Comfort + Convenience = More Women Biking

- Jennifer Dill, Portland State University
  - Quick overview of the gender gap in cycling
  - Why is there a gap?
    Using data from Portland and elsewhere, explain how comfort and convenience are important to women and girls and how new facilities might change that
Gender gap in the US: Bicycling vs. Walking

- **Made a bike trip...**
  - **on the travel day:** Females 0.8%, Males 2.4%
  - **in the past week:** Females 9.5%, Males 15.7%

- **Made a walk trip...**
  - **on the travel day:** Females 16.7%, Males 15.8%
  - **in the past week:** Females 67.8%, Males 68.3%

Source: 2009 National Household Travel Survey (NHTS)
Women who do ride, bicycle for recreation, not commuting

Source: 2009 National Household Travel Survey (NHTS)
Gender Gap: It’s not everywhere

City Level: Correlation between cycling & share of bicyclists who are women

Percent of bicyclists who are female vs. Percent of trips by bicycle

Why is there a gender gap?

... in the U.S.

Several surveys indicate that men have more positive attitudes about cycling than women.

... but why? I will try to answer using...

Random phone survey of ~900 adults in the Portland, OR region
Family Activity Study with ~300 families in Portland
Intercept surveys of cyclists on new facilities in DC & San Francisco
Comfort: Concerns about safety

- Strongly Agreeing

<table>
<thead>
<tr>
<th>Concern</th>
<th>% Strongly Agreeing</th>
<th>Women</th>
<th>Men</th>
</tr>
</thead>
<tbody>
<tr>
<td>feel comfortable riding after dark*</td>
<td>10%</td>
<td></td>
<td></td>
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<tr>
<td>know how to ride a bike safely in traffic*</td>
<td>40%</td>
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<tr>
<td>concerned about being hit by a motor vehicle*</td>
<td>30%</td>
<td></td>
<td></td>
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<tr>
<td>concerned about falling off by bike*</td>
<td>20%</td>
<td></td>
<td></td>
</tr>
<tr>
<td>feel comfortable riding when it is raining</td>
<td>10%</td>
<td></td>
<td></td>
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<tr>
<td>concerned about being stranded</td>
<td>10%</td>
<td></td>
<td></td>
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<tr>
<td>concerned about being bitten by a dog</td>
<td>10%</td>
<td></td>
<td></td>
</tr>
<tr>
<td>concerned about my bicycle stolen</td>
<td>10%</td>
<td></td>
<td></td>
</tr>
<tr>
<td>concerned about being hit by another bicyclist</td>
<td>10%</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

* sig. difference p<0.05

Source: Portland regional phone survey, 2011 (Dill)
Convenience

Source: Portland regional phone survey, 2011 (Dill)

* sig. difference p<0.05
Comfort and Social Support

- Biking for transpnt requires different clothes than normal
- I don't like wearing a helmet
- People impt to me would support me biking more
to Many of my co-workers bike to work
- Many of my friends bike to get places
- People I live with bike to...errands, shop...
- People impt to me think I should bike more

% strongly agreeing

- Women
- Men

* sig. difference p<0.05

Source: Portland regional phone survey, 2011 (Dill)
Differences start in childhood
Barriers to bicycling among 11-16 year olds

1=This does not at all keep me from biking
5=This really keeps me from biking

Source: Family Activity Study, Portland 2012-13 (Dill)
Possible solutions: Infrastructure

• Women are more concerned about safety, particularly from traffic
Bicycle Boulevards
(aka Neighborhood Greenways)

Bike path

Bike lane

Cycle track
(aka separated lane)
**Level of Comfort on Facilities**

A path or trail separate from the street

A quiet, residential street with traffic speeds of 20-25 miles per hour and traffic calming (bicycle boulevard)

A quiet, residential street with traffic speeds of 20-25 miles per hour

A two-lane neighborhood commercial shopping street, on-street parking, 25-30 mph, no bike lane

Major 4-lane urban/suburban street, on-street parking, 30-35 miles per hour, no bike lane

Major 4-lane street with a center divider, on-street parking, 35-40 miles per hour, no bike lane

Bike lane on a major 4-lane urban/suburban street, on-street parking, 30-35 miles per hour

Bike lane on a major 4-lane street with a center divider, on-street parking, 35-40 miles per hour

Bike lane on a two-lane neighborhood commercial shopping street, on-street parking, 25-30 mph

Cycle track on a major 4-lane urban/suburban street, on-street parking, 30-35 miles per hour

Cycle track on a major 4-lane street with a center divider, on-street parking, 35-40 miles per hour

Quiet, residential street with traffic speeds of 20-25 miles per hour and traffic calming (bicycle boulevard)

**Respondents' Level of Comfort Bicycling on Different Facility Types**

Level of Comfort (1-4 scale, 4=Very Comfortable)

Source: Portland regional phone survey, 2011 (Dill)
Respondents' Level of Comfort Bicycling on Different Facility Types

Level of Comfort (1-4 scale, 4=Very Comfortable)

Source: Portland regional phone survey, 2011 (Dill)
Comfort on facilities among 11-16 year olds

Mean Comfort Level, 1=Very uncomfortable, 4=Very comfortable

On a street with heavy traffic and no bike lane*
On a street with heavy traffic with a bike lane*
On a street with little traffic and no bike lane*
On a street with little traffic with a bike lane*
On a path or trail separate from the street

Boys
Girls

* sig. difference p<0.05

Source: Family Activity Study, Portland 2012-13 (Dill)
Could cycle tracks increase women’s cycling?

• 6-city Green Lane evaluation underway
• Intercept surveys of bicyclists on cycle tracks
• Because of the [street] cycle track...how often I ride a bicycle overall has increased
  o Washington DC L Street
    Women: 39%  Men: 26%
  o San Francisco Oak Street (preliminary numbers)
    Women: 29%  Men: 17%
  o San Francisco Fell Street (preliminary numbers)
    Women: 29%  Men: 20%