"Everything is really germy"

How are concerns about infection affecting public transport-use in the aftermath of the COVID-19 pandemic?

Caroline Bartle

Senior Research Fellow

Centre for Transport & Society, UWE

CTS Symposium
3rd July 2025

UWE Bristol | University of the West of England

Centre for Transport & Society

Infection risk on public transport: ongoing public concerns

- Public transport patronage in the UK has not yet fully recovered from the shock of the COVID-19 pandemic;
- Late 2023: 19% of UK respondents hesitant due to concerns about infections such as colds, flu and COVID (nationally representative survey for DfT by Ipsos, 2024);
- This longer-term legacy of the pandemic warrants investigation because it may still be reducing the appeal of public transport and potentially affecting ridership.

UWE Bristol | University of the West of England

Purpose of this study

To explore in greater depth how infection concerns were affecting (some) people's use of bus and rail in the UK

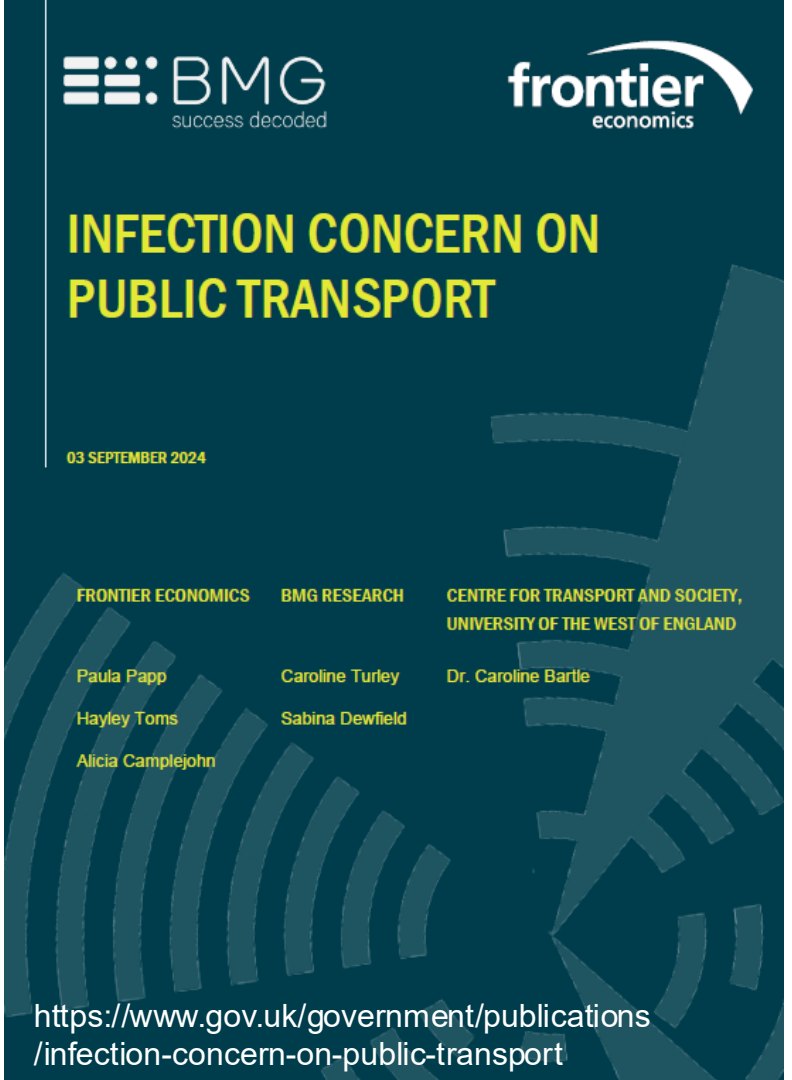
- Research conceived as part of an ESRC Policy Fellowship with the Behavioural Science team at the UK Department for Transport;
- Qualitative study conducted for the DfT* in 2024 (BMG** et al., 2024);
- Current analysis uses Protection Motivation Theory (PMT) as analytical lens.

UWE Bristol University of the West of England

UKRI Economic and Social Research Council

Department for Transport

*Rebecca Nourse, DfT
**Caroline Turley, BMG



https://www.gov.uk/government/publications/infection-concern-on-public-transport

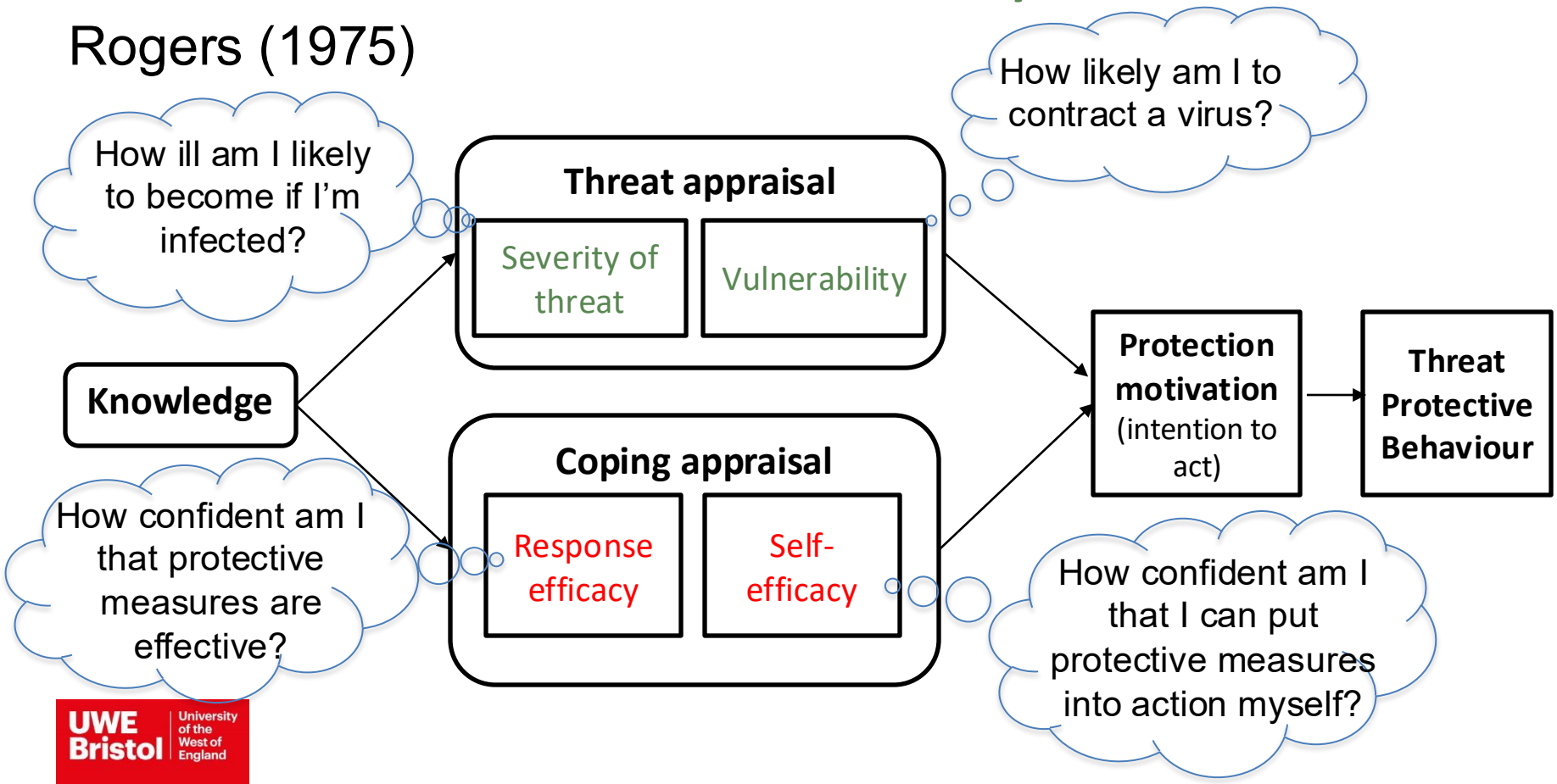
Previous research

- **Commuters' fears** about using public transport due to **the risk of infection** was referred to in majority of publications on commuting during the pandemic (review by Zarabi et al., 2024);
- Those uncomfortable with using public transport **during** the pandemic were less likely to intend using it **after** the pandemic (Mashrur et al., 2023);
- Sarker et al. (2025) used Protection Motivation Theory to explain the relationship of infection fear to public transport avoidance after the pandemic;
    - Conclusion: **perceived risk of infection still prevalent** and might have a major impact on ridership should another potent virus emerge.

UWE Bristol | University of the West of England

Protection Motivation Theory

Rogers (1975)



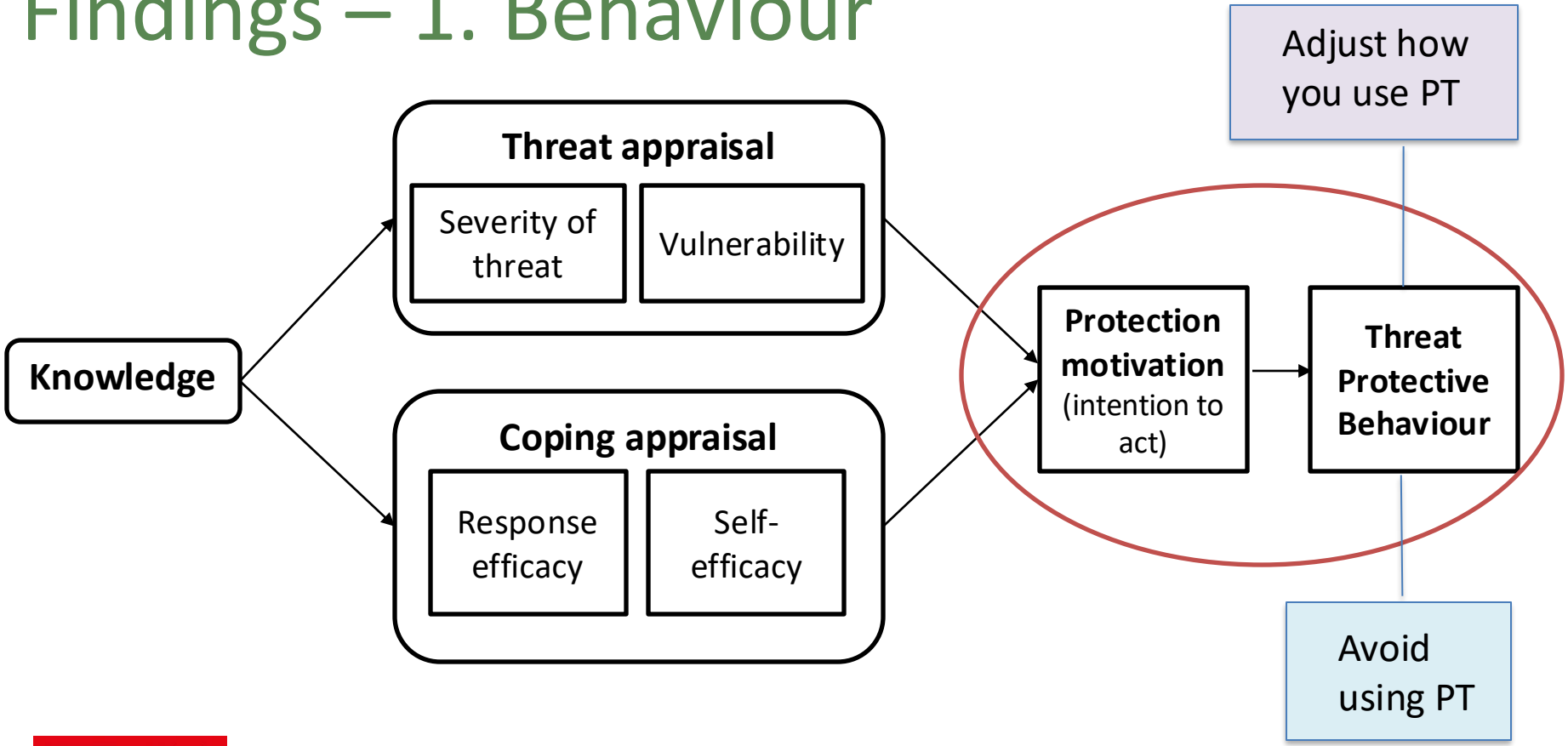
UWE Bristol | University of the West of England

Methods

- 24 in-depth interviews (early 2024)
- Diverse sample: demographics, travel behaviours
- Recruitment criteria included:
  - Currently using, having previously used, or having intention to use public transport;
  - Having some degree of concern about infection risk on public transport.
- Interviews focused on narrative of a real journey; infection concerns raised only later in interview.

UWE Bristol | University of the West of England

Findings – 1. Behaviour



UWE Bristol University of the West of England

Findings – 1. Behaviour

- Avoidance of busy services or carriages

"Perhaps before COVID we wouldn't have been so fussy, but now we tend to go for the quieter places. We don't want to be in with coughing and sneezing in busy carriages. [….] The train just fills up with condensation and moisture, and germs breed in that. That's in the back of our minds. […] So yes, we tend to go more to the front of the train. It's just quieter." (Male, 45-59, rural)

"I would strategically not go during the rush hour if I can help it. I'll try and go at an earlier time if I can […] I'll be honest, it [rush hour] triggers a bit of anxiety within me." (Female, 45-59, urban)

UWE Bristol | University of the West of England

Findings – 1. Behaviour

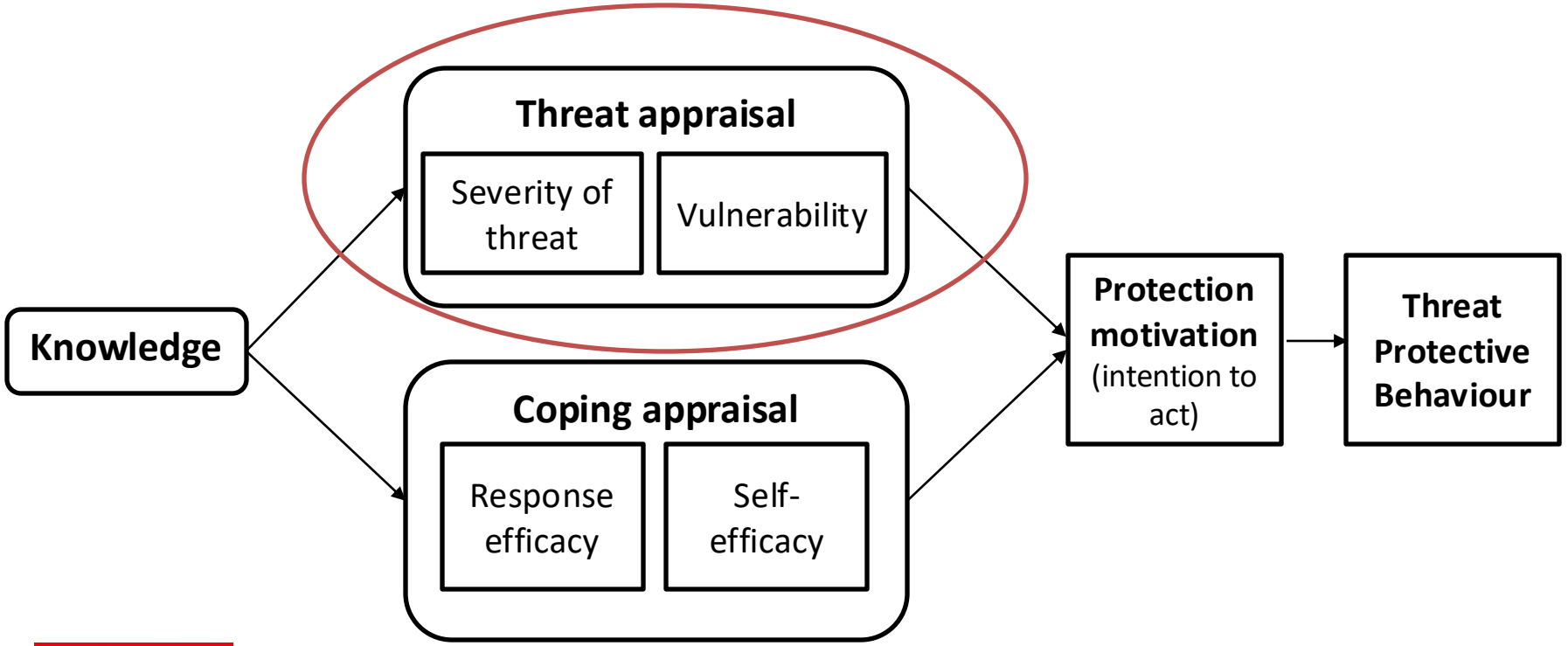
- Travelling by public transport with minor adjustments

  "We got scare-mongered by the media surrounding COVID and that, […] so I do worry about touching surfaces now where other people have been touching it. […] I pull my sleeve down, and I do that when I'm in public, you know […] opening any doors. I won't touch the [bus] handles now, unless I've got gloves on, or I pull my sleeve down." (Male, 60-74, urban)

- Avoiding public transport altogether

  "There's nothing else that I do in my day-to-day life where I am that physically close to people that I don't know. So, I try and avoid it [public transport]." (Female, 30-44, urban)

Findings – 2. Threat appraisal



UWE Bristol University of the West of England

Findings – 2. Threat appraisal

Severity of the threat

- **High severity** perception → more precautions
- Common among those with health conditions or caregiving roles

> *"Since I got COVID so badly, I feel definitely an anxiety with it. I feel like my anxiety is not rational for the actual risk […] The irrationality of it, how much it bothers me, isn't consistent with actual reality." (Female, 18-29, suburban)*

- **Low severity** perception → minimal action, even if perceived vulnerability is high (i.e. many infections are around)
    - Fatalism: "you'll catch something anyway"

UWE Bristol | University of the West of England

Findings – 2. Threat appraisal

- However….
  - Not all individuals susceptible to more serious illness (or caring for others in that position) were concerned;
  - Some habitual public transport users downplayed risks:

"I've pushed [concerns] to one side […]. For a long time, we were in this mentality of 'contact is dangerous' […]. I probably carried on feeling like that longer after most of the population went back to 'normal' [due to shielding]. […] I think it's one of those things, when you're worried about doing something, you do it and it's okay, you think, 'oh, well nothing happened'. You do that a few times then it eases off."

(Female, 18-29, suburban)

UWE Bristol University of the West of England

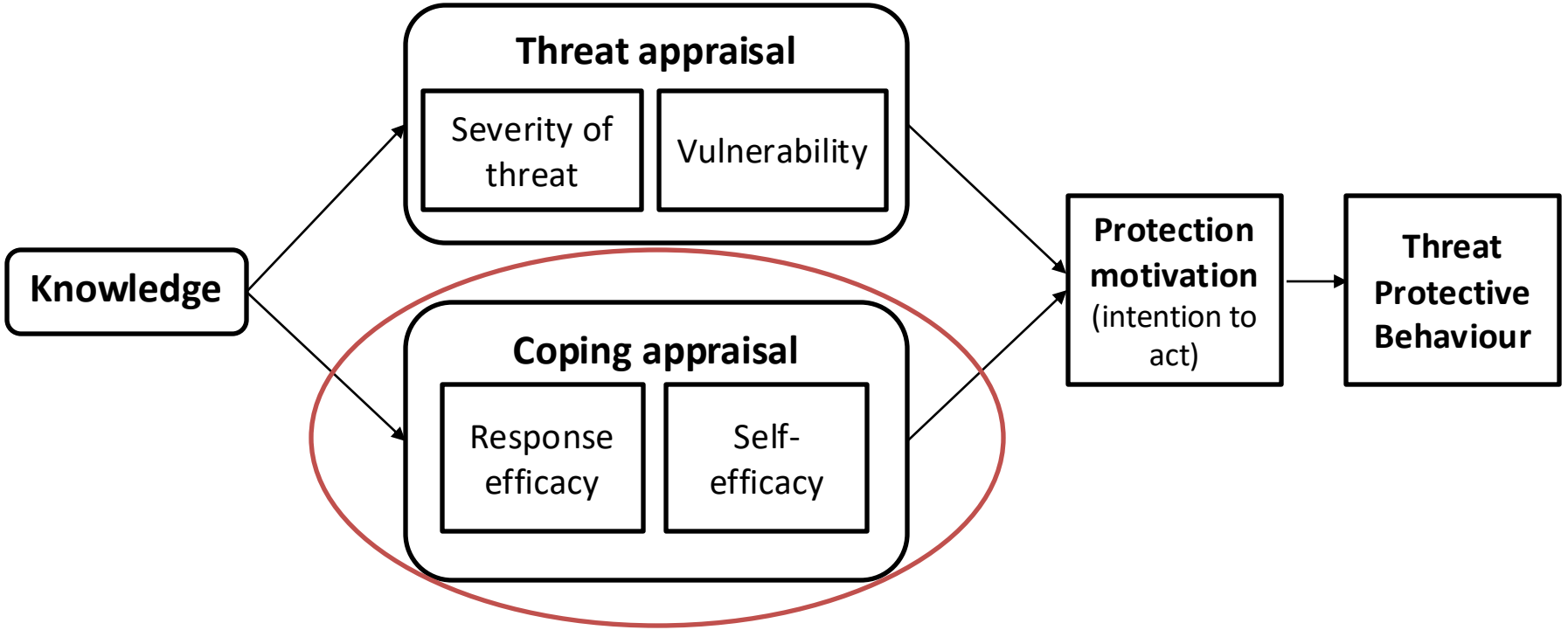
Findings – 2. Threat appraisal

- Severity also appraised in terms of economic impact (not health impacts alone)

"[I avoid] people who are obviously ill; you know, coughing and sneezing. I'm self-employed, and if I don't work, I don't earn. […] I have to look after me and it [getting ill] interferes with my ability to work." (Female, 60-74, rural)

UWE Bristol | University of the West of England

Findings – 3. Coping appraisal



UWE Bristol University of the West of England

Findings – 3. Coping appraisal

Self-efficacy

- Low self-efficacy = sense of lack of control over public transport environment and behaviour of other passengers, e.g.
  - Some had no choice but to travel at busy times, so couldn't undertake avoidance strategies;
- Low self-efficacy + high threat appraisal → negative journey experience or avoidance.

UWE Bristol | University of the West of England

Findings – 3. Coping appraisal

Response efficacy

- Doubts over efficacy of individual precautionary measures, e.g. face-coverings;
- Doubts about operator measures, e.g. ventilation:

"I just feel like everything is really germy and gross and there is condensation dripping down the insides of the windows. […] There must be a way to better ventilate buses." (Female, 18-29, suburban)

UWE Bristol University of the West of England

Findings – 4. Interpersonal factors

- Common frustrations: others coughing/sneezing, especially in crowded conditions;
- Even low-concern individuals disliked ‘inconsiderate behaviour’;
- Some took steps to protect others, and were frustrated when others didn’t reciprocate:

  “We should all take personal responsibility to make it nice for everyone to travel […], ensuring that trains are sufficiently clean, tidy, well-looked-after.” (Male, 30-44, rural)

Findings – 4. Interpersonal factors

- Face coverings might now be seen as socially risky or confrontational

"I am nervous to do that [wear a face covering] because I just feel like there are some crazy people out there who would have a go at you for wearing a mask. It's not happened so I don't know if it's just an irrational fear […]" (Female, 18-29, suburban)

"COVID and general coughs and colds, they feel no different to me than what they probably did in 2017 […] If I'm on the Tube now, and I see someone wearing a mask […] I look at them, I'm like, 'Why are you bothering?'" (Female, 30-44, rural)

UWE Bristol | University of the West of England

Conclusions

- Some pandemic-instilled behaviours and anxieties still persist, despite wide variations in individual motivation and response;
- Infection concerns continue to reduce the appeal of public transport for some; addressing them can improve passenger confidence and satisfaction;
- Among PMT constructs, appraising severity as high is most likely to increase intention to take precautions through adjustments or avoidance;
- Public health messaging and environmental design both (still) matter.

UWE Bristol | University of the West of England

Conclusions

To improve the journey experience of those concerned about infection, operators could:

- continue hygiene measures and make them visible, providing, for example:
  - reassurance of the effectiveness of ventilation systems;
  - a visibly clean environment;
- provide crowding information (‘busyness’ information in phone apps);
- Continue to use messaging to encourage pro-social behaviour.

References

Frontier Economics, BMG Research and the Centre for Transport and Society (UWE) (2024). Infection Concern on Public Transport

Ipsos UK (2024). Our Changing Travel: 2023. UK Department for Transport OGL.

Mashrur, S.M., Wang, K., Loa, P., Hossain, S. and Nurul Habib, K., (2023). Application of protection motivation theory to quantify the impact of pandemic fear on anticipated postpandemic transit usage. Transportation Research Record, 2677(4), pp.267-286

Rogers, R.W. (1975). A protection motivation theory of fear appeals and attitude change1. J. Psychol. 1975, 91, 93–114

Sarker, R., Currie, G. and Reynolds, J., (2025). The pandemic is over but riders still fear infection – An extended behavioural model explaining post-pandemic transit avoidance related to perceived infection fear. Transportation Research Part A: Policy and Practice, 192, p.104363.

UWE Bristol | University of the West of England