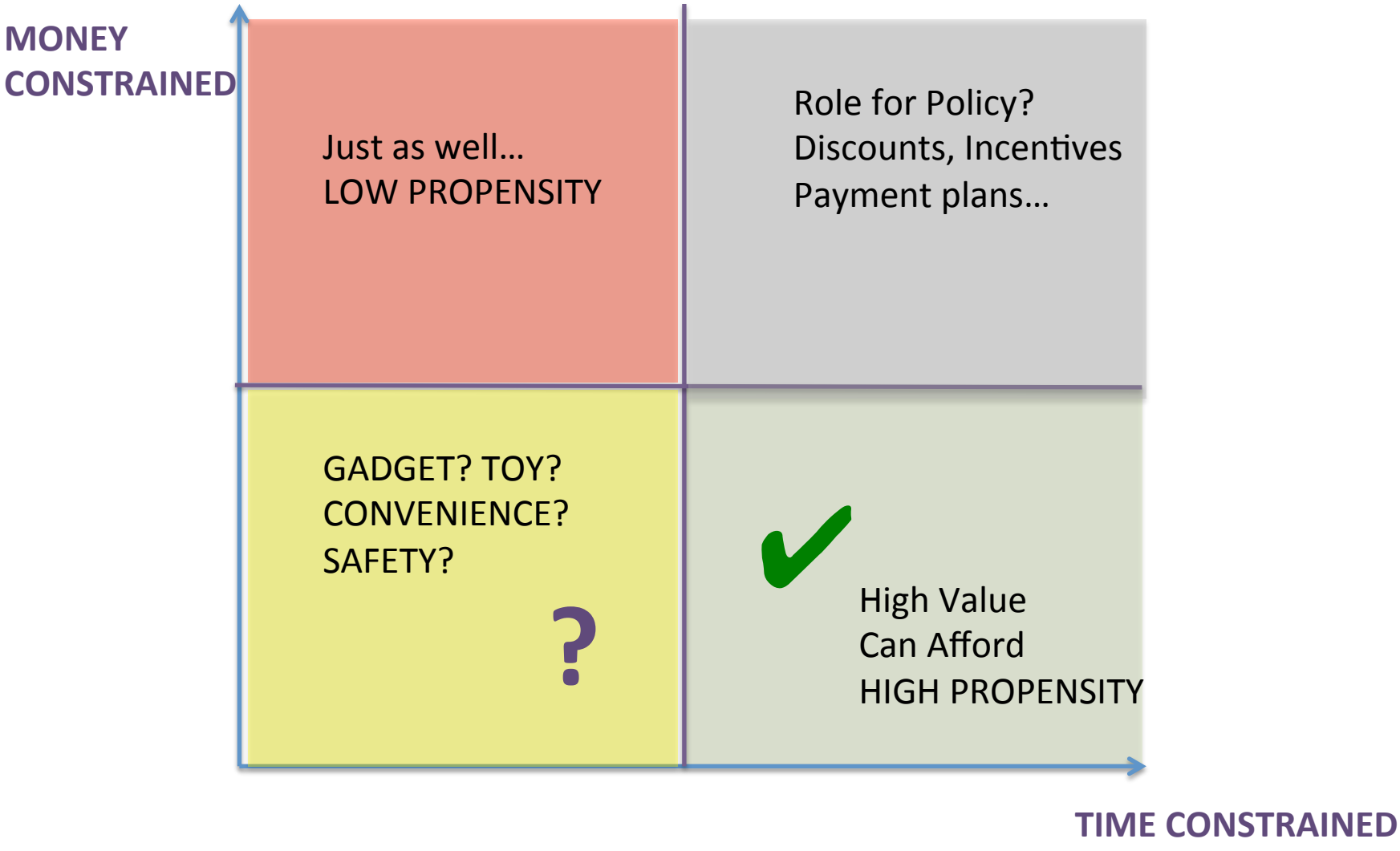



Cohort Effect: Increasing trust
Cohort Effect: Increasing need
Time value for parents
Safety value for parents
Safety value for self
Time value for children
Age

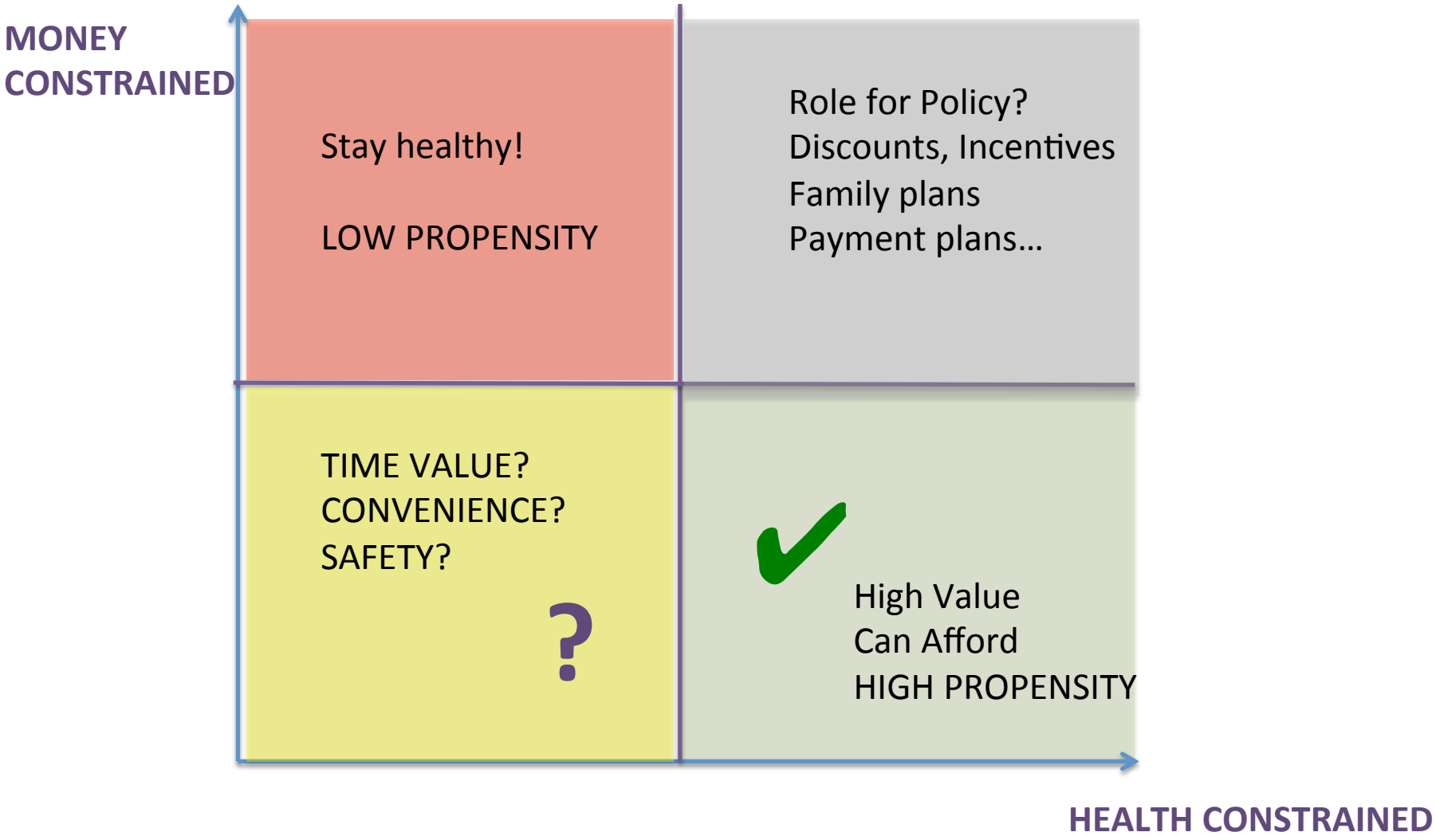
TWO KEY ASPECTS

- AUTONOMOUS CAR AS MOBILITY TOOL
  - Greater safety, efficiency, etc…
  - Enables multitasking, short vs. longer spans
- AS ROBOTIC ASSISTANT
  - Go shop, pick up kids– all mobility chores imposed by auto-centric suburban
  - For small businesses– go deliver, pick up supplies…

ADOPTION PROPENSITY



ADOPTION PROPENSITY



SUBSTITUTION OR COMPLEMENTARITY?

Possible Hypotheses

- SUBSTITUTE, NO OTHER CHANGE
- SUBSTITUTE, FREE UP TIME, MONEY (individual level) and IMPROVE SAFETY AND CONGESTION (for society)
- START USING CAR FOR ACTIVITIES PREVIOUSLY EITHER NOT DONE, POSTPONED OR CHAINED
- NEW USES OF MOBILITY TOOLS, MAJOR REORGANIZATION OF ACTIVITY PATTERNS, ESPECIALLY for CAREGIVERS (of young people, elderly)

FINAL THOUGHTS

- DON'T FORGET FREIGHT and LOGISTICS
- IDEAL MARKET FOR INTRODUCING TECHNOLOGY AND ADOPTING ON WIDE SCALE
- INITIAL ROLE AS DRIVER-ASSISTANCE
  - Evident safety benefits
  - Potentially large fuel savings (just in driving mode, not including network aspects)
- LAST MILE DELIVERY STILL UP FOR GRABS, AND LIKELY TO BE BITTERLY FOUGHT