

# Asian Neighborhoods in the New York Metropolitan Area:

## An Application of the Park/Burgess Model

### Introduction

A contentious topic in the United States, immigration has sparked a heated debate over border control and who should be allowed to legally enter the country. Immigrant assimilation, however, is lesser discussed yet still a subject of equal import. Assimilation can be measured across multiple dimensions, but this project will focus on residential assimilation, or patterns of ethnic clustering, as the metric of choice. Using the Park/Burgess sociological model to frame my analysis, I examine: (a) how ethnic concentrations and human capital levels (i.e. socioeconomic status) vary as distance from the central city increases, and (b) the degree to which ethnic concentrations and human capital are negatively correlated. I limit my analysis to the New York metropolitan area and study the Asian population in particular.



### Theory

In 1925, Park and Burgess pioneered the concentric zone theory. In this model, urban spaces are defined as a series of concentric zones expanding from the central business district (CBD). The further one moves from the CBD, the better the socioeconomic conditions are. Economists have built upon this model, theorizing that ethnic enclaves are located close to city centers. However, as immigrants acquire more human capital (i.e. improve their socioeconomic status), they have the tools to succeed in mainstream society and will consequently disperse residentially into more suburban areas. Two testable hypotheses emerge from these theories:



(1) Ethnic concentrations weaken and human capital increases the further the neighborhood is from the city

(2) Accordingly, ethnic concentrations are negatively correlated with human capital levels



As pictured to the right, many economic and sociological studies have illustrated that ethnic concentrations may still persist outside of city centers and among immigrants with a high degree of human capital -- such patterns may be due to network benefits and ethnic consumption preferences. Given these mixed theories, I use my analysis to visualize the validity of both strands of thought.

### Methodology

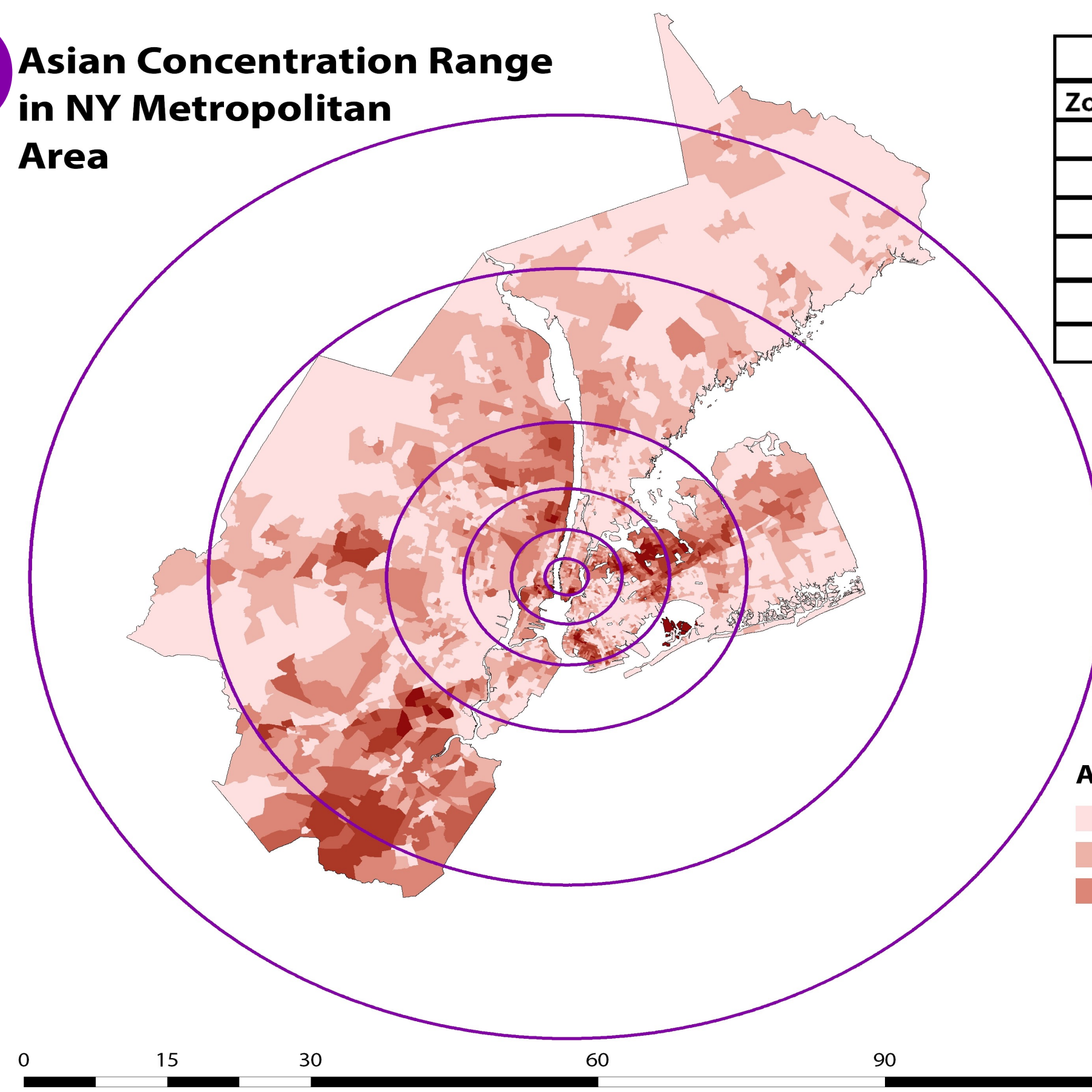
Employing the **census tract** as my spatial unit of analysis, I first calculate Asian concentration by computing the proportion of the tract's population that is Asian. I then measure **human capital** by aggregating information on (a) tract median income and the proportion of the tract that (b) has a bachelor's degree or higher and (c) speaks poor English. After these calculations, I map the ethnic concentration and human capital levels in six classes.

I test my first hypothesis by examining how human capital and ethnic concentration ranges change across concentric zones. These zones are modeled using the "Multiple Ring Buffer" tool. Then, I use the clipping tool to isolate regions into each zone and tabulate statistics for the ethnic and human capital characteristics of each zone.

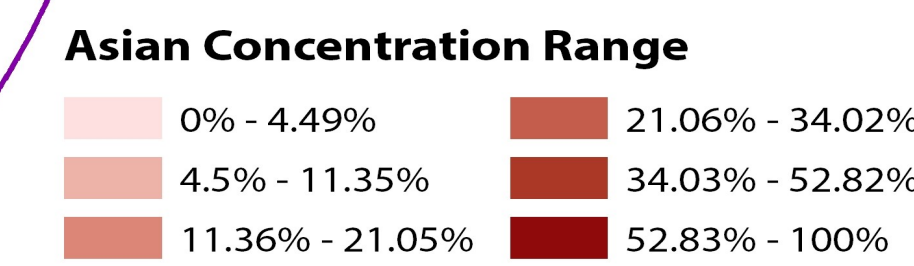
I next test the hypothesis that human capital is negatively correlated to ethnic concentrations. Based on the six clas-

ses of ethnic concentrations and human capital, I use the "Select by Attribute" tool to create a separate layer, "Expected Correlation," that identifies tracts that have a low/high ethnic concentration and high/low human capital. I further use the "Grouping Analysis" tool to create six groups of census tracts that share common ethnic and human capital attributes, and I see to what degree these automated groups exhibit a negative correlation.

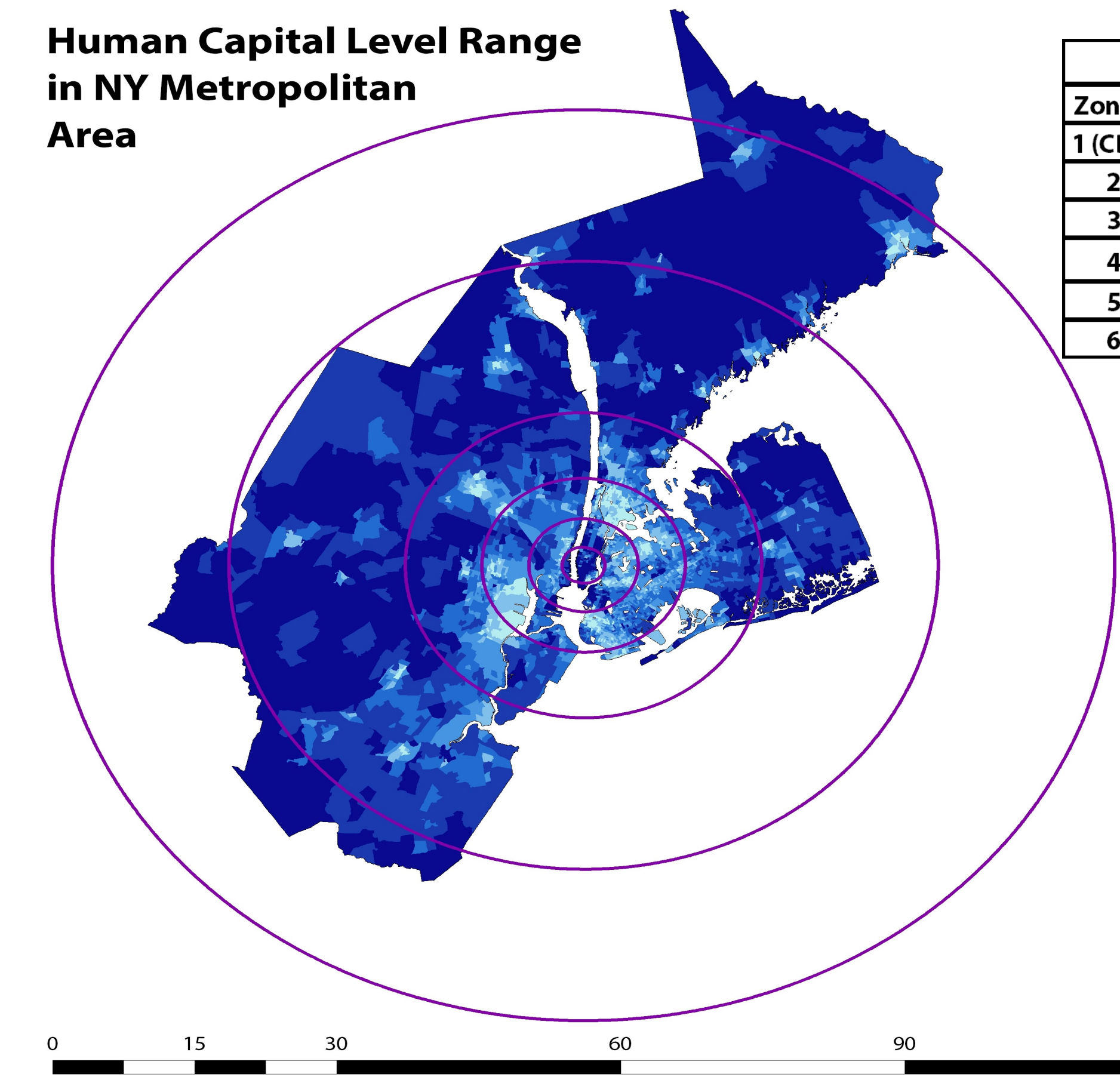
#### 1 Asian Concentration Range in NY Metropolitan Area



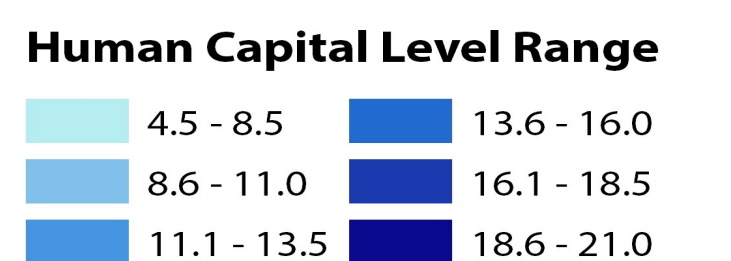
Asian Concentration Statistics				
Zone #	Mean	Std. Dev.	Min	Max
1	0.16	0.16	0	0.87
2	0.12	0.14	0	0.87
3	0.15	0.17	0	1
4	0.11	0.12	0	1
5	0.10	0.11	0	0.73
6	0.07	0.09	0	0.45



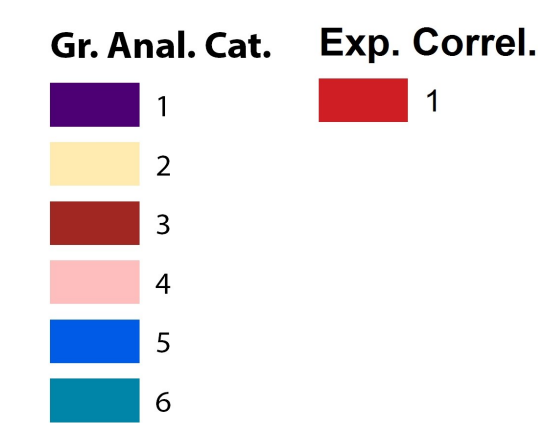
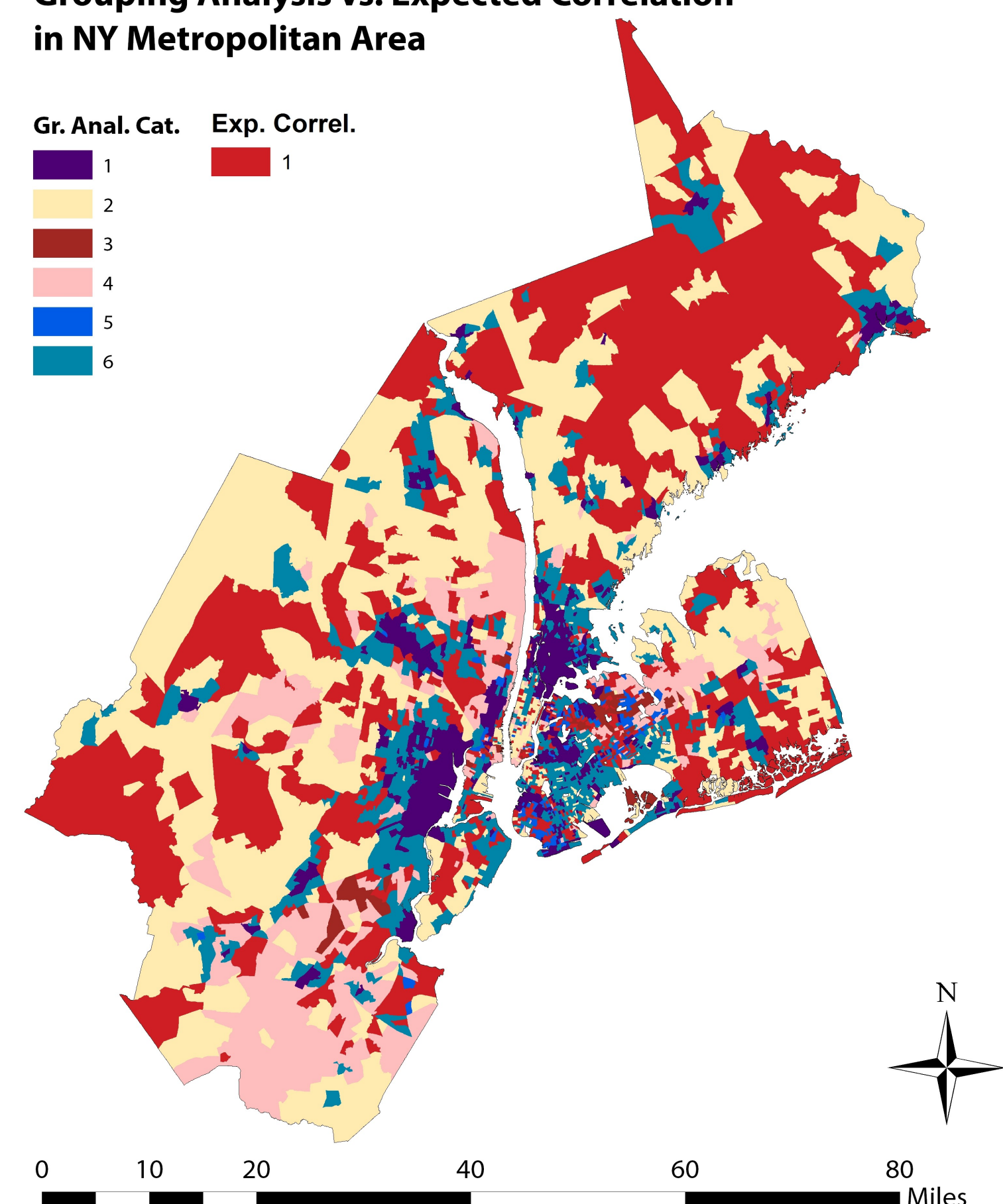
#### Human Capital Level Range in NY Metropolitan Area



Human Capital Statistics				
Zone #	Mean	Std. Dev.	Min	Max
1 (CBD)	17.35	3.94	6.5	21
2	14.04	4.00	5.5	21
3	12.38	3.09	4.5	21
4	15.15	3.25	5.5	21
5	17.17	3.05	6	21
6	16.98	3.75	7.5	21



#### 2 Human Capital and Ethnic Concentration: Grouping Analysis vs. Expected Correlation in NY Metropolitan Area



Grouping Analysis		
Group #	Mean Asian Concentration	Mean Human Capital Level
1	0.03	9.75
2	0.06	19.07
3	0.59	11.22
4	0.25	16.59
5	0.29	11.31
6	0.05	14.57

Expected Correlation		
Group #	A.C. Range (%)	H.C. Range
1a	0 - 4.49	18.6 - 21.0
1b	4.5 - 11.35	16.1 - 18.5
1c	11.36 - 21.05	13.6 - 16.0
1d	21.06 - 34.02	11.1 - 13.5
1e	34.03 - 52.82	8.6 - 11.0
1f	52.83 - 100	4.5 - 8.5

### Conclusion

Although there is some aberration in the first three zones, ethnic concentrations generally do decrease with each successive zone. Nonetheless, patterns are not uniform within these zones: indeed the south-west corner of the metro area exhibits a very strong ethnic concentration. As for human capital, although the map does visually suggest low human capital levels are concentrated in the center, the zonal statistics do not show a consistent pattern.

Moving to the second hypothesis, although some areas and Group 2 from the grouping analysis exhibit a strong negative correlation, there are plenty of census tracts within the NY metro area that defy this expectation.

On the whole, this mixed evidence for the Park/Burgess model suggests that social scientists studying ethnic neighborhoods must be cautious of the locational and socioeconomic nuances underpinning them.

**References:**  
 Manas Baba  
 May 2nd, 2014  
 GIS 101  
 Projection: USA\_Contiguous\_Albers\_Equal\_Area\_Conic (meters)  
 Scale: 1:250,00  
 Data: 2010 American Community Survey & Census 2010 TIGER/Line Shapefiles