



Ongoing MIT Transit & Parking Research:

Can employers really impact mode choice by providing new incentives?

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Transportation Benefits in the US

- As part of an effort to incentivize sustainable commutes in 1993, the US created pre-tax incentives for transportation costs
- Employers in the US may provide pre-tax transportation benefits to their employees:
 - Parking pre-tax benefits: \$255/mo
 - Transit passes/vanpooling benefits: \$255/mo
 - Bike benefits: \$20/mo



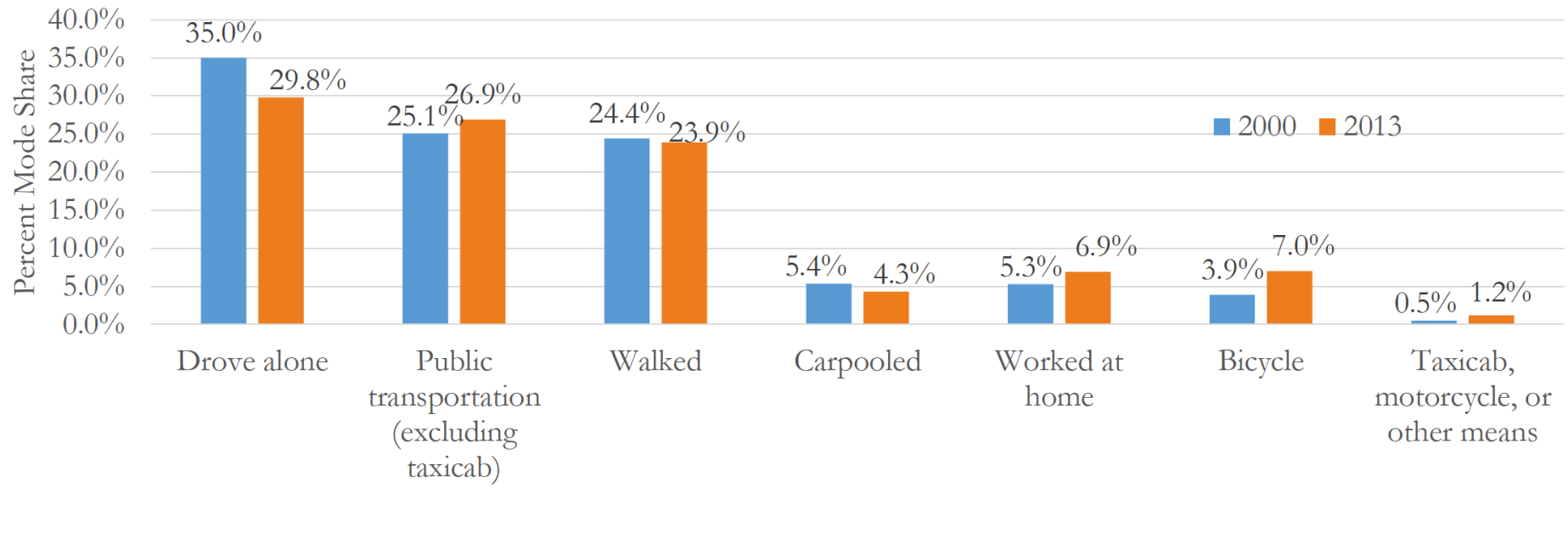
Employer-Distributed Pre-paid Transit Passes Via Payroll Deduction in Cambridge

- Origin as civic demonstration by John Hancock Insurance (1970s)
- Strengthened and expanded by Clean Air Act regulations (1970s and 1980s)
- Further strengthened by tax deductibility (1990s)
- Savings in parking expenditure by employer
- Zero marginal cost for employee
- But still limited to frequent transit users

Employer Transportation Benefits Beyond Pre-tax

- In addition to pre-tax benefits, employers can offer additional incentives to their employees to influence their mode choice
- Sample benefits:
 - 50% subsidy of monthly transit passes
 - Bike parking and repair services
 - Commuter showers/lockers
 - Bus shelters
 - Bike share memberships
 - Prizes for active commuters
 - Carshare memberships
 - Electric vehicle charging stations
 - Parking cash-out
 - HOV spaces
 - Emergency ride home
 - Telecommuting

Cambridge Mode Share: 2000-2013



(Kendall Square SOV Mode Share: 25.1% to 22.7%)

Motivation for MIT Research

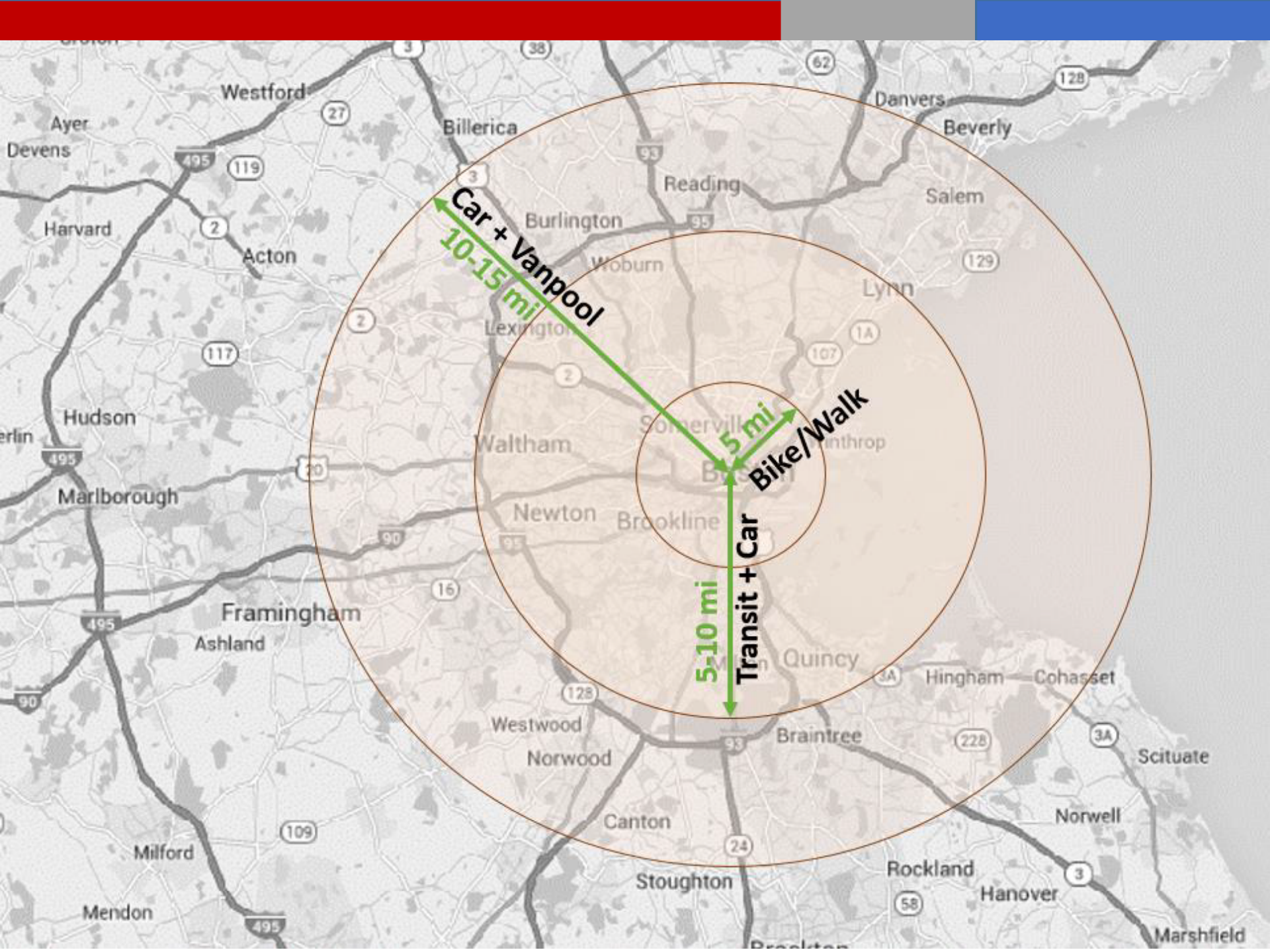
- Confluence of environmental and efficiency concerns to reduce parking demand
 - Decrease emissions in transport sector
 - Decrease auto congestion
 - Decrease costs of building and leasing garages
- Possible employer transportation benefit solution: Universal Pass programs, more incentives, and better customer information
- Initial focus on putting Universal Pass in place and evaluating it
 - University / employer distributes passes to entire population, and bears burden of payment
 - Combat technical weaknesses
 - Payment based on surveys or usage estimates as opposed to measured billing leads to unknown effect on fare revenue
 - Most prior implementations in auto-oriented areas

Questions

- Is the universal pass concept workable and effective for both employers and transit agencies in a heavily transit-oriented environment?
 - Issues
 - Construction costs and parking subsidies
 - Heavy existing transit usage increases costs for all participants
 - Pay per use & Smartcards
 - Many more pedestrians and bicyclists
- Is there institutional support for this concept?
 - Concerns
 - Policy process is unclear
 - Resistance to change
 - Voluntary participation vs. regulatory impetus

Criteria for Choosing Incentives

- Current commuting behavior (mode share)
- Size of organization
- Marketing/HR capacity
- Home location of employees
- Proximity of alternatives



Proposed Incentives

- Universal Transit Pass
- Parking cash-out
- Daily parking rates
- Commuter dashboard and lottery
- Bike to work/small events
- Others

Universal Transit Pass

- This incentive has proven effective in other cities (Portland, Minneapolis, Seattle and Denver) as well as at MIT
 - MN: Bus ridership increased an average of 25% at worksites where the MetroPass was subsidized more than 50% (Van Huttum, 2004)
- Several ways to implement this pass type:
 - Pay-per-use
 - Fixed monthly price



Universal Transit Pass in Cambridge

- New MBTA Corporate Pass Program trial offering additional passes for all employees on a pay-per-use basis
- Transit becomes more accessible to infrequent users
- Allows employers to provide an attractive benefit to employees and better manage parking demand

New MBTA Pass Program Eligibility

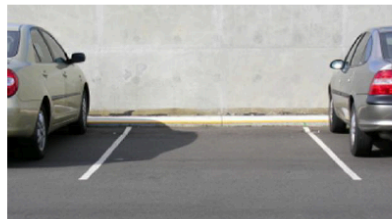
- To be initially limited to up to 5 area employers and MIT
- Employer must subsidize at least 30% of the cost of transit for its employees
- New passes will be billed on a per-use basis by the MBTA
- MBTA CharlieCard chip can be embedded into employee corporate ID cards

Parking cash-out (partial or full)

- Employees can choose to spend the money given to them by employers to pay for parking, or to buy a transit pass, or a bicycle
- Increases employee satisfaction
- Helps recruit and retain employees, providing a more equitable benefits package to all employees
- Parking cash-out rewards those who choose not to drive without penalizing those who must continue to drive alone to work
- A study on eight companies in California who implemented a cash-out program reduced SOV drivers by an average of 11% (Weinberger, Kaehny, & Rufo, 2010)



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Daily Parking Rates

- Make the decision to drive each day, and only pay when you park
- Commuters value out-of-vehicle costs such as parking higher than in-vehicle costs (such as gas expended)
- Offering a monthly or annual parking pass puts employees in the position to decide between driving to work, which thereafter has zero marginal cost, and the cost of a transit trip above what they have already spent on parking each day

Bike to Work / Small Events

- When employers do not have the budget for universal transit passes, they can still promote alternative modes through events
- In one study, of those who rode to work for the first time during the event, 38% stated they rode to work after the event

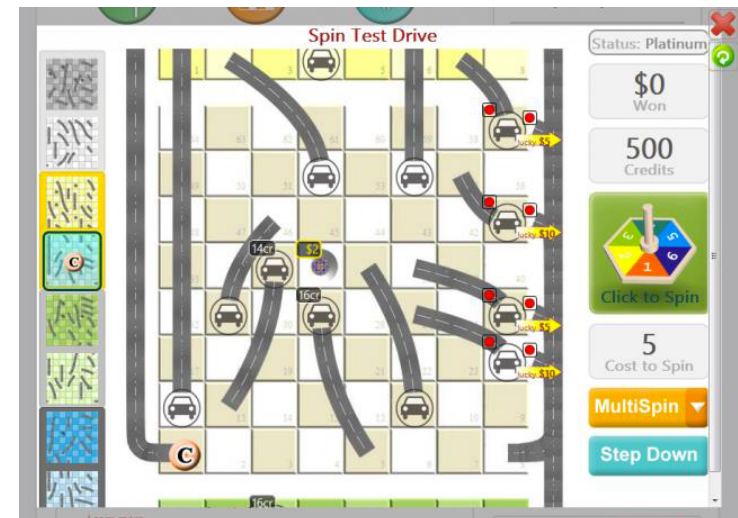
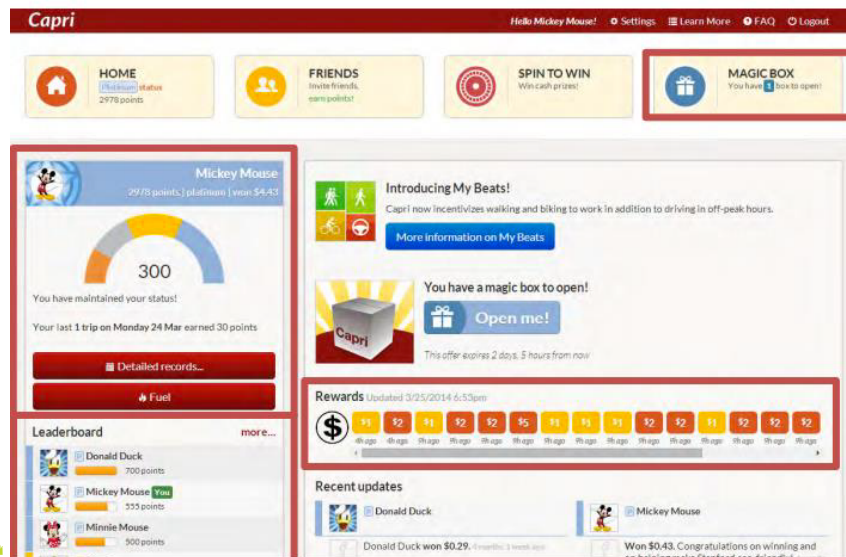


Other Incentives

- Reduced parking pricing and preferred spaces for part-time or casual carpooling
- Subsidized parking at transit stations
- Earn more vacation time by using alternate modes
- Better “employer endorsed” real-time mobile apps for transit and dynamic ridesharing

Commuter Dashboard and Lottery

- Provide individuals with their commuting behavior and assign points to more sustainable alternatives to enter into a weekly lottery
- Stanford CAPRI study used a dashboard and game to shift driving demand to off-peak

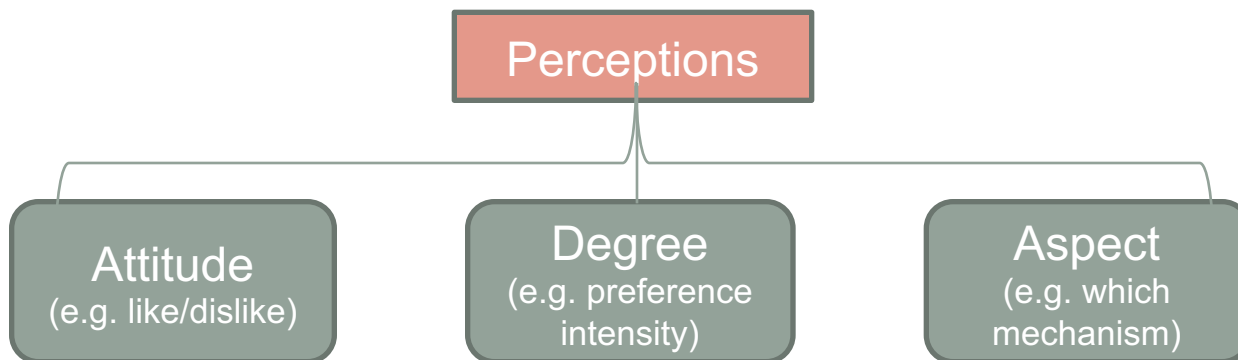


Lessons from Behavioral Economics

- Increase decision salience
- Emphasize costs and losses
- Establish norms
- Create competition with comparisons
- Lock in gains with affective cues

Lessons from Behavioral Economics

- Effectiveness of measures depends on user perceptions:
 - Local transit pass
 - Daily parking pricing
 - Commuter rail subsidies
 - Transit station parking subsidies
 - Better information and promotion

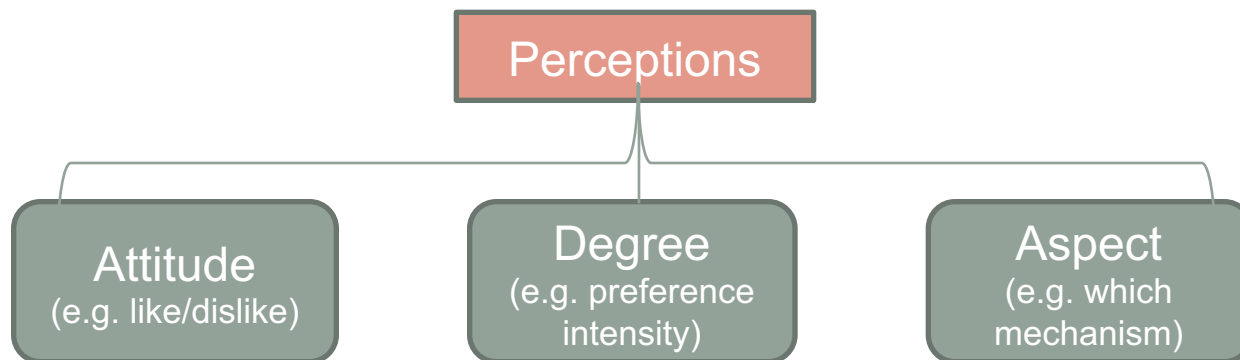


Lessons from Behavioral Economics

- Effectiveness of measures depends on user perceptions:

- **Local transit pass**
- Daily parking pricing
- Commuter rail subsidies
- Transit station parking subsidies
- Better information and promotion

- Price & salience
- Convenience
- “Power of free”
- Norms & identity





Questions?

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