



# agilysis



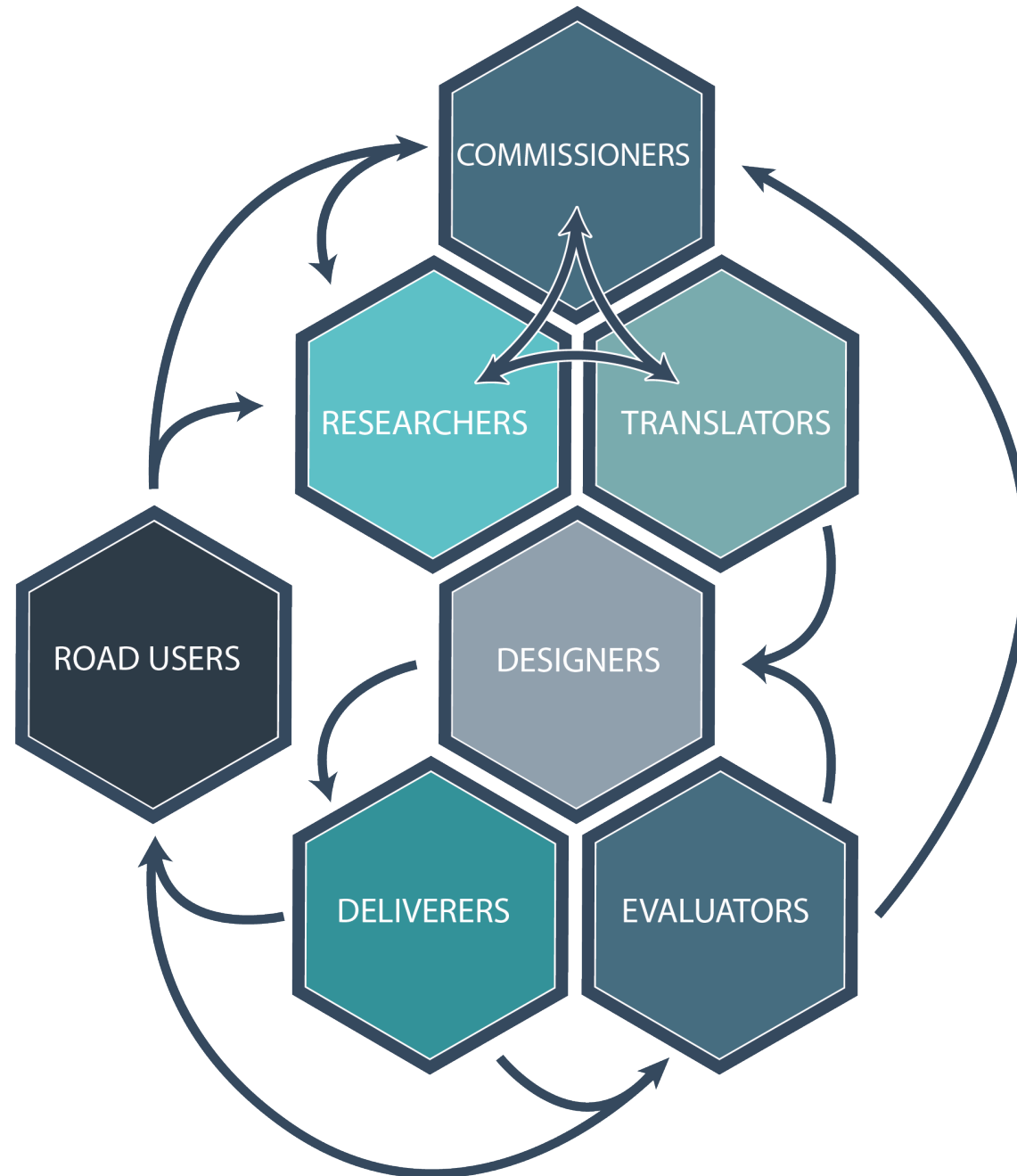
INTERVENTION DESIGN

TANYA FOSDICK & DAN CAMPSALL

# OUTLINE

1. DOUBLE DIAMOND APPROACH
2. DATA & EVIDENCE
3. SERVICE DELIVERY REVIEW
4. BCW/COM-B
5. BCT CODING
6. DEVELOPING A TRIAL
7. EVALUATION
8. SCALING FOR DELIVERY
9. DISCUSSION







# DATA DRIVEN INSIGHT



Right Intervention

(Phillips, 2011)



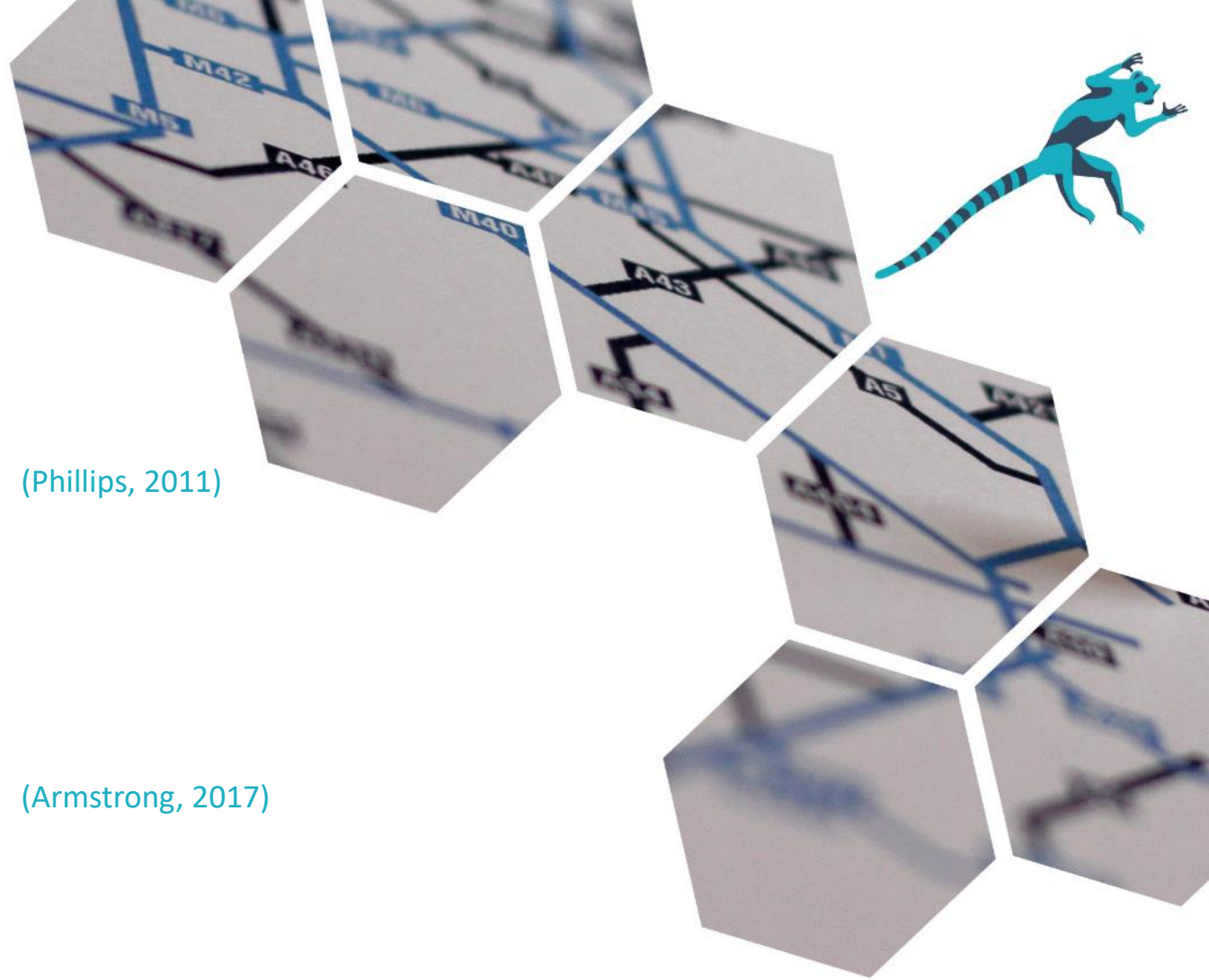
Right Place

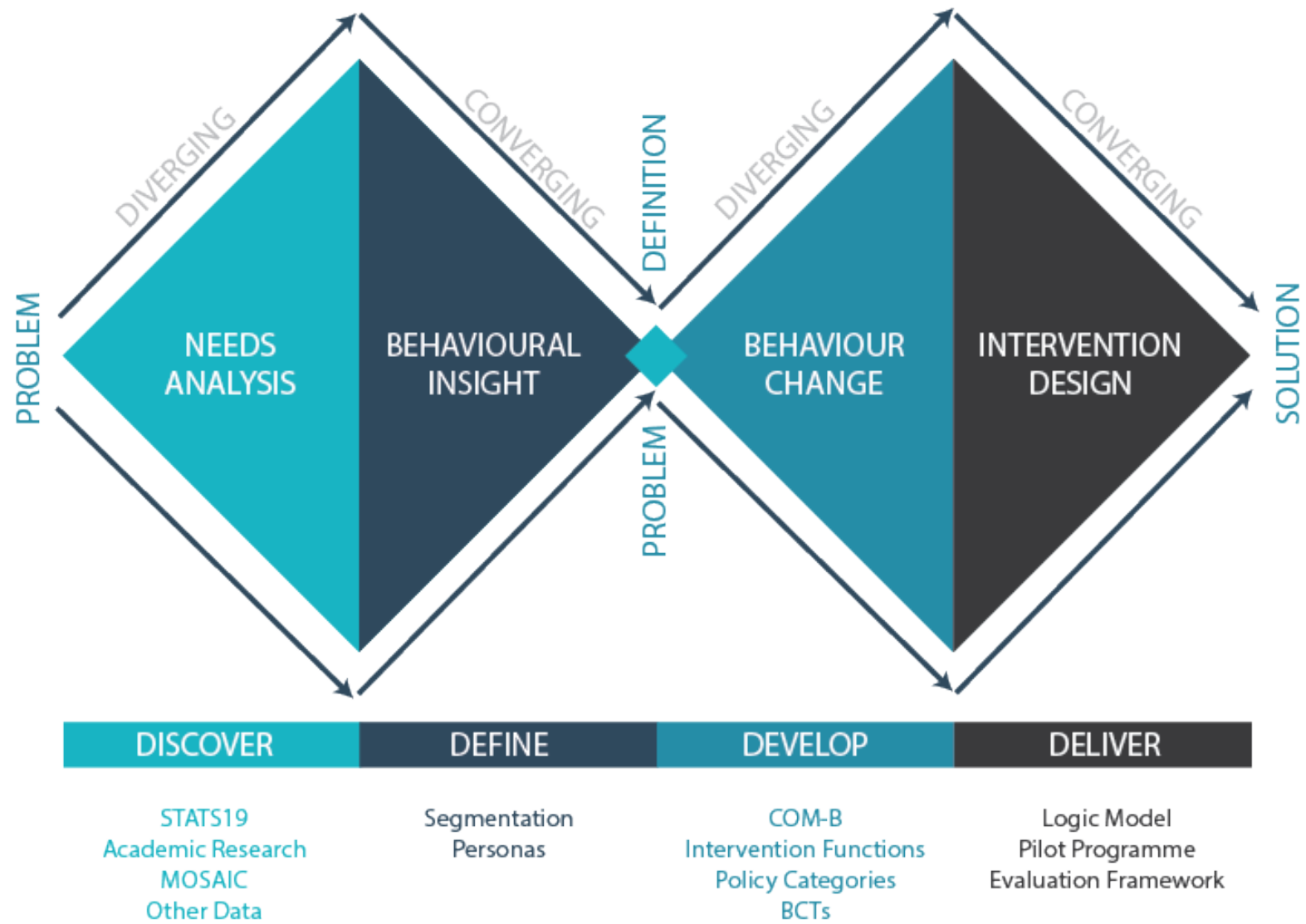
(Armstrong, 2017)



Right People

(Bingham, 2007; Moller, 2015; Portman, 2013)





# USING RIDEFREE AS AN EXAMPLE



- This process is one we've used for many interventions and in training
- Talk through one example: RideFree
- Approach by an England region, who wanted to work together to focus on motorcycle casualties
- Asked four questions:
  - What do we know about the data?
  - What is everybody currently doing?
  - Do we know what is and isn't working?
  - Who can help us?

# SERVICE DELIVERY REVIEW



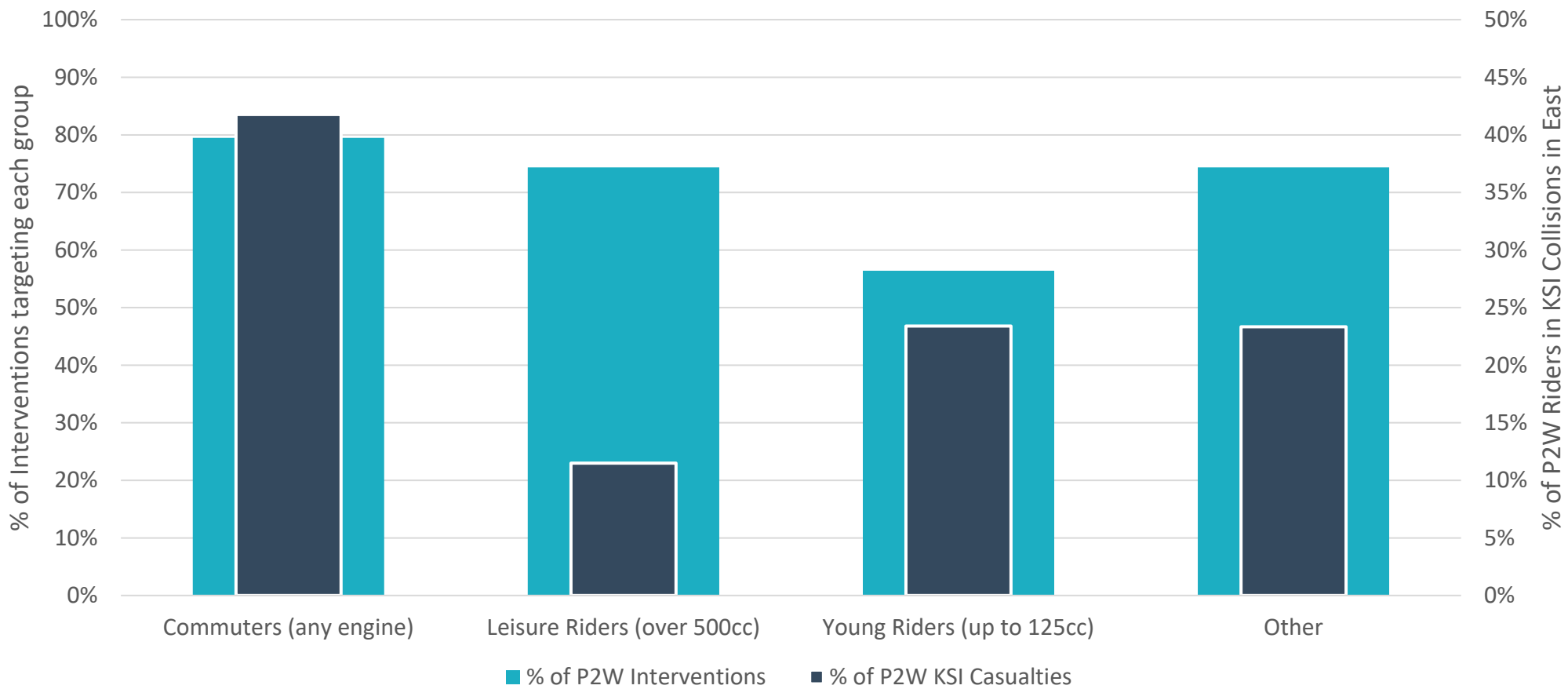
- Questionnaires to partners –
- What's being delivered to motorcyclists?
- What do these interventions hope to achieve?
- How was the problem identified?
- Who delivers it and for how much?
- Has it been evaluation and what were the results?

- 39 different interventions delivered across East
- Ranging from magazines & websites to training, assessments and enforcement
- Many focused on advice and changing attitudes
- Mismatch between intervention target audience and casualty groups:
  - young riders under-represented as target audience
- Many interventions not evaluated
- There was no consistent regional message
- There are clear opportunities for collaboration





# TARGET GROUPS FOR INTERVENTIONS



# NEEDS ANALYSIS (TITCOMB, ARIZONA)



- The process of identifying and evaluating needs in a community or other defined population of people.
- The identification of needs is a process of describing “problems” of a target population and possible solutions to these problems.
- A need has been described as:
  - A gap between “what is” and “what should be” (Witkin et al., 1995)
  - “A gap between real and ideal that is both acknowledged by community values and potentially amenable to change” (Reviere, 1996)
  - May be different from such related concepts as wants (“something people are willing to pay for”) or demands (“something people are willing to march for”) (McKillip, 1987)
- Needs analysis focuses on the future, or what should be done, rather than on what was done.

# Rider types

Age	Up to 50cc	50-125cc	125-500cc	500cc+
Under 20	8%	11%	1%	1%
20-24	2%	11%	3%	4%
25-29	1%	5%	1%	5%
30-39	1%	4%	2%	7%
40-49	1%	3%	2%	10%
50-59	0%	2%	2%	9%
60+	0%	1%	1%	3%



31%

Young Riders



38%

Commuters



9%

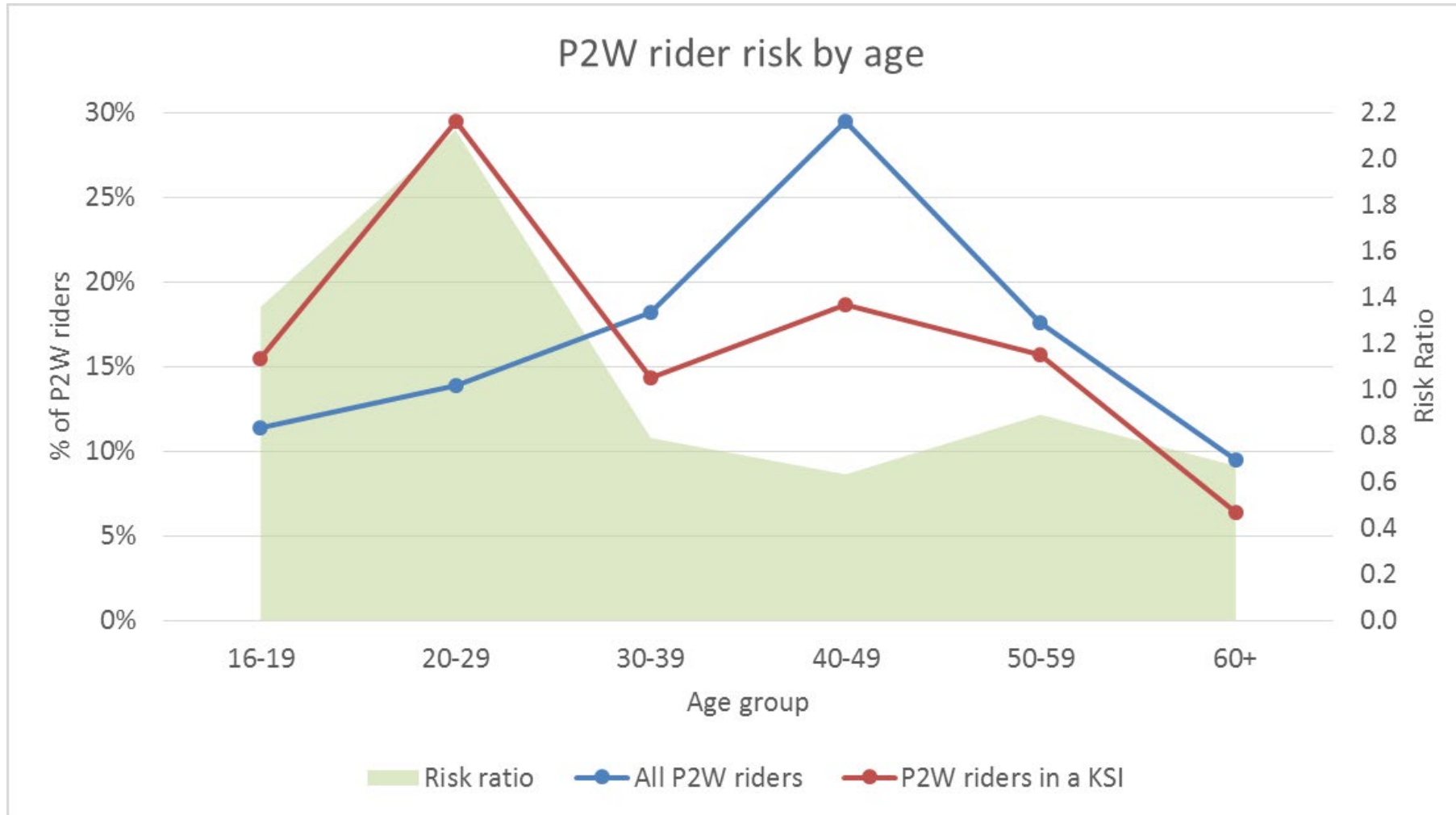
Leisure Riders

Weekdays

Weekends

# Why young riders

All riders: 23-29% of KSI but 0.6% of private motorised traffic





# DISCOVER

- 90% Male
- Seasonal effect – September peak
- Dependency – commute / access to education
- Sales of small bikes in rapid decline
- Collisions occur close to home
- More deprived communities (based on IMD)
- Some ‘rural effect’
- Close following, filtering, right turns & failure to give way
- 48% of all collisions at urban junctions
- 62% of Contributory Factors attributed to rider



STATS19  
Academic Research  
MOSAIC  
Other Data





# LITERATURE REVIEW

- Conspicuity (two-fold)
  - Visibility of rider (clothing, light configurations, road positioning, speed)
  - Driver perception (distractions, failing to look long enough, failing to detect speed, 'inattention blindness', experience)
- Young rider behaviours
  - Non-usage of protective clothing (beliefs about benefits)
  - Social norms – demonstrate speeding is not the norm
  - 'Car aspirants' – limited information can make them significantly more risk-conscious – high educability
- PPE
  - Demonstrable benefits from helmets and protective clothing



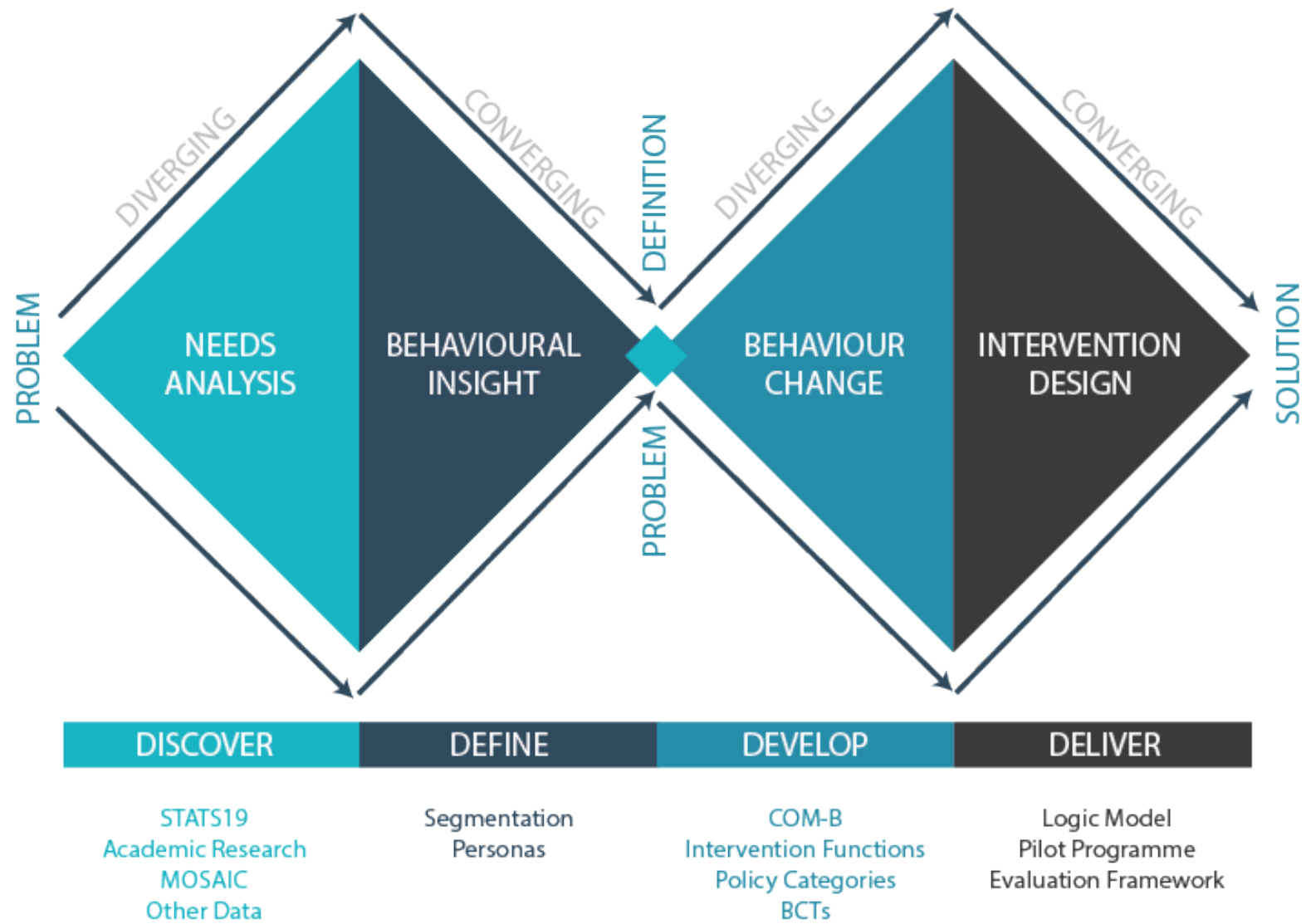
# DISCOVER



STATS19  
Academic Research  
MOSAIC  
Other Data

## LESSONS FROM OTHER INTERVENTIONS

STRENGTHS	WEAKNESSES
<ul style="list-style-type: none"> <li>• Benefit of incentivised scheme</li> <li>• Comprehensive training continuum</li> <li>• Sensitised to risk</li> <li>• Tailored approaches (local roads/delivery riders)</li> <li>• Appeal to BAME audience</li> <li>• Engaging activity</li> <li>• Audience 'priming'</li> <li>• Peer-led</li> <li>• Segregated infrastructure</li> </ul>	<ul style="list-style-type: none"> <li>• Inconsistent delivery</li> <li>• Incentivisation? (requiring funding)</li> <li>• Enabling environment</li> <li>• Limited impact</li> <li>• Parental understanding &amp; engagement</li> <li>• Evaluation</li> <li>• Measurability</li> <li>• Isolating the right audience</li> <li>• Road conditions</li> <li>• Model for telematic insurance &amp; scale of market</li> </ul>
OPPORTUNITIES	THREATS
<ul style="list-style-type: none"> <li>• Post-CBT training – recruitment through trainers</li> <li>• Trainers that 'get it'</li> <li>• Ability to 'normalise' training</li> <li>• Motorcycle show attendees</li> <li>• Selecting an appropriate delivery agent</li> <li>• Social influencers</li> <li>• Incentives for parents</li> </ul>	<ul style="list-style-type: none"> <li>• Wider content/system – economy and education</li> <li>• Financial &amp; time 'limit'</li> <li>• 'Culture'</li> <li>• Sustainable in the system</li> <li>• Alienation</li> </ul>





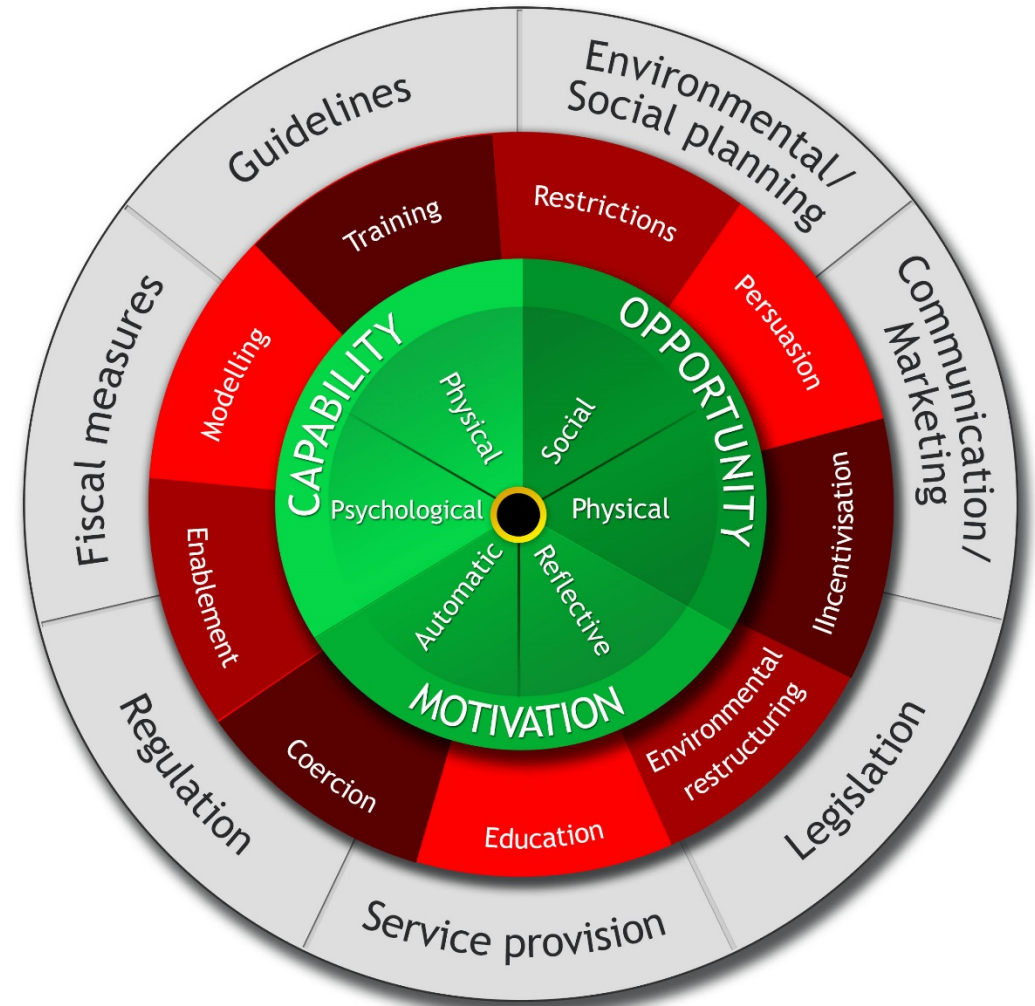
Segmentation  
Personas

# BEHAVIOURAL INSIGHT

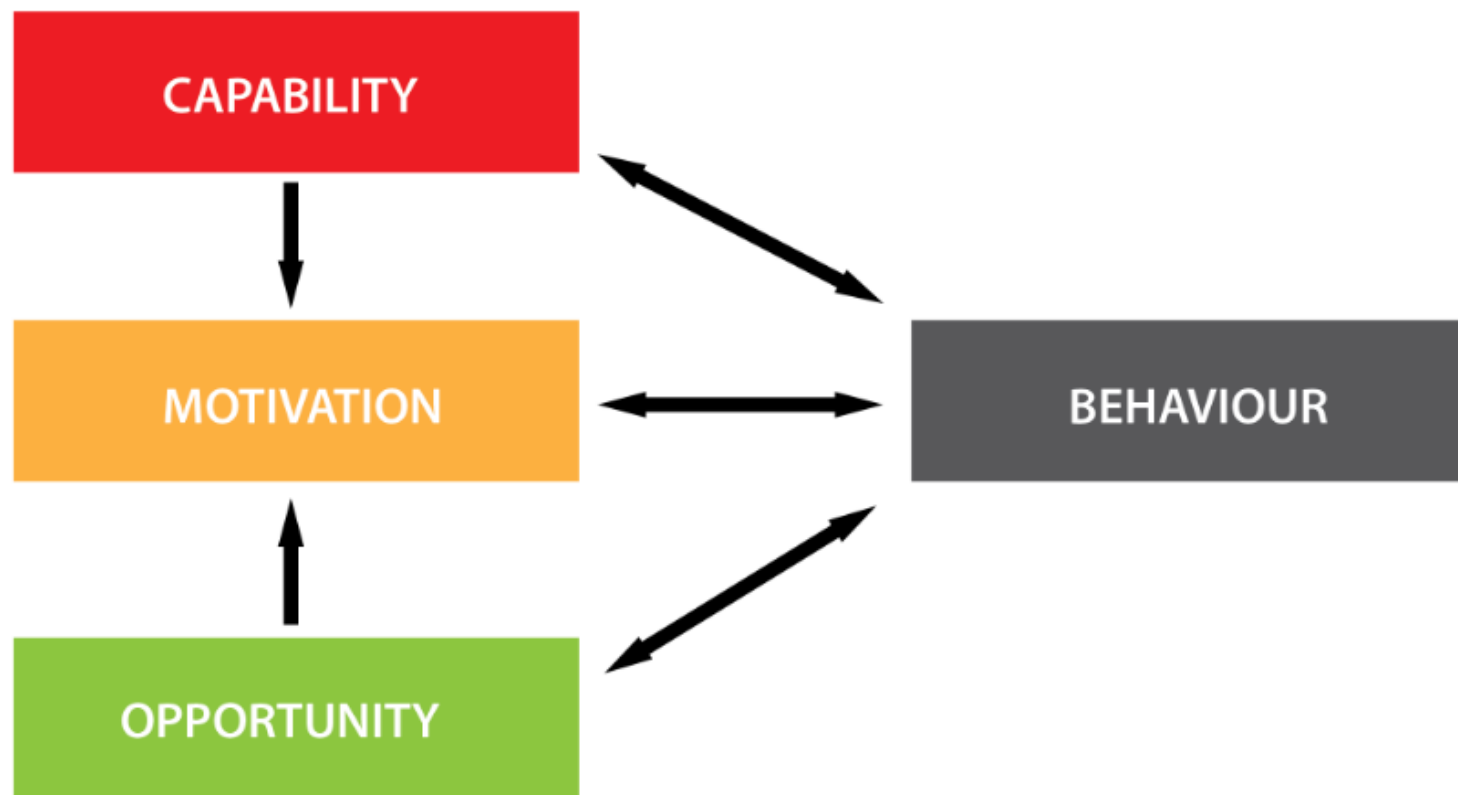
- Who & what do we want to change?
- Personas
- COM-B

# STEPS IN CONCEPT DEVELOPMENT

Step 1	Specify the behavioural target
Step 2	Identify what needs to change to achieve this
Step 3	Identify intervention functions
Step 4	Identify policies to achieve this
Step 5	Identify behaviour change techniques
Step 6	Flesh out the intervention









## COM-B: STEP 1

- Define the problem in behavioural terms
  - What behaviour?
  - Where does the behaviour occur?
  - Who is involved in performing the behaviour?



## COM-B: STEP 2

- Generate a long list of candidate target behaviours that could bring about the desired outcome?
- What is the desired outcome?
  - To reduce collision involvement.... Or
  - To reduce the *severity* of a collision if/when it occurs?



## COM-B: STEP 3

- Prioritise the behaviours
  - How much impact changing the behaviour will have on the desired outcome
  - How likely it is that the behaviour can be changed
  - How likely it is that the behaviour will have a positive/negative impact on other behaviours
  - How easy will it be to measure the behaviour?

# COM-B: STEP 3

Potential target behaviours to reduce risk of injury in young male riders	Impact of behaviour change*	Likelihood of changing behaviour*	Spillover score*	Measurement score*
<b>Wear good PPE</b>	Very promising	Promising?	Unpromising but worth considering?	Very promising
	<i>We know the protective effect of good PPE</i>	<i>Can we encourage them to wear it? Social norms? Cost?</i>	<i>Would it affect any other rider behaviours?</i>	<i>Observations or self-report measures</i>

\*Unacceptable

Unpromising but worth considering

Promising

Very promising







## COM-B: STEP 4

<b>Target Behaviour</b>	<b>Wear good PPE</b>
<b><i>Who</i> needs to perform the behaviour?</b>	All young riders
<b><i>What</i> do they need to do differently to achieve the desired change?</b>	Purchase and always wear PPE
<b><i>When</i> do they need to do it?</b>	Every ride
<b><i>Where</i> do they need to do it?</b>	Everywhere
<b><i>How often</i> do they need to do it?</b>	Always
<b><i>With whom</i> do they need to do it?</b>	Everyone



## BEHAVIOURAL INSIGHT

- Improve driver understanding of the needs and behaviours of young riders (drivers)
- Encourage appropriate clothing to be worn, to improve both protection and visibility (clothing)
- Improve rider positioning, particularly at junctions (positioning)
- Improve rider understanding of their risk and the need to mitigate it (risks)
- Reduce risk at junctions (junctions)
- Improve speed choices, especially at junctions (speed)
- Work with support structures (such as employers, education establishments, parents and peers) to tackle some of the other eight priorities (support)
- Improve hazard perception skills of young riders (hazard)
- Improve young rider attitudes towards training and the quality of available courses (training)





COM-B  
Intervention Functions  
Policy Categories  
BCTs

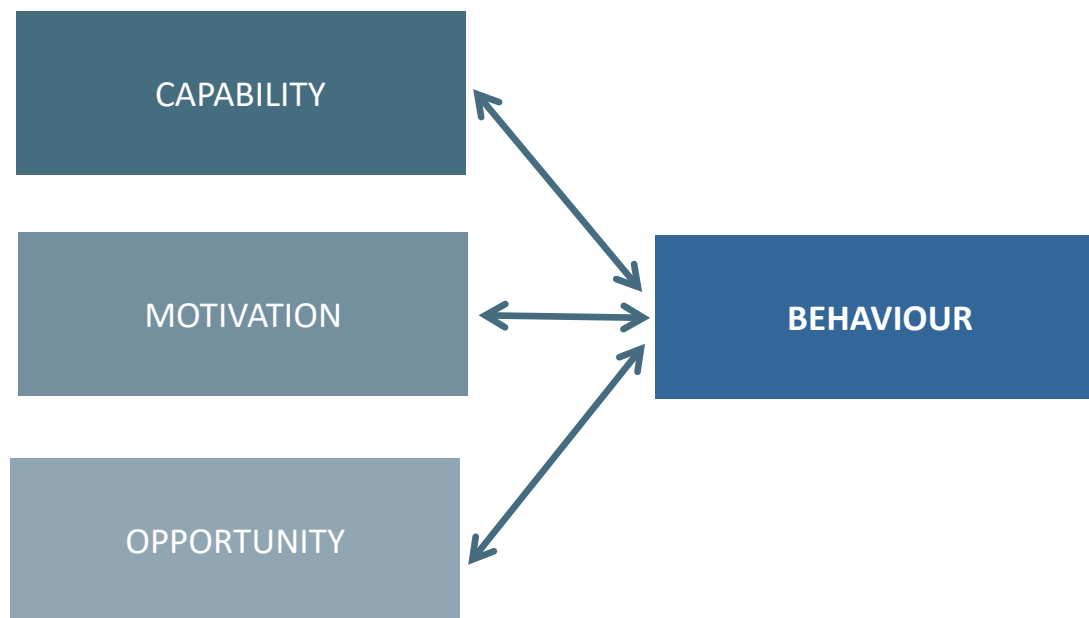
- Target audience identified
- Target behaviours identified
- What kinds of interventions might work?
- How might they be delivered?
- Which BCTs to use?

# DEVELOP



COM-B  
Intervention Functions  
Policy Categories  
BCTs

## *BEHAVIOUR CHANGE – COM-B*





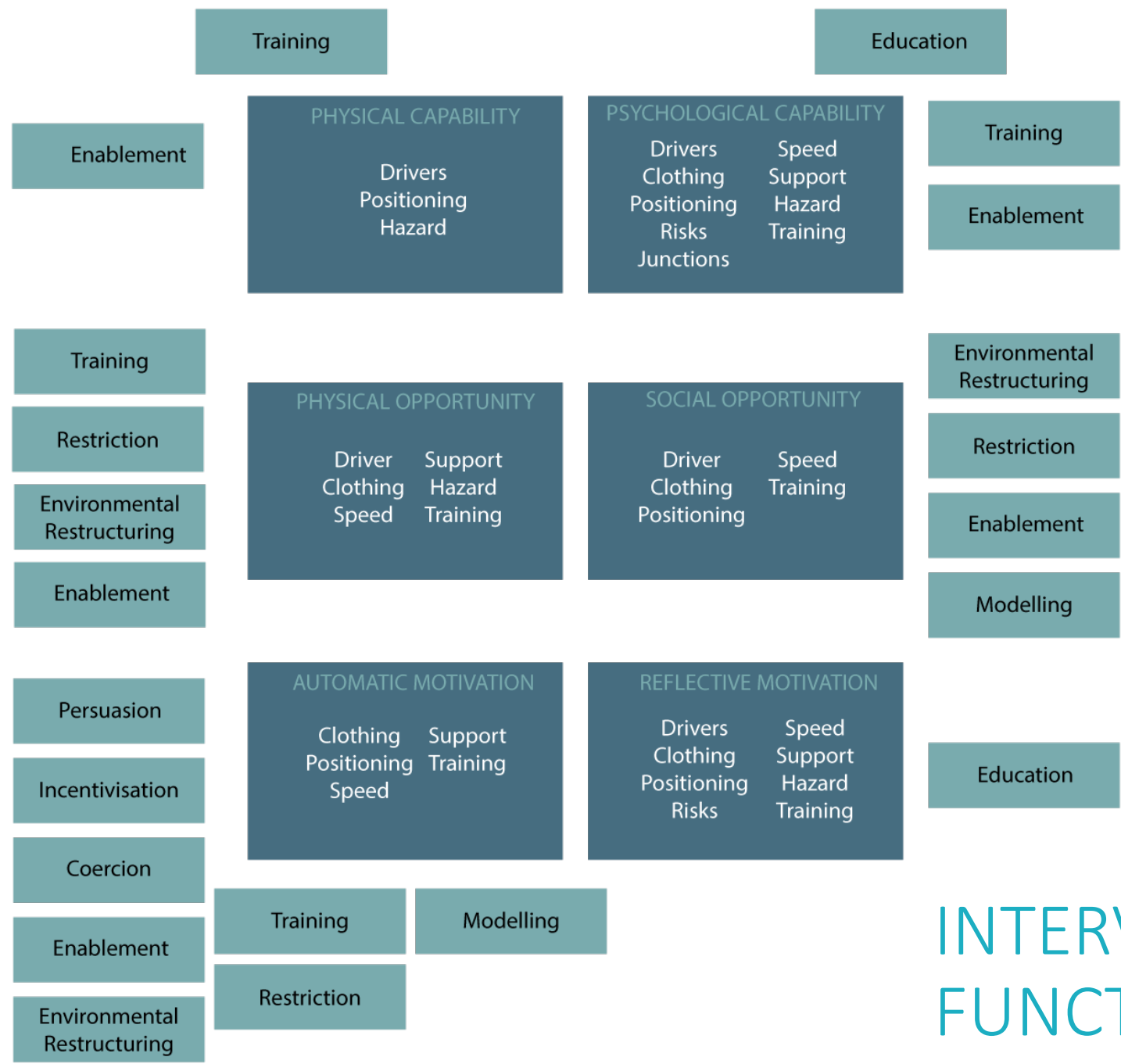
# INTERVENTION FUNCTIONS

COM-B components	Intervention Functions								
	Education	Persuasion	Incentivisation	Coercion	Training	Restriction	Environmental Restructuring	Modelling	Enablement
Physical capability									
Psychological capability									
Physical opportunity									
Social opportunity									
Automatic motivation									
Reflective motivation									

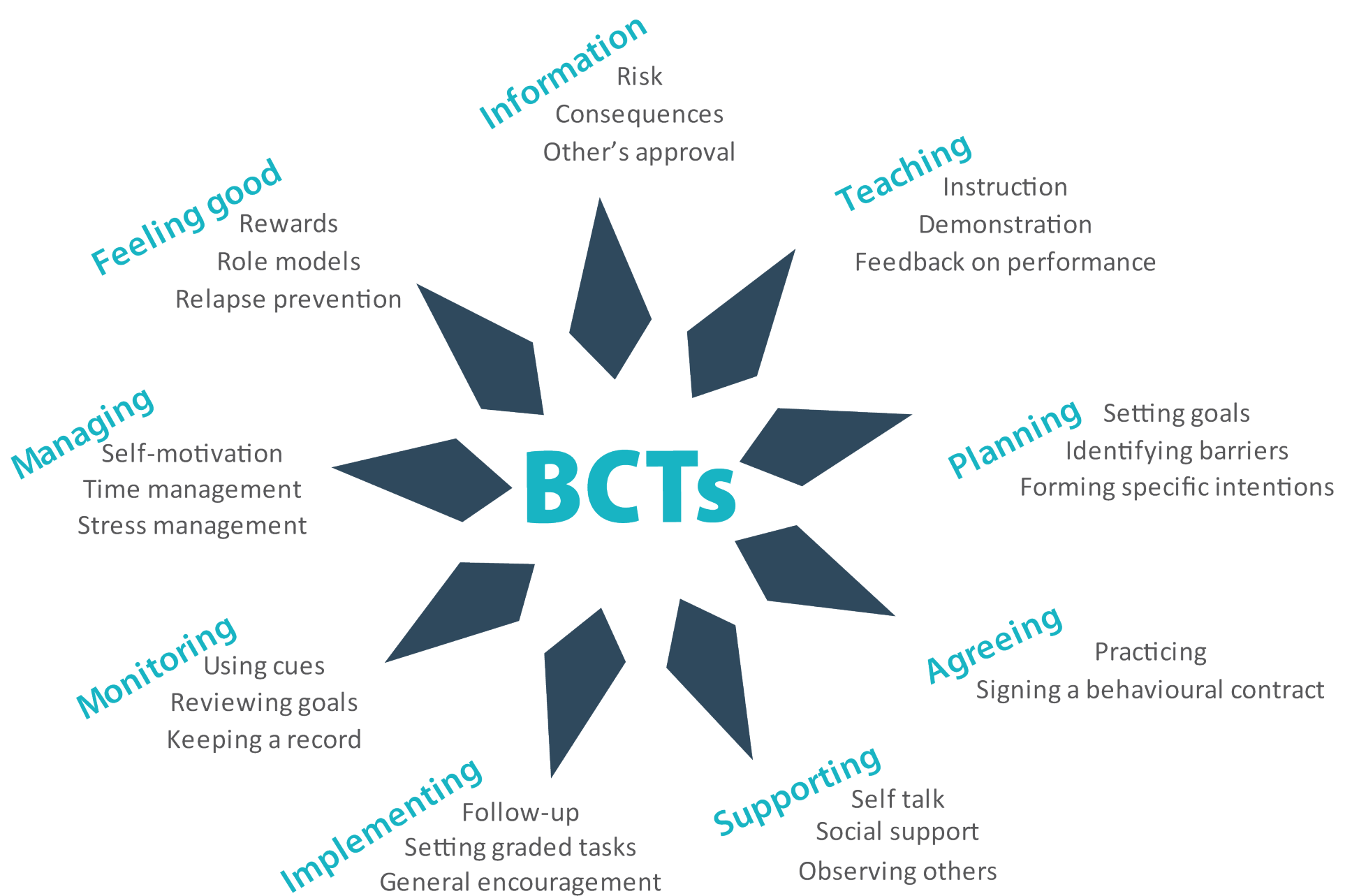




Target Behaviours	Physical Capability	Psychological Capability	Physical Opportunity	Social Opportunity	Automatic Motivation	Reflective Motivation
Improve driver understanding of the needs and behaviours of young riders	✓	✓	✓	✓		✓
Encourage appropriate clothing to be worn, to improve both protection and visibility		✓	✓	✓	✓	✓
Improve rider positioning, particularly at junctions	✓	✓		✓	✓	✓
Improve rider understanding of their risk and the need to mitigate it		✓				✓
Reduce risk at junctions		✓				
Improve speed choices, especially at junctions		✓	✓	✓	✓	✓
Work with support structures (such as employers, education establishments, parents and peers) to tackle some of the other eight priorities		✓	✓	✓	✓	✓
Improve hazard perception skills of young riders	✓	✓	✓			✓
Improve young rider attitudes towards training and the quality of available courses		✓	✓	✓	✓	✓



# INTERVENTION FUNCTIONS





BCT – 1.1  
Goal-setting (behaviour)

Set or agree a goal defined in terms of the behaviour to be achieved.



BCT – 1.2  
Problem-solving

Set or agree a goal defined in terms of the behaviour to be achieved.



BCT – 1.3  
Goal-setting (outcome)

Set or agree on a goal defined in terms of a positive outcome of the wanted behaviour.



BCT – 2.2  
Feedback on behaviour

Monitor or observe the behaviour and give informative or evaluative feedback on performance of the behaviour (e.g. form, frequency, duration, intensity).



BCT – 2.3  
Self-monitoring of behaviour

Establish a method for the person to monitor and record their behaviour(s).



## Welcome

**The BCT-Taxonomy training website is not compatible with Internet Explorer/Edge browsers - so please use either Firefox or Google Chrome to access the training. If you continue to experience technical issues with the website, please email [contact@bct-taxonomy.com](mailto:contact@bct-taxonomy.com)**

The Behaviour Change Technique Taxonomy – a resource for intervention designers, researchers, practitioners, systematic reviews and all those wishing to communicate the content of behaviour change interventions.

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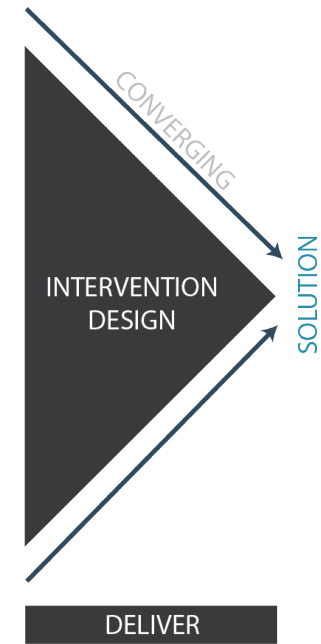
“ *The sessions were great – it was good to talk through the answers and fully understand why sometimes you were wrong* ”

*Tutorial trainee, Manchester UK*



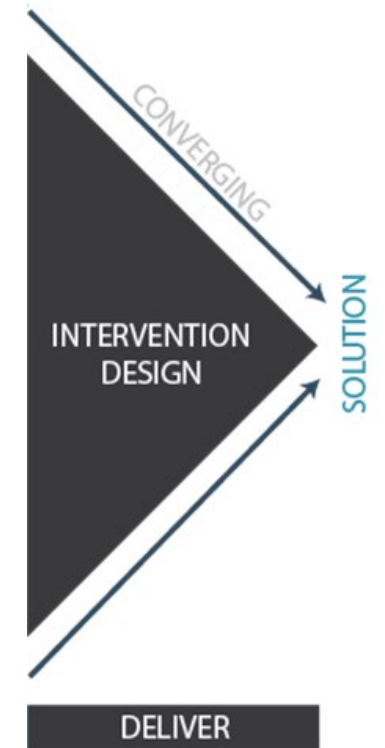
# INTERVENTION DESIGN

DELIVER



Logic Model  
Pilot Programme  
Evaluation Framework

- What is our aim? (*related* to our desired outcome)
- What our objectives? (*related* to our target behaviours)
- What might a pilot intervention look like? (intervention functions, BCTs)
- How are we going to measure success?



Logic Model  
Pilot Programme  
Evaluation Framework



- Aims – Can be to raise awareness; increase knowledge or skills; or change behaviour
- Aims **SHOULDN'T** be to reduce casualties, even if this is our overall goal, as it is extremely difficult to measure the effect of ETP on road casualties because:
  - Interventions are often short-term, one off and delivered to small numbers
  - There are other influences on road casualties, including changes in traffic, speed, roads, modes of transport
  - People change as they grow older and have different experience, changing the way they behave



# INTERVENTION DESIGNS

## #2 – YOUNG RIDERS

Developing an intervention design that utilised a range of intervention function:

- Education
- Persuasion
- Incentivisation
- Modelling
- Enablement

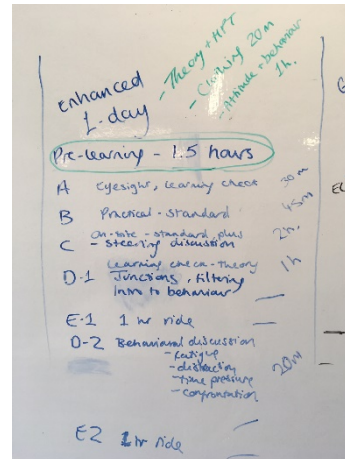
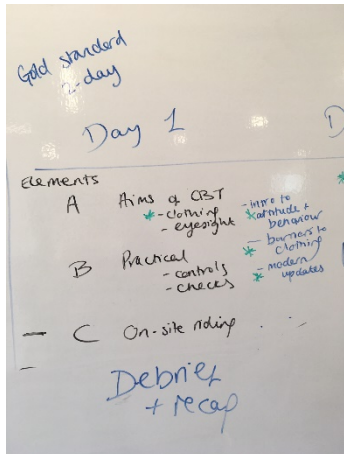
To encourage them to undergo training

To encourage them to wear appropriate clothing

# PROJECT DESIGN



- What do we want to test from our behavioural diagnosis having defined CBT as the route to influence young riders?
- Can we test some of the recommendations from the DVSA Improving moped and Motorcycle Training Consultation?
- How do we develop an intervention with evaluation at its core?



Dr Julie Gandolfi, Driving Research Limited

- Provided expert behavioural insight based on findings of DD
- Developed testing regime, separation from evaluation
- Development of syllabus
- Train the trainers (CBT instructors)

- Four pilot groups
  - Standard CBT with before and after questionnaires.
  - **Age stratified** CBT limited to **first time** ‘young riders’, with before and after questionnaires and trainer interviews.
  - Enhanced CBT with e-learning module containing **hazard perception** and adjusted course content introducing **attitudinal and behavioural elements** with **split ride out**, with before and after questionnaires and trainer interviews.
  - Two day enhanced CBT with **fully integrated behavioural and attitudinal elements**, with before and after questionnaires and trainer interviews
- Recruit trainers through DVSA alert, MCIA contacts and Road Safety Partnerships.
- Fifteen training schools recruited and two train the trainer days provided.

# EVALUATION DESIGN



- Randomised controlled trial
- Target sample for trial of 128 students across four groups
- Pre and post questionnaire for students
  - Experience & demographic information
  - Willingness to engage in risky behaviours
  - Fact-based questions about safe riding
  - Attitudinal questions adapted from Rider Attitude Questionnaire
  - Feedback on content and length of CBT
- Trainer questionnaires post-CBT
- Trainer interviews at end of project to understand barriers and opportunities

# SCALING FOR DELIVERY

<https://freakonomics.com/podcast/scalability/>





# FUTURE WEBINARS

DIGITAL TOOLS FOR YOUNG DRIVERS - WEDNESDAY 6<sup>TH</sup> MAY

SAFE SYSTEM PRINCIPLES – THURSDAY 7<sup>TH</sup> MAY

ROAD SAFETY STRATEGY AMA – MONDAY 11<sup>TH</sup> MAY





# agilysis



DAN CAMPSALL

+44 1295 731810

+44 7967 446506

[dan.campsall@agilysis.co.uk](mailto:dan.campsall@agilysis.co.uk)

TANYA FOSDICK

+44 1295 731813

+44 7795 385770

[tanya.fosdick@agilysis.co.uk](mailto:tanya.fosdick@agilysis.co.uk)

