



Driver stress in response to
infrastructure and other
road users:
Simulator research
informing an innovative
approach to improving road
safety

Dr Bridie Scott-Parker, ARRU
Assoc Prof Christian Jones, Engage
Mr Joel Tucker, RACQ

Project overview



- Stage1: Literature review
 - Driver courtesy/discourtesy and relationship with driver stress
 - Stress generally negative impact on health
 - Innovative approach to improving road safety

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- Stage 2: Focus groups – findings presented at ARSC2015, Gold Coast
 - Driver stress emerged from interactions with
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- Stage 3: Simulator study

What did we do?

- Simulator study (12 drivers, 21-76 yrs), AI vehicles
 - Actively controlled nature of interactions with
 - Other road users (Pig, Oblivious, Distracted, Nice)

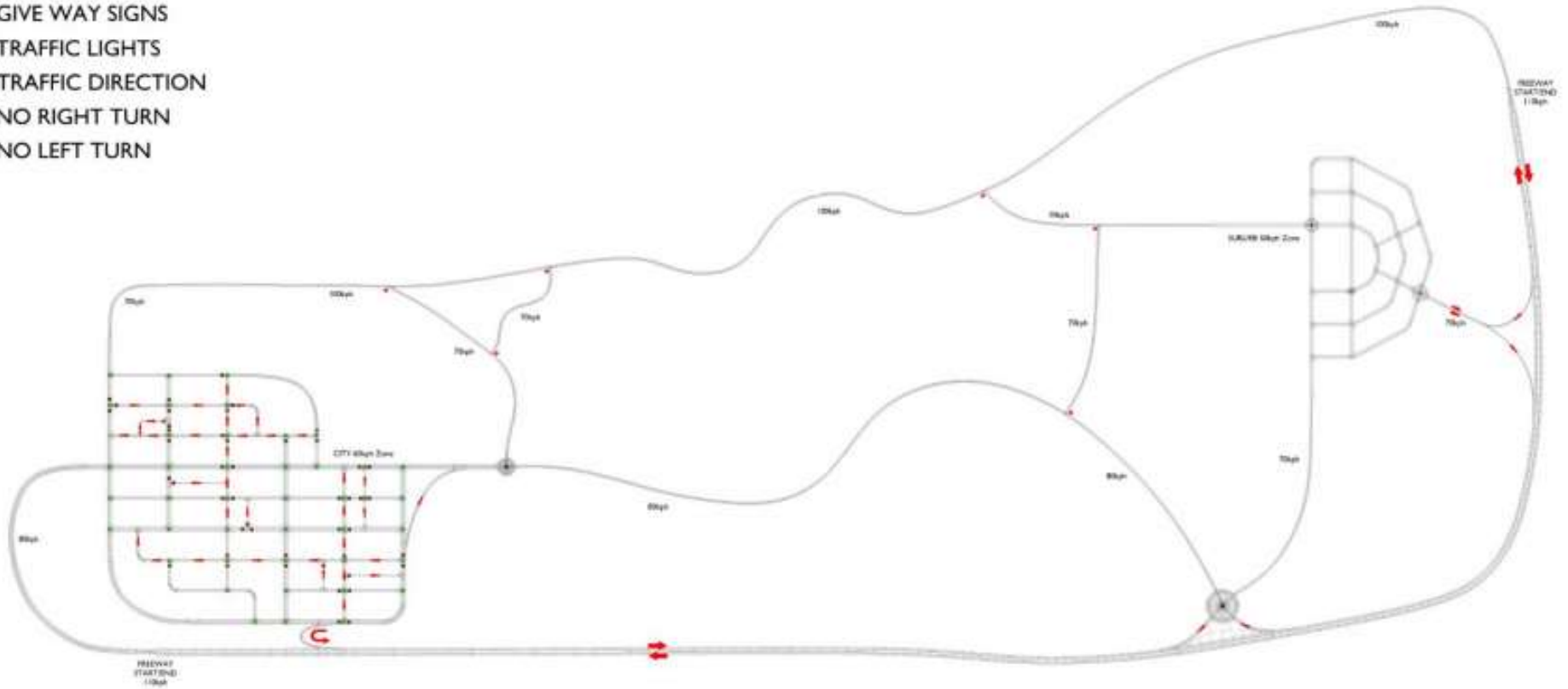
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 - Zones: City, suburbia, freeway, highway
 - Features: Roadworks, roundabouts, intersections, traffic lights

-  STOP SIGNS
-  GIVE WAY SIGNS
-  TRAFFIC LIGHTS
-  TRAFFIC DIRECTION
-  NO RIGHT TURN
-  NO LEFT TURN



What did we do?

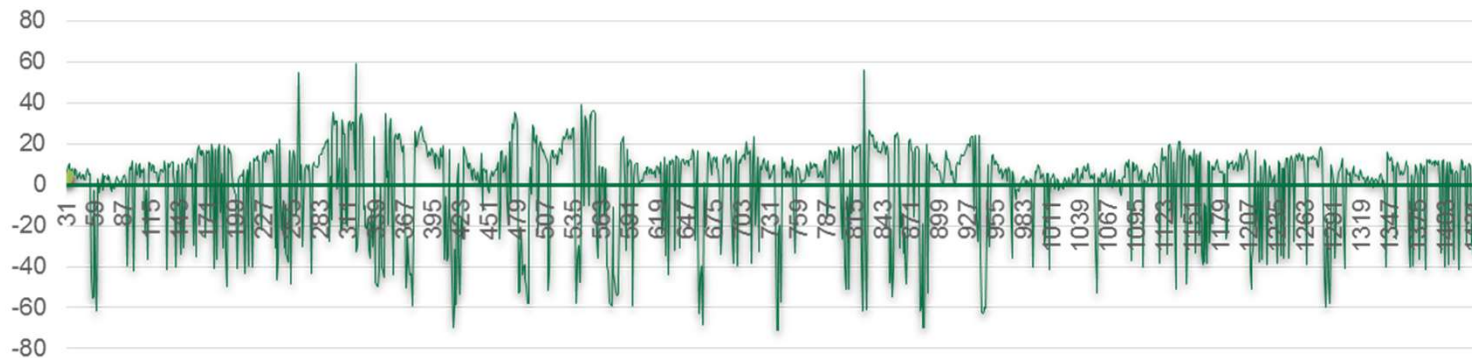
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 - Cardiac measures (heart rate, blood pressure, variability)

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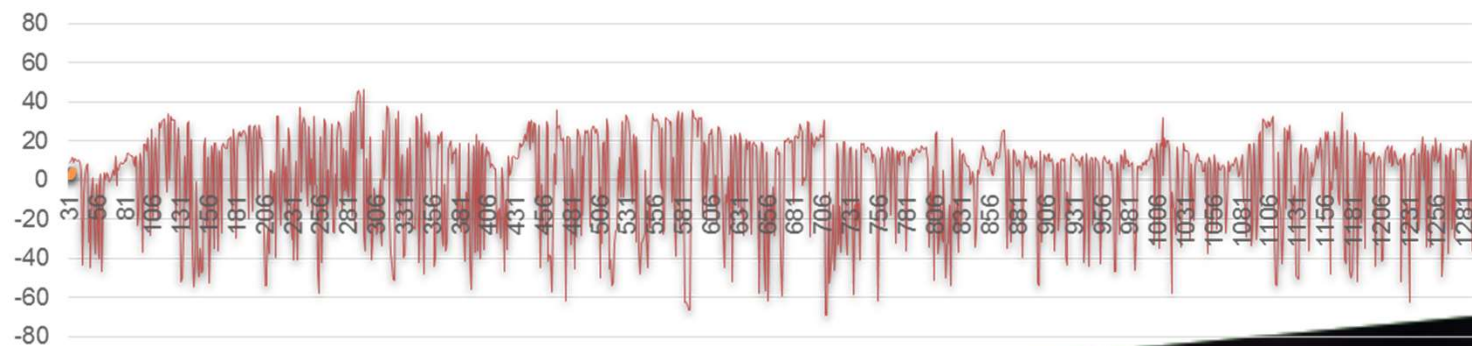
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 - Observed behaviours
 - Speech
 - Facial expressions and/or gesticulation

Data analysis

Interaction with Nice and Oblivious

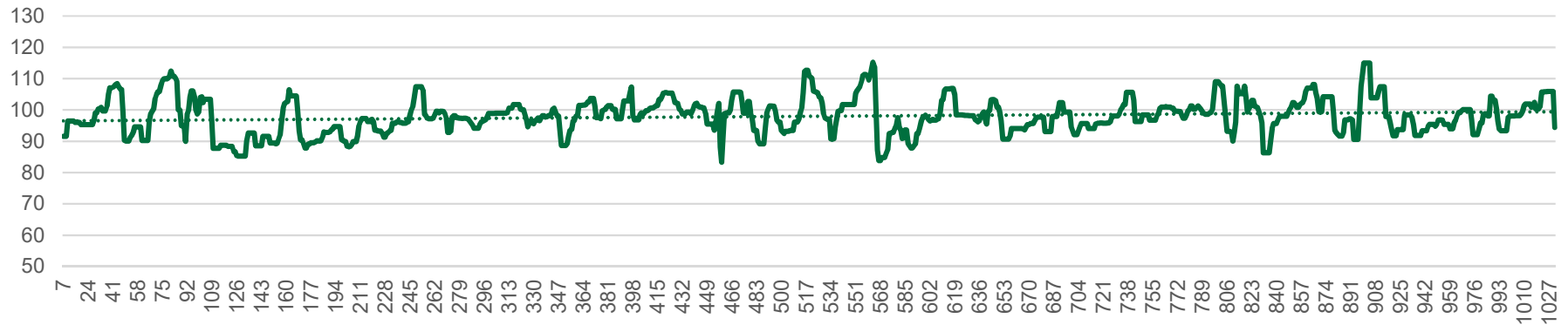


Interaction with Pig and Distracted



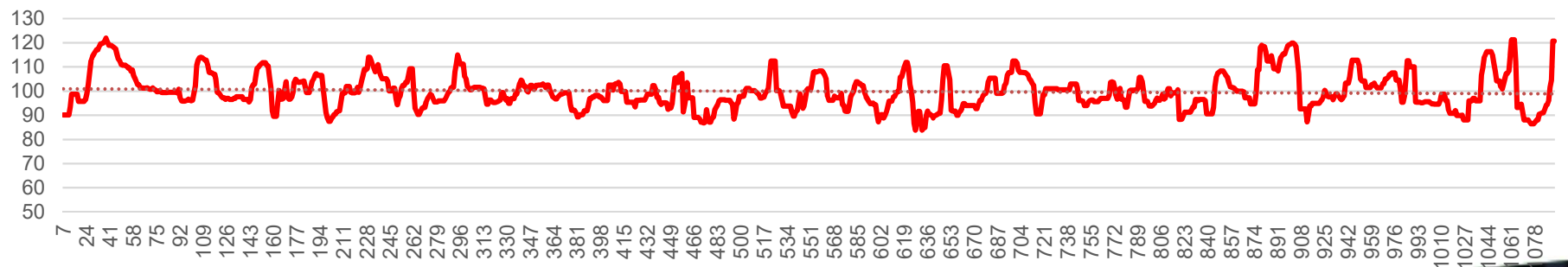
Interaction with Nice and Oblivious

9 point
median smoothed



Interaction with Pig and Distracted

9 point
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Paired with simulator activity



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 - Suburbia

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 - Manoeuvres
 - Regulating speed

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 - Pig, Distracted, Oblivious
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 - Infrastructure
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What else did we learn.....

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- Consistency in non-stress
 - Infrastructure
 - Straight roads
 - Manoeuvres
 - Turning (left)
 - Exiting roundabouts

Recommendations

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- Transfer ‘non-stressful’ responses/ attitudes/ behaviours to stressful responses/ attitudes/ behaviours
- Highlight link between driving discourtesy and stress
 - Perpetrators
 - Recipients

Questions?

Dr Bridie Scott-Parker

bscottpa@usc.edu.au