

Determinants and outcomes of cyclists' choice of lane position

Julie Hatfield, Ros Poulos, Chris Rissel, Raphael Grzebieta, Andrew McIntosh, Lloyd Flack, Susanne Murphy

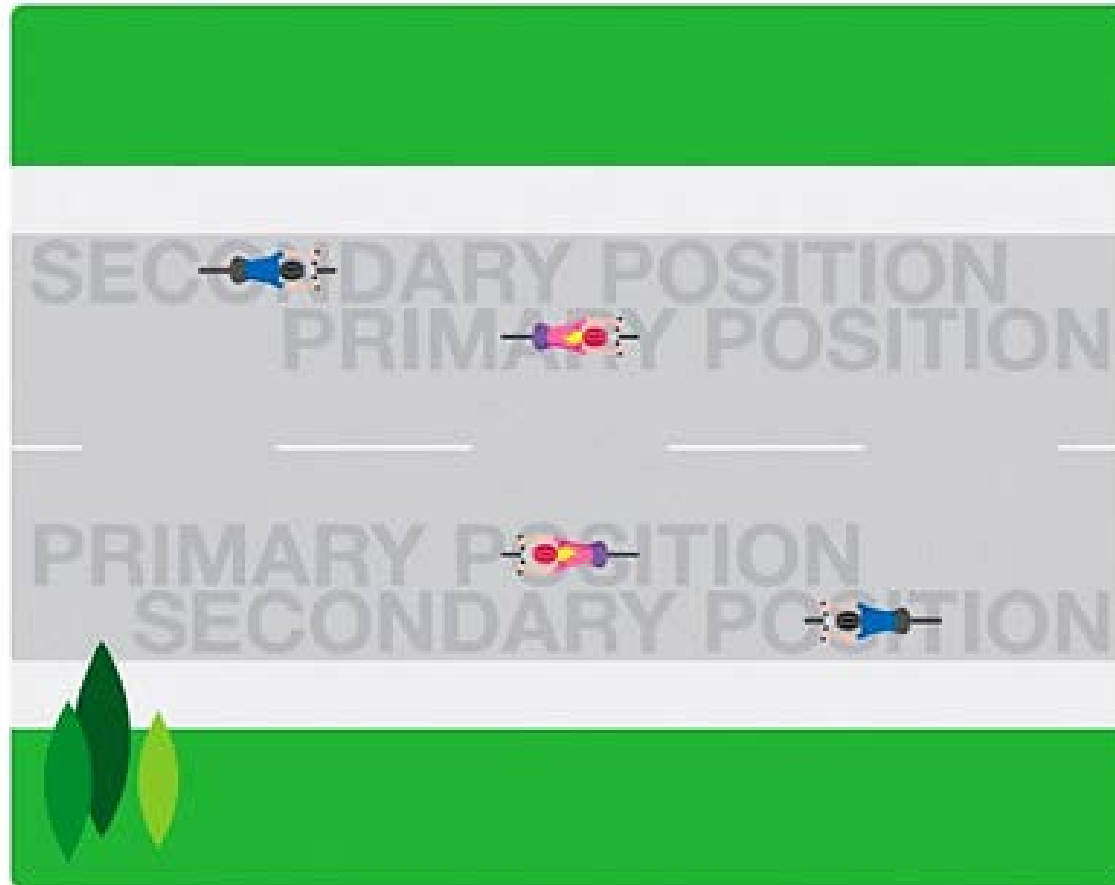


Transport and Road Safety (TARS) Research | School of Aviation | UNSW

Where is it safest for a cyclist to ride?



What is the safest lane position for cyclist?



What do we know?

Potential benefits

Walker (2007)

Anecdotal position of cyclists

Safer Cycling Study

A web-based prospective longitudinal study of a cohort of over 2000 cyclists in NSW, Australia



Safer Cycling Study

Safer Cycling Study

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Welcome to the Safer Cycling Study

Where your contribution will help
create a safer place for cyclists



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The Safer Cycling Study hopes to learn about when, where and why people cycle, and the risks, hazards, near misses and crashes that people experience while cycling. [Learn more.](#)

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Welcome

Welcome to the Safer Cycling Study. A place where your contribution will create a safer place for cyclists in NSW.

Our website has been designed using recent web technologies. If you are using an older web-browser like Internet Explorer 6, we strongly recommend you update to the latest version of your browser.

Thank you for your participation.

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Methods

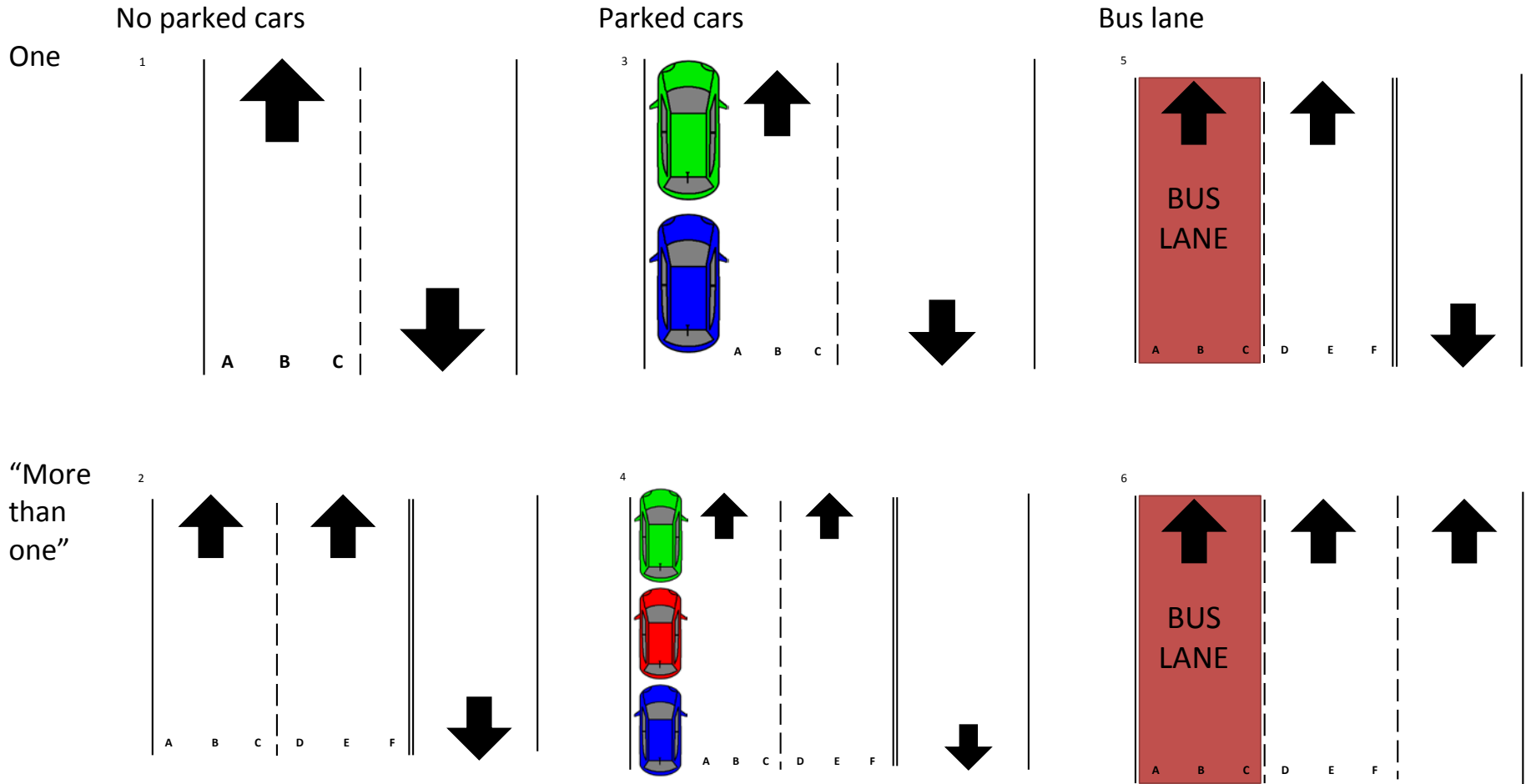
Poulos RG, Hatfield J, Rissel C, Grzebieta R, McIntosh A. (2011) Exposure-based cycling crash, near miss and injury rates: The Safer Cycling Prospective Cohort Study protocol. *Injury Prevention* 10.1136/injuryprev-2011-040160

Reporting weeks; cycling and crashes

“Cycling strategies” focus (Reporting Week 2)

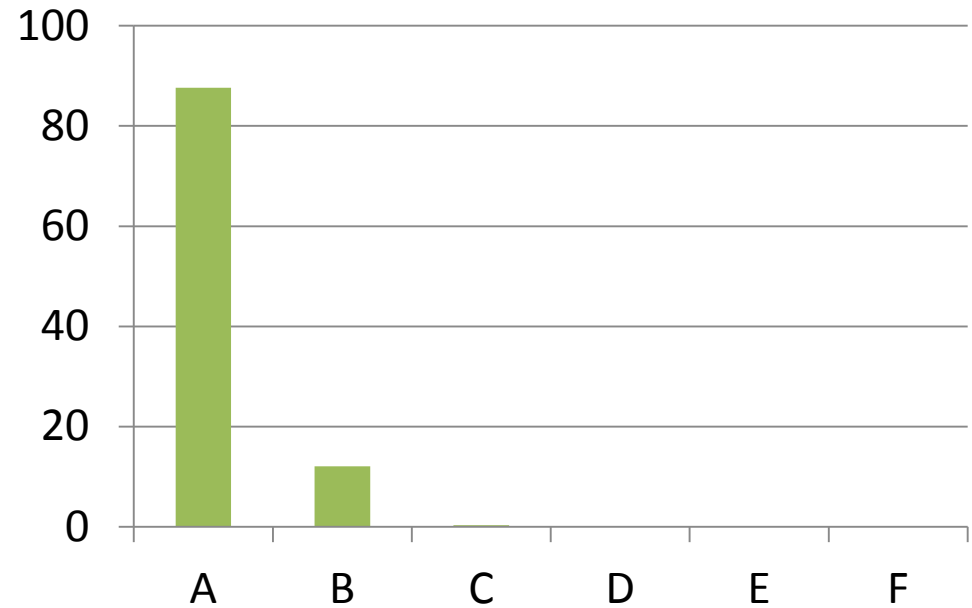
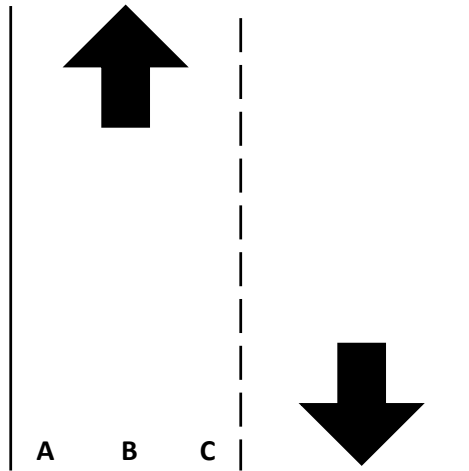
1525 cyclists who “ever ride on the road” showed their preferred lane position for 6 scenarios

Scenarios (2 x 3)

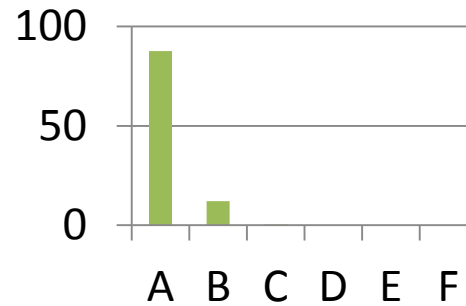
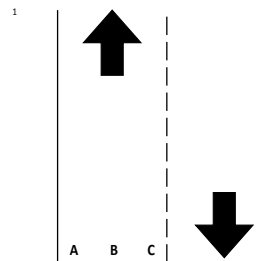
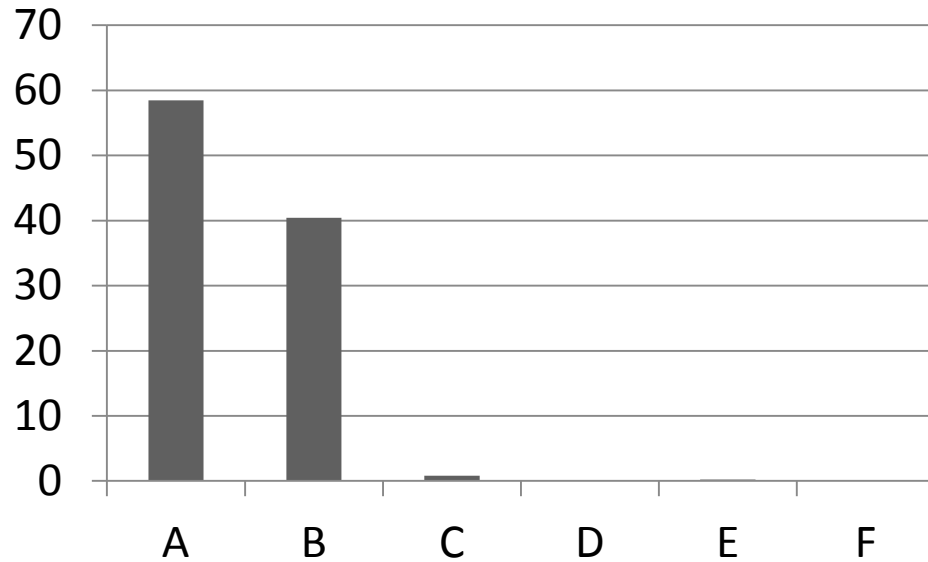
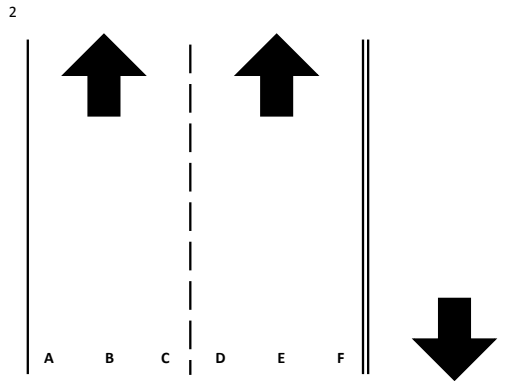


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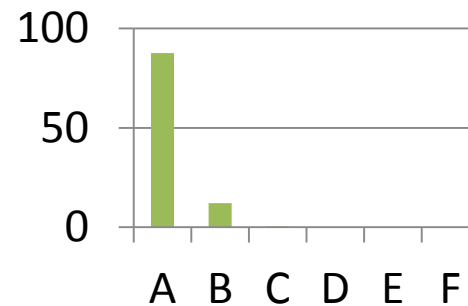
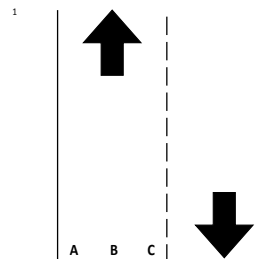
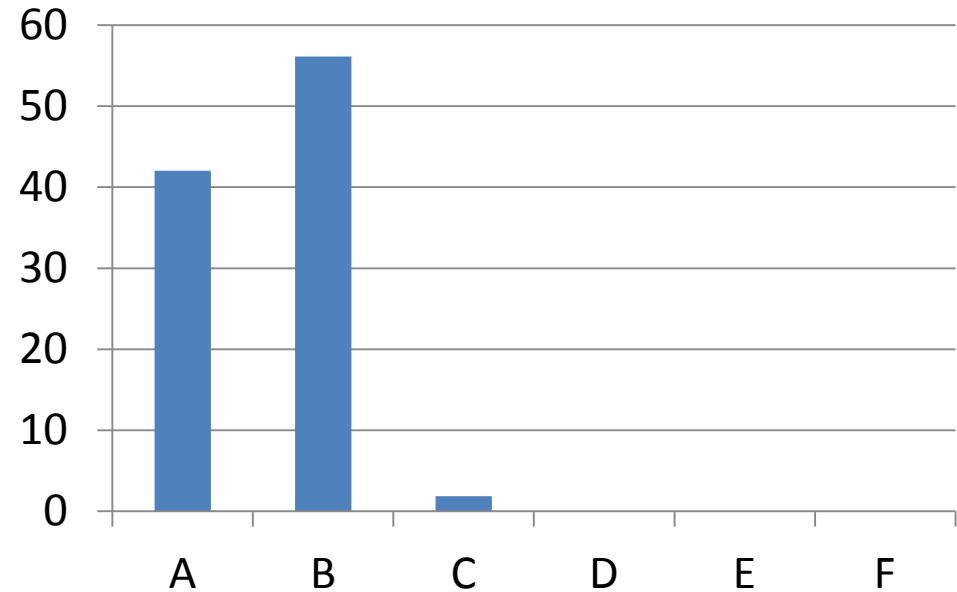
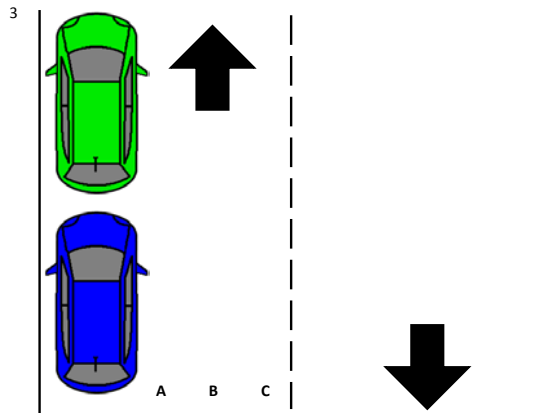
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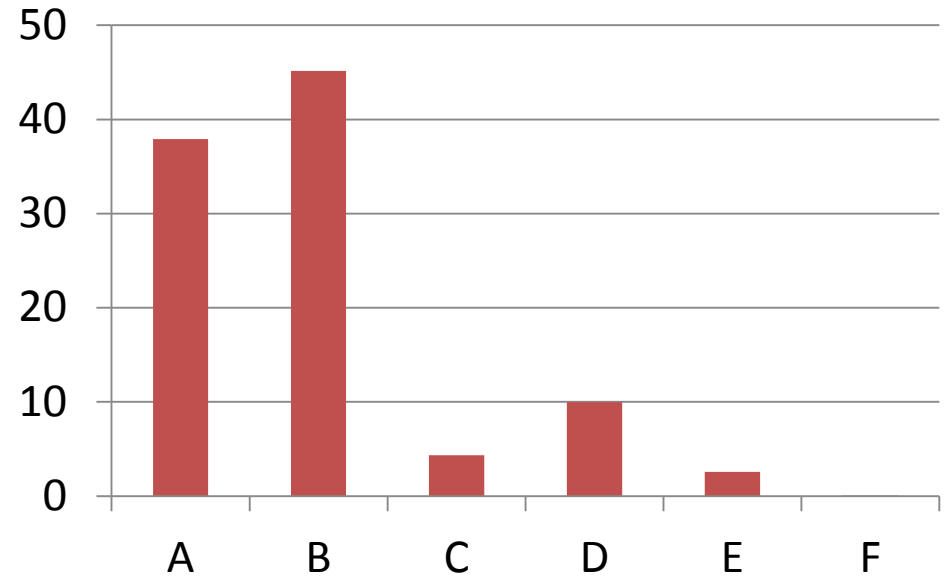
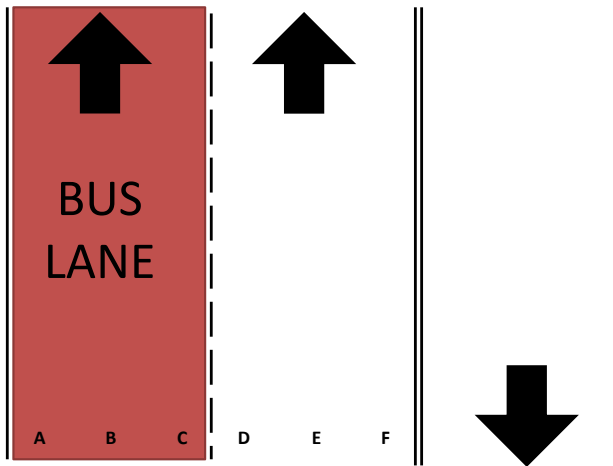


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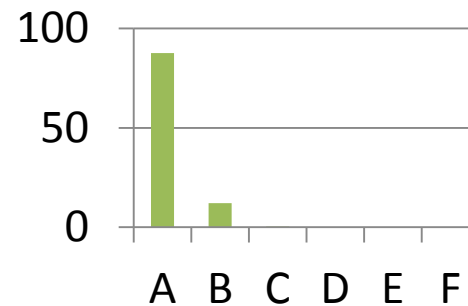
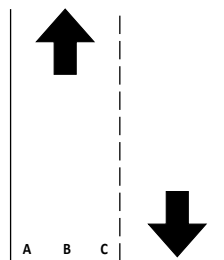


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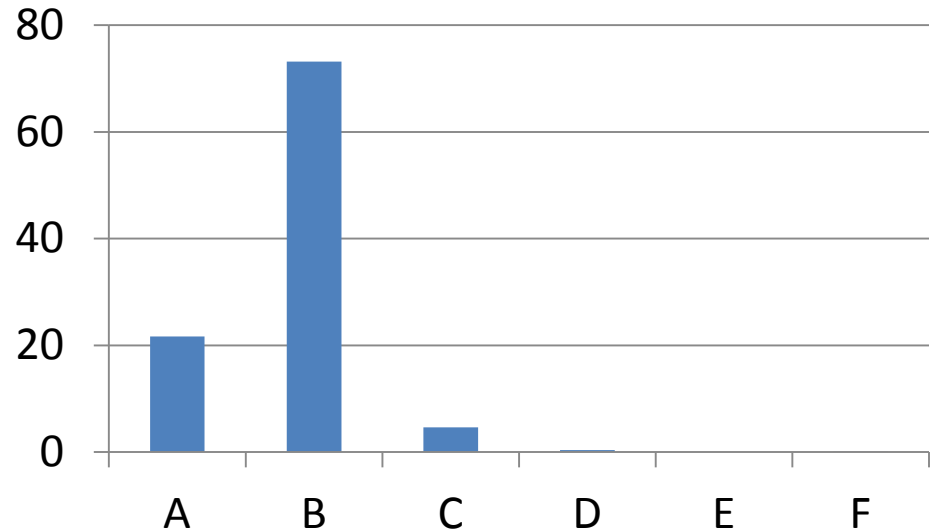
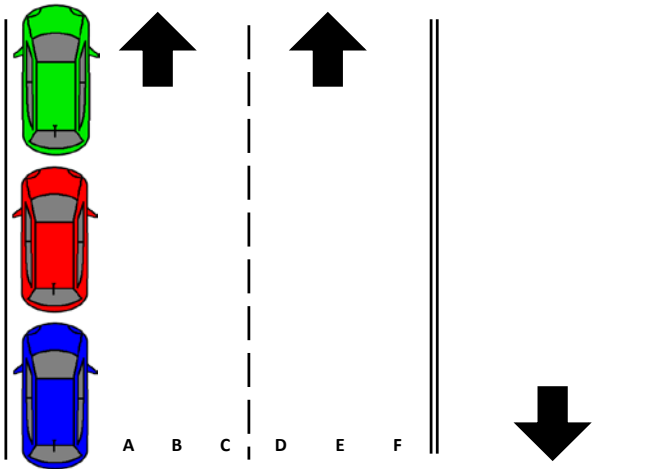


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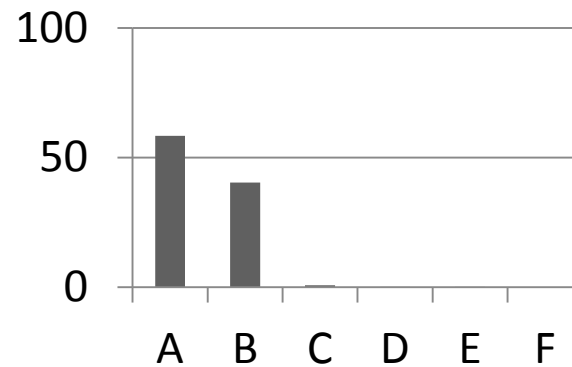
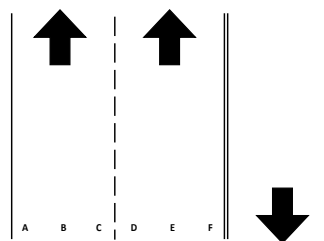


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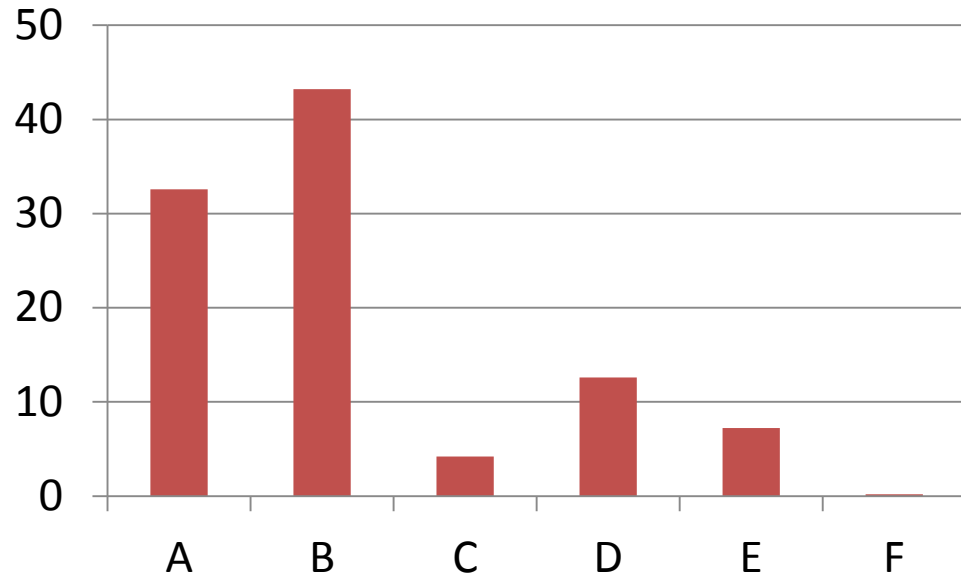
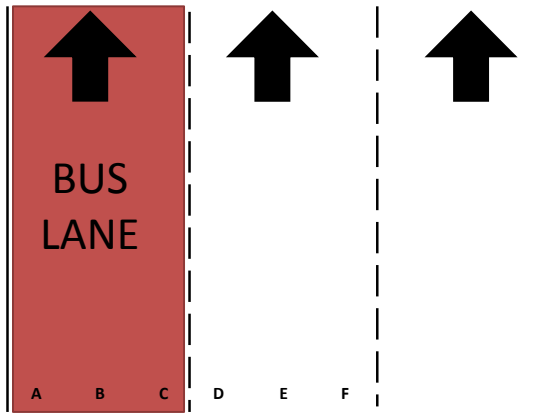


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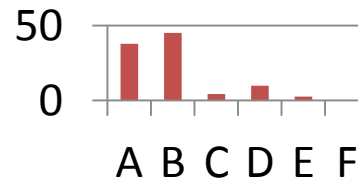
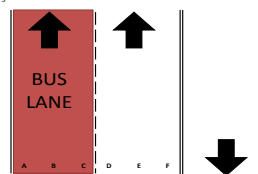


Preferences

6



5



Logistic regression on kerbside position

Parameter	Level	Estimate	Lower CL	Upper CL	Probability
Intercept		-0.187	-0.391	0.017	
Number of non-bus lanes	1	1.278	1.156	1.400	<.001**
	2+	0.000	0.000	0.000	.
Inner lane condition	Clear	1.072	0.950	1.194	<.001**
	Parked cars	-0.890	-1.025	-0.756	<.001**
	Bus lane	0.000	0.000	0.000	.

Logistic regression on kerbside position

Parameter	Level	Estimate	Lower CL	Upper CL	Probability
Intercept		-0.187	-0.391	0.017	
Purpose	Recreational	0.199	0.099	0.300	<0.001**
	Transport	0.000	0.000	0.000	
Intensity	Low intensity	0.404	0.510	0.299	<.001**
	High intensity	0.000	0.000	0.000	.
Rider experience	Novice and intermediate	0.181	0.039	0.323	0.012*
	Experienced	0.000	0.000	0.000	.
Confidence on busy streets	Not at all	0.239	-0.080	0.558	0.002*
	Low	0.200	-0.034	0.365	
	Moderate	-0.072	-0.177	-0.033	
	High	0.000	0.000	0.000	.

Logistic regression on kerbside position

Parameter	Level	Estimate	Lower CL	Upper CL	Probability
Intercept		-0.187	-0.391	0.017	
Gender	Female	-0.242	-0.354	-0.130	<.001**
	Male	0.000	0.000	0.000	.
Age group	18-24	-0.410	-0.741	-0.079	<.001**
	25-44	-0.333	-0.515	-0.150	
	45-59	-0.122	-0.301	0.057	
	60+	0.000	0.000	0.000	.

Comments on decisions rules

Lane width

I would ride to the side if the lane is wide enough to permit them to pass me safely within the lane.

Speed of traffic

My preference is generally to ride on the left hand section of the lane so that I don't obstruct the traffic UNLESS I can keep up with the traffic, in which case I prefer to ride in the centre of the lane.

Comments on decisions rules

Possibility of dooring

Near shops I ride in the centre of the lane as doors open regularly into the cycle lane, but in a residential street with moderate traffic I would ride closer to cars as the doors are not opening as often

Association with self-reported on-road crashes

Time spent on road and number of crashes on the road was calculated for each cyclist

For Scenarios 1-4 categories were preferred kerbside position or not

For scenarios 5 & 6 (bus lanes) categories were preferred bus lane or not



Association with self-reported on-road crashes

The ratios of the crash rates were calculated using under-dispersed Poisson regressions.

Covariates were rider type, experience, confidence, gender, and age group

The log of time ridden on the road was used as an offset variable

Association with self-reported on-road crashes

Number of non-bus lanes	Inner non-bus lane	Ratio of crash rates	Lower 95% CI	Upper 95% CI	P(no effect)
1	clear	0.509	0.380	0.683	<0.001**
2+	clear	1.200	0.928	1.552	0.16
1	parked cars	1.651	1.289	2.113	<0.001**
2+	parked cars	1.034	0.768	1.392	0.83
1	bus lane	1.561	1.019	2.393	0.03*
2+	bus lane	1.218	0.885	1.676	0.22

Conclusions

The bicycle riders in this Australian cohort did not prefer the recommended “primary” position

Preference for the “secondary” position when there is a single clear lane was associated with a lower crash rate (than other lane positions)

These findings suggest the need for further research to support advice to cyclists.

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Research staff:

David Vardeh, Amina Razzaq, Oluyemisi Ijamakinwa, Louise Shaw
(PhD student)

My email: j.hatfield@unsw.edu.au

