


Pedaling Towards Acceptance

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Publication date:

2024-09

Permanent link:

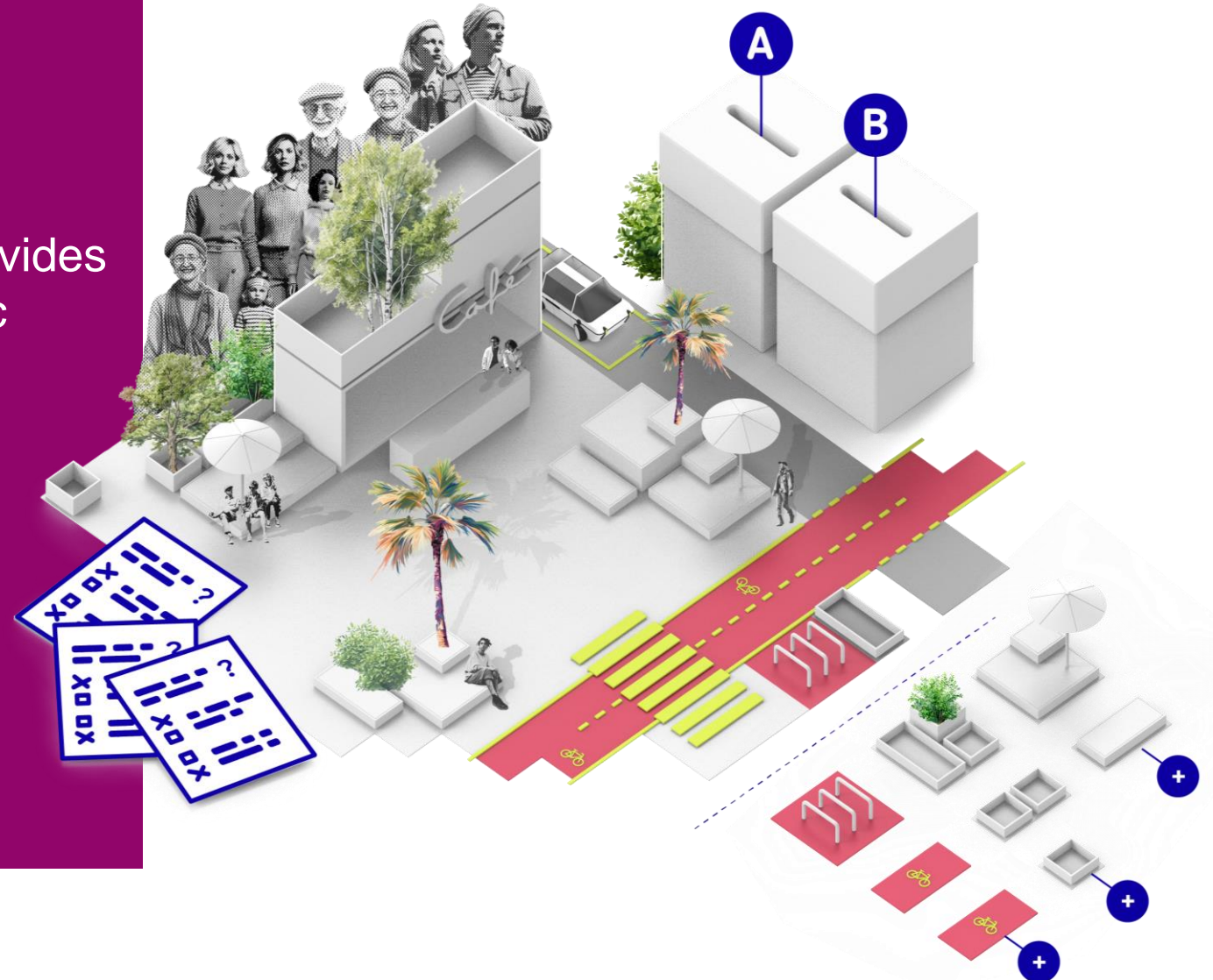
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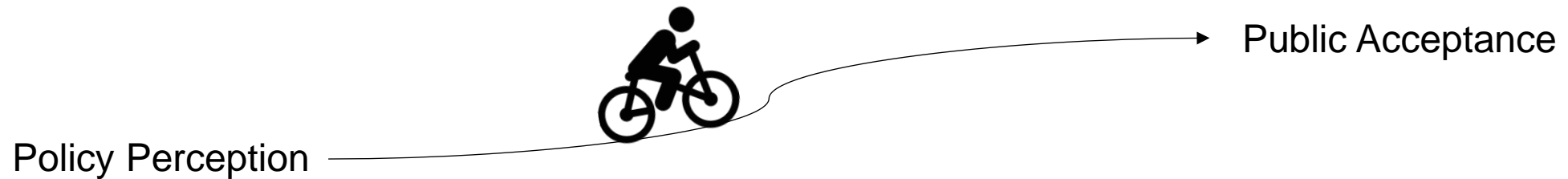
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Pedaling Towards Acceptance: Navigating Cleavages and Policy-Divides in the E-Bike City Transition – Public Opinion Insights from a Large-Scale Survey

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Spatial Development and Urban Policy, Institute for
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NSL Forum & Cycling Research Board 2024





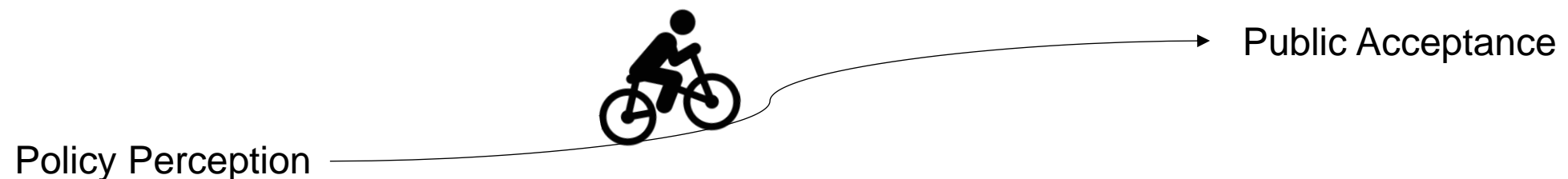
- What Drives Residents Opinion Towards a Policy Implementation of Infrastructure Projects?
 - Investigate **public opinion** on E-Bike City, focusing on the influence of **lifestyle choices**, **political ideology** and **individual policy perceptions**.
- Key Findings:
 - **Divided Acceptance**: Support varies significantly between cyclists and drivers and along the left-right political spectrum.
 - **High effectiveness perception** does not translate into acceptance.
 - **Perceived fairness and intrusiveness** critical in **determining** individual acceptance.
 - Lifestyle and ideological divides becoming less pronounced in specific implementation scenarios.

Urban Active Mobility Transformations

- Superblocks, 15-minute city, car-free zones, e-bike city....:
 - Reduce car dependency, healthier communities, sustainable urban spaces.
 - High-quality cycling infrastructure significantly **increases cycling volumes and safety** [Fosgerau et al., 2022](#)
 - **Potential:** Shift up to 56% car trips to cycling [Yang et al., 2019](#)



- Yet, infrastructure projects often **publicly contested** [Velojournal, 2023](#)
 - Concerns about Impact on existing **amenities** [Wicki & Kaufmann, 2022](#)
 - Issues of distributive and procedural **Justice** [Martens, 2020](#)
 - Acceptance Beyond Infrastructure: Understanding how changes are perceived by the public is key both for opinion formation and behavioural change [Schuitema et al., 2010](#)
- **RQ: What Drives Residents Opinion Towards a Policy Implementation of Infrastructure Projects?**



What Drives Residents Opinion Towards a Policy Implementation of infrastructure projects?

- Public Space Conflict



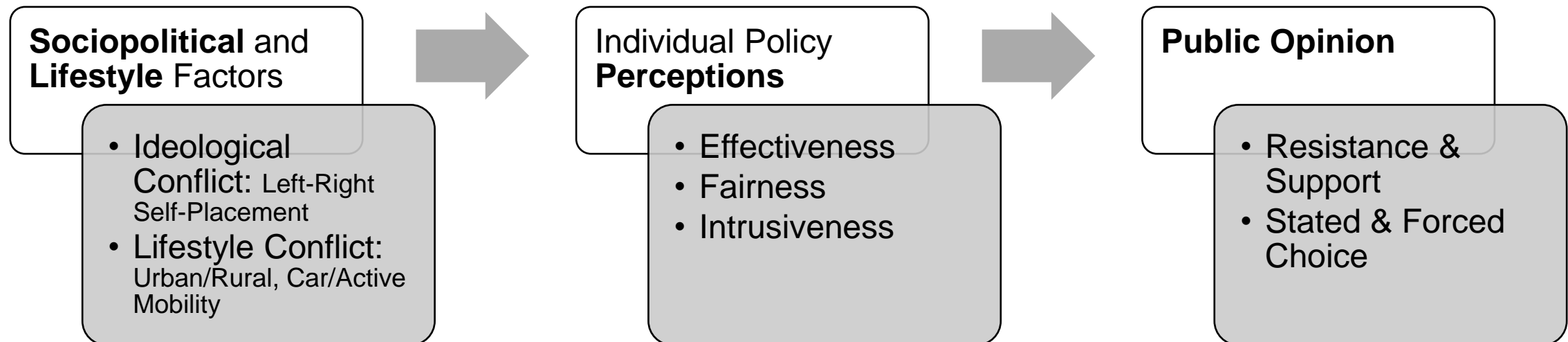
- **Lifestyle:** Intense competition for limited urban public space, driven by different lifestyle choices (e.g., car users vs. cyclists, urban vs. rural).



- **Politicization:** Ideological divides (left vs. right) amplify conflicts, with left-leaning individuals more supportive of policies promoting active mobility and environmental sustainability.

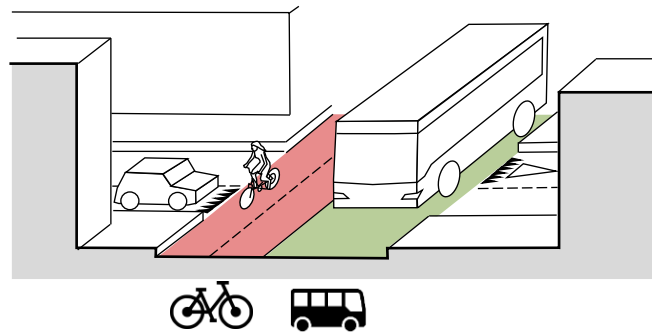


- Sociopolitical and lifestyle factors shape **individual policy perceptions**, which in turn influence public opinion:

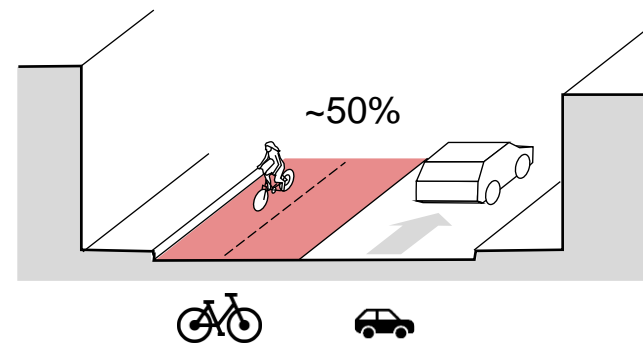


Case: E-Bike City/ies, Switzerland

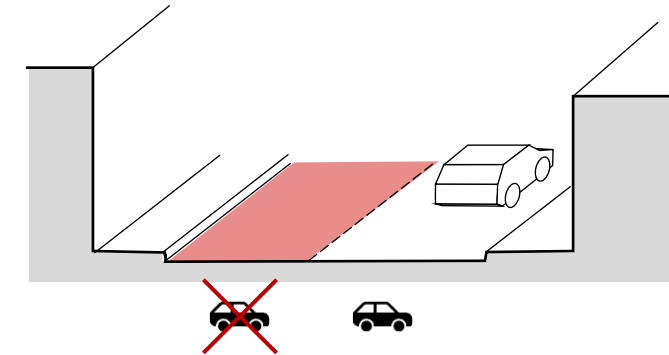
- Multidisciplinary project at ETH Zurich assessing effects of an E-Bike City future.
- Concept to reduce car reliance, improve cycling infrastructure, and promote active mobility in urban areas (50'000+ inhabitants/10 biggest cities)
- Re-allocate ~50% of current street space towards active mobility and public transport.



Absolute priority for cyclists and public transport at intersections.



Distribute safe cycling infrastructure evenly across the e-bike city



Reduction of the attractiveness of (highly) motorized transport.

- Assessing citizen attitudes towards E-Bike-City policy proposal using large-scale **survey experiments**
 - Representative sample of Swiss population 18+, N = 6495
 - Data Collection: Fall 2023, Summer 2024



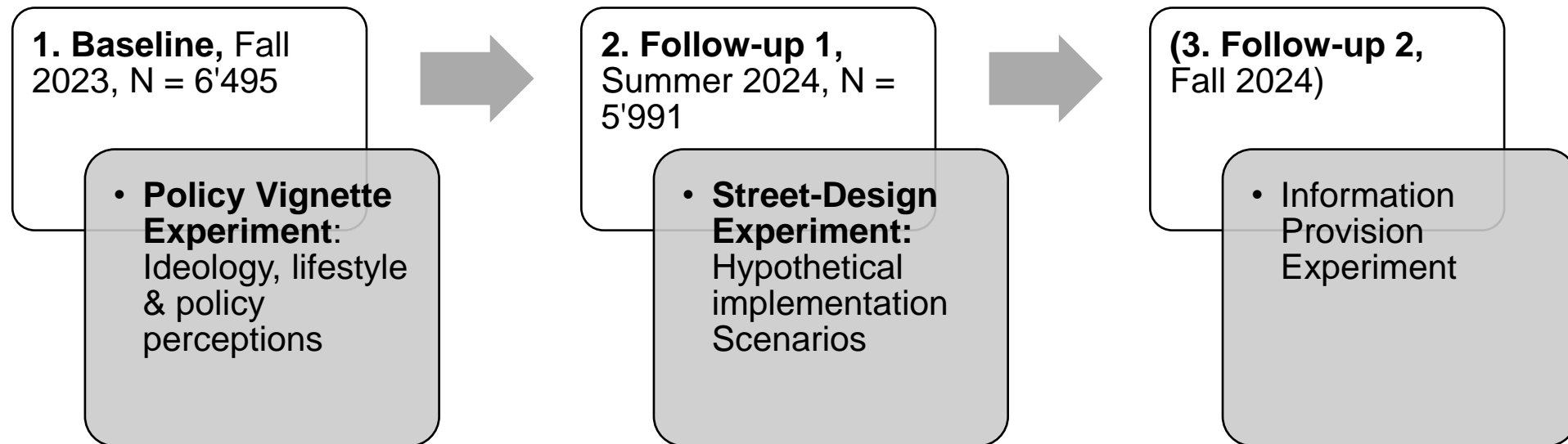
Swiss Mobility Panel

Schweizer Mobilitätspanel

Panel suisse de mobilité

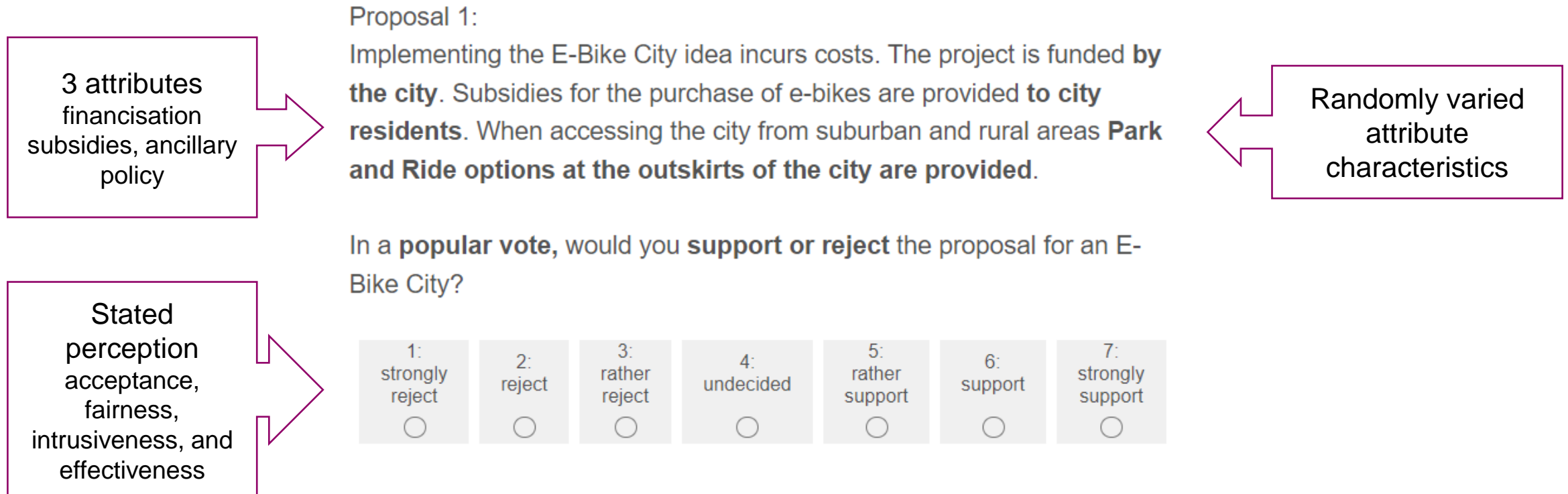
Panel svizzero sulla mobilità

- Survey & Analysis Parts:



1. Vignette Experiment: Evaluation of two policy proposals with varying attribute characteristics

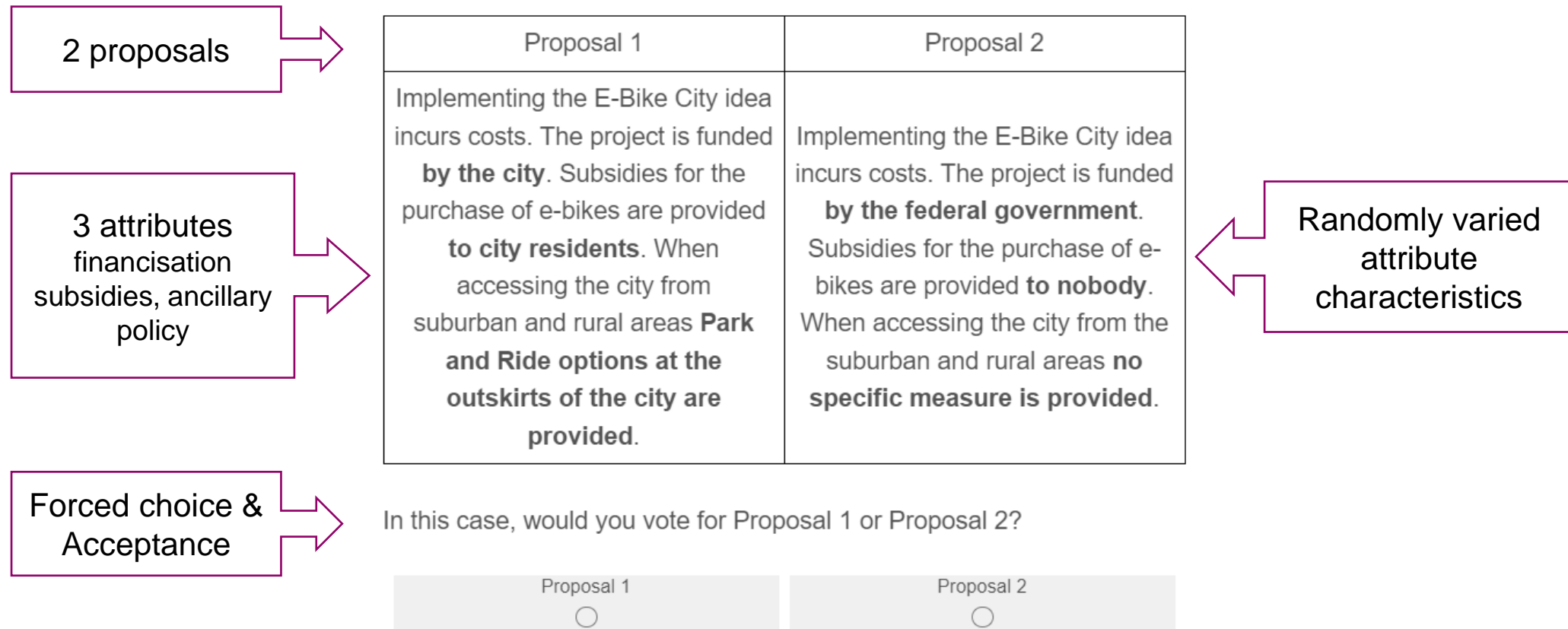
- Step 1: Individual stated perception for two random policy proposals each (acceptance, perceived fairness, intrusiveness, and effectiveness)



1. Vignette Experiment: Evaluation of two policy proposals with varying attribute characteristics

- Step 2: Forced choice between same two random proposals

Now imagine that a popular vote were to take place today in which you have to choose between the proposals shown previously.



Stated Baseline Acceptance of an E-Bike City Policy

- Sociodemographics factors like urbanity, gender, generation, and education with expected patterns.

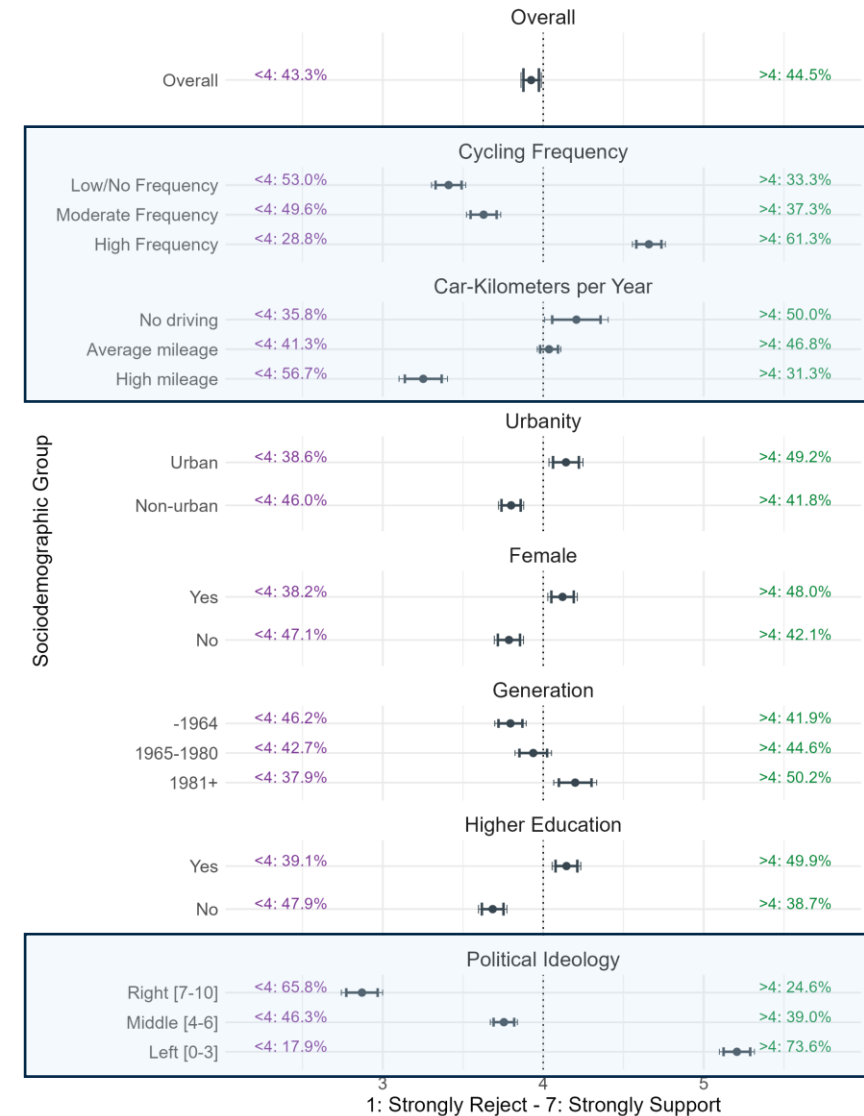
- Yet, main cleavages:



– **Transport Lifestyle:** Frequent cyclists much more supportive, while frequent drivers are less supportive.

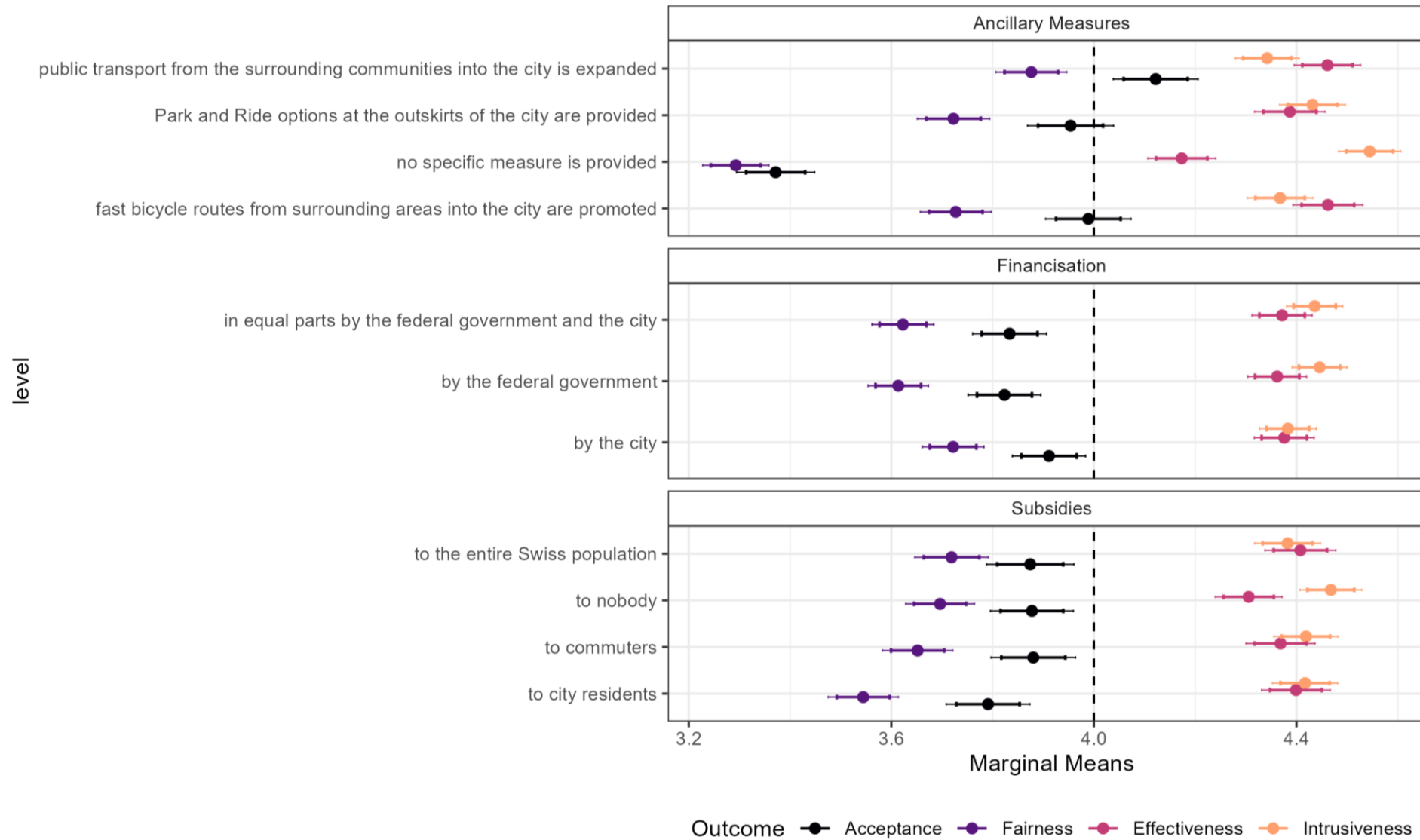


– **Political Ideology:** Political orientation also significantly affects views, with those on the left being more supportive of bike infrastructure than those on the right.



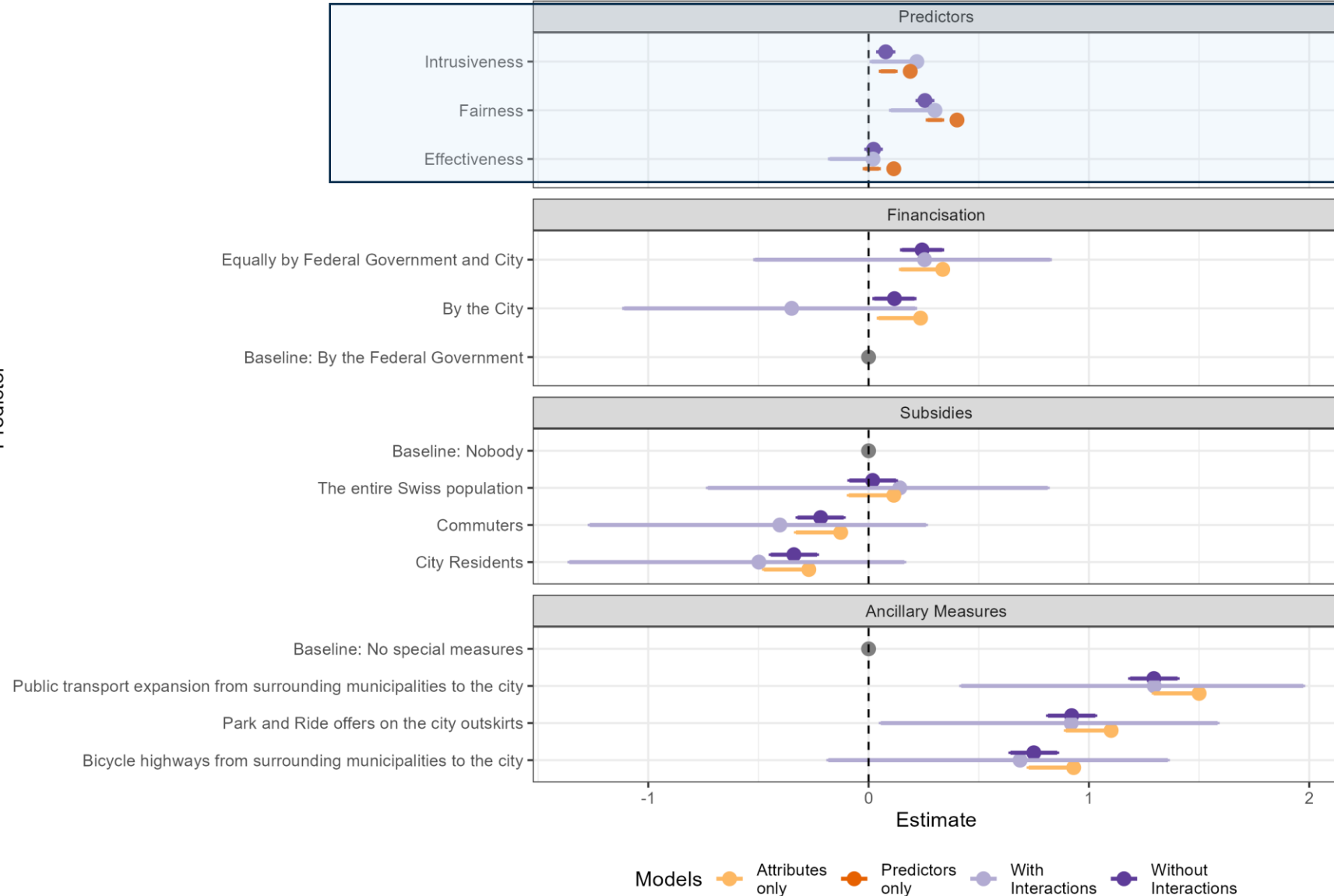


Stated Perception for Randomized Policy Proposals



Perceptions as Predictors for Acceptance

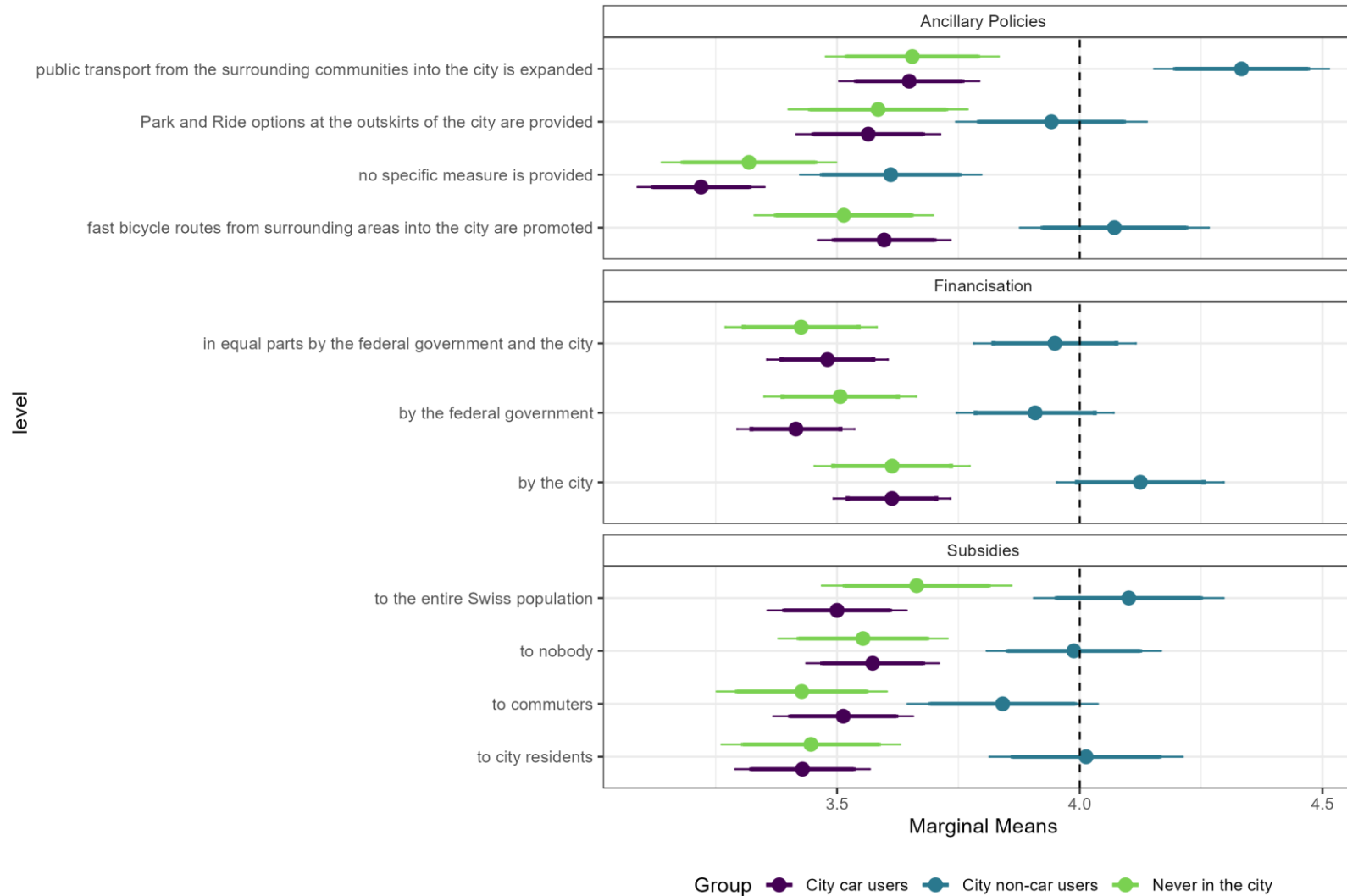
GLM Estimates: Predictors and Attribute Effects



- Lifestyle conflict translates into public opinion through perceptions of fairness and intrusiveness (change conflict) and non-impact of perceived effectiveness (abstraction conflict), driving acceptance.

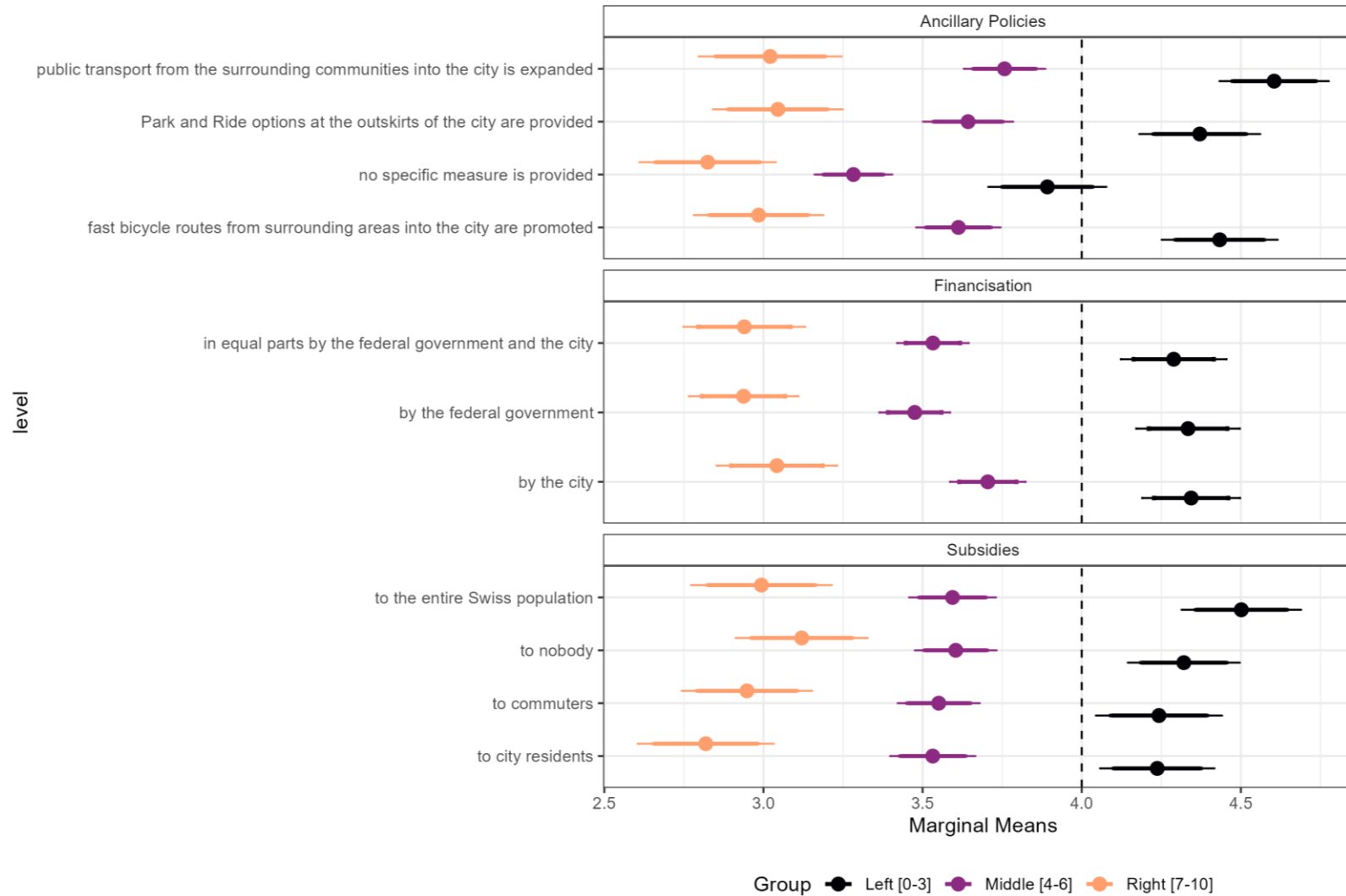


Lifestyle-Conflict: Perceived Fairness by City & Mode Usage





Ideological Conflict: Perceived Fairness by Left-Right Self-Assessment



2. Street Design Experiment: Evaluation of two road redesigns with randomly varied characteristics.

- Step 1: Individual assessment (twice)



click for initial situation to compare

How much would you be in favour of implementing the redesign if it were put to a popular vote?

1: Strongly disagree <input type="radio"/>	2: Disagree <input type="radio"/>	3: Rather disagree <input type="radio"/>	4: Neither nor <input type="radio"/>	5: Rather agree <input type="radio"/>	6: Agree <input type="radio"/>	7: Strongly agree <input type="radio"/>
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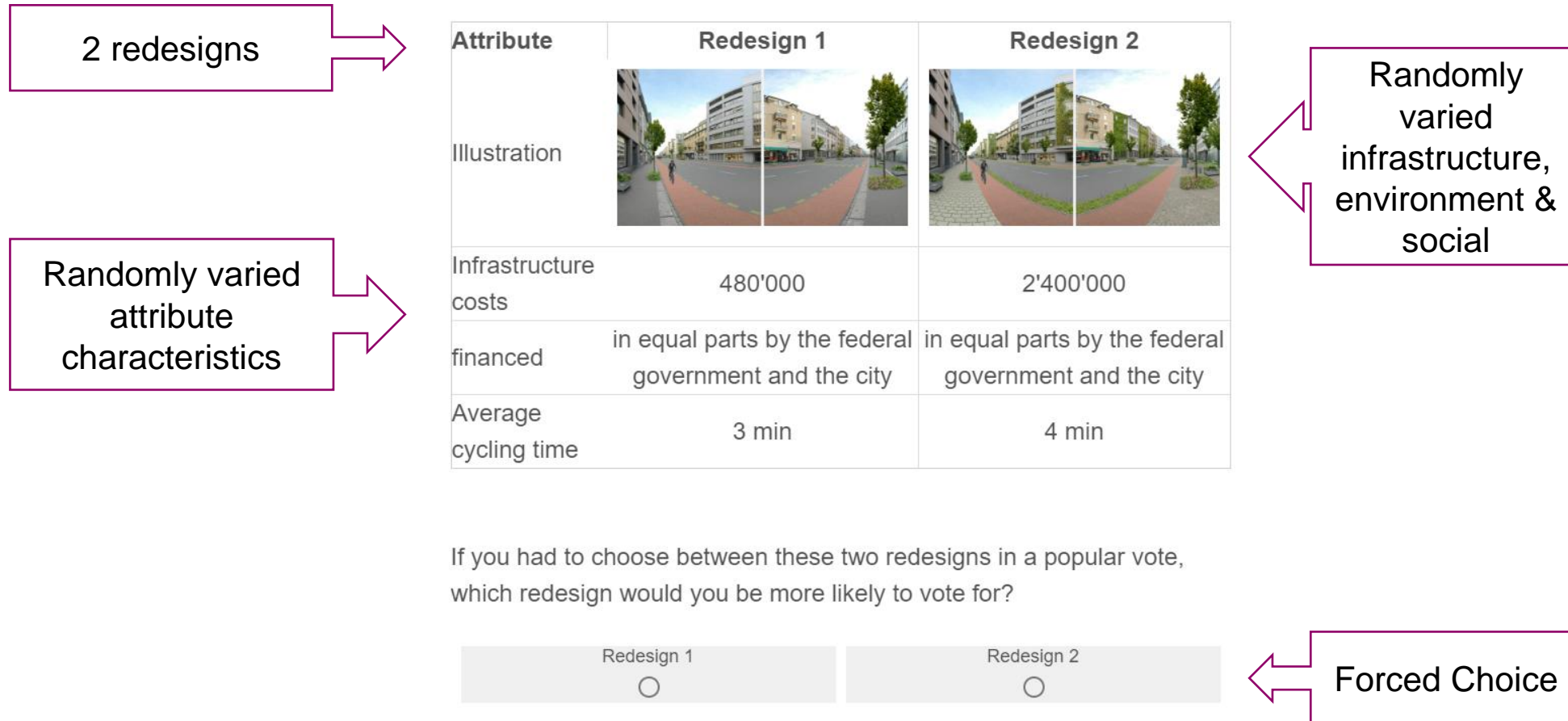
Presentation of random street redesign
main or side road; 3D or picture



Stated Responses
Redesign Policy Acceptance
Willingness to Live
Willingness to Bike

2. Street Design Experiment: Evaluation of two road redesigns with randomly varied characteristics.

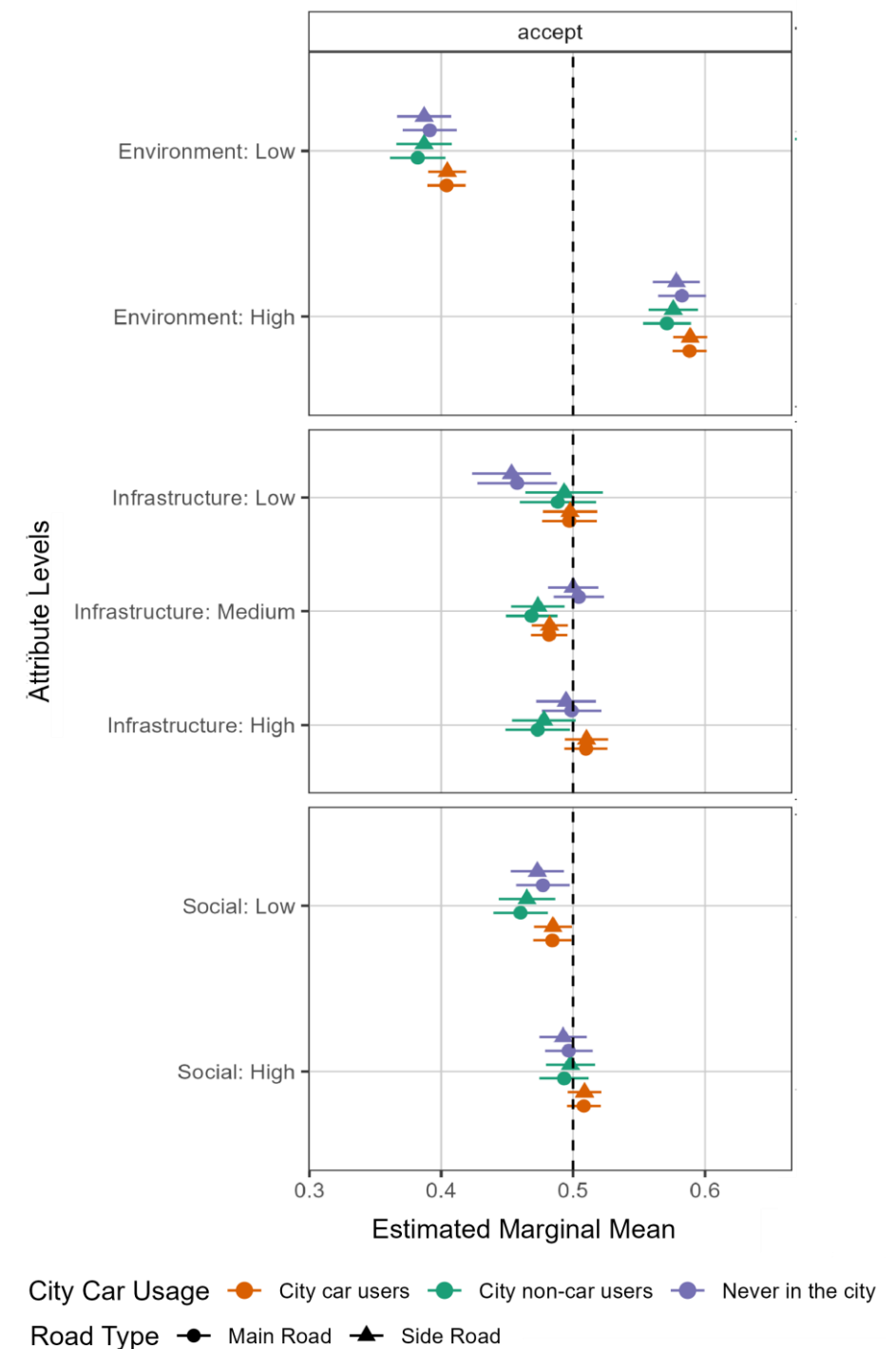
- Step 2: Choice experiment between the two redesigns





An Acceptance Implementation Gap?

- **Overall High Acceptance:** Higher levels of environment drive choice; also higher acceptance for infrastructure, and social aspects
- **Reduced Differences by Lifestyle (and Ideology):** Acceptance of specific street redesigns shows smaller differences between lifestyle groups compared to overall policy acceptance.
- **Acceptance-Implementation Gap?** Resistance towards bike infrastructure doesn't translate to resistance towards implementation.



To sum up; a step closer to public acceptance?

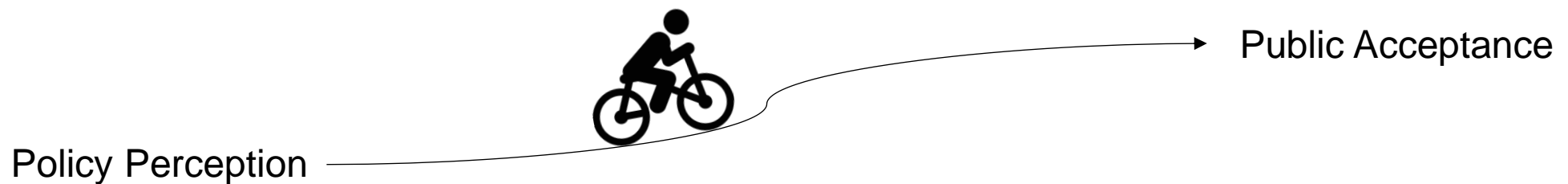
- Public acceptance:



- Divided across transport preferences and political ideology, highlighting key social cleavages.
- **Lifestyle Choice:** City car drivers show similar behaviors to those who never go to the city.
- **Issue Politicization:** Acceptance differs widely depending on left-right self-placement.
- There is a strong perception of **effectiveness** for an E-Bike City proposal, though not translating into acceptance



- Lack of acceptance is mainly driven by perceived **unfairness** but also **intrusiveness**.
- **Ancillary Measures:** Can increase acceptance across different groups – yet strongest for political left (that already accepts).
- **Acceptance-Implementation Gap?** Acceptance for specific street-redesign implementations varies across different lifestyle groups, yet fewer cleavages. Amenity effect perception key?



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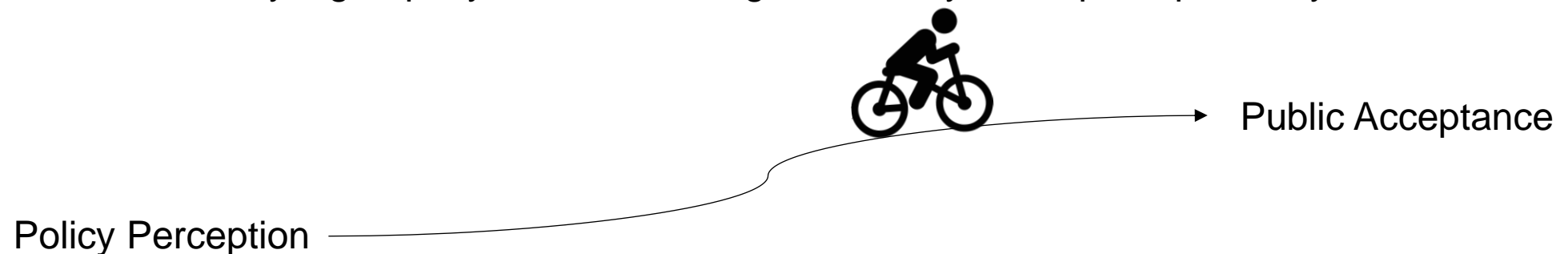
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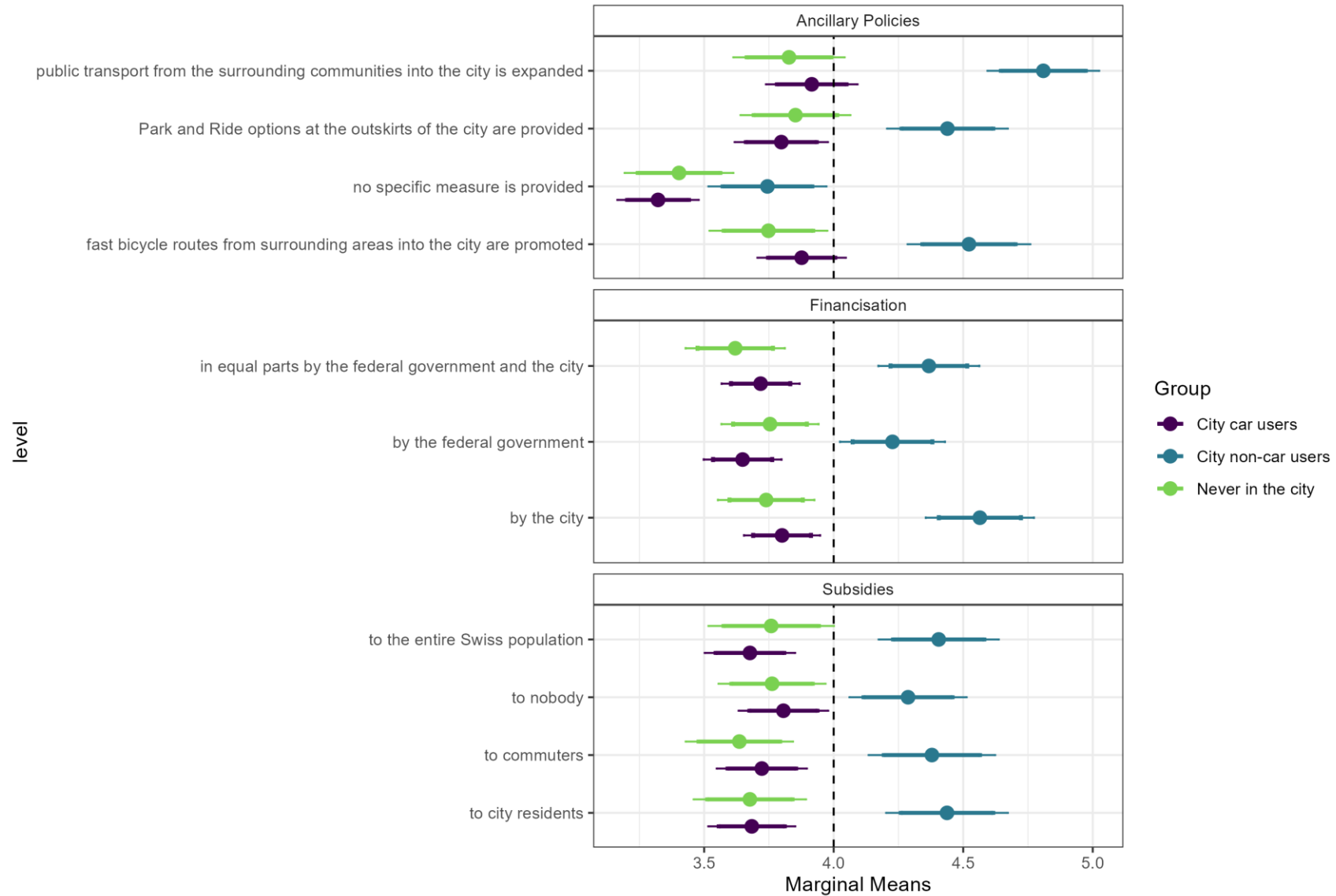
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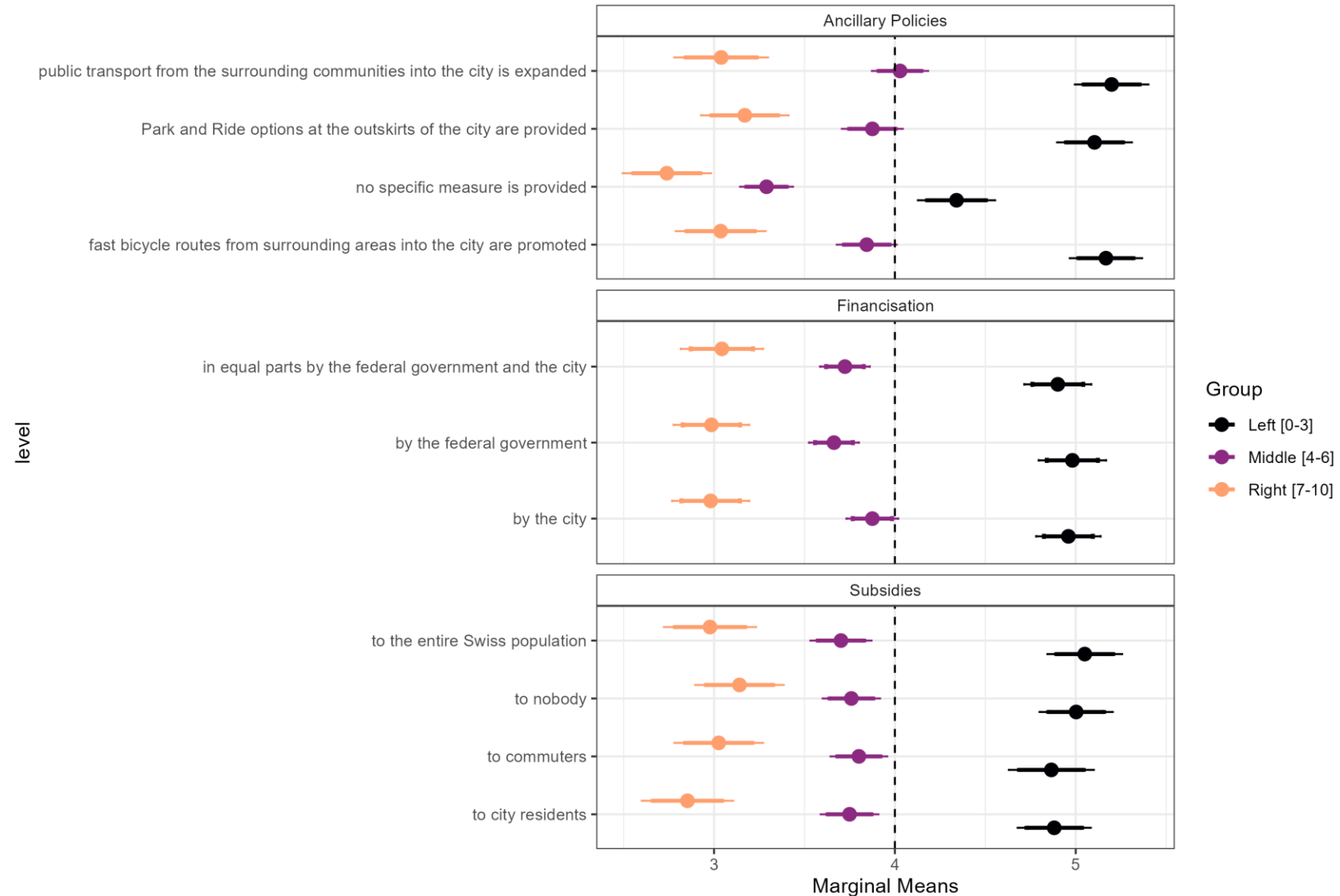


Lifestyle-Conflict: Stated Acceptance by City & Mode Usage

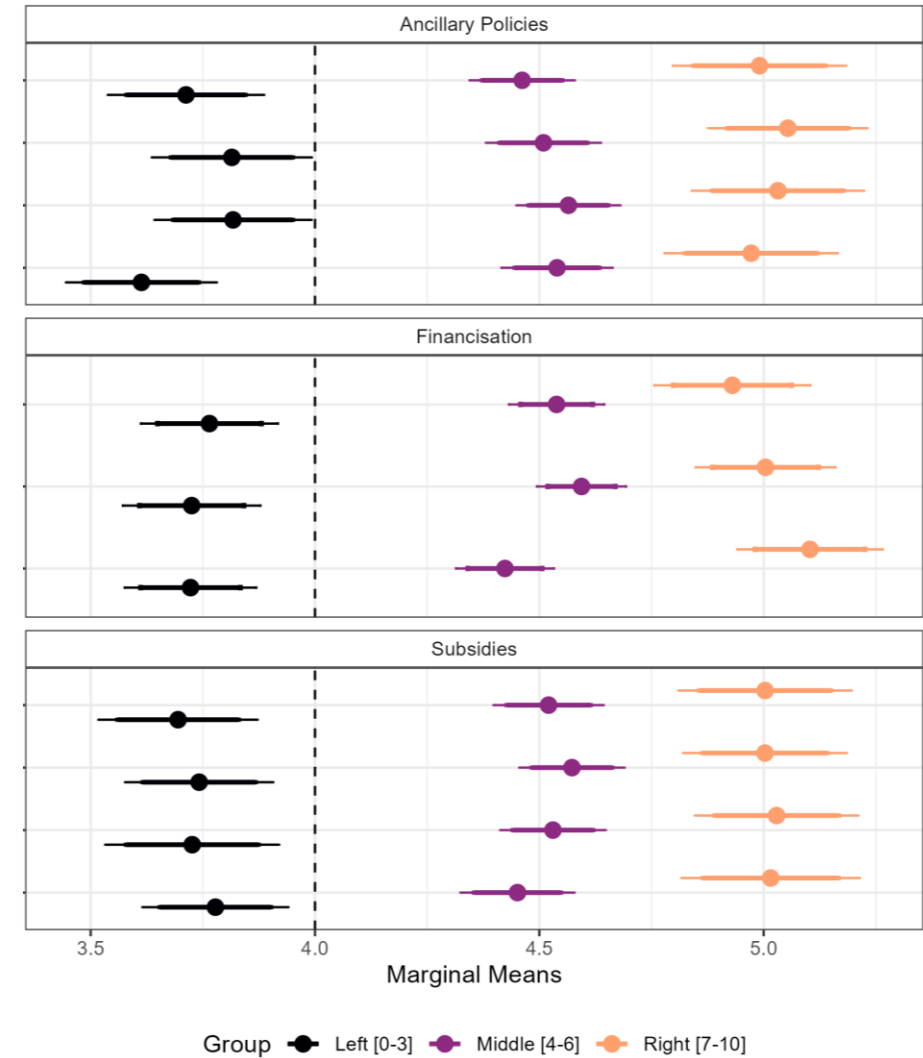
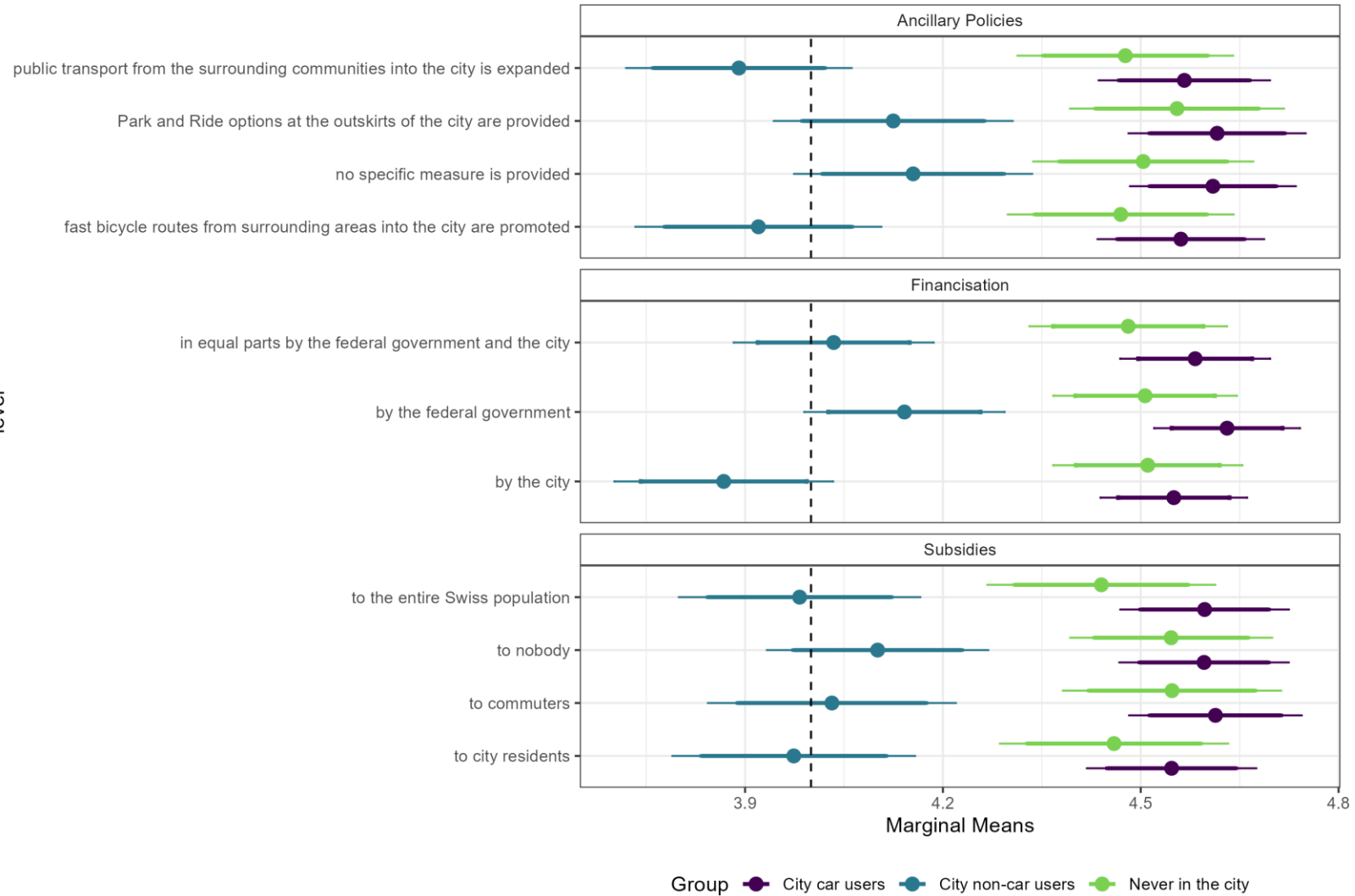




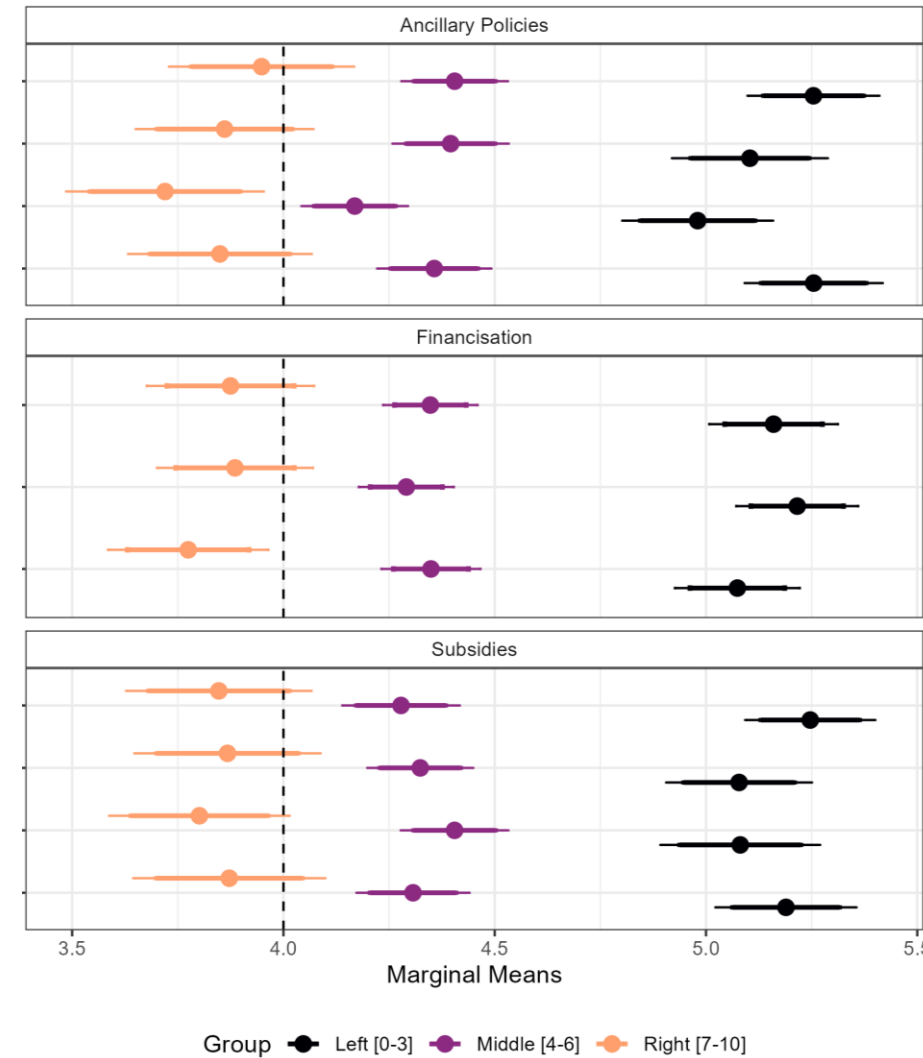
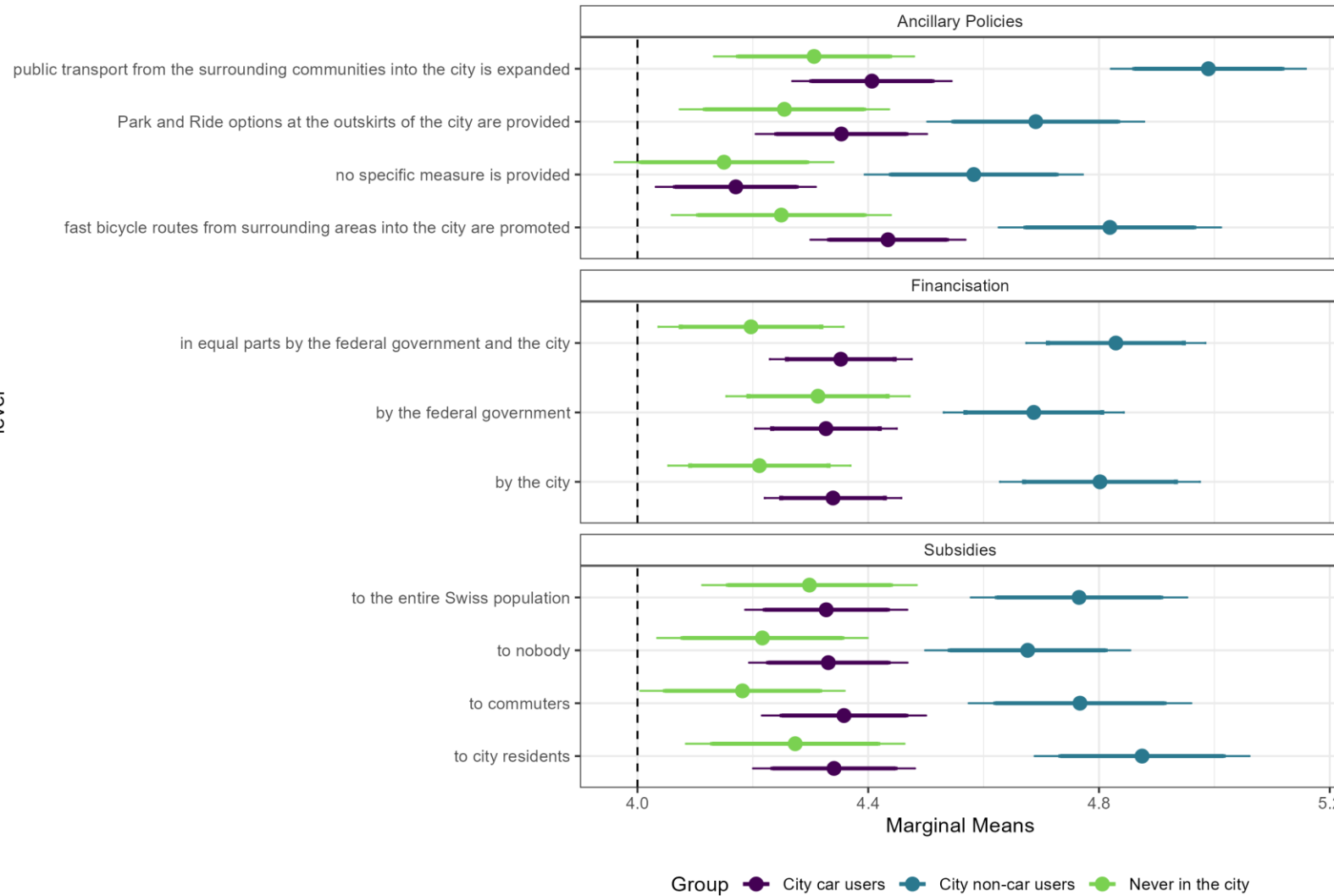
Ideological Conflict: Stated Acceptance by Left-Right Self-Assessment



Intrusiveness Perception



Effectiveness Perception



Outcome Choice Experiments

GLM-Model Estimates for Forced Choice, including cost interaction effects

