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New Ways to Think About Cycling: Insights from Moral Foundations Theory

Cycling and Society 2025
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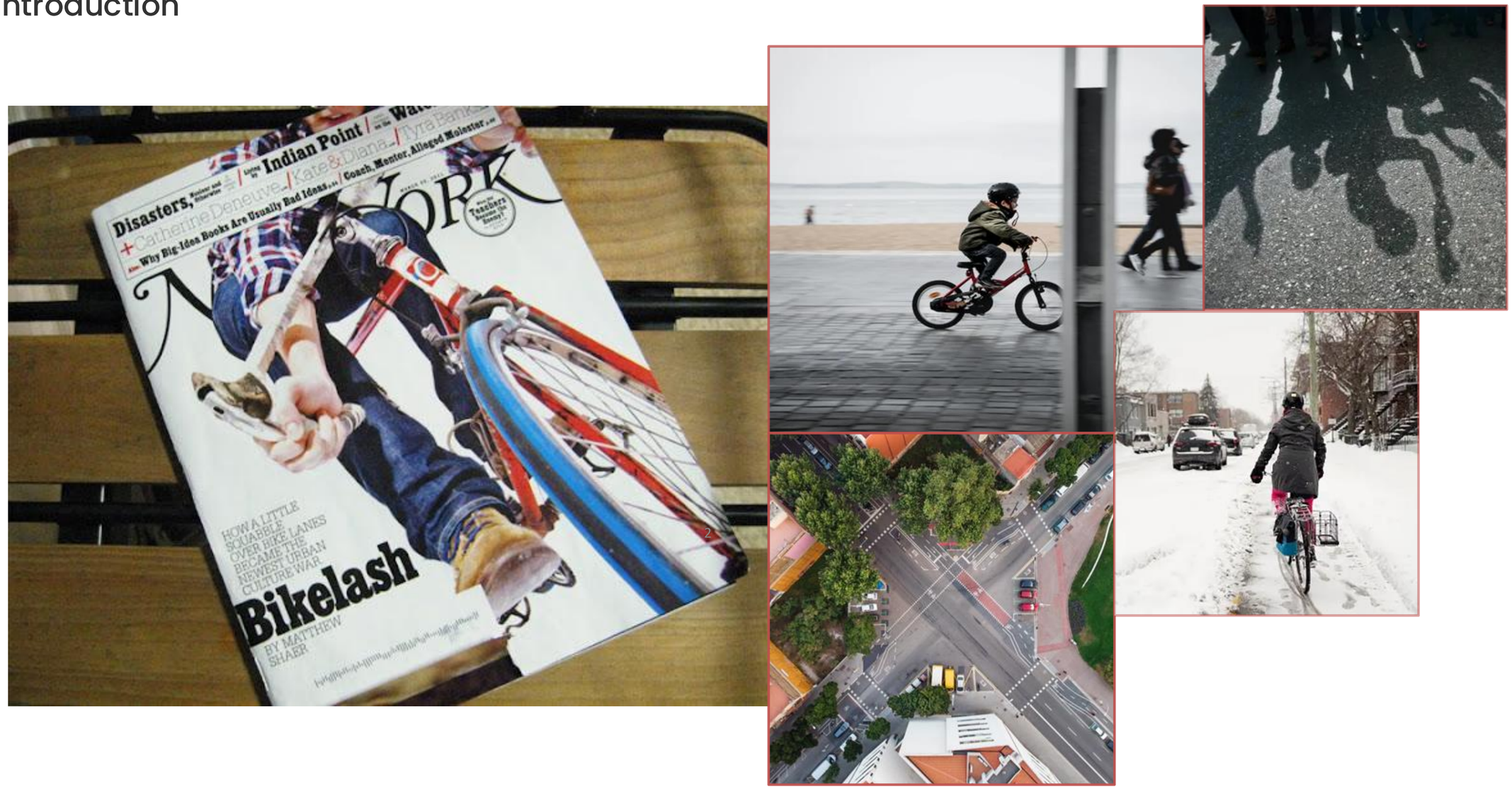
I Introduction



(Shae & Kim, 2011; Wild et al., 2018)

2 Moral Foundations Theory



(Haidt & Graham, 2007; Moral Foundations Test, n.d.)

3 Moral Foundations Theory

Care / Harm

Sensitivity to suffering; drives compassion and protection of the vulnerable, and rejection of cruelty.

Fairness / Cheating

Sensitivity to justice and reciprocity; motivates punishing cheaters and rewarding fair cooperation.

Loyalty / Betrayal

Sensitivity to group belonging; promotes trust and sacrifice for the group, and punishing betrayal.

Authority / Subversion

Sensitivity to hierarchy and rules; supports respect for tradition, roles, and proper conduct.

Purity/Sanctity

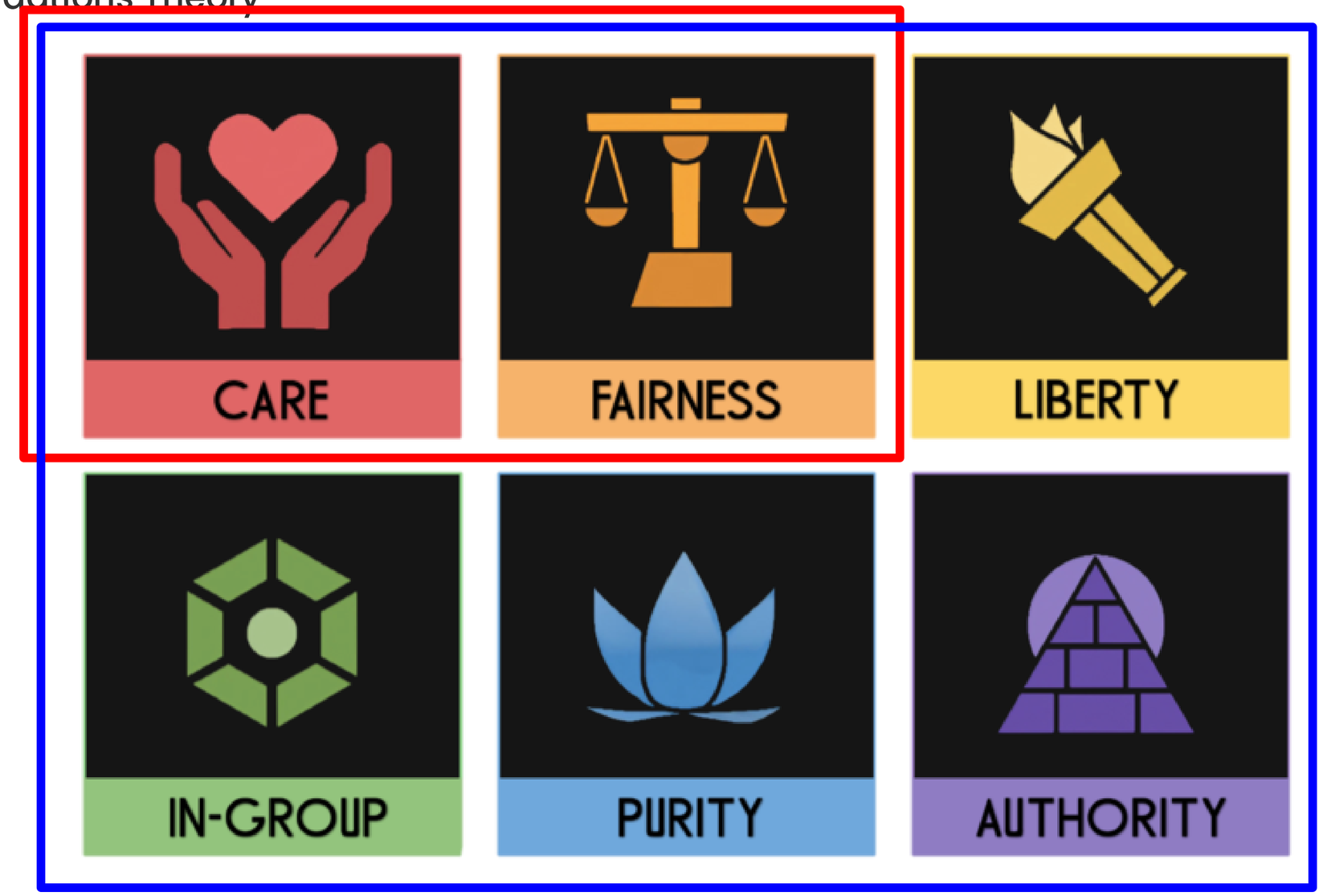
Sensitivity to purity and contamination; shapes moral disgust and shared values that bind groups.

Liberty / Oppression

Sensitivity to freedom and autonomy; fuels resistance to domination or control, and supports protecting individual rights.

4 Moral Foundations Theory

More weight by left-leaning individuals

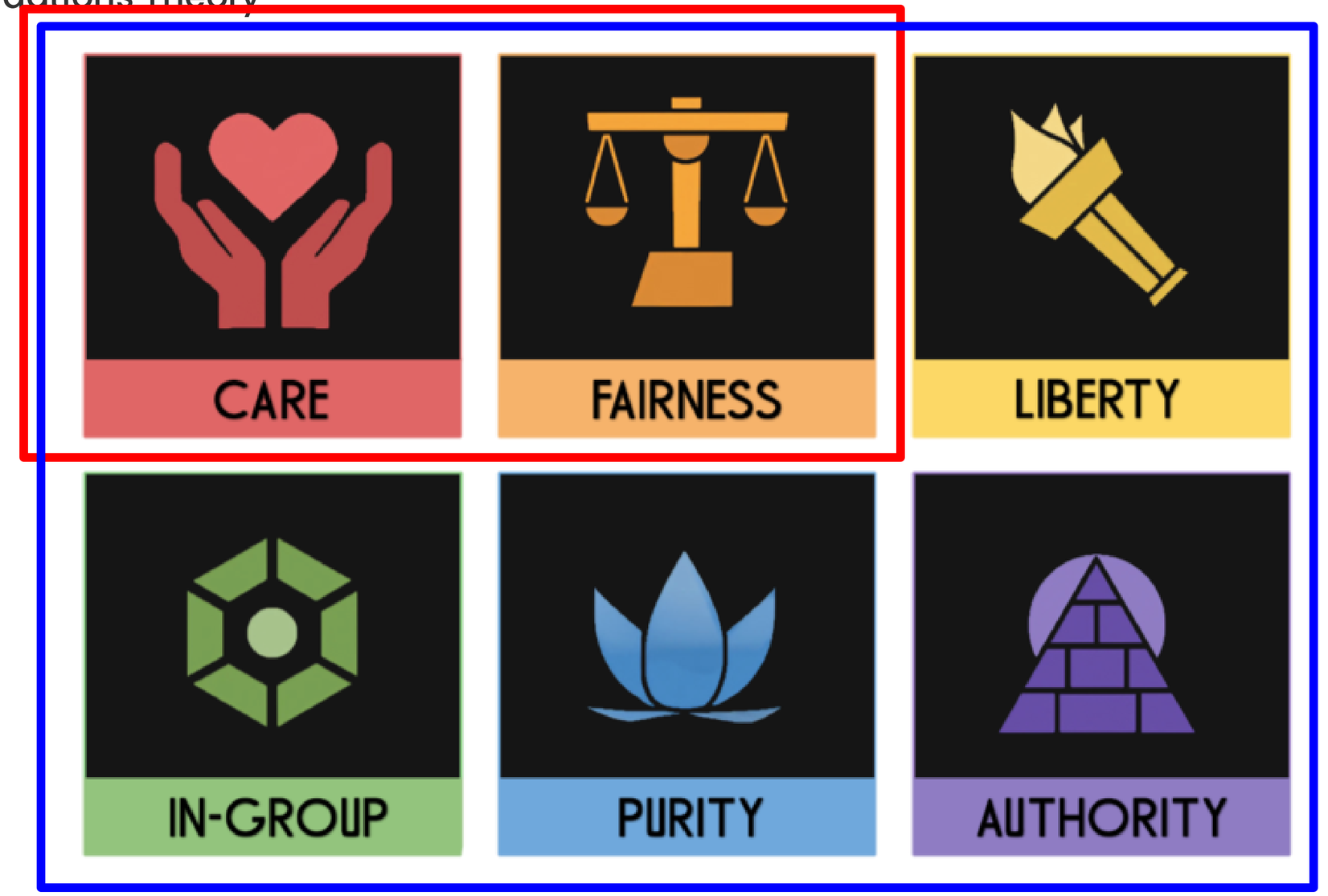


Right-leaning individuals consider all moral foundations

(Haidt & Graham, 2007; Moral Foundations Test, n.d.)

4 Moral Foundations Theory

More weight by left-leaning individuals



Right-leaning individuals consider all moral foundations

*Although other factors can influence political orientation

(Haidt & Graham, 2007; Moral Foundations Test, n.d.)

Care / Harm
Virtue: safe, compassion, protect, caring
Vice: harm, suffer, violence

Fairness / Cheating
Virtue: justice, equal, fairness, rights
Vice: unfair, bias, discrimination

Ingroup Loyalty / Outgroup
Virtue: together, loyal, community, united
Vice: betray, foreign, disloyal

Authority / Subversion
Virtue: respect, duty, lawful, leader
Vice: rebel, disrespect, illegal

Purity / Degradation
Virtue: pure, clean, sacred, wholesome
Vice: disgust, sinful, defile

Liberty / Oppression
Virtue: freedom, choice, rights, autonomy
Vice: control, restrict, tyranny

(Haidt & Graham, 2007; Moral Foundations Test, n.d.)

Research Question:

- How do moral foundations influence public support for cycling?



(Streetsblog Los Angeles, 2013)



Montréal

- 1.7M (City) / 4.9M (Region)
- 900+ km cycling infrastructure
- Targets to reduce car dependency, increase active transportation, expand the Express Bike Network.

(Lofaro, 2023)

Study Area

- Montréal Metropolitan Region

Dependent Variable

- “Should more or less support be given to the following modes of transport?” *(Bus, Walking, Rail, Bicycle, Private Car) Measured -100 to 100.*
- *At the beginning of the survey, not presented as a “cycling survey”

Independent Variables

- Political Orientation (Left–Right Spectrum)
- Moral Foundations Scores (Care, Fairness, Loyalty, Authority, Purity, Lifestyle Liberty, Government Liberty)
- Travel Behaviour and Mobility Tools (Car Ownership, Bicycle Ownership, Cycling Ability, Bicycle Stage-of-Change, Bikeshare, Careshare)
- Climate Stage-of-Change
- Sociodemographics (Age, Gender, Household Income, Education, etc.)

Survey Design

Survey Development	Distributed through a large Canadian survey marketing firm (*Léger Opinion*) French & English 81 questions
Sample	Greater Montreal Area representative by age and gender by sub-region Extensive response validation: essential for online surveys N (completed survey after validation) = 1606

Moral Foundations Questionnaire: 6 questions for each foundation. For ex:

Fairness: Justice is the most important requirement for a society.

Authority: Respect for authority is something all children need to learn.

Purity: I would call some acts wrong on the grounds that they are unnatural.

Loyalty: Whether or not someone showed a lack of loyalty.

Care: Compassion for those who are suffering is the most crucial virtue.

Moral Foundations Questionnaire: Liberty 6 for Government Liberty and 3 for Lifestyle Liberty. For ex:

Government Liberty: People who are successful in business have a right to enjoy their wealth.

Lifestyle Liberty: The government interferes far too much in our everyday lives.

Linear Regression Model for **general support for cycling (-100 to + 100 scale)**

Model 1:
Moral Foundation Scores ONLY

Moral Foundation Scores

Predictors	Estimate	
(Intercept)	**20.18**	*
Care Score	5.29	.
Fairness Score	**8.35**	**
Loyalty Score	**8.09**	***
Authority Score	**-9.31**	***
Purity Score	0.1	
Lifestyle Liberty Score	2.37	
Government Liberty Score	**-14.55**	***
Multiple R-squared: 0.08 **Adjusted R-squared: 0.07**		

Linear Regression Model for **general support for cycling (-100 to + 100 score)**

Model 2: MFT Scores + Control Variables

Moral Foundation Scores

Predictors	Estimate	
(Intercept)	10.18	
Care Score	4.17	
Fairness Score	1.57	
Loyalty Score	**5.82**	**
Authority Score	**-5.14**	*
Purity Score	1.45	
Lifestyle Liberty Score	1.24	
Government Liberty Score	**-6.63**	**
Multiple R-squared: 0.25, Adjusted R-squared: 0.24		

Note: This model includes sociodemographic variables, political orientation, and travel behaviour variables; however, only the moral value variables are shown in the table.

Linear Regression Model for **general support for cycling (-100 to + 100 score)**

Model 2:
MFT Scores + Control Variables

Travel Behaviour

Predictors	Estimate
Household Vehicles: None (Ref. = 1 or more)	**8.64***
Used BIXI in Last 12 Months: (Ref. = No)	
No, but interested	**12.41*****
Yes	**11.01***
Regular Bicycle Trips: (Ref. = Never in the Last 30 Days)	
A Few Times, Less than Weekly	4.97
1-2 Days per Week	8.78
3-4 Days per Week	14.16
5 or More Days per Week	**28.91*****
Bicycle Stage-of-Change (Ref. : Stage 1: Pre-contemplation)	
Stage 2: Contemplation	**14.16*****
Stage 3a: Preparation 1	**30.58*****
Stage 3b: Preparation 2	**32.39*****
Stage 4: Action/Malcontent Cyclists	5.41
Stage 5: Maintenance	**30.8*****
Multiple R-squared: 0.25, Adjusted R-squared: 0.24	

Note: This model includes sociodemographic variables, political orientation, and travel behaviour variables; however, only the moral value variables are shown in the table.

Linear Regression Model for **general support for cycling** (-100 to + 100 scale)

Model 2:
MFT Scores + Control Variables

Political Orientaion and Climate Action

Predictors	Estimate
Political Orientation: (Ref. = Neutral)	
Left	2.09
Right	**-22.36*** **
Prefer Not to Answer	1.85
Climate Stage-of-Change: (Ref. : Stage 5: Already Limiting Emissions)	
Stage 1: Not Concerned	**-30.13*** **
Stage 2: Concerned, No Plan	**-12.04** **
Stage 3: Want to Reduce, Unsure How	**-7.92***
Stage 4: Plan to Reduce Soon	**-9.53** **
Multiple R-squared: 0.25, Adjusted R-squared: 0.24	

Note: This model includes sociodemographic variables, political orientation, and travel behaviour variables; however, only the moral value variables are shown in the table.

Key Takeaway





- Moral foundations are useful predictors of support for cycling
- Right-leaning individuals are less supportive of cycling as a mode of transport
- Authority and government liberty are negatively associated with support
- Loyalty is positively associated with support for cycling
- People who cycle more are more likely to support cycling

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Next Steps

Explore the role of framing of cycling infrastructure projects using MFT on public support

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Thank you for listening!

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