

Q&A – 11 March – Andrew Newton

- 1. Excellent overview of the public transport system as risky facility! Any wisdom on the COVID pandemic impact on the level of risk. Any ideas for measuring the risk levels on specific transit crimes.**

This raises an interesting question. I anticipate that around transport there will be a continued patronage, although at a reduced level than pre-covid. However, in public transit environs nearby facilities will be closed, thus persons at transit nodes will be more exposed to crime risk as they are one of the few available remaining targets remaining in transit environs. However, I suspect that theft may be more difficult (especially by stealth/pickpocketing) due to reduced crowding/busyness, and assault/robbery might be more likely. A further question is time of day – has service frequency also been reduced, and has this reduction been greater at off peak times – thus the service may still be relatively busy at peak times.

- 2. More of a comment really - Density hypotheses is definitely something we are seeing within the British Transport Police under Covid restrictions. Theft personal property \ pickpocketing has hugely reduced dramatically to almost nothing due to reduced density. But robbery offences is one of the crime types which has increased due to the lack of informal surveillance. Very interesting, thank you.**

Thank you for this point. It supports my above thoughts. It will be good as some empirical analysis of this date emerges. I have seen media reports internationally of similar but look forward to published empirical studies.

- 3. Home address of offender might help solve some mysteries**

Yes – the distance offenders travel would be helpful – longer distances suggest ‘crime attractors’ is more likely (as per Brantingham)

- 4. The Safecity data clearly shows the Hubs and End stations have more incidents reported**

Thank you. It is great to see international examples supporting this. It is a dataset I am only partially aware of. I also wonder about when end lines become connections – eg from end of rail network onto a bus network – if this is also high crime risk.

- 5. Years ago we distinguished stations at a ground level vs. elevated stations vs. underground stations. Another possible distinction to help evaluate risks.**

Thank you. Another useful suggestion – but requires nuanced data to identify these three settings. In London the above and below paper examined a similar concept.

- 6. Centrography helps study these temporal issues. The standard deviation ellipse will change by the hour and will be different for robbery vs. pickpocketing etc.**

I think a range of network analyses are important here. I welcome more studies in this area.

- 7. I just wonder what the impact of density articulation would be on crime in transit? Then I wonder what the impact of this work could be in pedestrian bridges and crime there. Thank you for your presentation, very insightful.**

Unfortunately, I am unsure what you mean by 'density articulation. I would be happy to respond further if you want to contact me via email (andy.newton@ntu.ac.uk)

- 8. Thank you for the great talk! I always enjoy to hear your research presentations.**
- a. I was wondering if there is research done on the number of routes in a location (or rates per population serving it, per neighborhood)? Instead of only using the end stations, maybe would be interesting to consider a categorisation such as one bus route, 2-3 bus routes, 3-4, >4 or something like that.**
- b. also, depending on the city of analysis, creating clusters of transportation hubs would be interesting (e.g. one cluster can have one bus + one metro station, cluster 2 with >4 bus and > 2 metro stations).**

a) It will likely depend on the configuration of the network. For example, bus networks are often linked to main arterial routes within a city. I did find that in my PhD that, in addition to buses that stopped more frequently in high crime areas – bus services with higher frequencies of service that traversed high crime areas also experienced higher crime levels. So, the 1/2/3 bus route concept would be relevant.

b) Yes, I agree. Like urban syntax on streets we should be able using network analysis to identify the connectivity of nodes. I haven't done this but nodes with highest levels of connectivity would likely exhibit characteristics of busyness/crowdedness, and frequent interconnectivity of users.

- 9. Great presentation. I wonder whether anyone has tried to use agent-based modeling to simulate use/incident patterns in order to test out the familiar situational perspectives in a network context?**

This is a great point. ABM has been used on transport systems especially modeling demand. It has also been used although not extensively to understand crime patterns. Therefore, an ABM of crime on transit networks is ripe for research.

- 10. Is there any data regarding what type of population utilize PT as a way of transport? Majority, poor people, middle income?**

I haven't examined this specifically, but I would point to work of Marti Smith (I think) in US who highlights notion of 'transit captives'. There may be a difference between modes of transport (eg bus/rail) and in London for example there are higher levels of public transport commuters than other UK cities (due to congestion charges and availability of systems). Covid has also resulted in low income key workers dependent on public transport who may have to keep using system. I am not aware of studies that examine this in relation to crime risk. I suggest other factors may be more relevant to risk (several of which were outlined in my presentation).