Questions from the audience with answers from Prof. Kate Bowers

A big thank you to all of you who came along last week and to Vania, Andy, Marianna and team for organizing it.

Apologies again for making such an unexpected swift exit. I have attempted to answer all your very good questions below!

Very best wishes,

Kate

1. In street 2 there are 3 houses with no crime, do I understand correctly?

Yes, in my simple monopoly example in street 1 there were 10 crimes distributed across 5 facilities, in street 2 there were 10 crimes distributed across 2 facilities. In this case there would have been 3 facilities with no crime in street 2. A very simplified example of course!

2. How do CCTV cameras affect risky places?

This is a good question. I am not sure if any of the systematic reviews looking at the effectiveness of CCTV have looked at risky facilities in any detail (ie looking at differences say between effectiveness in bars and hotels). What I know the evidence does say- to date at least and we could do with much more- is that CCTV tends to be more effective in car parks and less likely to make an impact in town and city centres, in public housing and on public transport. See: https://whatworks.college.police.uk/toolkit/Pages/Intervention.aspx?InterventionID=1 for a summary.

3. About the case comparing 10 thefts in a street with 5 houses against a street with 10 thefts but only 2 houses: isn't that evidence (or incentive) that we should use standardized crime rates for analyzing risk (i.e. crimes per potential target)? (I guess that could also depend on the purpose, police might be interested in the absolute quantity of crime, but regular citizens might be more worried in the rate of crime per individual)

Absolutely! There are so many different ways to think about crime risk. When Ken Pease and others were looking at repeat victimization -which is a fair while back now- we all started calculating area level crime prevalence (the number of victims per potential target) incidence (the number of crimes per potential target) and concentration (the number of crimes per victim). As you say, these look at risk in a different way to pure volume. Something tricky with facilities though is how we account for variation of size in these internally in terms of footfall. So, the street with those 'red' places I had certainly would have had a high concentration rate as calculated above (with the unit of analysis being the facility). However, they might have had an exceptionally large number of people visiting them. If the unit of analysis

is the person using the facility that is of course a different calculation again! So, this comes back to your point about what we are hoping to achieve with mapping the risk.

Trickett, A., Osborn, D. R., Seymour, J., & Pease, K. (1992). What is different about high crime areas?. *The British Journal of Criminology*, *32*(1), 81-89.

4. Kate, I'd like to point out that the 80:20 rule is an aphorism, that might people lead to think it should add up to 100, which is nonsense. It's just Pareto principle.

Thank you, you are quite right in point this out. The pareto principle is certainly not restricted to precisely 20% of the places accounting for 80% of the crime (it could have been 78% or 83% etc etc). It is instead a rough rule of thumb. I was just rather tickled it worked out so precisely in my data!

5. In your crime concentration graph, did you include zero-place locations or just positive-crime places?

I think this was the only question I was able to answer before my swift exit. Just to recap, no I was not able to do this with my data, but it is an important point. Adding in the number of non-crime places will certainly change the distribution. This of course is tricky to do because we would need good data on facilities where crime didn't happen- access to this varies depending on situation. In the UK, Ordnance Survey Address Point/Base data offers opportunities that could usefully be explored.

6. Local and regional authorities, especially in large-and medium-sized urban areas, own and manage public transport services, and public transport infrastructure. You mentioned your work is focusing on those types of places. Could you talk a bit more? (please)

Yes, transport hubs are a crucial type of infrastructure in understanding these internal/ external crime relationships. My study wasn't big enough to be able to look at these in isolation- but I'm happy to talk more about this and will contact you!

7. The internal and external crimes might be driven by the same factors. Eg. a bar is a good place to select a target and then do the pickpocketing either inside or just outside, if the target is still suitable.

Yes- the internal and external crimes most definitely depend upon each other. There is further research to be done to look at the nature of this dependency- as you say do offenders pick up targets internally and follow them outside or do they choose new targets on the street following an unrelated internal crime? We would need more ethnographic research to better understand this.

8. How does it affect the statistics regarding when the offender stalks the victim for a certain amount of time and then decides to do the crime at a different place? What I mean is when the place of the idea of committing a crime is different of where the actual crime is committed? I'm thinking that the surroundings could affect the offenders with temptation to commit a certain crime?

This is nicely connected to the last question- but I think that the extra point here is about temporal 'delay' in an offence. So, yes, it is entirely possible that an offender might have spotted someone on the street and followed them into a bar. I suppose one point to consider is regardless of where a target was chosen, the offence was conducted in a place which allowed it to happen. Again, to untangle some of this we would need detailed ethnographic research.

9. Can we infer from your words that reducing the crime inside a public transport facility may also have a spillover effect and reduce the amount of crime that happens outside?

Yes- good question and quite possibly! John Eck has made similar points to me via email (also see point 18 below). If you or anyone else- would like to get involved in a piece of practical research testing this please do let me know!

10. Two methodological questions. First, why are you using GeoDa for modeling a very skewed distribution? You should be using a Poisson-based spatial regression model such as in CrimeStat IV, WinBugs, or R.

Yes, you are quite right. At the time of this research (I was analyzing in 2012/13) I couldn't easily find/access a Poisson-based spatial regression model. If I was to do it again, I would use CrimeStat IV. Unfortunately, the data is long gone because there was a deletion requirement from the police agency. This is one of the reasons why I would like to promote replication and the use of alternative methods.

11. Wrt your interpretation of regression results. Do you perhaps have a holdout (never seen) dataset to test your final model against? Allowing you to explore the data (as presented) but to then aim to test against fresh data in the end.

Good suggestion. Again, unfortunately I didn't do this at the time and I don't have the data set an more. Would be nice to see how an analysis like that would play out.

12. Second, you are using internal theft as a control variable for prediciting external theft. Why don't you reverse it (i.e. external is a predictor of internal? It would seem that environments/neighborhoods that have a lot of crime will also have a lot of crime within the shops and bars located there.

Yes agreed, this is exactly why when I talked last week, I discussed the tricky issue of causality and what might be the best methods for exploring that further. A future piece of work should absolutely do this in more depth. The original paper discussed the possibility of both crime radiators (in to out) and absorbers (out to in). Clues from the original analysis such as the temporal patterns of theft and the fact that concentration into highly risky facilities seemed to matter over and above internal theft levels in predicting levels of external theft suggested radiation in this case, but that is certainly not conclusive evidence.

13. Kate. Yes, you are correct about the need for the external view of place management. Shannon Linning and I are finishing up a book that argues this. We show that Jane Jacobs made exactly this point.

Fabulous- the crime radiator idea sits perfectly with the Jane Jacobs view of what place management should be. Let me know when the book is out!

14. Kate, thanks for the discussion wrt causality. My questions were mostly about causality, omitted variables, reverse causality and so on, but you've already covered a couple of such ideas. I agree we need to think much more about causality. And I think we (the field) should be moving to studies that have much better causal identification strategies (by ''better'' I of course mean: designs that make it easier to argue assumptions hold)

Agreed. This is exactly what we need to do moving forward. I would be delighted to see any further research examining causality further here and improving the method. The tricky (but not impossible) thing here is getting data that we can accurately categorize as external or internal. Agreed- we do need studies that better address causality more generally in the field.

15. I really appreciate your presentation Professon Bowers. What do you think about planning city areas as a perspective of ''economies of scale''?

Thanks for the question. I think there are interesting links to some ideas in economics and town planning. Not being an economist, I only have a basic understanding of ideas such as agglomeration and economies of scale. It does seem though that clustering and size of some of the venues has a potential impact on crime. Again we need more studies here! Ultimately, it would be useful from a policy point of view to have more of an idea of how introducing new land uses and zoning might affect crime problems (both internal and external).

16. Kate: Excellent explanation of the directionality of internal and external crime which will help to focus on the interventions so that we can have net reduction in and out! Could you please the convergence of the internal and external crime within the land use area. Thank you so much for us to think along.

Thank you! Yes, we need more of both studies looking at crime impact of such facilities, but also potential strategies and any reduction implications. Please do let me know if you know of anything really relevant to this topic that you think I might have missed!

17. Leading-edge stuff Kate – very fruitful line to pursue. Wonder whether there are any issues to explore by adding into the analysis, the Modifiable Area Unit Problem

Thank you! Yes- the MAUP is another one for the list of future improvements (that is getting rather long- so another plea to others to help with replication and development). I did this on a small grid of 50 by 50 metre squares- and there are a plethora of opportunities in terms of repositioning the grid and/or changing the unit of analysis in size or indeed shape!

**18.	One way to deal with the direction of causality is to conduct experiments/case studies. We alter the internal crime through prevention and measure its impact on external crime**

This is a great idea, thank you- and it follows up on points in questions 9 and 16 as well. Doing an experiment should certainly help out with some of those causality conundrums. Let's get to it!