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Journeys to Crime on a Newly-Introduced Transport System

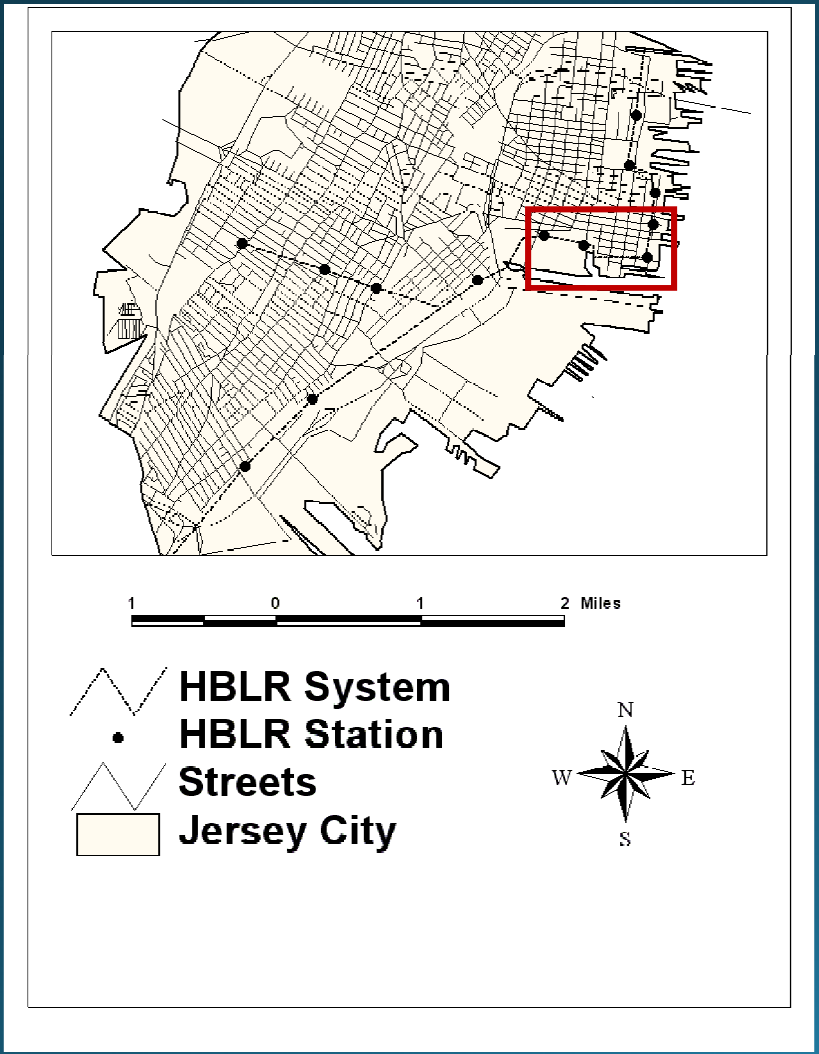
Concerns Surround New Public Transport In The United States

- Views that any new system or expansion will serve as a "conduit for crime" (Garrison, 2008), despite evidence from abroad to the contrary (see, e.g., ITDP 2003).

- Typical view: connecting low crime areas to high crime areas will "infect" the former.

- Is there any evidence that a new transport system is being used for crime trips?

The Hudson-Bergen Light Rail Jersey City NJ Segment



- Entered service in April 2000 with 10 operational stations; three more entered service in November 2000.
- NOT an expansion, but a completely NEW system.
- Much grumbling among residents in Paulus Hook area that system would bring crime, noise.

Travel To Crime and Public Transport

- Belanger (1999): NYC Subway – most repeat offenders offend within 10 stops of their home, suggesting travel time as critical factor rather than distance.
  - BUT – Bernasco & Nieuwbeerta (2005) find for burglars that proximity to home (in km) is critical to target choice.

- Plano (1991), Poister (1996) – expansion of existing commuter rail systems produced, at worst, temporary spikes in some offenses – lack of attractive opportunities outweighs awareness space impact?

- Clare & associates (2009) – burglars living near transit systems twice as likely to choose targets located along the system than to choose other targets. Does transit presence "mitigate" proximity?

Seeking Evidence of Crime Journeys on HBLR

- Assuming that proximity to home and travel time influence crime choices, it may be reasonable to think that over time offenders may use the system to seek new opportunities.

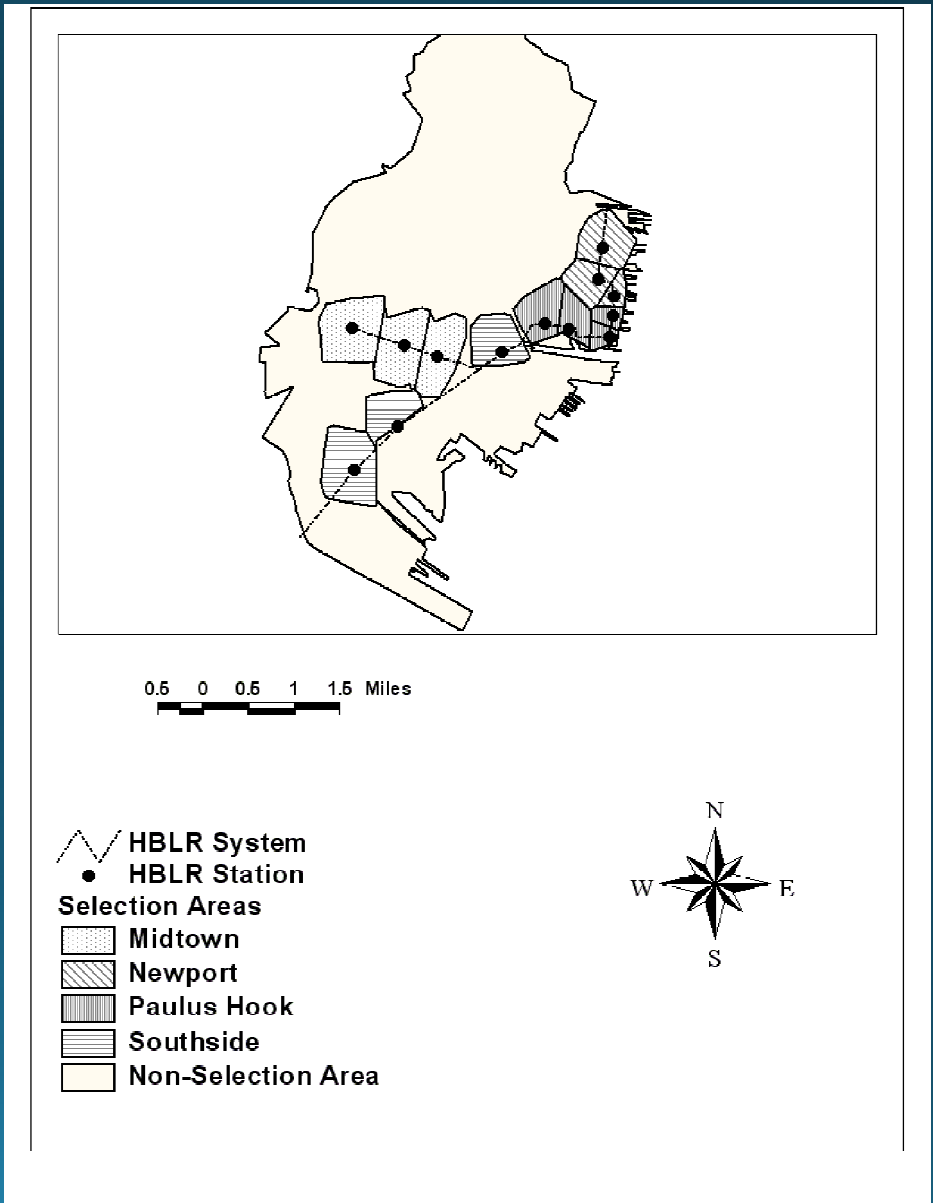
- If fears are valid, then we might expect to see "wolves at the door" - offenders from Service Zone "A" connected to offenses committed in Service Zone "B."

- An alternative: might the system instead create new opportunities for local offenders, "bringing lambs to the slaughter?"

Seeking Evidence of Crime Journeys on HBLR

- System divided into four "service zones."
  - Southside, Midtown – disadvantaged
  - Paulus Hook – gentrified
  - Newport - commercial

- Catchment areas created based on 0.5-mile street network distance from stations (Sööt et al., 2001)



Data and Methods

- Jersey City Police Department Arrest Data (Jan 1998 – Nov 2001)
  - Original file included more, but three-month gap in 1997 precluded use.
- Each case included three address fields
  - Incident
  - Arrest
  - Offender's given home address

Data and Methods

- Aggregated cases into four offense type categories
  - Violent offenses
  - Property offenses
  - Morals/Narcotics offenses
  - Other offenses (criminal mischief, suspicious persons, weapons possession)

- Categorized each case based on offender address vs. point of offense
  - Lived, offended in same SZ
  - Lived, offended in different SZs
  - Lived within 0.5 mile of a SZ
  - Lived in Jersey City, but over 0.5 mile from SZ
  - Lived outside of Jersey City

Results – Midtown Service Zone

	Arrestee Reported Address							
	Midtown SZ	Other SZ	< 0.5 Mile From SZ	> 0.5 Mile From SZ	Outside JC	*df*	χ^2	*p.*
Offense Type								
Violent								
Pre-HBLR	376 (381.4)	76 (74.1)	143 (144.9)	36 (33.0)	49 (46.5)			
Post-HBLR	190 (184.6)	34 (35.9)	72 (70.1)	13 (16)	20 (22.5)	4	1.69	.79
Property								
Pre-HBLR	124 (131.8)	63 (53.1)	84 (84.7)	23 (25.0)	28 (27.4)			
Post-HBLR	97 (89.2)	26 (35.9)	58 (57.3)	19 (17.0)	18 (18.6)	4	6.20	.19
Moral/Drug								
Pre-HBLR	1334 (1353.0)	402 (393.0)	822 (822.7)	259 (260.3)	288 (276.0)			
Post-HBLR	735 (716.0)	199 (208.0)	436 (435.3)	139 (137.7)	134 (146.0)	4	2.90	.58
Other								
Pre-HBLR	204 (208.2)	55 (50.4)	96 (93.4)	21 (21.5)	29 (31.6)			
Post-HBLR	106 (101.8)	20 (24.6)	43 (45.6)	11 (10.5)	18 (15.4)	4	2.45	.65

Results – Southside Service Zone

	Arrestee Reported Address							
	Southside SZ	Other SZ	< 0.5 Mile From SZ	> 0.5 Mile From SZ	Outside JC	*df*	χ^2	*p.*
Offense Type								
Violent								
Pre-HBLR	236 (239.9)	38 (37.7)	86 (79.3)	12 (13.0)	22 (24.1)			
Post-HBLR	133 (129.1)	20 (20.3)	36 (42.7)	8 (7.0)	15 (12.9)	4	2.52	.64
Property								
Pre-HBLR	57 (58.1)	36 (34.1)	58 (57.4)	13 (10.7)	11 (14.7)			
Post-HBLR	30 (28.9)	15 (16.9)	28 (28.6)	3 (5.3)	11 (7.3)	4	4.72	.32
Moral/Drug								
Pre-HBLR	402 (406.4)	165 (155.6)	335 (342.2)	59 (58.6)	109 (107.1)			
Post-HBLR	243 (238.6)	82 (91.4)	208 (200.8)	34 (34.4)	61 (62.9)	4	2.15	.71
Other[a]								
Pre-HBLR	122 (115.5)	13 (16.0)	43 (43.4)	5 (6.0)	10 (12.0)			
Post-HBLR	51 (57.5)	11 (8.0)	22 (21.6)	4 (3.0)	8 (6.0)	4	4.36	.36

a. *1 cell (10%) has an expected count of less than 5.*

Results – Paulus Hook Service Zone

	Arrestee Reported Address							
	Paulus Hook SZ	Other SZ	< 0.5 Mile From SZ	> 0.5 Mile From SZ	Outside JC	*df*	χ^2	*p.*
Offense Type								
Violent								
Pre-HBLR	80 (78.4)	34 (32.2)	42 (39.5)	20 (18.1)	19 (26.8)			
Post-HBLR	37 (38.6)	14 (15.8)	17 (19.5)	7 (8.9)	21 (13.2)	4	8.38	.08
Property								
Pre-HBLR	30 (29.5)	42 (39.2)	61 (59.7)	18 (18.6)	25 (28.9)			
Post-HBLR	16 (16.5)	19 (21.8)	32 (33.3)	11 (10.4)	20 (16.1)	4	2.20	.70
Moral/Drug								
Pre-HBLR	42 (44.9)	25 (24.1)	33 (34.2)	16 (14.7)	24 (22.1)			
Post-HBLR	25 (22.1)	11 (11.9)	18 (16.8)	6 (7.3)	9 (10.9)	4	1.60	.81
Other[a]								
Pre-HBLR	35 (32.4)	18 (19.4)	35 (33.1)	11 (8.6)	22 (27.4)			
Post-HBLR	10 (12.6)	9 (7.6)	11 (12.9)	1 (3.4)	16 (10.6)	4	7.56	.11

a. 1 cell (10%) has an expected count of less than 5.

Results – Newport Service Zone

	Arrestee Reported Address							
	Newport SZ	Other SZ	< 0.5 Mile From SZ	> 0.5 Mile From SZ	Outside JC	*df*	χ^2	*p.*
Offense Type								
Violent								
Pre-HBLR	33 (35.8)	33 (28.1)	33 (33.5)	22 (19.5)	45 (49.1)			
Post-HBLR	13 (10.2)	3 (7.9)	10 (9.5)	3 (5.5)	18 (13.9)	4	8.03	.09
Property								
Pre-HBLR	31 (33.7)	215 (218.4)	255 (245.5)	163 (170.0)	470 (466.4)			
Post-HBLR	10 (7.3)	51 (47.6)	44 (53.5)	44 (37.0)	98 (101.6)	4	5.28	.26
Moral/Drug[a]								
Pre-HBLR	6 (7.6)	8 (9.2)	15 (15.1)	7 (5.9)	11 (9.2)			
Post-HBLR	3 (1.4)	3 (1.8)	3 (29)	0 (1.1)	0 (1.8)	N/A	N/A	N/A
Other[b]								
Pre-HBLR	13 (11.4)	17 (14.7)	28 (27.7)	16 (16.3)	19 (22.8)			
Post-HBLR	1 (2.6)	1 (3.3)	6 (6.3)	4 (3.7)	9 (5.2)	N/A	N/A	N/A

a. *4 cells (40%) have an expected count of less than 5.*

b. *3 cells (30%) have an expected count of less than 5.*

You Can Lead A Horse To Water…

- Little evidence that HBLR became a "crime conduit."
  - Primarily a commuter system – little usage outside of peak periods.
  - Relative lack of attractive opportunities outside of "destination" stations.
  - Was "ethnic heterogeneity" (Bernasco & Nieuwbeerta, 2005) a factor?

- Did data limitations mask potential effects?
  - These were all *adult* arrests – what about juveniles?
  - Admittedly crude measure – contextual data lacking

No News Is Good News!

- If crime fears are the primary driver for NIMBY movements in the US, then HBLR example could assuage those fears.
  - Area that exhibited the most concern in the beginning was probably *least* impacted.
  - Good news for urban planners, transit advocates.

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Thank you!

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