Autonomous and Connected Vehicles: Implications for Bicyclists and Pedestrians

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What do Bicyclists (and Pedestrians) Think?

Three question survey:

1. Do you think that automated cars (e.g. cars that do not require human control, like Google’s car) will increase or decrease safety for people who bike and walk?
2. What, if any, concerns do you have about sharing the road with automated cars?
3. Would you wear a radio beacon (a device that communicates with cars) or use a smartphone app if it lessened the likelihood of a car hitting you while riding your bike or walking?
Do you think that automated cars (e.g. cars that do not require human control, like Google’s car) will increase or decrease safety for people who bike and walk?

- Not Enough Information: 43.1%
- Increase Safety: 42.3%
- Decrease Safety: 5.0%
- No opinion: 10.0%
Would you wear a radio beacon (a device that communicates with cars) or use a smartphone app if it lessened the likelihood of a car hitting you while riding your bike or walking?

If Not, why not?

- “to feel unsafe by simply using the public space (roadways, in this case) if I left technology at home makes no sense.”
- “Liability may change with ‘he wasn't wearing a beacon’”
- “Like those pedestrian "safety" flags at crosswalks, radio beacons are an attempt to make cyclists and pedestrians responsible for the failures of motor vehicle operators, whether human or machine.”
- “Expense, tracking, privacy”
- “…if automatic cars were the norm and I feared for my life otherwise, I'd wear one.”
- “it would encourage bad design and stigmatize non motorists”
What, if any, concerns do you have about sharing the road with automated cars? (Pick One)

- That new technology might distract from efforts to promote biking and walking for transportation
- The possibility of technology failures that will affect the safety of biking and walking
- The inability to communicate with the car (e.g. no eye contact with driver)
- Other (please specify)
- That automated cars won’t be on roads soon enough
- The possibility of new dangerous car behaviors or infrastructure
- No concerns

Other responses:
- “Speed and density will increase on all roads; to the point that all roads are fast moving freeways. Bicycles will be banned from all roads.”
- “More cars on the road”
- “Land use implications of a shift to autonomous vehicles (i.e. more burbs)”
What, if any, concerns do you have about sharing the road with automated cars? (Pick Multiple)

- The inability to communicate with the car (e.g. no eye contact with driver)
- That new technology might distract from efforts to promote biking and walking for transportation
- The possibility of technology failures that will affect the safety of biking and walking
- The possibility of new dangerous car behaviors or infrastructure
- That automated cars won’t be on roads soon enough
- Other (please specify)
- No concerns

Other responses:
- “People will find ways to disable the system.”
- “Old saying: to err is human; to really foul things up, you need a computer. Also, who is responsible when a vehicle running autonomously hits a bike or ped?”
- “Difficult to detect non car/truck objects in variety of situations so will likely be ignored until enough 'accidents' occur.”
How will autonomous and connected vehicles affect bicyclists and pedestrians?

Two scenarios:

• **Heaven** – Safe communities where people feel comfortable walking and biking to destinations

• **Hell** – Walking and biking to destinations made more difficult and less likely
## Comfort

<table>
<thead>
<tr>
<th>Heaven</th>
<th>Hell</th>
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<tbody>
<tr>
<td>People-oriented street designs and public space</td>
<td>Auto-oriented street design and LOS-based design choices</td>
</tr>
<tr>
<td>Connected vehicles bear burden of avoiding collisions with bicyclists and pedestrians</td>
<td>Bicyclists and Pedestrians must adjust behaviors to accommodate autonomous and connected vehicles</td>
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<tr>
<td>Better compliance with traffic laws, and better laws</td>
<td>Laws ban pedestrians and bicyclists from roads</td>
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## Communities

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<tr>
<th>Heaven</th>
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<tbody>
<tr>
<td>Smart Growth Policies</td>
<td>Autonomous vehicles enable increased sprawl</td>
</tr>
<tr>
<td>Use technology to enhance transit systems, and transit-oriented development</td>
<td>Land use policies continue to assume personal vehicle ownership and discourage infill development</td>
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## Safety

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<tr>
<td>People are encouraged to communicate with vehicles and are actually made safer</td>
<td>People are forced to communicate with vehicles and accommodate vehicles in most cases</td>
</tr>
<tr>
<td>Automated vehicles are designed to interact with people in ways that are safe and enable trust</td>
<td>Autonomous vehicles designed for people-free environments</td>
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- **Heaven:** People are encouraged to communicate with vehicles and are actually made safer. Automated vehicles are designed to interact with people in ways that are safe and enable trust.
- **Hell:** People are forced to communicate with vehicles and accommodate vehicles in most cases. Autonomous vehicles designed for people-free environments.
Now is the Time to Think About What We Want in the Future

Technology should enhance community goals related to:

• Health
• Economic development
• Environment
• Transportation equity

http://bikeleague.org/FutureBike
September 11, 2014 | 1 to 7 p.m. | Pittsburgh, Pa.
Thank you!

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