

Green Spaces, Marginalization, and Mental Health

Part 1: Background

In social science research, ample evidence exists that marginalized groups experience fewer benefits from greenery and are forced out of their communities through greening efforts (Gould, 2012; Lewartoska, 2024; Anguelovski, 2021). The creation of Prospect Park led to poorer residents facing rising rent costs and the eventual gentrification and relocation of many residents (Gould, 2012). Furthermore, greening projects frequently don't correctly grapple with the historical racism of urban areas, creating another layer of racialized displacement (Anguelovski, 2021; Lewartoska, 2024). Conversely, researchers interested in happiness studies, ecopsychology, and ecology have observed the cognitive benefits of being in nature (Mayer, 2004; Russell, 2013; Passmore, 2013; Nisbet, 2010; Moller, 2023). Literature reveals that knowing and experiencing nature positively affects well-being (Russell, 2013). Further, Moller found that the South African Indigenous group Xhosa sought comfort and solace within nature after familial death and recorded some of their most significant moments in life in nature. However, there is a large gap between social science and psychological science. The gap should be filled with research investigating the connection between mental health benefits from nature and the effects of segregation/green gentrification. Understanding how segregation is affecting the mental health of already marginalized groups is the goal of this study.

Although various research areas have observed green gentrification and the benefits of interacting with nature, however, little to no research has been published on the middle ground between the two. Suppose we take the truth of less access to greenery in urban spaces for marginalized groups and the benefits of seeing and being in nature, then is it, not the case that

these marginalized groups are experiencing a socio-constructed loss of essentially free mental health and well-being benefits? The intersection of these two research areas leaves numerous questions to be analyzed. How can urban planners deconstruct the societal barriers historically embedded within cities? What can be done not to allow green gentrification to take place? Most importantly for this study, what is the effect on mental well-being for marginalized groups who repeatedly lose access to greenspaces?

Green Spaces and Their Benefits

Evidence shows being in nature provides comfort during difficult times, and joy during euphoric times. South African Xhosa people often relate the best experiences of their life to nature (Moller, 2023). Moments of life that elicit the highest levels of joy and jubilation occur in nature or are connected to the land (Moller, 2023). Contrarily, the worst times of one's life are often mediated by an experience with nature (Moller, 2023). The participants were noted as going into nature to cope or find comfort after the deaths of family or friends. Moller's findings indicate that experiences with nature that provide comfort or are a place for joy may be universal across cultures (Moller, 2023).

Moller's finding is related to our study within her conclusion. If we accept Moller's thesis that people are simultaneously comforted and joyous in nature across cultures, then the necessity of access to natural spaces is apparent. Providing access to green spaces should be a fundamental right; however, this is frequently not the case.

Mayer's paper conducted five studies to assess the CNS (Connectedness-To-Nature Scale), which measures an individual's emotional connection to the natural world (Mayer, 2004). Mayer's study utilized two community samples and three from colleges, demonstrating that "the CNS has good psychometric properties" (Mayer, 2004). Mayer's work further indicates that ecopsychologists have the right idea regarding human connection to nature (Mayer, 2004).

The Uniqueness of Urban Areas

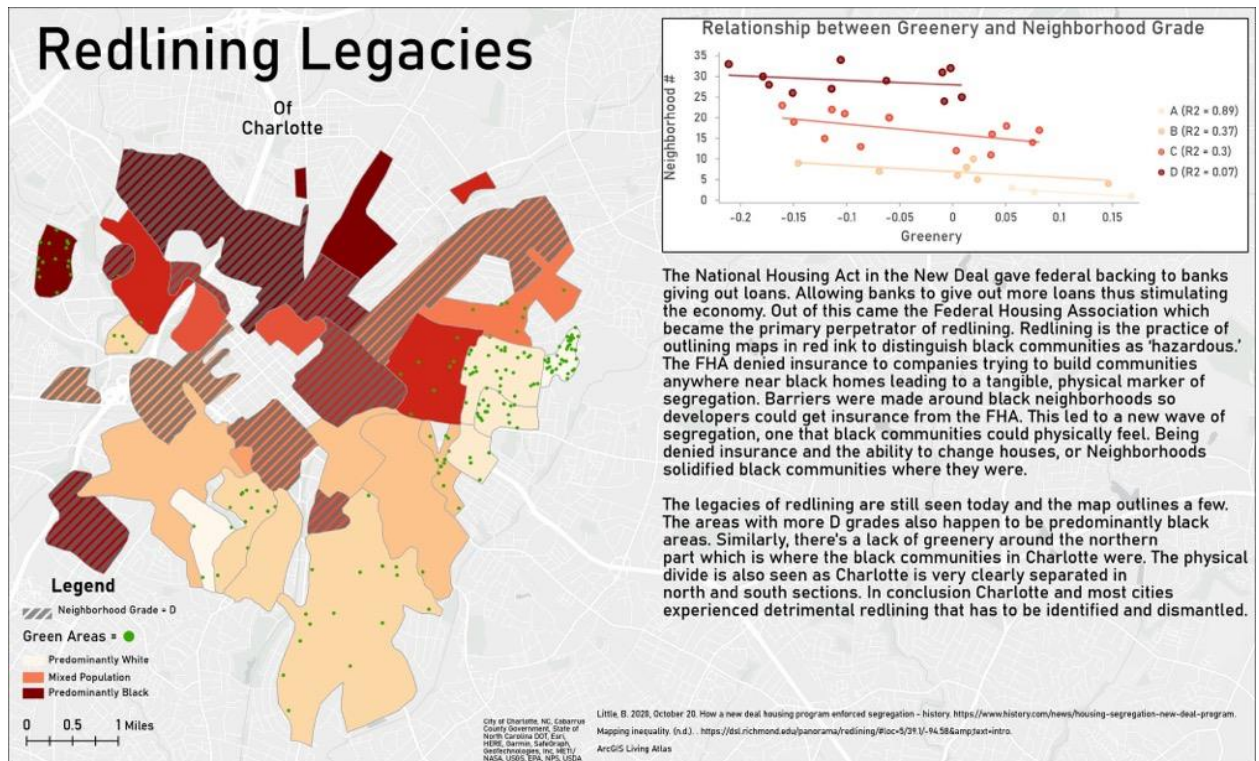
Urban areas reveal themselves to be essential cases to study because of the scarcity of natural greenery. Most parks and green spaces in cities are man-made, created for the enjoyment of the city's population. The location of parks is deliberated and discussed in detail, so their placement reveals something about their designers' intent. The value of greenspaces cannot be overstated. As has been said, evidence points to greenery being an essential aspect of positive physiological and mental health. Therefore, the loss of access to greenery through segregation is an essential piece of this study.

Moreover, redlined neighborhoods have even less access to green spaces. Redlining was the process of denying government services to poorly graded neighborhoods, which was primarily based on the racial makeup of the area. (Egede, 2023). As shown in the map below, green spaces within Charlotte are frequently distributed unevenly. Those with cross hatches got a grade of D during redlining, and colors indicate populations. However, Charlotte is not the only case of this. There is evidence of worse historical HOLC grades and less greenspace across 102 urban metropolitan areas (Nardone et al., 2020). The significance of historical segregation

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causing a disconnection between greenspaces has been studied. But, the connection between mental health and the disconnect from greenery has yet to be studied.

Charlotte Redlining Map



By: Logan Mallory

Redlining has been shown to cause worse bodily health. Why has mental health not been studied? The modern effects of redlining are varying and embedded. Furthermore, redlining is linked to "increased risk of diabetes, hypertension, and early mortality due to heart disease" (Egede, 2023). If redlining has shown an effect on the bodily health of those privy to it, then surely a study specific to the mental well-being of those who still encounter its effects is important.

Urban areas frequently cause re-segregation and new gentrification by trying to implement new greenspaces. Lewartoska examines racial inequity in various cities across the

U.S. and Europe, all of which have histories of racism. It's found that urban greening efforts exacerbate the existing racial disparities to create environmental racism (Lewartoska, 2024). The analysis of four U.S. cities and three European cities found that new green urban projects increase the quality of infrastructure in a neighborhood. But simultaneously provide the opportunity for re-segregation where housing costs and rent skyrocket due to the new greenery. Often leading to the forced displacement of poorer communities (Lewartoska, 2024). Showcasing that just adding more parks is not always the correct solution. The issue has to be considered in varied ways, which is why sociology can help us understand the problem.

Prospect Park's remodeling provides further evidence of how sprucing up an area causes new gentrification. The park was investigated using census data, analyzing five neighboring areas and the effects of the park's restoration in the 1980s and 90s (Gould, 2012). There was a significant decline in the black population, suggesting displacement due to these restoration efforts. "Greening whitens" was the conclusion (Gould, 2012). This indicates that while green spaces offer ecological benefits, they also contribute to gentrification. However, Gould's research lacks evidence of mental health declines among the displaced. Existing studies on redlining and gentrification primarily focus on physical health, yet given the current mental health crisis, exploring the impacts of green gentrification on mental well-being is crucial. Despite the challenges of such research, we aim to use mixed methods to answer and analyze our research question.

Importance of the Study

The necessity of the present study only becomes more apparent with further evidence. The ecopsychologist's conclusion that physiological and mental well-being are deeply entangled with one's personal feelings toward nature was found over 20 years ago. Yet sociologists have lagged in their adoption and research toward the questions that this conclusion opens up. However, sociology does have essential perspectives that can be added to the ecopsychologist's conclusion. In 1978, William Catton and Riley Dunlap urged sociologists to investigate how society and nature are intertwined (Catton & Dunlap, 1978). Environmental sociology spawned from this claim and has made great strides in accepting the "New Environmental Paradigm." Environmental Sociology has researched the socio-constructed notions of nature and the human aspect of environmental issues; still, gaps in our understanding of these two fundamental aspects of our reality remain, which is what this study aims at. The gaps of Environmental Sociology, how urban inequality affects access to greenery and those groups' mental health. The current study seeks to understand this through quantitative, qualitative, and ethnographic methods.

Historical redlining and segregation have been intensely studied, along with modern green gentrification, which purports greening projects as newfound forms of gentrification. This often leads to displacement and rising costs for a neighborhood due to urban greening efforts. Simultaneously, ecopsychologists and happiness researchers over 20 years ago concluded that a connection to nature indicates positive mental well-being. Yet, the concrete study of a connection between the two falls short. It's imperative that we investigate both how redlining and historical segregation affect mental health as well as modern green gentrification and its results on already marginalized groups' mental health. Urban city's attempts at greening,

although commendable, frequently don't contend with their own racist histories (Lewartoska, 2024). Compounding and layering the inequity through a new lens rather than combatting it through environmentalism and greening efforts. In conclusion, our study hopes to analyze the effects of green and historical gentrification and segregation in an attempt to discover a connection between mental health and the loss of access to green spaces.

Part 2: Data Collection

The ethnography took place in East Side Recreation Park in Saratoga Springs. We went during the day around 3:30 PM, so it was populated. Initially, an urban park was intended, but a more local park was chosen due to time constraints. If someone were to recreate the study, I'd recommend going to parks in urban areas. It was a single 30-minute ethnography. Walking around and observing everyone there allowed us to infer about the park. Splitting up was the best idea as it allowed us to cover more area of the large park. Both researchers paid attention to demographics and visible joy or sadness whenever present.

Ethnography did not turn out to be the best method for this project, as we couldn't talk to individuals. The method also didn't yield any results regarding how the lack of green spaces affects mental health. Everyone we observed had access to a park and was actively using it. What the question did help answer was how a park brings joy. The people we observed were largely happy. Occasionally, somebody was left out, and they were visibly upset. This finding was surprising as we hadn't expected anyone to be clearly sad in the park. Lastly, there were two key instances of observation that spoke to the marginalized group aspect of the question. One Asian boy was playing with his mother instead of the large group of kids. However, this could also be

due to personal anxiety and not a demographic difference. At the pickleball courts, we observed only white individuals playing, all of whom were in workout outfits and new equipment. The ethnography, however, as a whole, was not effective for this study.

Our interviews were conducted separately. We wanted to pick people who lived in cities and utilized green spaces. My interview was done with a young black student (Asher) on the Skidmore campus. To find an interviewee, I asked friends, hung up posters, and asked entire classes I was taking and, eventually, found someone who fit the bill. We created questions beforehand, mainly relating to the individual's relationship with nature, their ability to use it, and how frequently they used it. For my interview, I also created and asked questions that stressed the difference between Philadelphia and Skidmore and the access he now had to green spaces. If someone were to recreate the study, I'd suggest making more questions than you think necessary. I had to improvise at a certain point, as I had run out of questions. Luckily, the interview took a certain direction that I could continue emphasizing. My research partner interviewed her grandmother (Alma), who provided an interesting look at how age affects one's relationship with nature. Her interview was done over Zoom, which may have made noticing subtleties in her speech harder. Connectivity issues can also occur, making it harder to understand or connect with the participant.

The interviews were highly successful we took away a lot of good information. Interviewees emphasized the built barriers of access to green spaces. How city infrastructure systematically excluded certain people from green spaces. Furthermore, both participants mentioned safety. Alma mentioned how parks could be generally unsafe, and Asher emphasized the times of day in which he would seldom go to a park. Getting to the park, maintaining it, and

its quality were also brought up. Asher discussed how parks in Philadelphia are poorly maintained, and little care is given to them. The deterioration of the parks is evident, making the few parks available even worse. Forcing him or his parents to make the longer trek to a high-quality park. Asher could also speak to the mental aspect of the question nicely. He discussed how nature at Skidmore has become a place to be alone and “feel sad,” something he was relegated to doing in his room at home. These findings relate nicely to our research question, as they tackle all aspects of the question instead of just a piece compared to the ethnography.

Our two following methods were a geospatial analysis and ANOVA tests. For the GIS portion, I used data from CDC PLACES, which compiles health-related data. I used the frequent mental distress attribute and combined it with RACE from the U.S. census. I then used bivariate symbology to find areas where both values were high. I added a green spaces layer from the LA County GIS center, which I got from ArcOnline. The map worked to visualize the relationship between distance from parks and the high black population with high mental distress. The analysis took a lot of time, so if I were to run it across America for more urban areas, I suggest creating a model in Modelbuilder that could automate the process. The ANOVA tests created a table to find a correlation between days of poor mental health in the past 30 days and having easy access to the natural environment. Both pieces of data were gathered from the General Social Survey.

Our takeaways from the GIS analysis were that these factors have a relationship. However, I ran the same process on Cleveland, Philadelphia, Charleston, WV, and Pittsburgh before landing on LA, which showed a visual relationship. This indicates that there may not be a significant relationship across America, only in LA. The ANOVA tests weren't statistically

significant but were very close. This shows that while the correlation isn't there, perhaps different environmentally related factors could have a statistically significant relationship. GIS related to our question as it provided a visual indication that yes, there are areas that are far from parks, have poor mental health, and are largely of a marginalized population. ANOVA tests while not being significant were very close, showcasing that with some tweaking correlation tests could provide significant evidence toward our question.

Part 3: Reflection

Interviews, compared to the other methods, yielded the most varied and accurate results for our question. Ethnographies yielded some results but couldn't speak to the loss of access in a park or the marginalized aspect of the question. Furthermore, there was difficulty finding urban parks due to spatial and time constraints. While interviews were also challenging in finding participants, the study would have a longer span and a wider interview body, making it easier to find participants. I wanted to find a specific person who fulfilled all the characteristics of the research question. The interviews successfully tackled every part of the question, and some points were discussed numerous times, indicating that some conclusions may be reliable across populations. The ethnography also lacked depth, unlike the interview, where we could pin down all aspects of the question. During the ethnography, a lot of inferring was done about personal feelings and reasons for exclusion. The GIS analysis showcased a relationship, but it took a lot of time as opposed to the other two methods. I spent roughly 4 hours working on the maps and running through the steps numerous times. However, it did produce an intriguing visual that can be used to communicate the issue to a broader audience. Compared to the ANOVA tests, maps can be an effective tool for academic communication. An

individual uneducated in social science research would struggle to understand the ANOVA test results. ANOVA tests and GIS also require extensive training, which is an important limitation for both. ANOVA also assumes too much about the geographical distribution of the variables and what groups experience which aspects of the correlation more. Compared to the interview, which yields specific results for each individual, accounting for the variance across our population. GIS is also limited by being just visual. It's harder to get in the weeds and truly understand how large the relationship between variables is.

The results don't necessarily relate directly back to all the literature, because of the novelty of our study. Our literature primarily provided evidence of all the preexisting knowledge that would indicate the importance of a study like ours, but there are some connections. The results spoke to the accessibility of green spaces in urban areas. Both interviewees discussed accessibility which points to the reliability of the claim. Furthermore, the results discussed how access to nature provides peace and joy. Asher mentioned numerous times how he likes to go in nature when he's both sad and happy. This was what Moller found that people find comfort in nature. The same rings true for our ethnography. We observed visible joy in many individuals, showcasing the evidence of many claims made in various fields. However, the literature didn't discuss the possible exclusion in parks. However, exclusion is expected in most group settings. So, our research primarily relates to the benefits of greenspaces, but that is partly due to the lack of prior research on this topic. Which shows how well we filled the gap within the literature. There was essentially zero research on the specific topic we had. Nobody has connected the benefits of green spaces to the lack of them within marginalized communities and what that result looks like. For this part of our results, I'm incredibly proud to find novelty in

such studied disciplines is something truly special in my eyes. Our findings were slightly similar in each method. However, ethnography only spoke to the benefits of green spaces, while interviews and GIS yielded new results that indicated some evidence for our question.

As mentioned, if we were to continue the study, it would be through interviews. While GIS and ANOVA were both nearly accurate to the results we would hope. ANOVA wasn't statistically significant, and the GIS analysis had no relationship in multiple cities. Interviews, however, grasped all aspects of the question. I think primarily because we were able to ask a variety of questions, which mentioned the benefits, the access, and the connection between the two. It was specifically beneficial that my participant had experienced an urban environment with few parks and then Skidmore, which has a lot of greenery. If we continue, finding participants like this who can compare the two places would be essential. As an addendum to the project, however, I think a large-scale GIS analysis would be beneficial and yield significant results. For the interview, I would have many more questions. Running out of questions made me think of them on the spot and hurt my time management. Other than that, I'd keep most things the same. Do interviews, find similar participants, and add more questions.

I learned a lot going through the process of social science research. Firstly, the importance of pinning down your question. Initially, it was too wordy and could have multiple interpretations. Our final question was quite strong and said exactly what we meant. The variance in research methods also surprised me. I have a strong desire to conduct an ethnography in the future, but it was clear that it didn't fit this question. Although I wanted it to be fitting, you can't force a square peg into a round hole. I also learned that the research process is not my favorite aspect of research. It was hard to find sources. Compiling them took

so long, and reading them all through took even longer. I think it would be easier if it were done over a broader period, but doing all of it in just a day or two was not the best. I enjoyed working in pairs; Jana brought a different perspective that helped broaden the project's scope and the ways to approach it. It helped being very communicative with her, share ideas, and not being afraid to criticize one another constructively. It makes sense to me why collaborative research is often the path. I can imagine it being tough to write and conduct all of the aspects of the research entirely alone. The main challenge was scheduling. Finding times to meet up and to do the ethnography was difficult. The only limitation I would point out is time and other work. It was hard to find time to do some of the research, and I would've loved for it to be my only priority, but it just can't be. Overall, I thought doing actual social science research was illuminating and helped show me how it all truly feels and works, which has made me know for a fact that it's what I want to pursue, as I got great satisfaction and joy from conducting research.

Part 4: References

- Anguelovski, Isabelle, Malini Ranganathan, and Derek Hyra. 2021. "The Racial Inequities of Green Gentrification in Washington, D.C." *The Green City and Social Injustice* 160–70.
- Catton, W. R., & Dunlap, R. E. (1978). Environmental Sociology: A New Paradigm. *The American Sociologist*, 13(1), 41–49. <http://www.jstor.org/stable/27702311>
- Egede, Leonard E. et al. 2023. "Modern Day Consequences of Historic Redlining: Finding a Path Forward." *Journal of General Internal Medicine* 38(6):1534–37.

- Gould, Kenneth & Lewis, Tammy. (2012). The environmental injustice of green gentrification: the case of Brooklyn's prospect park. *The World in Brooklyn: Gentrification, Immigration, and Ethnic Politics in a Global City*. 113-146.
- Lewartowska, Emilia et al. 2024. "Racial Inequity in Green Infrastructure and Gentrification: Challenging Compounded Environmental Racisms in the Green City." *International Journal of Urban and Regional Research* 48(2):294–322.
- Mayer, F. Stephan and Cynthia McPherson Frantz. 2004a. "The Connectedness to Nature Scale: A Measure of Individuals' Feeling in Community with Nature." *Journal of Environmental Psychology* 24(4):503–15.
- Møller, Valerie, Michelle Cocks, and Susanne Vetter. 2023. "Nature-Connectedness and Well-Being Experienced during Best and Worst Times of Life: A Case for Safeguarding Biocultural Diversity." *Social Indicators Research* 165(3):1053–89.
- Nisbet, Elizabeth K., John M. Zelenski, and Steven A. Murphy. 2010. "Happiness Is in Our Nature: Exploring Nature Relatedness as a Contributor to Subjective Well-Being." *Journal of Happiness Studies* 12(2):303–22.
- Passmore, H. A., A. J. Howell, and K. Buro. 2011. "Meaning in Life as a Mediator of the Relationship between Nature Affiliation and Well-Being." *PsycEXTRA Dataset*.
- Russell, Roly et al. 2013. "Humans and Nature: How Knowing and Experiencing Nature Affect Well-Being." *Annual Review of Environment and Resources* 38(1):473–502.