USF Summer Institute on "Methodologies for Just Urban Futures: Using Geospatial Tools to Address Police Violence"

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The purpose of this project is to be critical about the different tools and concepts/assumptions that lead the police to surveil some spaces more than others.
And in relation to this, a guiding question that frames our research is how to make visible police presence, what proxies can we use, etc.
For today I'll show you some of our rationale, hopefully you're able to see when statistics are useful in guiding our thinking – and if you have any suggestions, please – let me know. All comments are welcome.

What leads the police to surveil some spaces more than others?

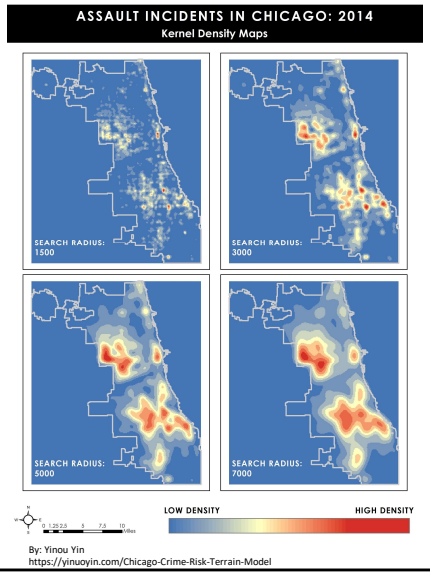
- Shortage of police resources

For the past year we've been doing research in trying to answer this question and what we've realized is that there are three main things that dictate police presence (at least, in theory).
One is shortages. Police departments are facing cuts in their funding (or so they say), so they need to be efficient and strategic in where to send their task force. As you can see in this map, the Baltimore police department is employing this new tactic that identifies focused patrol areas and district action team. The idea is to be efficient and effective by sending patrols to these priority spaces.

But - how are these spaces defined? How does the police decide, hey ok – these are the patrol areas. This is where we're focusing all our power? (its kinda creepy and scary if you really think of it) But anyway:
Obviously, there is bias, right? There is structural racism, classism, etc. And these understandings of a city are perpetuated by public policy that build on stereotypes. But, of course, for the past 20 years, critique to police action has prompted a need for "objectivity" and "efficiency". Where does it make sense to send police humans?

What leads the police to surveil some spaces more than others?

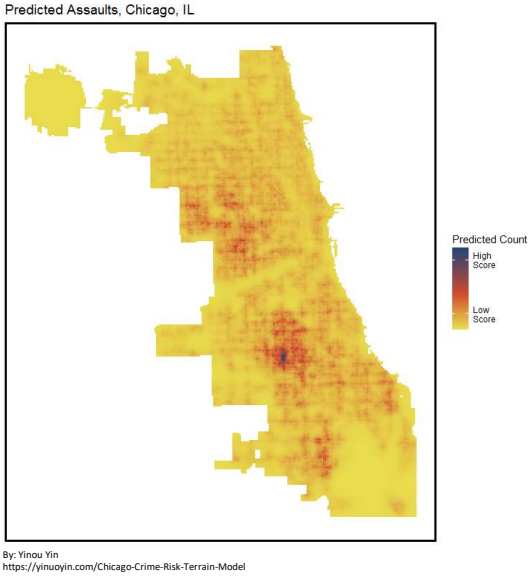
- Shortage of police resources
- Places with more crime



Statistics- here police departments use historical crime data and basic Kernel density analysis to define which spaces are “hot spots”.
But this isn’t enough – if the quest is for efficiency, then we’re talking about predictive policing – how to predict where crime will occur?

What leads the police to surveil some spaces more than others?

- Shortage of police resources
- Places with more crime
- Typology of neighborhoods



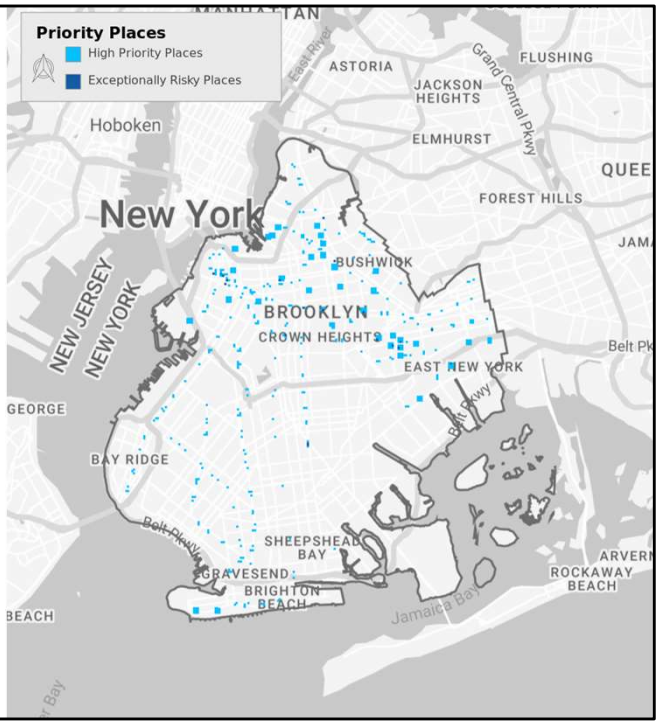
Predictive policing is based on risk terrain modeling. In police/crime science, studies point to land use as crime generators and crime attractors. Police departments can be more efficient and effective and preventing crime by identifying which types of land use attract crime. So, for instance – we might think, ok – banks attract crime, but not all banks are involved in property crime. Its not about the land use itself but the surrounding areas. It's a bank next to a grocery and a bus station and a public school and a liquor store that make this bank more prone to property crime than a crime in the middle of a residential space.

So, there are differences between general locations and "risky" locations. And as social scientists, we're troubled by this term. What is risky? How is it defined, etc.

To begin to unpack “risk”, then we need to understand how risk locations are built. And for that we use the risk terrain model.
For instance, here is a map that evaluates relative risk in Brooklyn 2007 for property crime. Using the police database I’m able to identify what locations are “risky” based on where the crimes occurred.
Now, as you can see, the results are skewered by residence – we can clean up the data to have a better display of all possible “risky” factors.

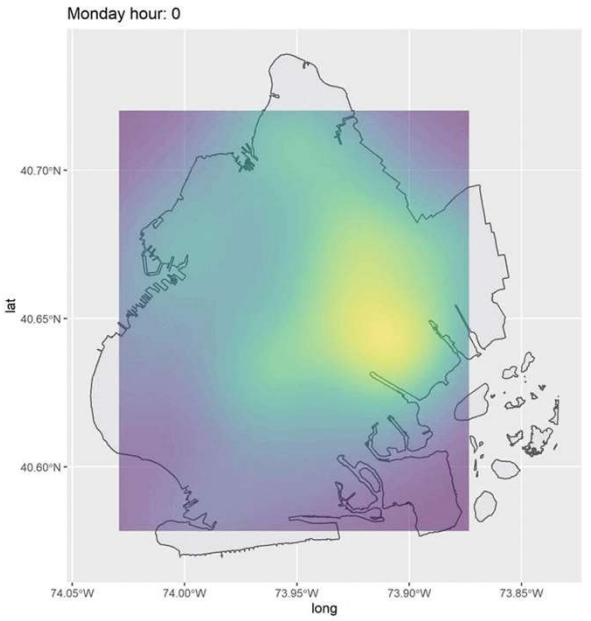
I then went ahead and got the spatial information for these types of land use for 2007 – not an easy task. And then run the model.

Risk Factor	Operationalization	Spatial Influence	RRV
brooklyn_07 - subway.shp	Proximity	250	3.467
brooklyn_07 - mixedres.shp	Proximity	1250	3.273
brooklyn_07 - pschools.shp	Proximity	1500	2.525
brooklyn_07 - commcenter.shp	Proximity	500	1.946



According to the model, these are the priority places in Brooklyn 2007.
This table shows you what the results are from the spatial autocorrelation. The higher the RRV (relative risk value), the more influence the factor has in attracting/generating crime. But as I said, not all subway stations – only specific ones – as the map shows.

So now that we know how "risk" is defined and how those priority spaces are defined – we're trying to unpack feedback loops.

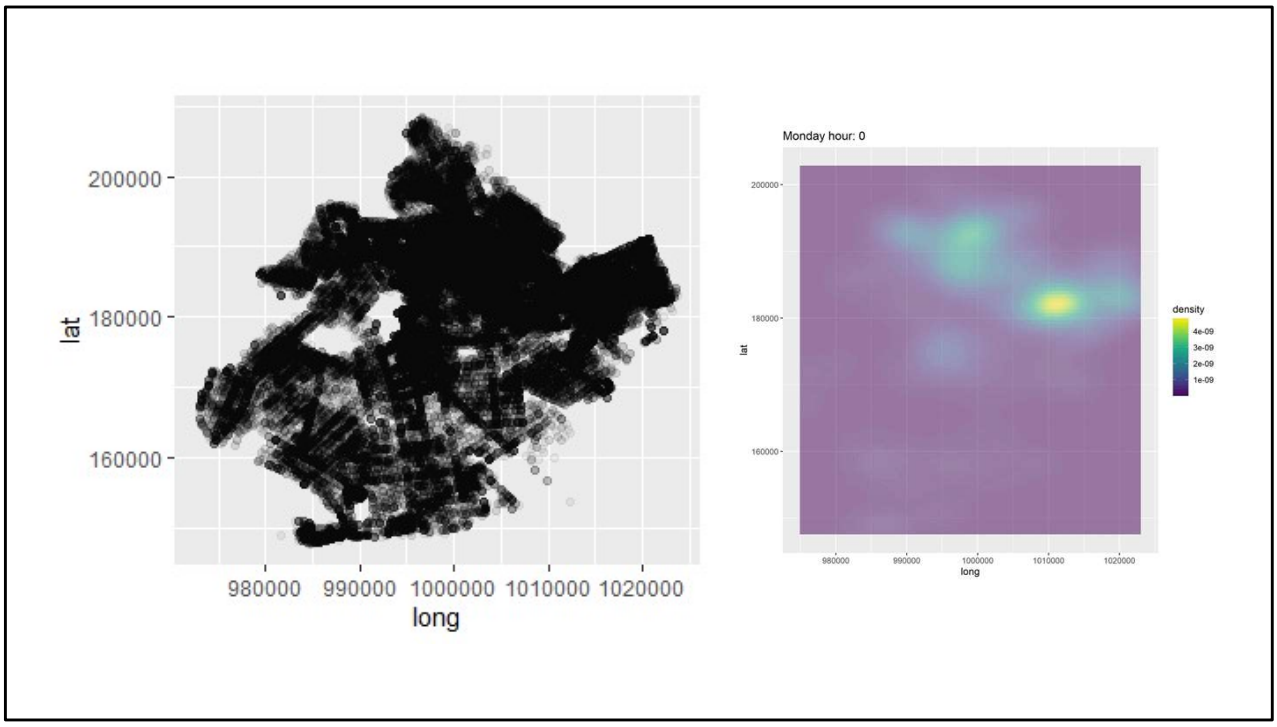


Show 24 entries Search:

	Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
0	50	51	57	63	78	83	60
1	42	58	33	19	21	25	27
2	30	42	24	27	25	23	30
3	29	27	33	28	26	21	20
4	39	31	21	24	24	28	30
5	27	32	29	28	18	21	27
6	15	49	45	40	43	42	27
7	22	73	81	85	69	62	27
8	38	126	131	118	111	126	45
9	59	103	96	107	101	113	45
10	43	88	87	68	78	90	49
11	37	56	60	79	79	63	46
12	59	103	80	95	96	107	79
13	50	59	67	64	63	73	46
14	64	54	64	83	62	93	48
15	58	53	55	67	59	88	58
16	48	60	51	61	56	90	57
17	62	56	75	63	57	99	61
18	57	48	46	61	65	73	56
19	50	61	42	60	65	73	56
20	39	54	58	59	56	71	55
21	42	54	38	45	64	73	43
22	32	42	37	47	45	42	53
23	34	33	40	39	37	55	40

Showing 1 to 24 of 24 entries Previous 1 Next

Take this animation – its from property crime distribution in Brooklyn. How much of its reporting has to do with police being there to report it?



Now we're working with stop and frisk information – its pretty concentrated in one location in specific times of day. So maybe this is how we should go about thinking about police presence.

Thank you