

GLOBAL LESSONS FOR PROMOTING ELDERLY SOCIAL ENGAGEMENT THROUGH
INTERGENERATIONAL ACTIVITY IN URBAN PARKS

by

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(Under the Direction of Douglas Pardue)

ABSTRACT

This thesis study through four parks between America and China to explore the landscape character of potential intergenerational (IG) space in urban parks. My research question is: How can landscape architecture learn globally to develop design strategies and guidelines to promote senior citizen's social engagement through intergenerational design in urban parks? Facing the challenge of an aging society, people realized that senior social isolation led mental problem increasing now. For reducing the loneliness of elders, IG practice as the most effective way was to get attention. While introducing the IG practice into the outdoor environment is still lacking now. Urban parks as the recreation center of city could take the responsibility. This thesis could be used for researchers who interested in IG design and environment design in their further study.

INDEX WORDS: Intergenerational engagement, intergenerational design, elderly social isolation, urban park, landscape qualities, social survey

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CHAPTER 1

INTRODUCTION

1.1 Background

Senior loneliness is a global phenomenon, as the world's proportion of elders aged 60 and above is growing faster than other age groups and expected to continue. According to the United Nations World Population Prospects, the number of elders is expected to more than double by 2050 and more than triple by 2100. Further, the senior population is estimated to be 21% percent of the global population by 2050 (Department of Economic and social affairs, 2015). An aging population is defined as a group of elders living in a specified region or country that exceeds 7% of the total population. Based on this definition, many world regions are already considered to be aging (Department of Economic and social affairs, 2015).

Elders are particularly prone to loneliness, with declining health and increasing isolation, negative feelings, and depression (Swami V, 2007). Social isolation is a common cause of mental illness in older adults, and it is increasing along with senior populations (Swami V, 2007). One important finding from recent research addressing senior social isolation is that effective social support networks can help elders restore feelings of personal control and self-esteem by buffering the effects of stress and poor health. (Krause, N. 1987).

In an increasingly globalized world, it is crucial to understand aging problems and potential design strategies from a multicultural aspect. Elder populations in both China and the United States are increasing (see Fig. 1, Department of Economic and social affairs, 2015). Moreover, their large economies, global influence, large elder populations, and rich design

culture make them global bellwethers of design trends. Both countries also share similar age society problems, including senior loneliness, neglect, and shrinking social networks. Examining the ways that these two, undeniably different (and similar?), societies address senior loneliness through landscape may offer lessons to each, to other aging cultures, and perhaps even to “global” or “universal” design lessons for addressing elder loneliness.

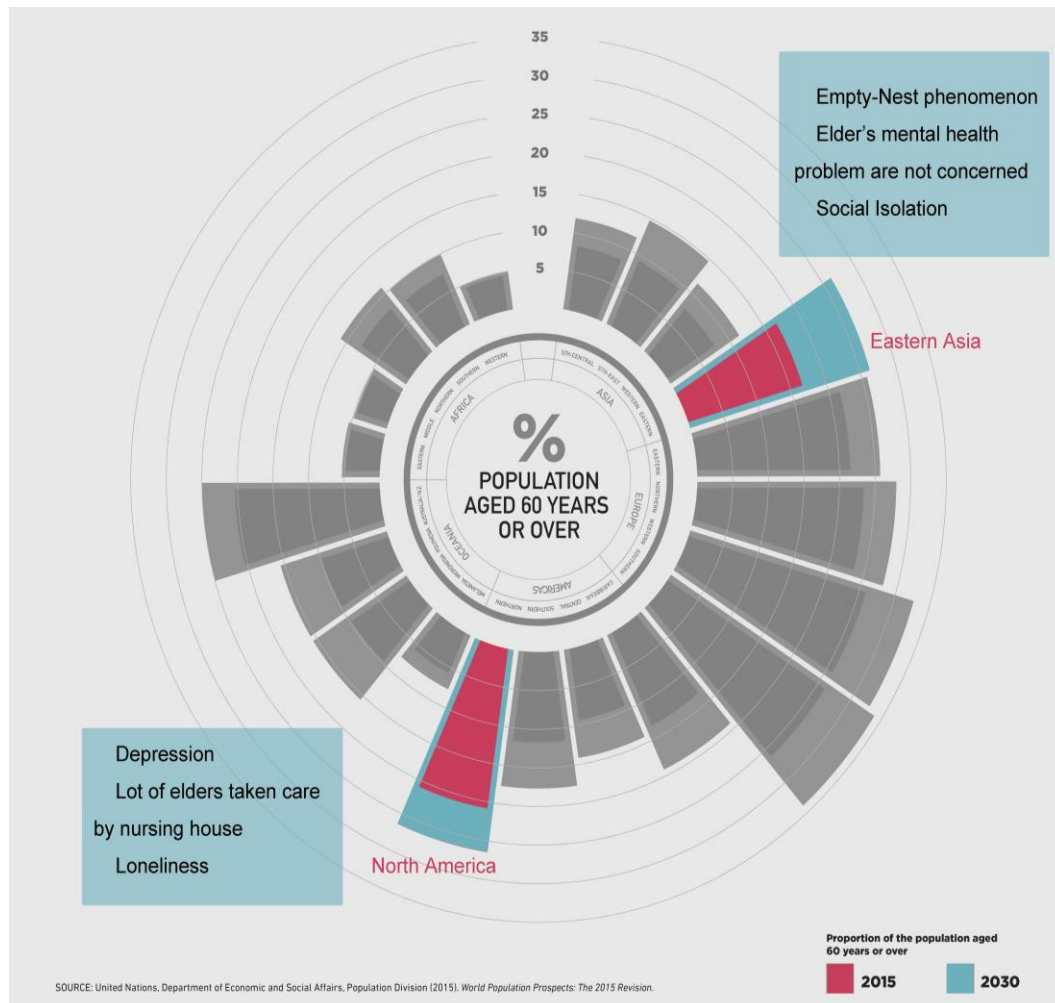


Figure 1: Challenges of an Aging World.

(Source: Population Ageing and Development 2015, image redrawn by the author)

Studies have increasingly shown that intergenerational (IG) activities, which provide engagement with other age groups, are an effective way to improve elders’ wellbeing, through helping to decrease despair that elders can experience from social isolation (Jacqueline Kendona,

2017). Matthew Kaplan, a doctor at Pennsylvania State University, wrote that introducing IG practice into community or space is a strategy for improving wellbeing and building a more cohesive community (Kaplan & Sanchez, 2016). This research suggests that introducing IG activities into public places elders utilize such as urban parks may help address senior loneliness. Similarly, Leng Leng Thang (2015) introduced the concept of an Intergenerational Contact Zone (ICZ) as a spatial focal point for people from different generations to meet, interact and build relationships. These ICZs can be any type of public places, including urban parks, clubhouse, museums, or community gardens.

Urban parks serve several functions to society, including a social function to encourage social engagements and can help elders build social connections (Peters et al. 2009). Also, many studies have found that urban parks can decrease stress levels and help reduce depression (Davis, J. 2004). Intergenerational practices can happen either inside or outside; however, the outside environment has a greater influence on a senior's well-being. Therefore, an urban park is the ideal place to hold intergenerational practices.

1.2 Purpose and Significance

In this thesis I am trying to better understand IG design challenges and potentials in urban parks, in order to improve landscape design's capacity to promote IG opportunities for elders and thus reduced senior loneliness. This thesis developed a framework for urban parks that reveals how landscape design space and character functions to promote IG interactions. This framework can be used as a template for similar future studies, and also as a lens through which to evaluate cultural values related to IG spaces and, more broadly, research literature on IG landscape design.

The knowledge gained from analyzing Chinese and American parks has culturally specific applications as well as potential global lessons, which might be used universally in parks worldwide. As globalization, increasingly mixed people from different ethnic and cultural backgrounds, this potential only increases. This thesis explores IG design from culturally specific and global perspectives, and may prove useful to students and professionals engaging in large, cosmopolitan park design.

Additionally, this thesis supports the idea of using outdoor public environment for facilitating IG engagements. Intergenerational practices and environmental studies have concluded that ICZ could consist of areas such as streets, schools, or plazas; however, most intergenerational programs occur inside, with only a few taking place outside (Belza B, 2007). This work adds an outdoor environments perspective to this critical dialogue.

1.3 Research Question

To examine cross-cultural and global capacities of urban parks to alleviate loneliness in elders. The primary research question is: How do urban parks in China and the United State function to prevent through facilitation of IG engagements? How are these parks similar and/or different? What does this examination suggest for IG design in respect to urban parks? What similarities, differences and potential shared lessons between Chinese and American urban park IG use and how might diverse cultures affect and be affected by park intergenerational usage patterns?

1.4 Methodology

This thesis will examine the research literature, and then specific design characteristics of identified IG places within public parks, in order draw out design lessons. To answer these questions, the author will use the following research methods: literature review, description, case

study method, social survey to find out what elders think, and field observation that support the survey (Deming and Swaffield, 2011). The description will examine problems resulting from social isolation of seniors, and how effective intergenerational practice design can be used to prevent this problem. The case study method will use criteria which was determined by survey results and the observation of seniors, to evaluate various landscape qualities among four parks. It is important to obtain seniors opinions of the park, because this specific information is hard to obtain through field observation or general research. Based on the information provided by the case, the patterns of usage among American and Chinese seniors will be compared, and a comparative framework will be created. After the framework is created, the findings of the case study will be analyzed.

1.5 Delimitation and Limitation

1.5.1 Delimitations

There are numerous benefits afforded by urban parks beyond the scope of this thesis, including the benefits of being in natural environments, and being with individuals of similar generation, i.e. not intergenerational. These are likely critically intertwined with loneliness and good subject for future study.

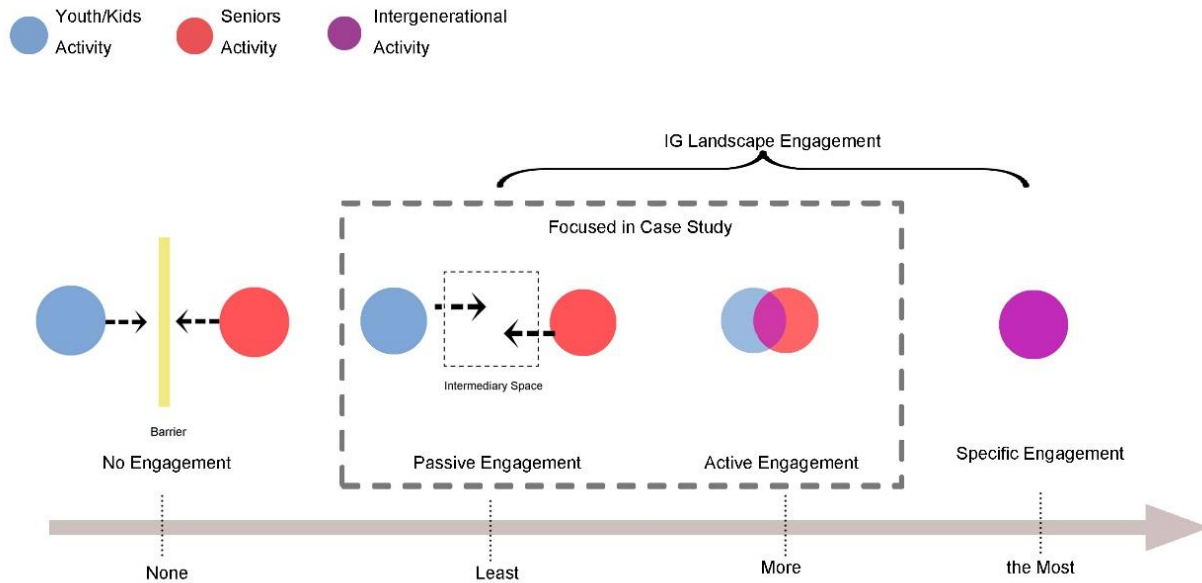


Figure 2: Intergenerational Engagement Process (created by author)

Another delimitation was found after research is the scope of the study. This paper examines that people's willingness of join in an IG activity is changing over time, and the process itself is uncertain in a place. The condition of engagement could be change by different individual or activity. A least engagement condition is there having a barrier between the youth activity place and the senior activity place. This barrier limits the field of vision, and therefore prevents both the younger and older adult groups from interacting with each other. But, if both age groups can see each other, they may start interacting in the space between their designated areas. A previous study suggested that an intergenerational contact zone (ICZ) provides space and opportunity for the users of adjacent mono-generational spaces to meet and engage in joint activity. ICZ spaces can soften the social and behavioral boundaries between adjacent mono-generational spaces, and add intergenerational socializing options to these settings. (Thang, 2015) Active engagement, which is the main focus of study in this paper, occurs when both older

and younger adults are willing to join into an IG relationship, with the knowledge that it is an IG activity. The IG activity could be a spontaneous activity or a self-organized activity. In this situation, a person's purpose in joining the activity may not be IG interaction, they may just have the same interests. The best way to build IG relationship is IG program, which is a focused and specific activity, where participants already know the objective. And the IG program should be the next step. to introduce IG programs into urban parks.

Older people in rural and urban areas have the same problems that include social isolation, depression, and high stress levels. However, this paper will only be discussing these problems within the urban setting. In American and China, urban areas have a much higher population than rural areas. Today, China has more than half of its population living in the city. (<https://www.psychologytoday.com/blog/the-athletes-way/201509/large-city-parks-and-green-spaces-promote-well-being>)

1.5.2 Limitations

Two limitations are evident after analyzing the survey and case study. First, because there were not a lot of survey samples taken in each park, the information may be biased; however, the survey results are consistent with the general trend.

Second, the amount of time spent in each park may not have been sufficient to provide accurate data. Only one day was spent in each park for survey and observation, and it is possible that unknown factors may have influenced the data. For example, there may have been a senior event held nearby on the day the observation was conducted, which would have caused an increase in the typical number of senior's park. Another possibility is that some intergenerational programs regularly occur in the park, however, there were none on the day of the observation.

1.6 Thesis Structure

The thesis will begin with an introduction, where the issues relevant to an aging population and the resulting social isolation issues will be addressed. Then, the problems and the probable causes will be discussed. Chapter two will compare American and Chinese culture in relation to the urban park. Several aspects will be discussed, which include the social attitudes on seniors, the history and function of both country's urban parks, and the different patterns of park use among seniors. Because culture could affect how, and how often, an older adult uses urban parks, a deeper understanding of various cultures will aid in understanding the later findings.

Chapter three will examine an urban park's social role, and how the environment can influence social interactions. An urban park, which provides surrounding residents with opportunities to connect with other people, plays a key role in a person's daily life. For older adults, an urban park could help them build social connections and help them stay mentally healthy. The concept of the IG relationship, and the history behind it becoming internationally studied, will be addressed. Further, the study of environmental and intergenerational practices will be discussed. Finally, the study, which was conducted by Pennsylvania State University researchers and linked intergenerational contact and the environment together (now known as ICZ), will be introduced.

Chapter four will discuss the methodology used, and will be divided into several distinct parts. The case study will be created from observations and surveys. So, the first section will explain the purpose of field observation, and how the observations contribute to the conclusion. Next, four parks will be compared, and it will be explained how they were chosen. The second section will consist of the survey to be submitted to IRB. Since this thesis is gauging the

landscape characteristics relative to a complex issue, the user's views of urban parks are important. Then, the qualitative study method, which is used in the case study, will be introduced.

Chapter five will be based on the survey and observation data. This data was used to establish the criteria used to evaluate various aspects of the landscape qualities among the four parks. The analysis of this data will provide the necessary knowledge needed to create a design framework for intergenerational spaces. Diagrams and maps will be inserted into this chapter to further explain the findings.

Chapter six will contain the discussion and conclusion, and will discuss potential outdoor intergenerational activities. The findings will be described, and suggestions will be provided for the design of urban parks. The potential strategies will also be discussed in this chapter, as well as other essential factors necessary to achieve a successful intergenerational space.

CHAPTER 2

SOCIAL ISOLATION AND GLOBAL PATTERN TOWARDS ELDERS

2.1 Elderly Social Isolation

2.1.1 Introduction

When talking about social isolation, there is a study defined two different types. One is lacking connectedness which means requiring social relationships and low levels of participation in social activities. Another is called perceived isolation which implies loneliness and a perceived lack of social support (Cornwell & Waite, 2009).

Social isolation means one have no meaningful contact with the individual or community (Cattan, M., Kime, N. and Bagnall, A.M., 2011). Anyone can experience social isolation and loneliness. However, the degree of risk depends on some factors and thus causes some individuals or groups to be more vulnerable than others. These effects and often interrelated factors include physical and mental health, age or life stages, socioeconomic status and gender (Durcan & Ruth Bell, 2015).

2.1.2 Reasons cause elderly social isolation

Live alone

For some older people, living conditions such as physical weakness, family members death and living alone will increase their risk of social isolation (Kendona, 2017). Unfortunately, most old people live alone. In the United States, nearly twenty nine percent of older adults live alone. About half of the communities most elderly (85+) live alone (Kaplan & Berkman, 2016). In China, the same situation. The ratio of social isolation in the urban area is 21.4% among

seniors. More 'empty nest elderly' phenomenon appeared, which means elderly who live without children/live without spouse. By 2050, the ratio of 'empty nest elderly' among all elderlies will grow up to fifty percent (Chen, 2006).

Social network shrinks

Social network research has demonstrated health risks associated with shrinking social network, connect with friends is not frequent (Beverly H, 2001), and the lack of social networking diversity (Cornwell & Waite, 2009). Many older people do not have a secure network with friends after they retirement, and when their friendship networks are shrinking, they found themselves at a disadvantage in making new friends. The reason might be the life course changes, such as retirement and bereavement, may lead to a loss of social roles (Ferraro, 1984), and health problems may limit participation in social activities (Li & Ferraro, 2006).

Poor transportation links

Also, poverty areas often lack adequate quality green and public space, creating obstacles for social participation. Transportation is also crucial in establishing and maintaining social connections.

Poor transport links can create barriers to social inclusion, whereas useful transport links can benefit social cohesion. If elders found it is hard for them to get access to the park, some of them may choose reduce times go to the park. That will cause they lose the chance to communicate other people in parks, and they will feel there's nothing attract them to the park. It is a vicious circle. A report by the International Longevity Center also found that older adults would like to visit their friends more frequently when the transport has been improved (Durcan & Ruth Bell, 2015).

2.2 Elder's Social Value Among Eastern and Western Culture Comparison

The attitude toward to seniors in eastern and western culture is an important thing I have to learn for better understand elder's usage pattern in the globalization background. The difference is because the history and origins of these two cultures are separately, and the social values are different. These difference effect seniors' live experience in their later life.

The social value of western culture, which is very individualistic, is mostly focused on "youth, self-reliance, and individualism." While eastern culture is collectivistic, it more values on a family member, respect on elderly (Advanta Home Care, 2012). In Chinese values, the love and support of the old, the educate and take good care of the children are widely known traditional virtues. People think seniors are wise and experienced; they can give many pieces of advice to help to keep us on the right way, that's way in eastern culture elders are much more respectful. There even has a Chinese proverb called 'Not listening to the old people word, suffer losses before the eyes.' Even now in some rural area keeping a custom: the crucial matters in a village will be decided by seniors who venerable in this town.

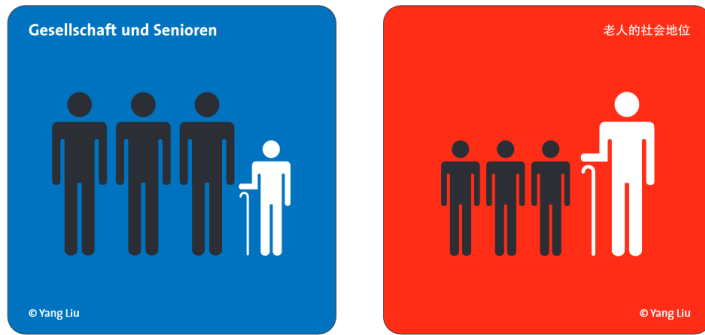
The difference of attitude towards seniors in eastern and western culture is mainly due to the following aspects:

The first is the attachment to one's family. In eastern traditional culture, it is a right to stage thing that children take care of their parents and even live with them. Many traditional festivals like the Moon festival in China, the O-bon Festival in Japan, and the Lunar New Year are all aimed at gathering family members together and celebrate. Although this idea changed with time, it is still apparently shown the family concept is fundamental in the eastern culture. And because of people taking good care of their parents, they have the same expectation on their children. "Filial piety essentially directs the young to recognize the care and aid received from

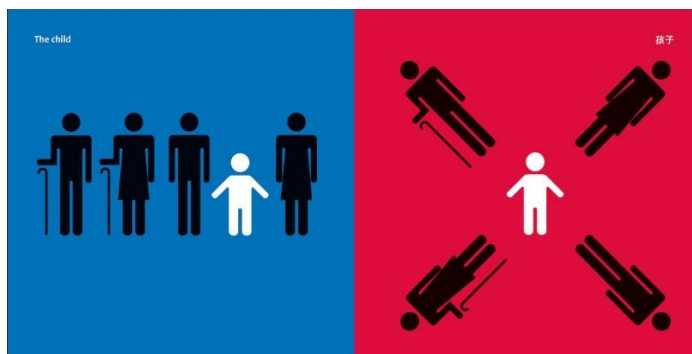
elderly relatives and to, in return, respect, and care for them. The tradition is deeply rooted in their family system and social structure." (Sung, K, 2004). However, the family tie in western culture is not as close as the other one. In most western culture, children will leave the original family after they have the ability independence and they won't live with their parents. Many elders in the U.S. are spending their later life in a nursing house. 1.3 million elderly Americans live in nursing homes. In 1990, nearly 1 in 4 Americans age 85+ lived in a nursing home, and now the number is still growing (<https://www.ioaging.org/aging-in-america>).

The second part is the social value distinct. In western, people believe individual development and emphasis personal freedom and rights. If taking care of parents is a very messy work or it would affect their own life, most people will choose to send them to a nursing house and enjoy their personal life. In the meantime, these seniors also feel going to the nursing house is a good choice. In the history, people in western are relied more on themselves than their parents to make successful. In eastern, the cultural value is harmony which means each person is one member of the whole society, so people used to consider more group benefit than their benefits. And people like the group activity. In the past, when youth step into the community, most parents will play an essential role in their future success. Their parents social class decide their future. All these differences between two cultures are because of the history and development of the culture (Guo, 2010).

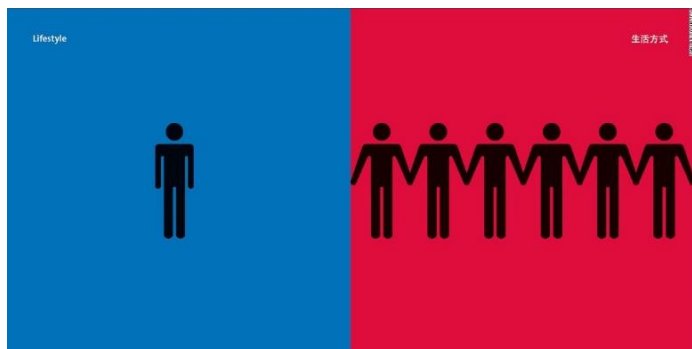
I found these pictures showing the eastern culture compare with western culture in many aspects. The blue color represents western civilization, the red color represents the eastern culture (Liu, 2007). They may not entirely scientific, but they do help us understand the thinking way and culture value difference between these two cultures. And it will help me learn lessons about elderly using urban parks from America and China based on their social values.



Social status of the elderly



Children's family status



Lifestyle

Figure 3: West meet East

(Source: <https://qz.com/567479/the-cultural-differences-between-east-and-west-according-to-one-artist/>)

While even eastern culture seems friendlier to elderly, America has the world's forefront technology and science. Many studies in America recognize the perception of later life. In the caring for aged mental health part, nursing homes, plant therapeutic aspects, America did a great job. Although many seniors in America are spending their later life in nursing homes, they still are taken good care. The only inadequate is the elderly would lack communication with their family members, and their interactive social circle would be confined just to the nursing homes. So, western culture can learn from eastern culture respect for old part. People should care more about their parents like talking with them and encouraging family gathering frequently. In the other side, eastern culture could learn from western having the conscious of taking care of elderly's emotional/ mental health. Because now the more concern about older are in the Material aspects not from the real psychological needs aspects.

2.3 Eastern and Western Urban Park Comparison

Cross-cultural behavior study of the park also won the attention of the western academia. Research shows that the activities of attitude and behavior patterns, park activities experience and attitude towards environment be different due to the different culture. For example, Loukaitou Sideris has found that park users are influenced by cultural background with significant behavioral differences by investigating four different types of urban park users in Los Angeles (Sideris, 1995). I believe that learning the difference and similar characters among multi-cultures could help me learning this lessons from a global perspective and better support the intergenerational findings in parks.

It is interesting that of all civilizations, gardens were all start from serving few people. Compared with the ancient private gardens, the public garden was the birth of the modern industrial society. This is the open space that everyone can enter, as the urban park we call today.

The world garden has a history of more than 6, 000 years, but the park has just been existing around a century or two. Genuinely complete modern meaning of city parks appeared in the 19th century after the industrial revolution. Due to the expansion of the industrial revolution and urbanization landscape, M. Laurie in his book NATURE AND THE CITY PLANNING IN THE 19TH CENTURY first time discussed the point of view in modern concepts of industrial city, a theory of the natural regression, the definition of city parks and studied the history of epoch-making significance.

2.3.1 The history and developing of urban parks in America culture

In European and American landscape evolved from Noble private garden. There were no urban open spaces in medieval and previous cities when the most critical function of the city was defense.

Birkenhead Park built in 1843 in Liverpool, British, is the first truly urban Park in the history of world gardening. It marked the birth of the first city park. It is said to be the first truly urban park, because the park was built by the government, not the public park that had previously been built by private finance.

In the modern concept of city park originated in the United States, by the founder of American landscape design Frederick Law Olmsted put forward the construction of the park in the city of the great vision. In 1858, he and Calvert Vaux common design for New York's central park. New York Central Park is the world's first modern city park, is also the starting point of the American urban park movement, its distinctive feature is the public characteristics, that is, for the general public the public living landscape (Mai, 2006).

At present, most of the scenes in the United States provide civic recreational activities are urban parks, with perfect functions and facilities, emphasizing local conditions and adapting to the needs of social activities.

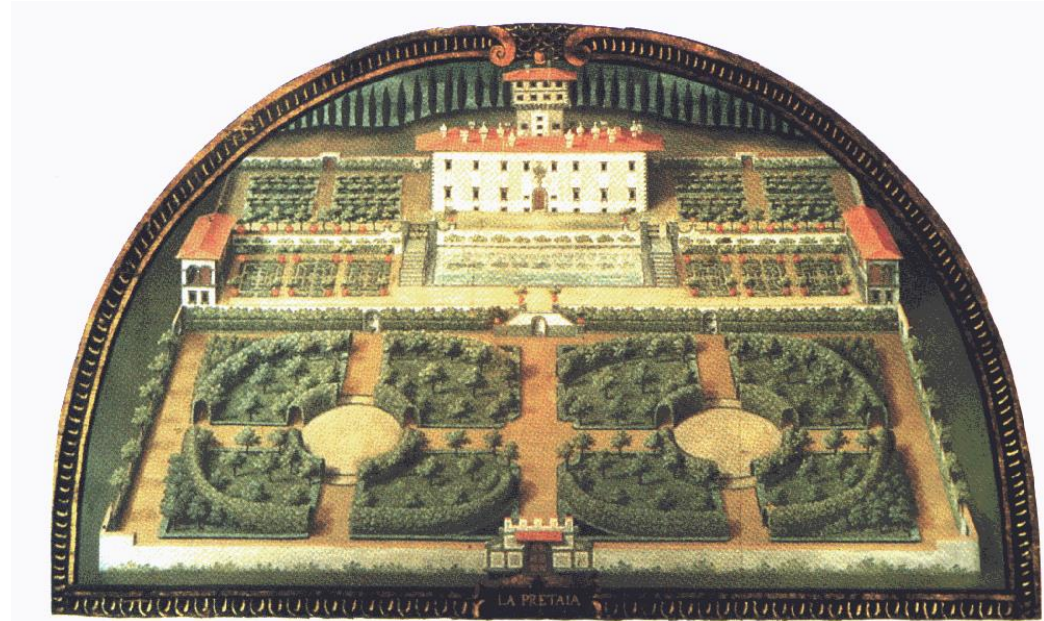


Figure 4: Typical 16th century Italian garden of the early Renaissance

(Source: https://en.wikipedia.org/wiki/History_of_gardening)

2.3.2 The history and developing of urban parks in China culture

It will be important and interesting to note the need for preservation of cultural in Chinese garden---park process, at the same time a involving urban parks to be able to accommodate for global cultural needs.

Although European societies have at times in the past preferred large open spaces, grassed parklands and paved plazas for recreational purposes, traditional Chinese society favored the intimate scale of garden and courtyard (Ji, 1988). In China, we have traditional garden in the past thousands of years, but the modern urban park is merged later than other places.

Very few people originally are allowed to use the traditional garden, such as the imperial aristocracy or Commander in chief. There's no public park at that time. The character of the

traditional garden is the very narrow building space, and its private garden, it is delicate. The design of the landscape is also static. It is not a public sightseeing site; it is a private space and not the ideal place for public gather and doing activities. So nowadays there's a new style open space in China now: natural style and traditional style (Yao, 2013).

With the concept of modern urban parks slowly introduced into China, the Huangpu park, which was built in 1868 in Shanghai, was the first modern urban park built in China. Its garden ideas came directly from European gardening practices and theories, with large tracts of grassland and very few buildings. But for a while, the public parks in China was small in number, weak in appearance and inadequate facilities. The concept of 'Urban Park' wasn't clear either. Fortunately, after economic development, significant achievements have been made in the construction of urban landscaping. The activity of constructing "ecological garden city" was carried out, and the downtown green area per capita is increasing every year. In the urban green space classification standard (Ministry of Construction of the PRC, 2002), City Park is defined as a place which opens to the public, have certain recreational facilities and service facilities. While also have ecological, landscaping, disaster prevention and mitigation and other comprehensive roles of green land.



Figure 5: Master Plan of a typical Chinese Garden, 1174 A.D. China

(Source: <https://randomwire.com/master-of-nets/>)

2.3.3 Compare of urban parks through culture

Claire Cooper and Carolyn Francis declare that people use the city park for two main reasons, one is the desire for the natural environment, the second is the need for interaction with people (Marcus & Francis, 1998). Social activities are part of the importance of urban park activities, and many scholars have studied this, such as Gill and Simeoni found that the city park organized festivals to attract different cultural background of the park users come to increase the park activities potential power (Cormack et al, 2010).

According to the theory of intercultural communication, the people have same mother tongue and cultural background will show a greater common in social behavior. Cultural background similarities and differences have a greater impact on social behavior. Some studies have shown that culture have influential on park social activities of the content, participation. For

example, American whites tend to have a single or two-person park activity with an average park attendance of 1.6, and Asians are more likely to have family or friends' collective park activities with an average park attendance of 5.0 (Gobster, 1993).

In a study, the author compared the urban park activity in American and China, she found that there are some overlapping activities in both American and Chinese parks, but there also have some unique activities of their own culture. Her findings are shown below.

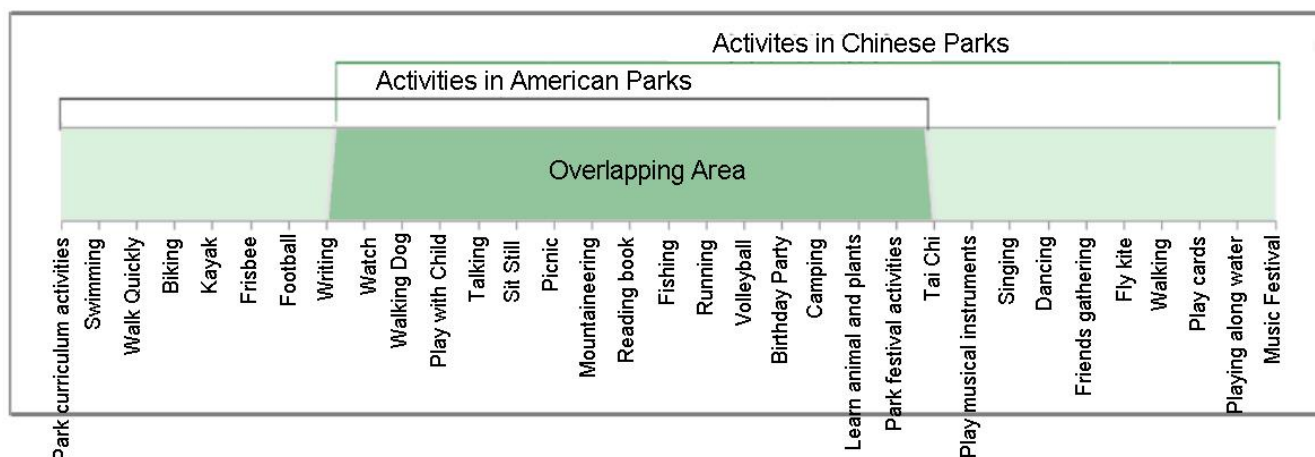


Figure 6: Comparison of the types of activities in China and the United States

(Source: Luo, 2016)

As we can be seen from the figure, about half of the activities in the park are similar, with a total of 15 overlaps, covering the majority of park activity types. Chinese park activities as tai chi, playing musical instruments, singing, dancing, friends gathering, playing cards and other activities in the US park did not appear, because such activities are mostly group, social activities, more relaxed. The participants include family, friends, strangers. American park activities as Frisbee, American football, kayak, and other activities did not appear in the Chinese park; such activities are characterized by strong competitive, dynamic activities, more dependent on the activities of facilities, equipment, event participants are mostly with familiar family, friends (Luo, 2016).

In the number of participants, the American park users are richer in personal activities, most of the family members of the team activities, and the Chinese park team activities more group activities, participants are not limited to family members, this difference is also reflected in the social park activities in the classification. From the state of park activities, the activities of the park in China and the United States show the opposite characteristics. The activities in US park are dynamic, competitive, fitness activities, in the majority of Chinese parks are leisure, easy static class of static activities, this difference in the nature of the activities of the division also reflected.

So, compare between the urban parks in America and China (See table 1.), we can see the urban park developing are different between these two countries.

Urban Park System	China	America
Function	Recreation and Service	Ecological and Preservation
Activity Type	More Static	More Competitive
Space Type	Semi-open, delicate landscape	Open, large green area and lake
Social Activity	Group activity	With family members

Table 1: Urban Park System Compare

(Source: Gobster, 1993 and Luo, 2016)

In China, the relative isolation of traditionally closed parks makes it impossible for the outside world to share the park landscape and amusement places. The park development is unbalanced; the layout is scattered, the facilities are not complete and old, the park function is not perfect; The traditional urban parks have difficulty in adapting to the development requirements of modern society. And only reforming and update the traditional city parks could

make the park regeneration energy used again by the high quality of the humanities landscape art connotation and function of ecological science to meet the needs of modern society. Therefore, the traditional park urgently needs to renew and renovate and restore the vitality of the park to make its own better development.

Conclusion

Elders are suffering loneliness. What can landscape architects learn from these lessons, the difference from a different culture, and how can we use it in the future design? Comparing through eastern and western culture towards elderly and the park system, we could say that the culture has a profound influence on the urban park usage pattern.

After the study, I feel the problem of elderly social isolation lacks connectedness with other people. Now there already have some ways to help elders reduce loneliness, like visit them at home, community connection or internet. Among all the solutions, I feel the proper way is to encourage them to communicate with other people and build a longitude friendly relationship. In this way, elders can know other people need them, and it could reduce their negative emotion.

CHAPTER 3

URBAN PARK AND INTERGENERATIONAL PRACTICE

3.1 Urban Park's Social Role

3.1.1 Urban park is good for mental health

The natural environment of urban parks could affect people's emotion. The physical environment helps people interact with others, reduce the stress and it could help reduce social isolation. The designer should consider elderly's needs and their life well-being in urban parks. But now the urban parks consider more adults and children needs instead of old people. Most plazas in parks or playground are designed for youth and child while seniors are a group of neglected groups (Loukaitou-Sideris, 2014).

One study forecasting that in the next 35 years, there will be approximately 66% of the world's population live in urban area. Although the urban green space and the park have long been considered good for our physical and mental health, the city planners and landscape architects should concentrate on how to meet the growing citizens' needs, at the same time does not affect the existing ecological system (<https://www.psychologytoday.com/blog/the-athletes-way/201509/large-city-parks-and-green-spaces-promote-well-being>).



Figure 7: Urban Park Inside City

(Source: David Shankbone/Wikimedia Commons)

There many study researches about how urban park benefits people's mental health. One study claims that open spaces like urban parks, greenways and plazas are essential for citizens to build a more generational cohesive, stronger community (<http://www.cityparksalliance.org/why-urban-parks-matter>). In a study, 71% of people have reduced depression after walking outdoor, while in the indoor walking group the depression was reduced by 45% (Anon. 2007). Another study showed the same results about the relationship between health and green spaces. They found that having a grassy area nearby the home has a substantial and positive impact on people's stress (Stigsdotter, 2005).

The green spaces value does not only help reduce stress, and it could encourage exercise and interaction relevant to treating depression symptoms caused by social isolation.

As noted above, studies have shown that owning nearby natural landscapes and living in green spaces could improve workers' productivity, improve academic performance, and reduce symptoms of Attention Deficit Disorder (Maller,2009).

Overall, urban parks play a vital role in strength and positive citizen's emotion (https://depts.washington.edu/hhwb/Thm_Mental.html). While in this thesis, I will focus more on IG reduce social isolation, rather than nature's benefit to mental health.

3.1.2 Urban parks encourage people social engagement

An environment which provides surrounding residents the opportunity to contact with other people. So, public places can be a very proper interaction happening zone. It is essential to understand that the environment and personal habits have positive effects on social engagement. Treatment of the environment, practices, daily life of older adults who are experiencing social isolation could help to prevent harmful health issue and build up social engagement. Public parks have been described as places for “the meeting of strangers” in (Ward Thompson, 1998). In this study, some people think that in modern society, there is almost no other place than parks to allow strangers from a different background, financial situation and ethnic to interact together.

Researchers supported by Peters et al. (2009) found that natural elements of open spaces could encourage the social engagement of people in many aspects of social health, social solidarity. The green areas provide opportunities for people from different ethnic groups to act and enjoy outdoor life together. Their study pointed out the importance of park design on social cohesion (Peters K, Elands B, Buijs A, 2009).

Residents living surround urban parks can have the improvement of social cohesion and interaction. Due to the increased chances of exposure to nature and connect to other people, their mental health will remain positive. Studies have found that efficient social support networks can

help restore personal control and self-esteem by cushioning stress and adverse health effects (Krause, N., and B.A. Shaw. 2000).

A community design can be easily integrated into the green space, and it can also improve the cohesion and interaction of society. Therefore, the individual's mental health will remain in a positive state (Krause, N. 1987). Green space such as community gardens and even shadows of trees, all could encourage social connections (Health Council of the Netherlands. 2004).



Figure 8: People Naturally Social in Urban Parks (took by author)

Especially for the elderly, social interaction is important because less loneliness is associated with lower mortality, depression and cognitive impairment. A study shows that seniors prefer natural rather than the built environment, there is a definite correlation between the familiarity of the environment and the resilience of the environment (Berto, R. 2007). Since elders' mobility is more limited than others, they need easier access to spaces.

It has been found that there is the natural landscape, green community gathering place, spontaneous collective activities such as walking and old shared garden area can promote social contact, it has been shown to reduce the development of chronic diseases such as depression and cardiovascular diseases.

Matsuoka and Kaplan (2008), who are leading the social and landscape design combined study field, provided the consistent evidence that urban landscape design strongly influenced the happiness and behavior of urban park users. Many studies stresses that urban landscape features have a connection to human health and social relationships (Matsuoka RH, Kaplan R, 2008).

City parks can provide an essential place for everyone to share their experiences with all kinds of people. And landscape design is one of the most effective tools because it could improve people's living environment and give people a sense of belonging.

Open spaces in the city might contribute more value to the society and psychology of the city than physical function. And such spaces help developed communities and ecologically provide benefits for the whole city (Uslu, Gökçe, 2010).

3.2 Seniors and Parks

3.2.1 Senior usage pattern in urban parks

As it said in the former chapter, lacking connectedness is the critical reason of senior's social isolation. Parks provide precious assets for the city because they offer recreational opportunities, represent places for social interaction, and provide natural respite opportunities for citizens. The Administration on Community Living (formerly Administration on Aging) claimed about 30% of elders in 2010 were living alone, and in women over 75 years of age, this ratio is almost 50% (Administration on Aging, 2011). Such condition of elderly would easily cause social isolation problem. Then these elders will become more vulnerable to physical health issues and early death.

A study of seniors in the United States shows that the power of contact between neighbors is associated with the availability and proximity of parks and green public spaces

(Kweon, Sullivan, & Wiley, 1998). Social opportunities in the park may be more important than the park's facilities (Cohen et al., 2009).



Figure 9: Playing piano in Washington Square Park, NYC.

(Source: Sideris, 2014)

As their age, senior citizens are more likely to suffer additional mental and physical problem, which in turn makes them less balanced with the environment. Through their institutions and self-direction, they can compensate for their increased biological, psychological limitations by adapting to the environmental. However, adaptability should have two aspects: the environment should also adapt to the needs of the elderly because they are continually changing and developing (Sideris, 2014).

Studies find that seniors perceive open spaces as gathering spaces, or what Garvin et al. (2013) refer to as “third places” or “bumping places.” (Garvin, E., Branas, C., Keddem, S., Sellman, J., & Cannuscio, C. 2013).

Senior prefer interactive group should also be concerned in park design process. Some elders may prefer to be with peers, while others may wish to join other age groups. Thus, a study

said elders in Montreal preferred people from their age groups nearby when at the park, while elders in the Netherlands were interested in having people from other age groups nearby when staying in public green space (Moore. S, 2010).

3.2.2 Urban Parks and Elders

Urban park is continually evolving to meet the needs of elders. Concepts such as ‘Senior-friendly parks’ are increasingly popular, suggesting increasing focus on and park use by elders. Equally important policies such as the Americans with Disabilities Act (ADA) promote elder accessibility to public through guidelines and standards that increase accessibility of facilities for people with disabilities (Frost, K. 2013). Furthermore, urban park has features and programming such as paved trails and playgrounds that act as draw for elder and other generation of park users and adequate space to allow for diverse attitudes about park use (Besenyi, G., Kaczynski, A., Wilhelm Stanis, S., & Vaughan, K. 2013).

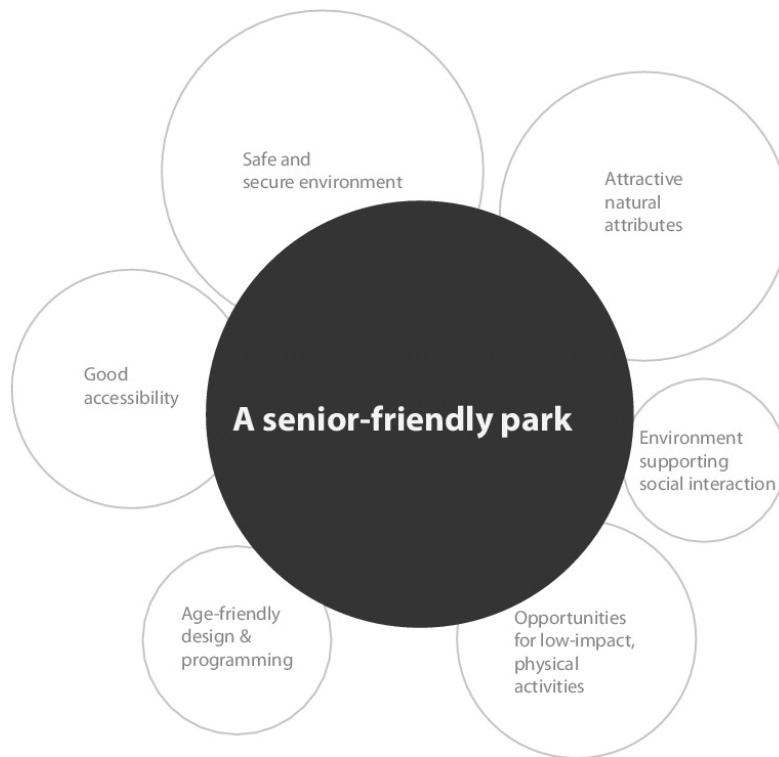


Figure 10: Seniors' Suggestions for a Senior-friendly Park

(Source: Sideris, 2016)

Research on senior's preferences in urban parks suggests that both IG engagements and separation is important to elder wellbeing. For instance, in one urban park survey, some elders welcomed the integration of different generations in the park, particularly children and families while other expressed preference for exclusive (Henkin, Brown, & Leiderman, 2012).

3.3 Intergenerational Engagement in Urban Parks

3.3.1 Intergenerational relationship and effect

IG engagement has been shown to benefit elder's mental wellbeing and emotion and reduce incidences of depression (Gigliotti, Morris, Smock, Jarrot, & Graham, 2005; Herrmann, Sipsas-Herrmann, Safford, & Herrmann, 2005). This finding has spurred several advancements in IG design. Including the International and European IG agenda in the 1990's, and the UN's World Assembly on Ageing in Madrid, set up by 2002. Age-Friendly Community AEGenda

built in the USA in 2012 are further demonstration of the increase in IG attention, research and funding. And while parks increasingly consider the diverse needs of children, elders, and adults, there is need still understanding specific means and strategies urban parks employ to promote IG engagement.

Furthermore, the study of elder mental health in China also needs to be advanced, particularly as China has unique intergenerational usage patterns based on a specific cultural background. These usage patterns include Chinese elder preferences for visiting parks in groups and their desire to share their experiences with youth. Programs exist in China to purposefully bring together young and elders in parks, there already developed many self-organized groups, and the facilities in the parks provide opportunities for interaction.



Figure 11: Elders and Kids in Xingqinggong park, China (took by author)

The interaction of older persons with young people is more significant regarding reducing stereotypes and improving their happiness than those associated with professional trainers, which is related to the benefits of intergenerational relationships with young people themselves (Gigliotti, Morris, Smock, Jarrot, & Graham, 2005; Herrmann, Sipsas-Herrmann, Safford, & Herrmann, 2005).

Connecting older adults and youth can have benefits for both generations. Older adults have pearls of wisdom and copious time on their hands to share their life experiences with the youth while engaging in leisure activities. Young people are introduced to older adults as smart, valuable and competent, which can help overcome the senior's fear of getting old. The intergenerational interaction can help decrease the despair older adults experience with social isolation (Kendona, 2017).

3.3.2 Introduction of intergenerational programs

The definition of “intergenerational programs” as defined by The National Council on Aging (United States) as “activities or programs that increase cooperation, interaction or exchange between any two generations” (Thorp, 1985). It can provide opportunities for different generations to share experiences, knowledge, and skills, which are mutually beneficial and develop positive long-term relationships (Newman & Hatton-Yeo, 2008).

Intergenerational (IG) programs, as a response to social conditions and problems, have been improving in the United States since the 1970s. These programs are organized targeted intergenerational interaction. These programs have been extended to various programs across the United States. They are apparently visible in small and large education and social services systems, like k-12 schools, libraries, children and adult day care, mental health systems,

multipurpose social centers, long-term care and residential neighborhoods and education institutions (Newman, 1997).

IG programs have four basic types: the youth serve older adults, elders serve children, youth and elders serve others, and the youth and elders share the site. In this thesis, I will study focus on youth help elders and share place one.

European have the most advanced intergenerational cognition and practice since the large grants from the European Year of Active Ageing and Solidarity between Generations, as well as national funding from government or private sources in 2012. Since then, intergenerational planning has become very popular, almost every social community project is called some "intergenerational plan." (A Portuguese City Park as a Potential Intergenerational Contact Zone). Right now, there are so many intergenerational councils and organizes in European like the European Network for Intergenerational Learning.

A growing number of global interest in generational move has caused international plans on the establishment of the International Consortium for Intergenerational Programs (ICIP), the group is committed to supporting the development of generation planning and practice, as the agents of social change. ICIP will foster intergenerational approaches to issues of community revitalization, cross-generational learning, generational cohesiveness, and quality of life for a nation's old and young. The organization hopes to be a bridge for communication in all areas to promote intergenerational initiatives to meet the social needs of different countries in the world.

The organizations among countries have created many evidenced-based programs to promote health for older adults, but six out of seven of these programs take place inside (Belza 2007). People are more likely to stick with a healthy behaviors/exercise regime if it takes place

outdoors since being outdoors provided varied scenery, is often free of charge and increases the opportunities for socialization (Miller 2014).

I will learn several cases which are all intergenerational programs, and all believe outdoor IG programs have more benefit than indoors. I think these arguments could help me for developing park design strategies. But these programs are not focused on how environment support IG, so these examples are just for reference.

1. Together Old and Young (TOY)

This program aims to let young children and senior citizens learning and developing in intergenerational community spaces. They believe that Outdoor play and learning involving community volunteers would seem to offer rich possibilities for intergenerational contact and broad community benefits. This TOY program processing model is shown as figure 12.

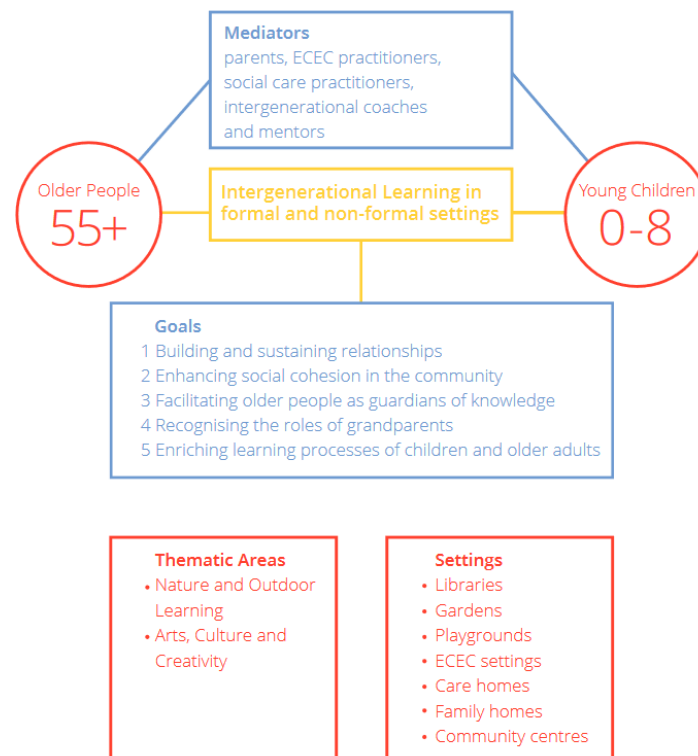


Figure 12: Framework of 'TOY'

(Source: Together young and old—Dublin University)

2. Irish community IG program:

An Irish IG program aim to promote interaction between different generations in their community, host a IG program in community gardens. This program encourages participants from different ages to plant in the gardens. Participants are come from local school, retired elders in the community and anyone who interest in this (Fitzpatrick, A., 2013).

3. Habitat Intergenerational Program (HIP)

The HIP is a volunteer program that allows people of all ages to participate in outdoor projects which goal is to protect and improve the environment. The program provides a wide range of activities like environmental education, planting native wildflowers, monthly bird walk, etc. This program holds every week, and the half of the participants come from nearby students.

4. The Intergenerational Outdoor School (Penn State University)

A residential educational program where 4th graders and older adults are brought together for 4-days to learn about nature and gain insight into other people's values for caring for the environment. Research shows the intergenerational component had a positive impact on both students and adults. For example, students said they learned more about the environment they are living and more like to protect it; elders learned that students admire their profound knowledge and views.

5. San Diego County Intergenerational Games

This is one of the very minority outdoor intergenerational programs in San Diego. The Intergenerational Games started in 2002 by San Diego's Area Agency on Aging. This program encourages older adults and youth play together to join sports competition or other outdoor games on the playground which aim to promote physical activity and promote intergenerational

interaction. They cooperate with primary school and middle school students as volunteers (Sotelo-Solis, 2016).

From the case study above, we can learn that the review of the intergenerational program and how environment facilitates it keeps moving forward. More people realized that intergenerational programs foster social participation, respect, and social inclusion, two other domains of an age-friendly city (World Health Organization 2007). Some researchers believe parks are ideal venues for intergenerational programs since parks are free, accessible and both children and older adults benefit from being outdoors. (HIP) Some researchers found that cooperate with local parks, schools, retirement home, and youth centers are crucial to reaching a diverse volunteer and participants (Krey, 2016). So, I'll talk about the latest research in this field.

3.3.3 landscape design facilitate Intergenerational programs/ activity

The intergenerational space is a study addressing sociology, physiology and landscape design. The relationship between them is like a report showed as the figure 13.

(<http://www.gu.org/Portals/0/documents/Presentations/11-Webinar-Designing-Environments.pdf>)



Figure 13: Relationship Between Sociology and Environment

(Source: <http://www.gu.org/Portals/0/documents/Presentations/11-Webinar-Designing-Environments>)

In urban parks, it may not have well-organized IG programs aimed to social cohesion and human well-being. But park could provide the place and opportunities for potential IG practice. It also could encourage occasionally happened social interact.

In Penn State University, college of agriculture sciences introduced a concept of intergenerational contact zones (ICZ) (Thang, 2015). Its focus is on creating a community environment that welcoming people of all ages, providing opportunities for meaningful intergenerational engagement, and enriching community life in some way. They learn from the ICZ conceptual framework as a tool for investigating and designing spaces for intergenerational participation.

The researchers found that when people describe their location, they usually add meaningful connotation to their description unconsciously. Space can't be understood as a neutral setting, only when the social context is applied. For subsequent social interaction, the start of

experience and cultural significance, and is composed of people living in this space, help it become a social significance of "place." (Thang & Kaplan, 2013).

That's why we can say a park is an ideal place facilitate IG. Typically, a city park is a public space without any access restrictions based on personal characteristics. However, if we look closely at the area and activity of the city park, we may find some age-based distinctions. For example, the playgrounds are mostly occupied by children; the sport fields are typically occupied by youth and the tea rooms are used by older adults. How to create an urban park that maximizes its potential to generate meaningful possibilities for intergenerational interaction and cooperation? We should try to change the multi-generation outdoor recreation to inter-generation. We need professional councils, programs to help people from different age play together, exchange their knowledge.

(http://recmanagement.com/feature_print.php?fid=201002fe03)

Lessons for Landscape Architects

According to the above studies, if the park wants to meet the social needs of senior residents it should consider the characteristics that entice elders and youth, the senior-friendly elements, the park feature and introduce more programming. Regarding the social health plays a vital role in open spaces and parks, there are two reasons to add intergenerational design into parks. First, the health of the elderly can attract both open space and benefit from the park. Second, considering social welfare is necessary because older people are facing more and more social isolation risks, and sadly they are fatal (Sideris, 2014).

It was a good idea to ask senior's needs when designing the open spaces as it would give them a sense of belonging and respected their general needs. Landscape architects should also consider the parks should meet with senior-friendly park characters as mentioned above.

The most important part of an intergenerational design is that space must accommodate a variety of ages and activities. The place must have the feel and function of home by providing residents with the proper balance of privacy and community by incorporating adequate safety and security measures and by promoting their independence and pride. It is critical to creating spaces that are explicitly designed for intergenerational activities while also creating flexible areas that would encourage unplanned, informal events for all ages.

Some older adults enjoy interacting and playing with children while others prefer just to watch the children play from a distant; some like indoor play areas while others take pleasure in outdoor games. Intergenerational planned activities are feasible through music, art, cooking, gardening, and exercise. Because there are many obstacles in a typical street environment, such as narrow and poorly maintained pavement, many older people do not encourage regular outdoor play. Improving the quality of the outdoor environment can provide a better quality of life for the elderly.

In the park design aspect, planting design within a park is also outstanding. One study argues that people prefer open landscapes like grassland because it is mostly like the place our ancestors living (Heerwagen, J.H & G.H. Orians. 1993). While other researcher didn't agree with them, a study shows that the shade trees and biodiversity plants have positive psychological benefits on people. The more time people spend in richness plant area, the better mental well-being they are (Williams, K.J.H., & J. Cary. 2002).

Overall, the intergenerational spaces are shared areas where children, youth and older adults all can enjoy it. The goal is to make sure there are designed spaces specific for planned intergenerational activities and regions that would create spontaneous togetherness.

While improving design features in parks will hopefully attract older adults come outside, providing activities and social programs is a great chance to increase elder's social interaction with other people. Appropriate programs and park policies can encourage elders to get outside come to parks and build a long-term stable IG relationship which could help reduce social isolation problems among seniors (Krey, 2016).

Conclusion

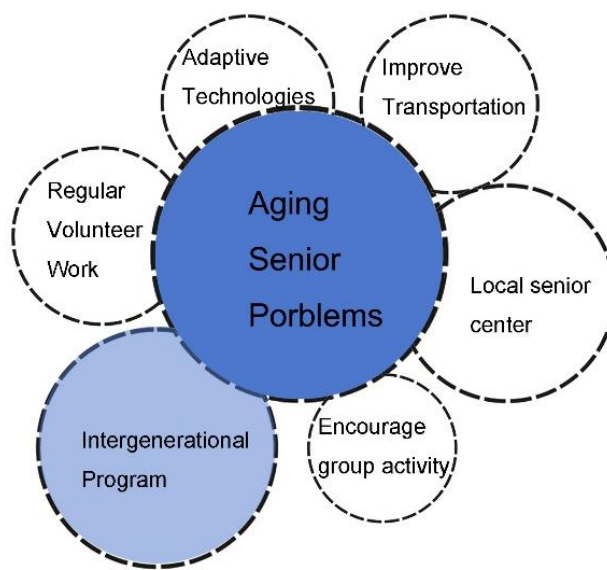


Figure 14: Aging Senior Problems (created by author)

The urban parks play an important role in helping senior citizens release their stress out and reduce the social isolation problem. While I found that the intergenerational activities can contribute to this issue. Because elder still needs to connect with people, and most important are with the youth. They need new knowledge, new view/ sight to view the world, and through connecting with youth, they can refresh their brain, always keep curiosity to this world. And it is good for keeping their emotion at a reasonable level.

As I mentioned above, when designing the park landscaper should also consider senior's willing of surrounded peer groups. I will test this in my survey and observation in the next step. In the perspective of global, there's some key principles of IG practice could be used in design in the future.

Even there's many methods to solving the senior's problems, the IG practice was tested to be one of the most efficient one. Through the practice, seniors are encouraged to join social group activity, build relationship with others and make them have the sense of belonging.

CHAPTER 4

METHODOLOGY

4.1 Introduction

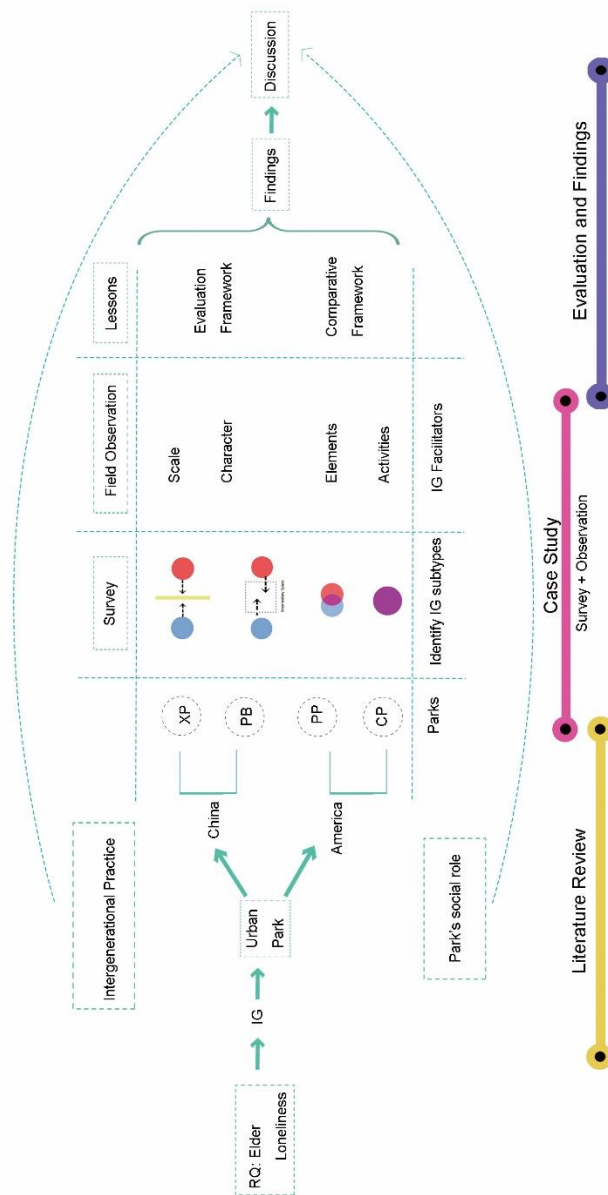


Figure 15: Diagram of Research Framework (by author)

This chapter presents the methods used to examine the ideal landscape qualities for IG spaces in urban parks. To explore critical relationships between space, elder's usage pattern, and intergenerational use, I will use a framework to examine and integrate several sub-methods. The sub methods are the case study, survey, and field observation. Within this framework, case studies in China and the United States are compared and contrasted as a means of examining culturally-specific lessons for cross-fertilized, intergenerational design potentials. For each case study, the author first conducted elder surveys to identify important spaces for IG in urban parks, and then systematic field observations to examine and unpack how these IG spaces function.

To help this framework work well and better study case studies, I used case study, social survey, and field observation as sub-method to achieve the findings. Integrating these methodologies is essential. The framework is shown as fig. 14 above.

4.2 Case Study

To better understand specific landscape design strategies that may alleviate elder loneliness, I chose four urban parks as case studies: (1) Xingqinggong Park and (2) Purple Bamboo Park in China; and (3) Piedmont Park and (4) Centennial Park in the United States. These four urban parks are comparable, as they share scale and are all located in urban areas with a high ratio of elder residents.

PARK NAME	LARGE	LOCATION
Xingqinggong Park	128.5 acres	Xi'an, China
Purple Bamboo Park	117 acres	Beijing, China
Piedmont Park	189 acres	Atlanta, USA
Centennial Park	132 acres	Nashville, USA

Table 2: Case Study Parks Basic Information

Each park will be learned by literature review, but most important part is the survey and field observation. Because only face-to-face contact can learn the seniors and other people's attitude, the firsthand data will help me learning people's subjective wills when they interact with people in urban parks and trying to find a way out help promote intergenerational practice in urban parks.

I will build an evaluation template to collect and descript data. The column will be identified IG spaces from survey, and the row will be the criteria used to evaluate the landscape qualities of these spaces. My example template is shown as below.

Landscape character IG Space	People's Interactive Character	Tree ACTivity	Seat Arrangement	Space Character	Shade	Activity	Access

Figure 16: Evaluation Template Example

4.2.1 Social Survey

The questionnaire has been designed in English and Chinese for collecting data from both countries. The questionnaire has been improved and edited before being used in the formal survey process. The first three questions are the reference from End Loneliness Campaign's Loneliness Measuring Tool. The author develops the other seven questions according to former IG practice study.

The next step is to make the form of the survey clear. The questionnaire is a time-efficient research method which can get accurate information from respondents directly. The questions are designed for approaching the expected results.

The research portal was submitted to UGA IRB, and IRB approved this survey. The Institutional Review Board (IRB) is the research supervisory board, which is responsible for ensuring that human subjects research is conducted by applicable federal, state and institutional policies and procedures. And the study ID is IRB Submission - STUDY00004268. The survey contents are shown as Fig. 17.

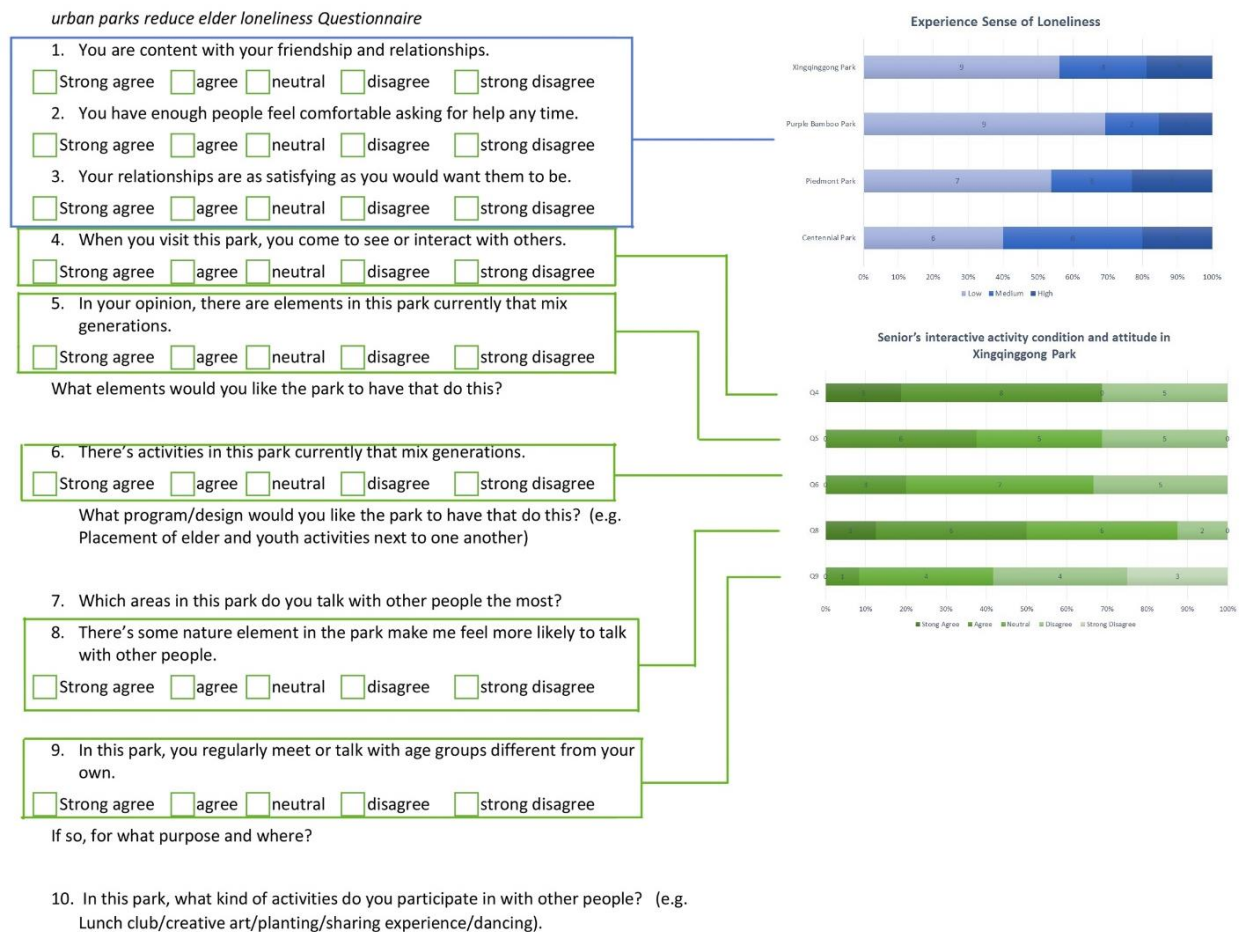


Figure 17: Social Survey Contents (created by author)

The survey is a face-to-face survey, and I did not record respondents' personal information like their name or voice. When I start my survey in parks, I will start with a brief introduction of my research and see if their age is included in senior range defined as 60 years old and plus. The age of 60 and plus is based on WHO (The world population prospects: 2015 revision) definition of elderly. And for making my data correctly, I will ask each person how old are they when I first contact with them. If their age is beyond 60, I will stop the survey and find another person.

The first three questions are according to End Loneliness Campaign and the measurement is come from their loneliness measurement tool. For interpret the survey results, their responses should be coded as follows:

Response	Score
Strongly disagree	4
Disagree	3
Neutral	2
Agree	1
Strongly agree	0

Figure 18: Score Bar for Answers

(Source: <https://www.campaigntoendloneliness.org/wp-content/uploads/Loneliness-Measurement-Guidance1.pdf>)

The scores for each individual question need to be added together. This gives a possible range of scores from 0 to 12, which can be read as follows:



So, someone with a score of 0 to 4 can be said to be unlikely to be experiencing any sense of loneliness, whereas anyone with a score of 9 to 12 is likely to be experiencing the most intense degree of isolation. Ratings in-between these two extremes are on a spectrum of feelings of loneliness; however, it is not possible to say that each point on the scale represents an equal increase or decrease in the degree of loneliness someone might be feeling. I divided these loneliness level to three levels:

- 0-4 low lonely feeling experience
- 5-8 medium
- 9-12 high (most frequently)

Other seven questions are related to intergeneration and elder's social life in urban parks. Most of them are also have five level of answers, from strong agreement to strong disagree. I will analyze these questions by a bar chart. Respondents number of each question will show as a percentage in the table. From the bar chart, I can get a clear motivation and attitude from the respondents who will help me build the framework of the guideline. The example of the bar chart is showing as below:

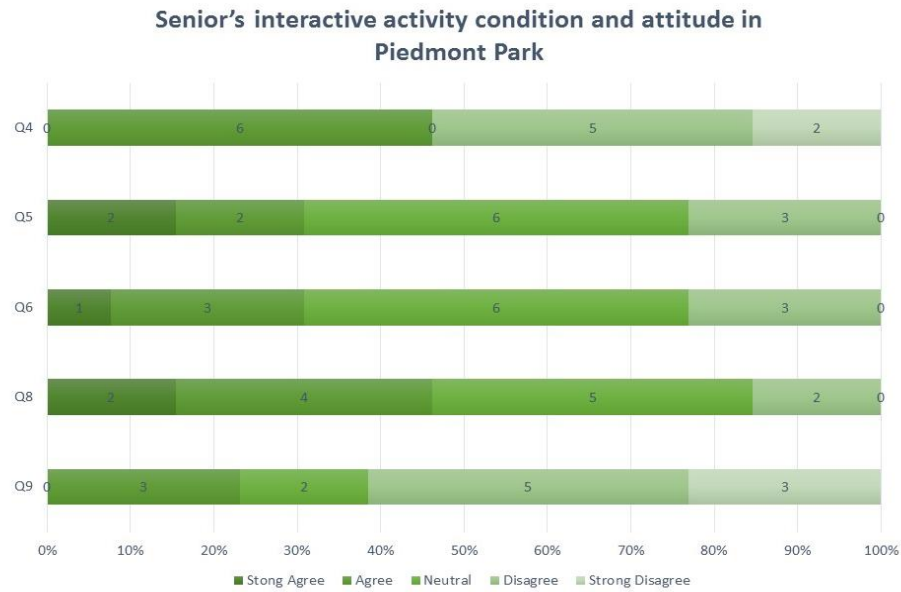


Figure 19: Survey Respondents Results of Piedmont Park

This is the Q4-Q10's answer results. The survey basically reflects older adults' IG interaction condition and their attitude towards IG activity. Q7 and Q10 are open questions and can help me identify where do elders like to activate in the park. An example of these open question is: When I was asking a couple senior residents in Piedmont Park about what activity do they usually take with people ages different from their own, they said they usually like walking in the park, but sometimes they walk dogs they will talking with different age group people.

4.2.2 Field observation

The field observation is a social research technique as one part of my sub-method. The observation will process on the same day as the survey day in each park. Field observation was defined as a process of building a relationship with the community to learn people's act and blend oneself into the environment naturally. Then immerse oneself in the data to understand what is going on and be able to write about it (Bernard, H. Russell, 1994). The observer's

presence does not influence park users' behavior. The conversation or activity in parks would not stop because the observer is standing around there.

Participant observation be used to increase the validity of the study, as observations may help the researcher have a better understanding of the context and phenomenon under study. I will observe both elders and youth in parks. The observation will be being in each park I visit, and I will take notes to describe what are observed in the park. The notes will be taken into data analysis process (Kathleen M. & Billie R., 2002).

In the observation process, I will observe elder's usage pattern through following aspects:

1. Where do the elders always activate in the park?
2. When is the time elders come to parks the most?
3. If elders prefer to join large group activity or small person activity (1-2 person)?
4. Do elders prefer to join the IG activities or prefer watching others?
5. For seniors not interacting with others, what are they doing?

These questions will lead me in the observation process, and provide support to the survey results. How these methods work together will be explained in the next chapter.

CHAPTER 5

ANALYSIS AND FINDINGS

5.1 Introduction

In this chapter, I will discuss the landscape elements of intergenerational spaces. The findings are organized along three broad fronts: general research/literature review, surveys, and field observations. Finally, these findings will be merged, and conclusions will emerge.

The spatial perception and evaluation of people from different socioeconomic backgrounds have been comprehensively discussed (Sugiyama, 2008; Roose, 2007; Joseph and Sirgy, 2000). Some studies have focused on ethnic and outdoor recreation in Western countries. Others have discussed the relationship between user perceptions and park planning. A growing body of research focuses on Chinese urban park transformation and related entertainment usage patterns (Jia, 2011). The Chinese urban park development system has already started trying to control the rapid loss of urban green land resulting from the processes of urbanization. American and Chinese park systems have very different social, functional, and standards-related characteristics. To compare and better understand senior citizen's usage patterns of urban parks globally, the present research investigated intergenerational activities and landscape qualities in four parks located in Xi'an, Beijing, Atlanta, and Nashville.

The survey and observations carried out in this study were conducted on weekend days with good weather for spending time outdoors. Weekends were selected as the specific period of study because that is when people were expected to go outside and visit parks. The four parks in this study are all large urban parks and serve urban populations of a similar scale. All four parks

are located close to the downtown area of a city, and they are in areas with a high density of aging population.

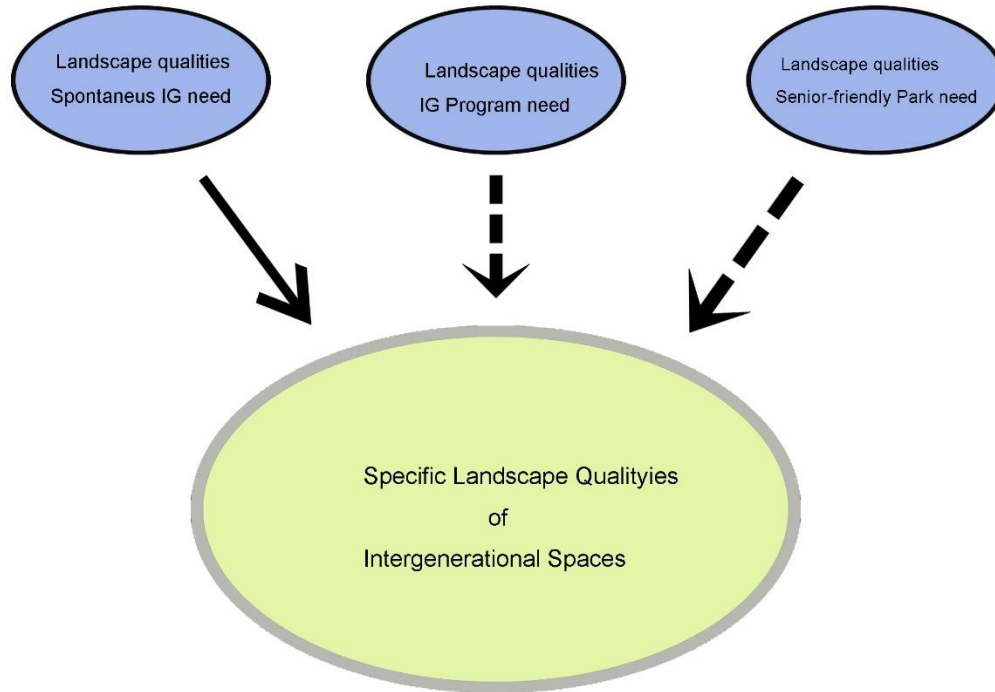


Figure 20: Study Process Framework

While elements that may affect intergenerational (IG) activities include the IG participants (elderly and youth groups), the outdoor environment, the time, and so on, this thesis will focus on the landscape qualities aspect. There follow the findings from the survey and observations gleaned from the case studies carried out in the present research.

When I was observed the four parks, I tried to find specific IG program which supposed to be the best way to reduce senior loneliness. But I didn't observe them. The active and passive IG engagement would be the case study mainly focused engagement type.

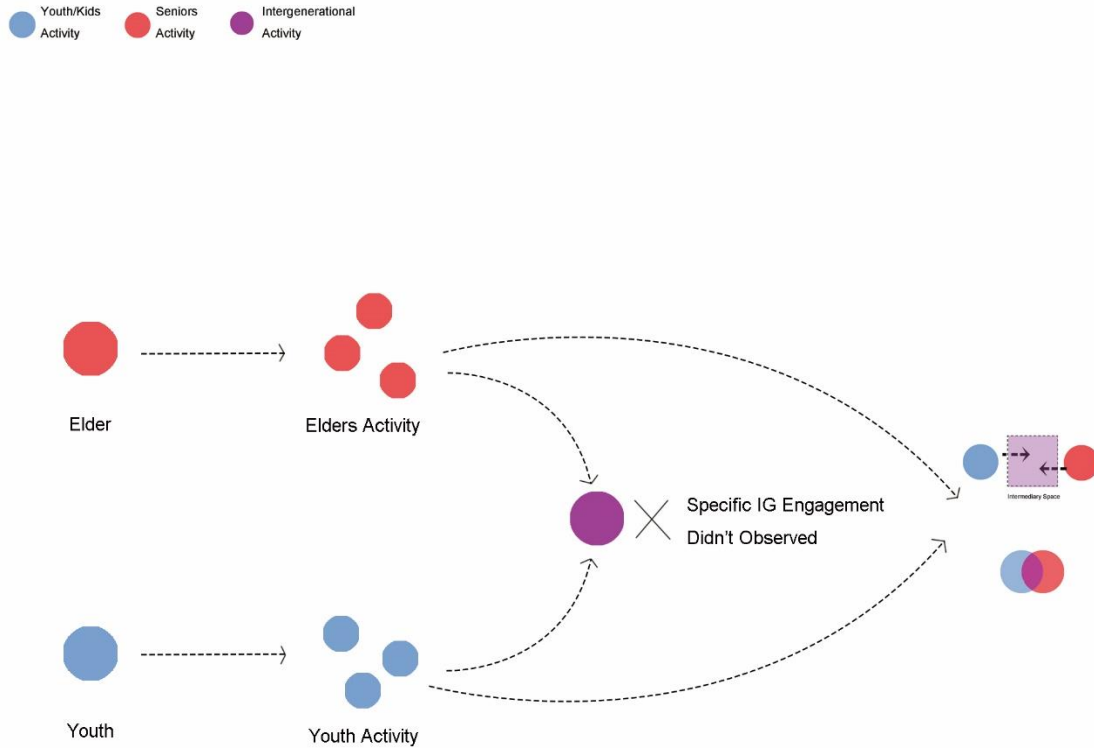


Figure 21: Activity Patterns in Urban Parks

5.2 Case Study

For all four parks, the same questionnaire was used. The first three questions of the survey were taken from the Campaign to End Loneliness, which is used to measure the loneliness level of the elderly. Table 3 presents the results according to the survey respondents for each of the four parks.

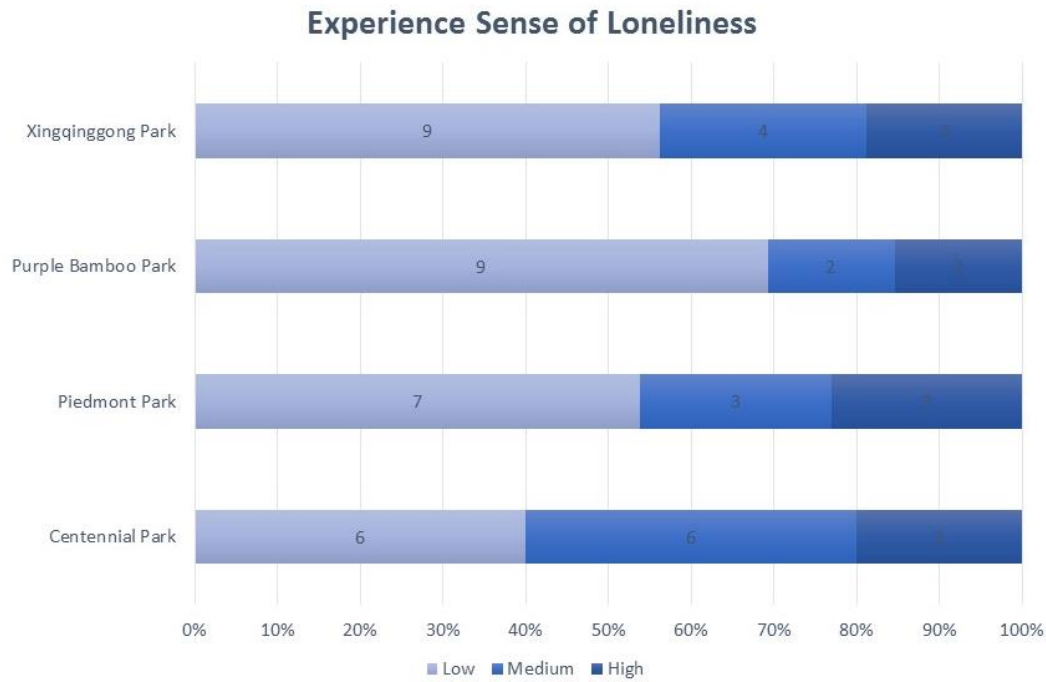


Table 3: Loneliness Level in Each Park

In Table 3, the numbers for each park's respondents in each of the three categories vary, and the color range corresponds to the older adults' level of feelings of loneliness. The darker the blue, the more frequently they suffer from loneliness. From the table, we can see that almost half of the seniors in the park feel they suffer loneliness at some point. The results may be biased because some people are not willing to tell a stranger like this researcher about negative aspects of their lives. Therefore, there may actually be a higher ratio of lonely seniors in the park.

For the results regarding the other questions in the survey, similar histogram tables have been used for easier understanding. The results are shown in Fig. 22 below:

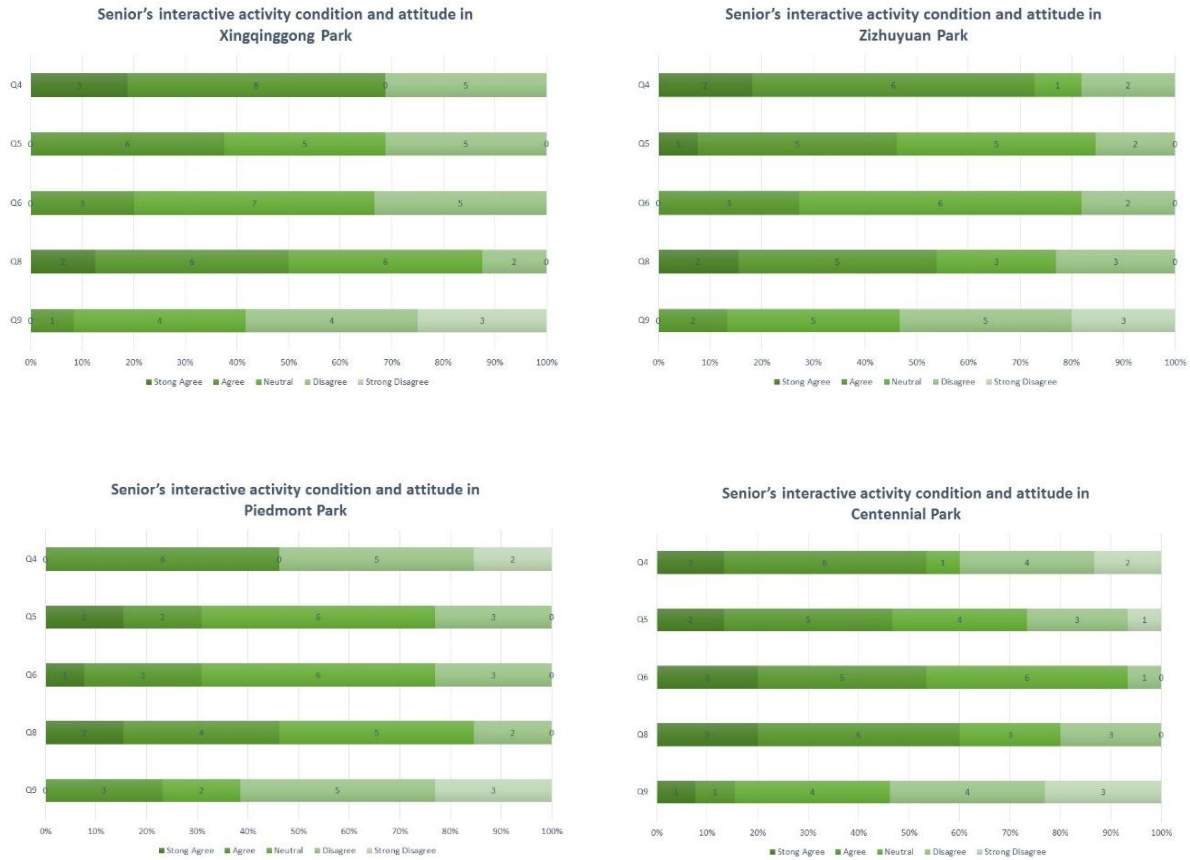


Figure 22: Survey Data Collected from Four Parks

It was found that most people have a positive attitude toward participating in intergenerational activities based on the question four and nine. The scale from dark green to light green represents respondents' answers from Strongly Agree to Strongly Disagree. The survey was used to find causes of loneliness and to discover elder's attitudes toward IG in urban parks; therefore, most questions were aimed at studying the senior resident's usage pattern in the parks. There were many people who agreed with Question 5; however, they did not agree with Question 9. This means that these respondents may be aware of IG programs or regular activities in the park, but they did not choose to participant in them. However, in the majority of the bars in the table, it is clear that the color green occupies at least half, meaning that more than

half of the respondents answered Neutral, Agree, or Strongly Agree to those questions. I will test these survey results in each case study in order to learn the relationship between IG activity and elder's emotion condition.

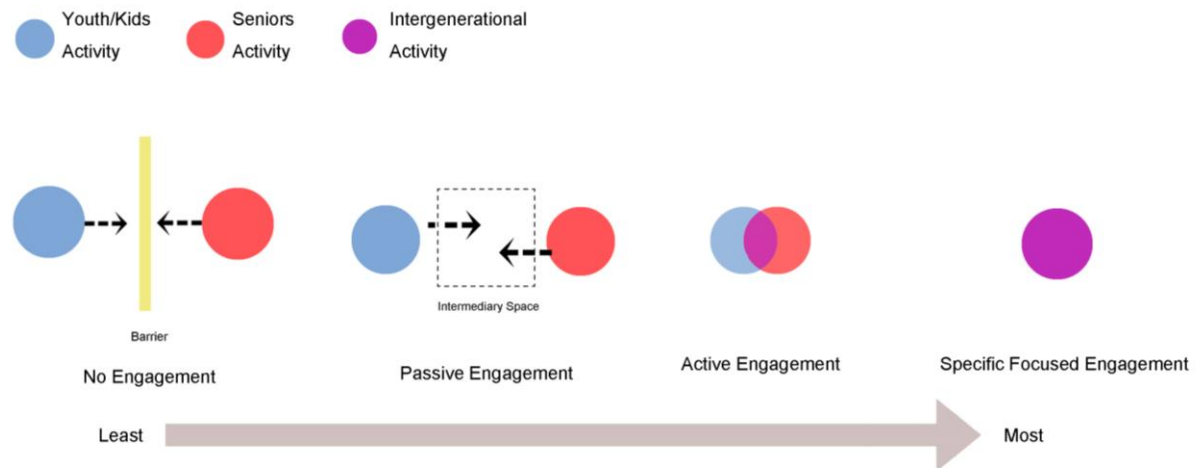


Figure 23: Test Four IG Subtypes in Case Study

After the lit review, I define the IG places as shared areas where children, adults and older adults all can enjoy it together. The IG places should have the characteristics that attract all ages group come together. This place should consider everyone's own comfort. In this way, I will test the identified IG places from survey and observation into this engagement model and see their regular pattern of IG activity.

There are a number of identified IG spaces in each park that were pointed out by participants in the survey. By choosing three of the identified intergenerational spaces in each park and evaluating them, a relationship between intergenerational activity and landscape design was revealed.

5.2.1 Case Studies in China

Xingqinggong Park and Purple Bamboo Park were chosen for case studies in China. I observed these two parks on weekends between 8 a.m. and 5 p.m. They were both observed, and

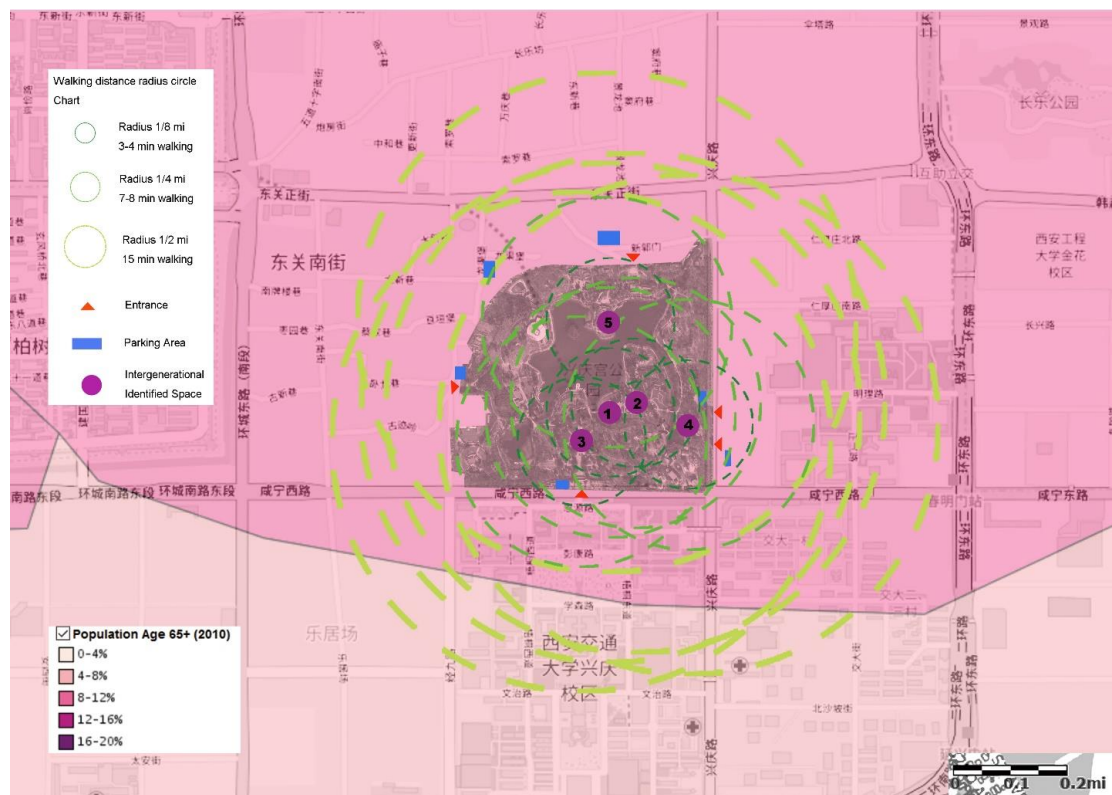
the survey administered in January 2017. These two parks had some same usage patterns: in the morning, the parks were occupied by senior residents, and by noon, the number had decreased. In the afternoon, teens and children used the park in larger numbers. In the evening, the number of elderly increased. A possible reason for these fluctuations is that in the morning, teens and children have not gotten up yet; however, older adults, who tend to sleep lightly and for a shorter period of time than the young, come out to exercise in the morning. The observed IG activity mostly occurred in the afternoon, when both youth and seniors have a higher ratio of presence in parks.

Xingqinggong Park

This park is located in Xi'an, a city in the middle of mainland China that covers 6,340.50 km² of land with a population of 22,208,300. According to China's national standard for urban area greening classification (Ministry of Construction of the PRC, 2002), this park is 128.5 acres and was established in 1958. The park is designed in the traditional Chinese style while its function responds to the needs of a modern society.

The demographics around this park indicate a high ratio of elderly, with 8 to 12% of residents aged 65 and over (<http://worldmap.harvard.edu/chinamap/>). Consequently, there is also a large ratio of seniors among the users of the park. We also directly experienced this phenomenon during observations carried out within the park; there were a great number of elderly people using the park in the morning. To the south and east of Xingqinggong Park lies university land; to the north and west are mixed communities. Thus, there are young people from the university as well as the elderly and children from the communities. To gain a better understanding of the influence of the surrounding area and seniors' usage patterns, a

demographic map was overlaid on a park map and the distance seniors needed to travel to reach the intergenerational (IG) space was analyzed.



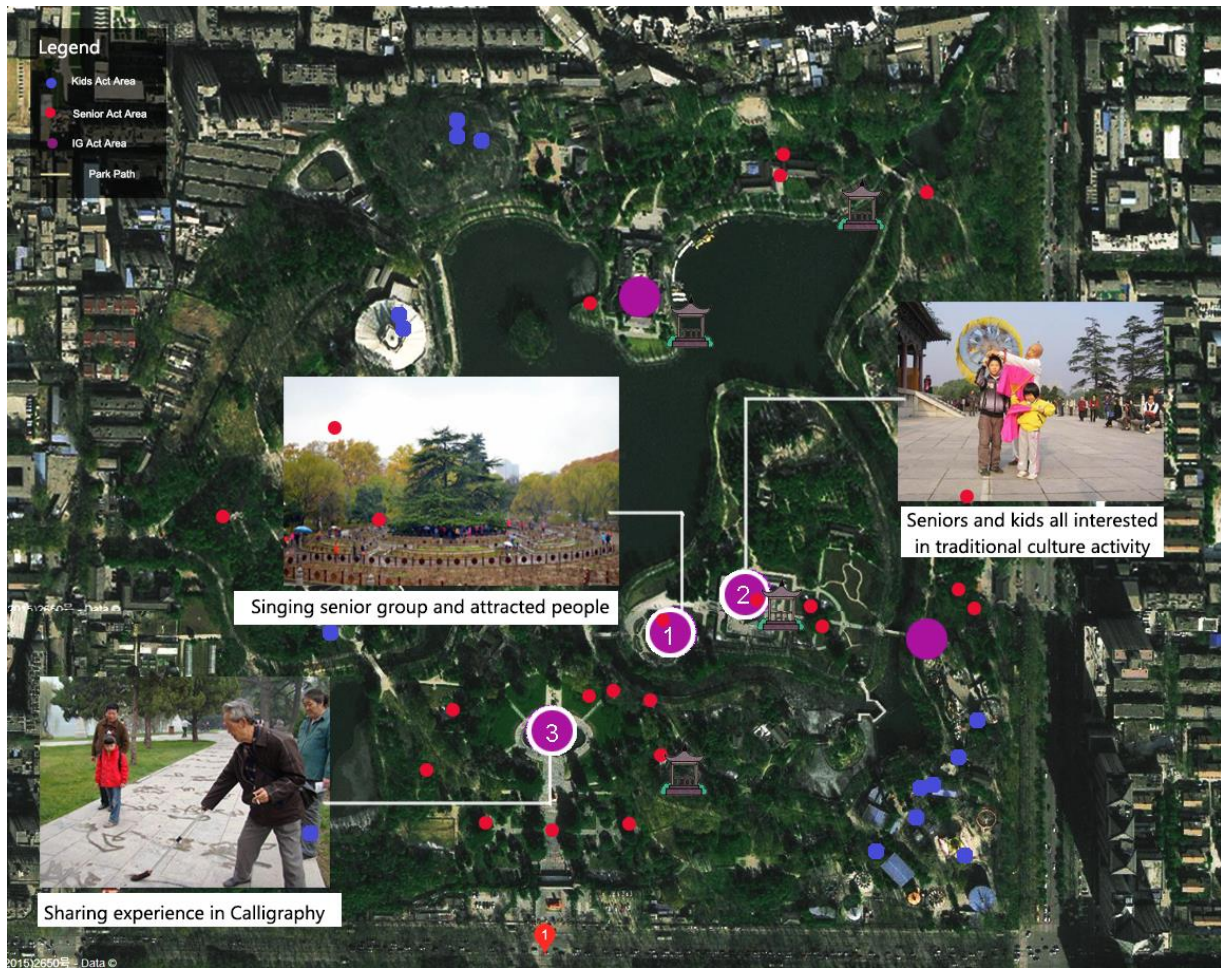


Figure 25: Map of Xingqinggong Park (created by author)

The identified IG spaces are shown in Table 4 in the form of numbers. I choose three IG spaces within each park and created small-scale diagrams that provide more specific information. The activities included singing, culture festival preparation groups, calligraphy, watching other people, etc. The purple dots on the IG spaces represent survey result collected in order to clarify people's activity patterns, for example, how far one group is from other groups and what the relationship is between people and the environment.


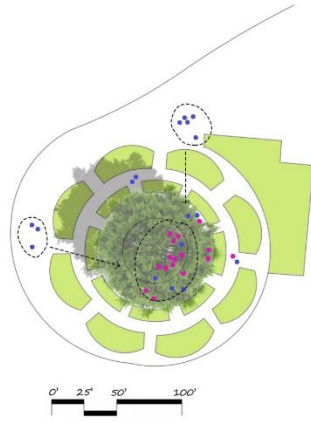


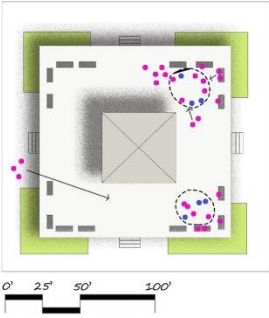


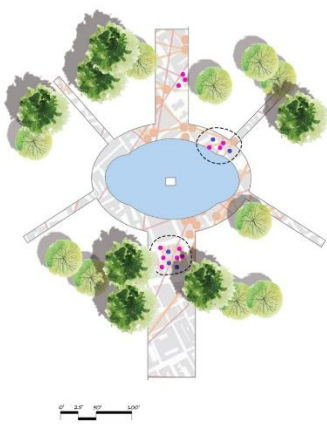


IG subtypes	Plan of IG Findings	Images	IG Facilitators
<p>1</p> 		 <p>Singing group and attracted people</p>	<ol style="list-style-type: none"> 1. Scale: The passing by people could see the singing activity and join in. 2. Character: Tree around Semi-closed space. 3. Elements: Paved road connected plaza and center tree provide shade. 4. Activity: Singing group regularly active under the tree, both elders and kids could join this interest group.
<p>2</p> 		 <p>Senior and kids all interested in traditional cultural activity</p>	<ol style="list-style-type: none"> 1. Scale: Big enough for group activity and have distance for those who just want to watch others. 2. Character: Flat open space. 3. Elements: Paved high platform with stone benches. 4. Activity: Elders and kids join together the cultural events and activity. They could sharing experience, kids can learn from elders. When resting they can talk with other people.
<p>3</p> 		 <p>Sharing experience in Calligraphy</p>  <p>Dancing group</p>	<ol style="list-style-type: none"> 1. Scale: Large plaza provide place for both youth and elders active and whatch other activity. 2. Character: Enclosed open space 3. Elements: Paved plaza and roads, with flat groud. 4. Activity: Variety of interest groups like dancing or calligraphy. Both attracted elders and kids to join in or watching.

Table 4: IG Activity Analysis in Xingqinggong Park (created by author)

The model of IG engagement process was examined in this table for category each identified IG spaces in the park. As the table shows, some IG places are belonging to passive engagement, others are active engagement. When elders and kids join the same cultural events, they are preparing together and elders sharing their experience to kids. This activity could be seen as active engagement. While in other activities like children watching senior residents singing could be seen as passive engagement.

Purple Bamboo Park

Purple Bamboo Park is located in Beijing, the capital of China, which has a population of 21.71 million and a high ratio of seniors. The park is 117 acres and contains several lakes. Its design is in the traditional Chinese garden style, and it therefore has a lot of tree coverage and terrain that rises and falls. A number of pavilions are built on top of hills to provide better views. In the north direction from Purple Bamboo Park are several universities and schools; to the south and west are mixed-use neighborhoods; and to the east are located public service facilities such as a library and a gym.

In Cong Yuan's (2010) study of Purple Bamboo Park, he focused on the elderly's usage patterns in this park. He studied these patterns from the point of view of general characteristics, activity characteristics, and environmental preferences of seniors. He found that there were significant differences among the content of the activities practiced by elderly people of different ages. The elderly have a high level of enthusiasm for various recreational activities, and they are highly engaged in them. The main activities are playing poker, dancing, ball playing, and so on. The activities of middle-aged individuals mainly include using fitness facilities, playing poker, chatting, and so on. Older people are more likely to sit on their own and watch other people's activities (Cai, 2009).

A number of the findings of his study are useful for the present one. Taking the geography of the entire park into consideration, the activity density of the flat areas is greater than in venues which have topographical changes. However, because sites with topographical changes always have greater tree coverage that can provide more shade, a number of activities also occur there.

For the purpose of studying the influence of shade on senior activity patterns, Cong grouped elderly activity by the number of people involved: one person, two to five people, and more than five people. In general, the density of activity occurring in shaded areas is much greater than in those without shade. However, groups of more than five people active in unshaded areas outnumber groups of two to five people or individuals. The reason is the lack of open space. Even though people prefer to be active where there is shade, there simply are not enough shaded open spaces available in the park, so some activities can only take place in unshaded spaces. As a result, shade has less effect on large group activities (Cong, 2010).

The elderly activity distribution map that Cong created confirms this study's findings. As with the survey results of the present research, the identified IG activity locations overlap the places elders would like to stay in his study as well.

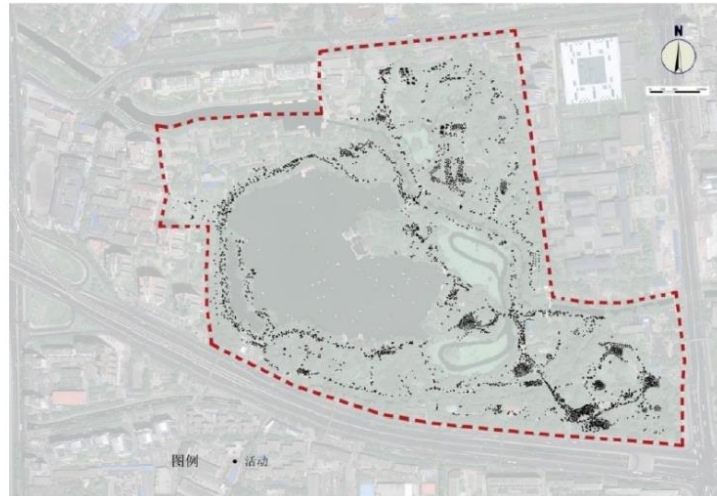


Figure 26: Elderly Activity All-day Distribution Map of Purple Bamboo Park

(Source: Cong Yuan, 2010)

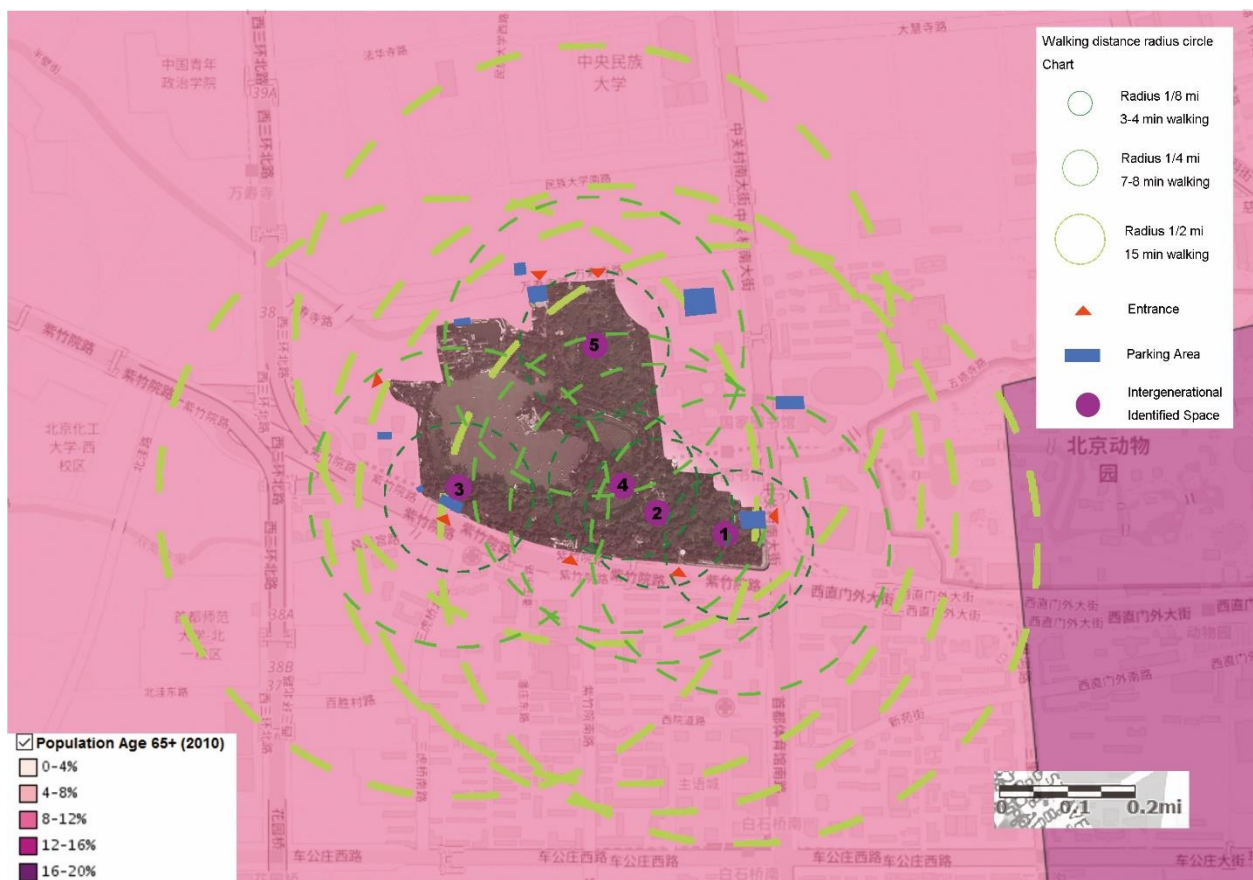


Figure 27: Demographic and Access Conditions of Purple Bamboo Park (created by author)



Figure 28: Map of Purple Bamboo Park (created by author)

Switching to the small-scale map, we found the activities engaged in are mostly culture-related interest groups like group singing, kite flying, Chinese Allegro, etc. Children and seniors engage in most of the activities together. Either older adults share their experience with children, or children watch seniors and are eager to try things themselves.




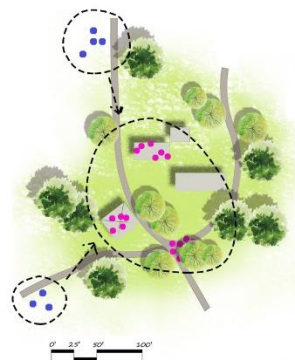
IG subtypes	Plan of IG Findings	Images	IG Facilitators
<p>1</p> 		 <p>Instrument playing and sharing experience</p>  <p>Flying kite</p>	<ol style="list-style-type: none"> 1. Scale: Elder and kids can see each other, and play together. 2. Character: Enclosed open space. 3. Elements: Hard paved road for people walking, in the center is a large open greenland. 4. Activity: Seniors playing instruments and sharing experience with kids/ youth, seniors and kids also flying kite together.
<p>2</p> 		 	<ol style="list-style-type: none"> 1. Scale: Elder and kids activity area have distance but they can see each other. 2. Character: Enclosed semi-open space. 3. Elements: Pavilions provide shade and seating area around. 4. Activity: Seniors singing and play Chinese allegro in pavilion and on the roads. Kids playing close to them are attracted and come watching them.
<p>3</p> 		 <p>Square dance</p>	<ol style="list-style-type: none"> 1. Scale: Elder and kids pass this place together, and they can see each other's activity. 2. Character: Entrance plaza of the park. 3. Elements: Hard paved road for people walking, in the center is a large open greenland. 4. Activity: Square dance in this place attracted middle age group people and seniors. While some elders just like to watching them play.

Table 5: IG Activity Analysis in Purple Bamboo Park (created by author)

5.2.2 Case Studies in the United States

Piedmont Park and Centennial Park are both large city parks in big American cities. Both parks were observed on weekends between 9 a.m. and 5 p.m. They were both observed, and the survey administered in February 2017.

Piedmont Park

Demographically speaking, Atlanta is a young city. The elderly population is not as high as in the other cities investigated in this study. Nevertheless, the aging trend is obvious on the demographic map. Piedmont Park was originally sold by Dr. Benjamin Walker to the Gentlemen's Driving Club, after which it was opened to public. Located to the northeast of downtown Atlanta, the park covers a total of 189 acres. It hosts several events and festivals annually. Additionally, a dog park was opened within the park boundaries in April 2011.

This park doesn't have too much nearby parking, but most available parking areas are within a half-mile range. Multiple communities and local school surround this park. It serves people from these communities and visitors as well.

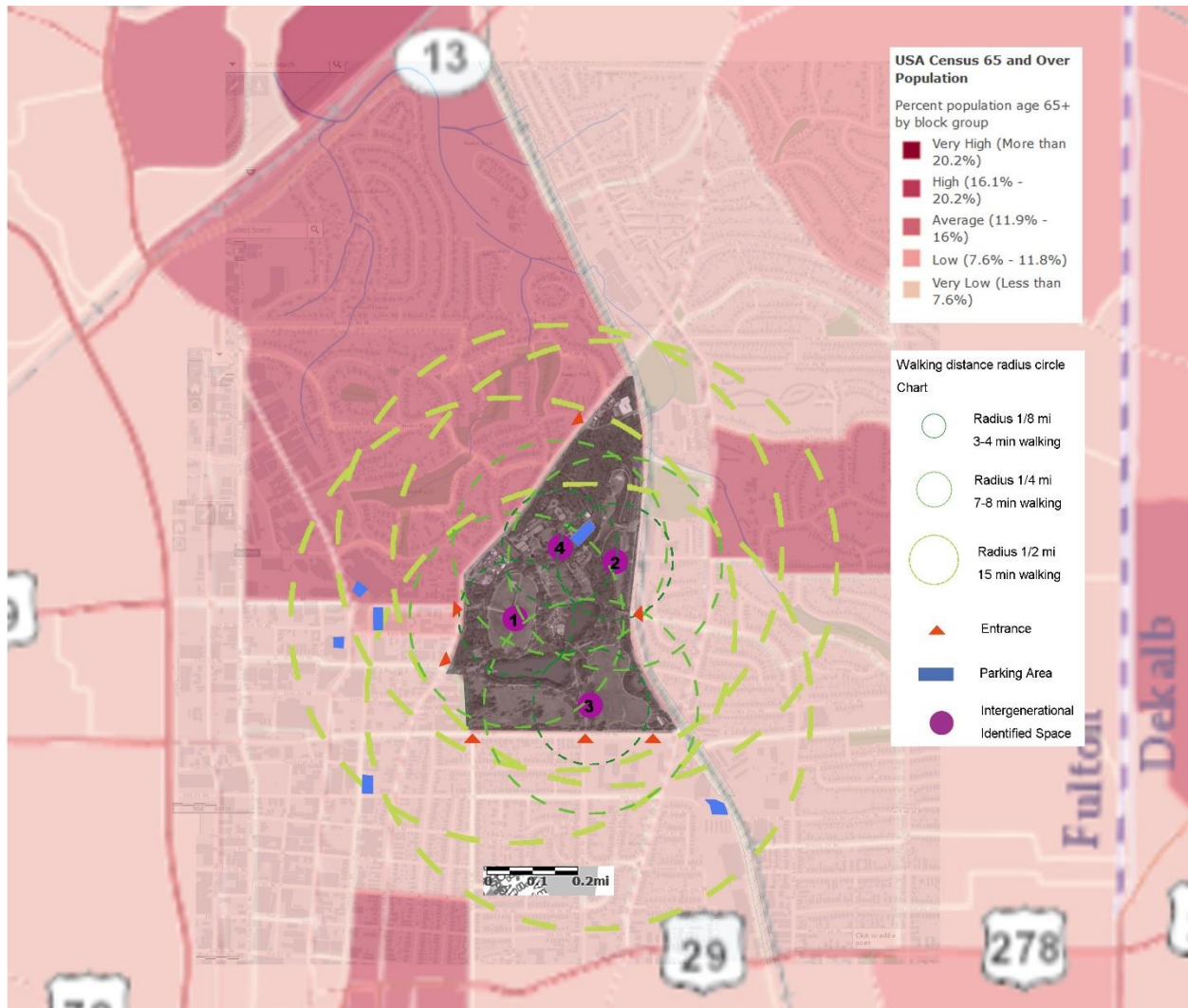


Figure 29: Demographic and Access Conditions of Piedmont Park

(Source: <https://datamapper.geo.census.gov/map.html>)



Figure 30: Map of Piedmont Park (created by author)

The identified IG spaces in Piedmont Park are as follows: the dog park, the oval field center plaza, and the small circular space near the south entrance. In this park, the scale of the IG spaces is a little smaller than in the other parks. For the IG places, most of them are happened active IG engagement.

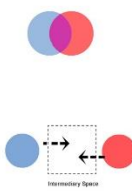
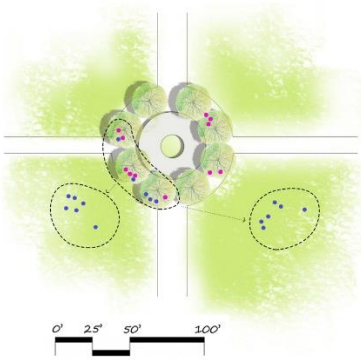


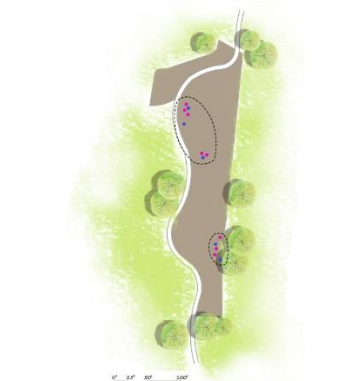

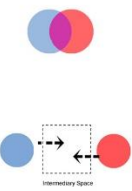
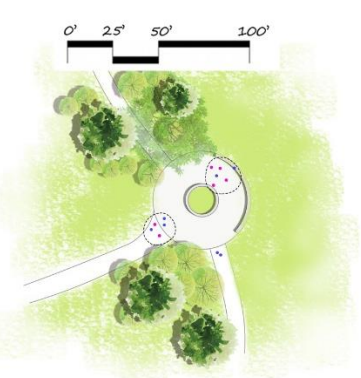

IG subtypes	Plan of IG Findings	Images	IG Facilitators
<p>1</p> 		 <p>Resting in center of the play field</p>	<ol style="list-style-type: none"> 1. Scale: Elder and youth could rest together, and big enough for elders watching. 2. Character: Semi-closed space. 3. Elements: Large green space for youth playing, and benches under tree. 4. Activity: Youth could play on the green field or rest in the center sheltered place. Elders could watching them playing.
<p>2</p> 		 <p>Walking dog together and talking</p>	<ol style="list-style-type: none"> 1. Scale: Large place where elders and kids could talking without disturbs. 2. Character: Semi-closed open space. 3. Elements: Unpaved large field with shade tree around. 4. Activity: Talking with other people, and palying with dogs together.
<p>3</p> 		 <p>Talking and watching with people</p>	<ol style="list-style-type: none"> 1. Scale: Elder and kids gather in this place for resting. 2. Character: Open space with good sight. 3. Elements: Hard paved plaza and road, stone bench for people sitting and resting. 4. Activity: Watching passing by people, and the baiking, running people rest here. They could talking together.

Table 6: IG Activity Analysis in Piedmont Park (created by author)

Centennial Park

Centennial Park is located to the west of downtown Nashville, Tennessee. It is a large urban park that is 132 acres in area. It was dedicated as a public park in 1903. In the environs of Centennial Park, there are many mixed-use neighborhoods to the north and south. In the southeast direction, there is a large area used for industry.

There are six identified intergenerational activity spaces in this park, and they are located in the following locations: the Bandshell, which is a stage that is open for the use of art troupes, the Parthenon, the dog park, the outdoor exhibition of the Nashville, Chattanooga, & St. Louis Locomotive 576 and the history of the steam locomotive, the sunken garden, and a green space in the corner of the park.

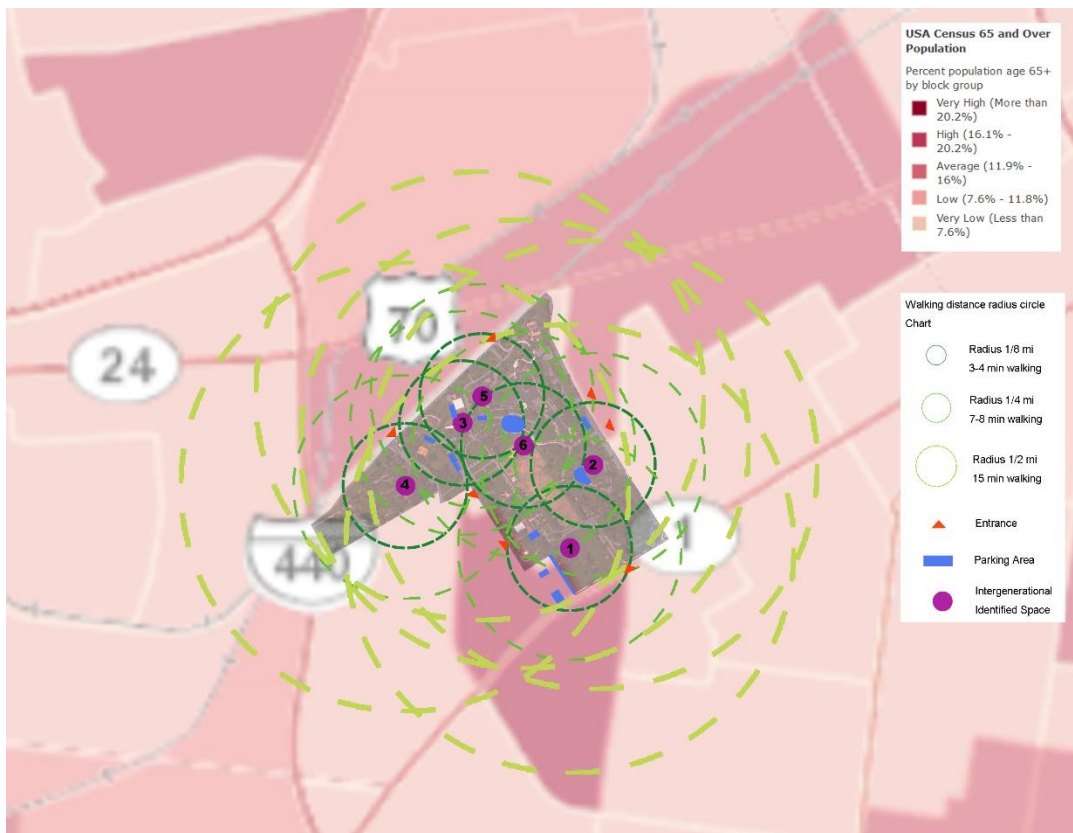


Figure 31: Demographic and Access Conditions of Centennial Park

(Source: <https://datamapper.geo.census.gov/map.html>)

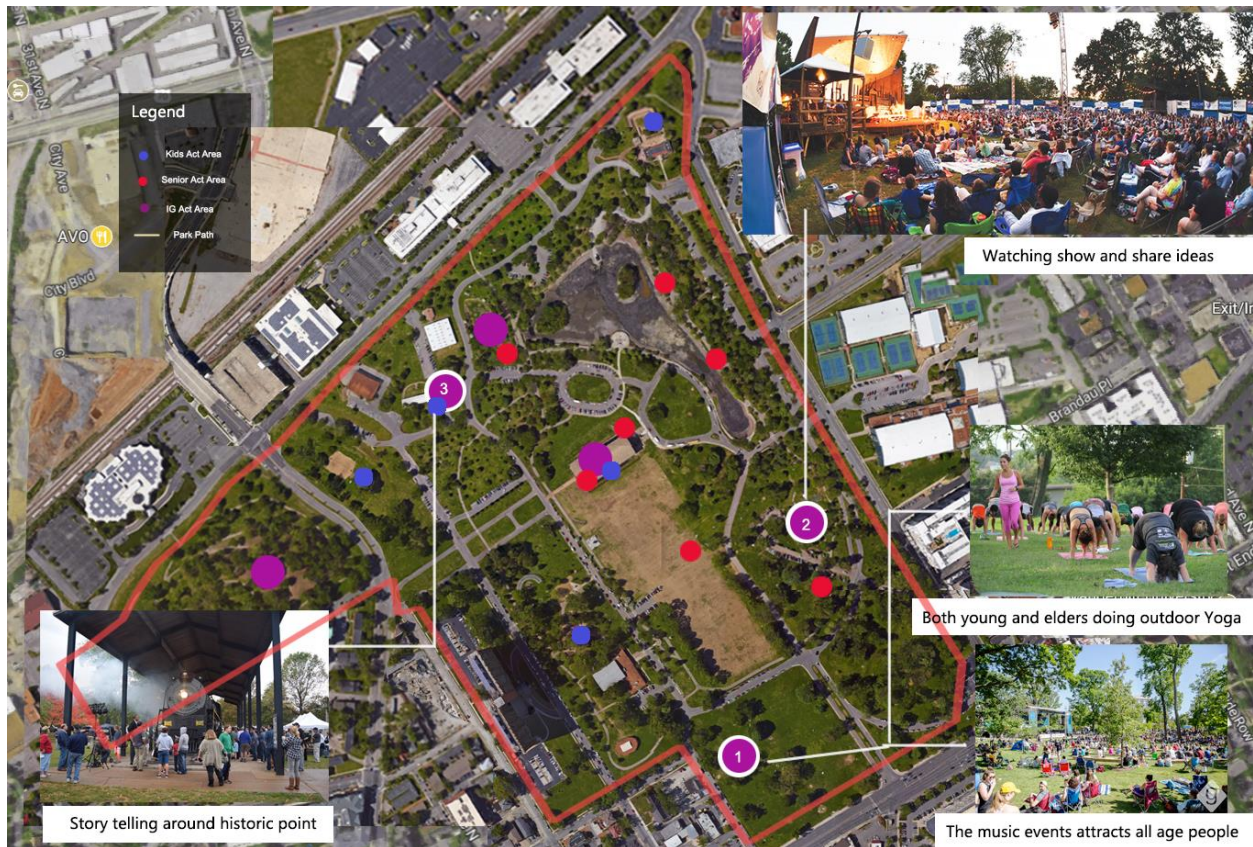


Figure 32: Map of Centennial Park (created by author)

There are a great variety of intergenerational activities that take place in this park, as reported by participants in the survey. This park regularly hosts art and music events and also has seasonal gallery exhibitions, so there are many opportunities for IG to happen, as many people of different ages and generations are attracted by the events and festivals.

IG subtypes	Plan of IG Findings	Images	IG Facilitators
<p>1</p> 		 <p>Outdoor Music Events</p>  <p>Outdoor Yoga</p>	<ol style="list-style-type: none"> 1. Scale: Elder and kids can see each other, and play together. 2. Character: Semi-closed open space. 3. Elements: Large green space for people doing activity, sitting on ground, and relax. 4. Activity: Senior residents and youth enjoy music concert together, sharing their experience. Or outdoor exercise like Yoga group together, people from different age could become friends. Passing by people could watch them.
<p>2</p> 		 <p>Sharing experience in art events</p>	<ol style="list-style-type: none"> 1. Scale: Elder and kids can get very close and talking with each other. 2. Character: Semi-closed open space. 3. Elements: Large green space for relaxing, seating area and stage. 4. Activity: Talking and sharing experience with surrounding people. Both Kids and elders can have a great experience being with other people.
<p>3</p> 		 <p>Telling history</p>	<ol style="list-style-type: none"> 1. Scale: Elder and kids stop by this place together, and they can get close under the shelter. 2. Character: Gathering open space under shelter. 3. Elements: Hard paved plaza and road for people standing on it. 4. Activity: History story of the place attracts people from all ages gather in this place.

Table 7: IG Activity Analysis in Centennial Park (created by author)

Based on the former case studies, I define the IG spaces should be the place where could happen intergenerational activities, and have the unique characteristics which could attract both elders and youth come together. For these landscape characteristics, I will discuss later in the template.

5.3 Evaluation Framework






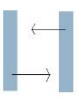



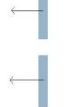




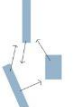



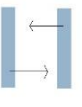



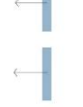



Because it is the aim of this study to investigate how the landscape characteristics of the environment could influence the people's social interaction, it is important to study the ways in which parks facilitate and encourage IG interactions.

For the purpose of this investigation, we created evaluation criteria to test landscape qualities among all four parks. There are common elements among the four parks, as was found through observation, and Intergenerational Contact Zones should have such landscape characteristics as visibility and flexibility as well as provide intergenerational choice (Kaplan, 2008). These elements are part of the essential character of a successful Intergenerational Contact Zone. Although there are other elements, such as volunteers, participants, programs, people's awareness, time, local school support, etc., that may influence an intergenerational program, this thesis is focused solely on the environmental qualities of IG spaces.

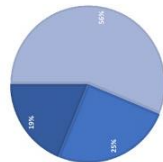
The criteria outlined above were constructed based on this researcher's observations and a review of previous literature. These criteria make it possible to characterize several aspects of landscape and compare them among the four parks. By rendering the four parks comparable, it is easier to summarize the information obtained. All identified IG spaces are arranged according to park. Simple symbols are employed to represent certain characteristics, in the aim of greater clarity.

The blue pie chart represents the loneliness level of each park's seniors, as shown in Table 1 above. The 12 spaces are where intergenerational activity was identified by survey. The horizontal categories are the criteria used to compare landscape qualities.

Description Framework

Landscape character IG Space	People's Interactive Character	Tree Activity	Seat Arrangement	Space Character	Shade	Activity	Access
	Center under the tree	Shade tree in center Act under the tree	No seat			Singing Group	3 road connect to other place 
	On the Corner	Lawn				Dancing Group, Telling story of traditional culture	4 road connect to other place
	Center	Shade tree on edge Act near the tree				Calligraphy, Dancing Group	6 road connect to other place 
	Along the road	Shade tree on edge Act under tree				Flying kite Instrument playing	3 road connect to other place
	Center	Shade tree on edge				Traditional art show Singing	4 road connect to other place
	Center	Shade tree on edge				Dancing	5 road connect to other place 

Frequency of loneliness feeling
Xingqinggong Park



Low Medium High

Purple Bamboo Park

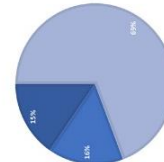
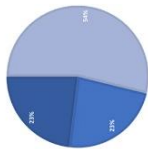
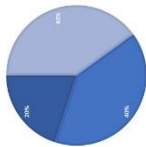



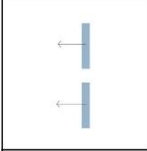
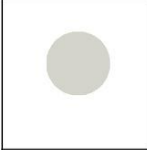
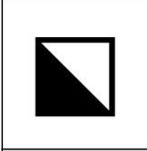

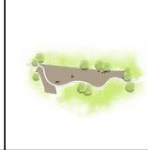
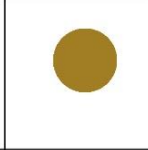
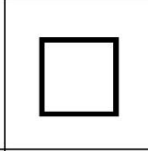

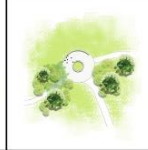
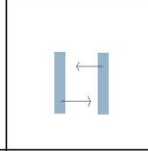
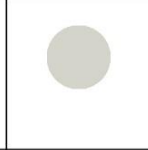
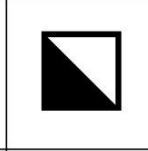

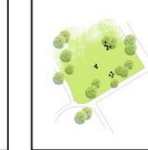
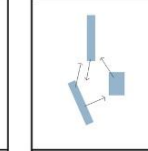
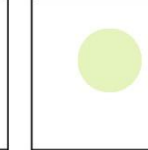
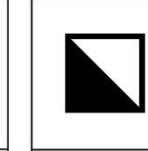

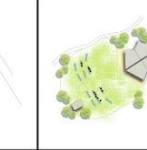
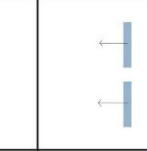
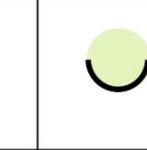
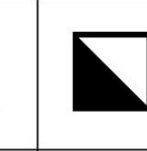

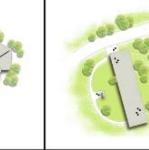
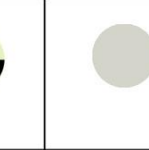
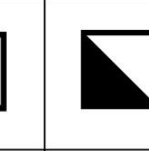

Table 8: Criteria Framework of Chinese Cases (created by author)

Piedmont Park



Centennial Park



	In the center	Shade tree in center				Talking about games, waiting for their grand children	4 road connect to other place 
	Nature dispersion	Tree on the edge	No seat			Walking dogs, Talking	3 road connect to other place 
	On the edge	Tree on the edge				Self-confidence group, Talking	3 road connect to other place 
	In the center	Shade tree irregular				Music event, Outdoor Yoga	5 road connect to other place 
	In the center	Lawn				Join a show, Talking	2 road connect to other place 
	On the Corner	Lawn and ornamental tree	No seat			Telling story	2 road connect to other place 

Legend











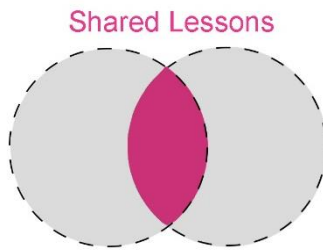
	Face-to face seating		Half shade		ADA trail		Dirt open space
	Facing same direction seating		Full sun		semi-open space		Paved open space
	irregular seating						Green open space

Table 9: Criteria Framework of American Cases (created by author)

Findings/Lessons:



The framework used in this study detailed specific landscape qualities of intergenerational (IG) spaces globally. Because studies in the literature review mentioned that landscape characteristics may influence the elderly's engagement patterns in places like outdoor environments in terms of how easy a place is to access and how comfortable a place is, etc., this researcher has added certain additional criteria to the framework based on observations carried out in the course of this study.

According to the IG subtypes analysis and the survey results, the loneliness level condition is similar in all parks. Almost half of the interviewed elders said they feel lonely sometimes. While the IG process in each park is quite similar, too. Most of the IG activities observed were belonging to passive engagement and active engagement. We could suggest that introduce more specific focused IG activity may reduce the loneliness ratio.

After studying the activity pattern of Piedmont Park, it seems that the reason for this smaller scale is that the elderly using this park are normally running or biking, which means they prefer to exercise alone or while talking with family rather than join a group activity.

Looking at the IG space locations, it can be concluded that the IG places need good access like nearby parking area and entrance. It could be more convenience for elders to get into IG practice if the place has a good transportation.

A stable intergenerational (IG) relationship could efficiently benefit both youth and elder's mental well-being and emotion. Take a step back to the green chart of survey results and loneliness results in each park, there's some findings may reflect the relationship between IG engagement and social isolation condition. In the Xingqinggong Park, and Purple Bamboo Park, they have a relatively lower loneliness feeling among elder users. And the green chart of survey analysis, Purple Bamboo park people have a very positive attitude towards IG activity. Piedmont park have a lower attitude, and his loneliness feeling level is like half of the elders feel lonely. But in the four parks Centennial park have the most loneliness feeling elder ratio.

So maybe we can speculate that the active activity has more positive influence than passive than no engagement at all. There may have a positive correlation between the engagement process.

The survey results show that most seniors welcome intergenerational practices taking place in urban parks, and as confirmed by the research outlined in the above chapters, urban parks play a vital social role in modern senior life. This research provides support for a fundamental point: urban parks are a suitable place to host IG programs. Furthermore, it is an important step to introduce more IG programs, both indoor and outdoor. While there is some question whether elders even consciously join IG activities, they don't join them very much, the reason being that there are not enough IG programs in parks for them to join. As observed by this researcher, none of the four parks had focused IG programs. The IG activities we observed were mostly spontaneous and happened among people with similar interests.

In considering the requisites for building IG zones, based on the criteria above, it is obvious that all people like to have shade when they talk, enjoy music, or play games or sports. In addition, almost all of the parks' entrances and parking areas are close to the IG areas, mostly

within the range of one quarter mile, so when considering building IG zones, it would be better to have a parking area or entrance no farther away than a quarter mile. Another IG consideration is bench arrangement, and it is closely related specific activities. If the intergenerational activity is a more static one, such as telling stories or watching certain events, the seats should be placed to suit the activity, for example, face to face or facing the same direction. If the IG activity is a more mobile one, such as flying kites or dancing, there is less need for seating. However, there is one common seating characteristic: most intergenerational spaces have seating around the activity or inside the activity. This means that seating is a necessary element, although the arrangement can change based on the specific activity type. Seating can also be useful for some seniors who prefer to engage in IG activities more “passively,” for example, by watching others (Kaplan & Thang & Sanchez, 2017). Given these insights, I suggest providing movable seating in the space that can be rearranged by the people who use it. This will always allow the possibility of seating people facing other people, an arrangement that encourages people to interact, even if they are engaging passively.

As for the type of space, people in the United States enjoy the use of green open space such as lawns, and they lie down or sit directly on them. On the other hand, Chinese prefer paved or dirt places; they are not used to sitting directly on the ground but instead prefer standing on soft dirt in places that are close to nature. However, all preferred spaces are open or semi-open, which means that IG activity should occur in a place with a good and unobstructed view. It cannot be too far away from a road or main gathering area in the park, nor can it be too enclosed. Regarding trees as a natural element, most of the spaces have trees around them that provide shade. Just a few of them did not have trees because other structures already provided the shade. In sum, we can say that shade trees have a positive influence on IG activity.

In the course of this study, certain qualities were discovered that have no effect on IG activity, for example, proximity to water, the existence of a fountain or lake close to the place, whether the place is in the center of the park, etc.

In conclusion, the landscape qualities garnered from applying the criteria in this study and which could be used globally are as follows:

- Shade trees nearby or some other structure providing shade
- The distance to nearest parking area/entrance should be within a quarter-mile range.
- Provide seating that suits activities.
- IG space scale range: 2,000–48,000 square feet
- Flat open space with a good view
- The IG groups need some distance between them to prevent disturbances: at least?? On average: feet
- Accessibility: have multiple roads connected to other spaces; better to have an ADA trail
- Most IG spaces are located near a main road or close to an entrance.

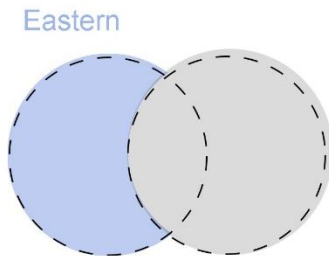
In addition to these findings, as the survey results from Purple Bamboo Park showed, the identified IG activity places overlapped places where the elderly are always active (Cong Yuan, 2011). This means that if a park wants to introduce IG programs, it should consider the spaces routinely occupied by the elderly. This finding supports my hypothesis: in order to successfully build IG spaces, it is not only necessary to meet the needs of IG programs but also to meet senior-friendly park standards. The places routinely occupied by the elderly must have their own characteristics that attract seniors.

5.4 Comparative Framework

With the globalization of the world in recent decades, more and more cities' residents come from different ethnicities and cultural backgrounds. Consequently, there will be more opportunities for a diversity of people to use parks together. Comparing park usage patterns of the elderly in different cultures has therefore become necessary, and in several ways, the methods and conclusions of this study may help to better understand how to carry out such comparisons.

Comparing the IG space qualities in Chinese parks and American parks, certain differences became clear. This was supported by the previous literature, which indicated that Eastern and Western cultural backgrounds could lead to different usage patterns. The comparison reflects how cultures and customs affect the usage patterns of the elderly in parks.

Differences:

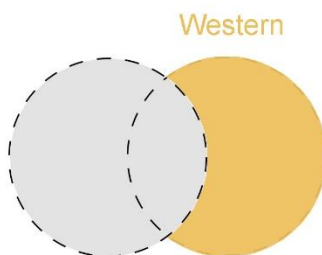


In China, there are more undefined spaces in parks, and their use is decided by the people who use them; thus, there could be a variety of activities in a given space. In America, however, there are more specific places—like dog parks and children's playgrounds, etc.—that have specific functions.

Chinese seniors in parks have a greater preference for group activity, while in America, seniors prefer independent or small group activities. They normally enjoy running, walking, or talking in urban parks with their family or friends. Most interaction in parks between strangers

remains at a surface and unstable level, but seniors need to build deeper and longer-lived relationships to deal with their social isolation problems. Thus, for the long-term, an intergenerational program is definitely the better solution. Seniors in parks should be encouraged to meet more people and engage in outdoor activities that fulfill their interests.

When considering the parking area element, the figures clearly show that parking areas for Chinese parks are located outside of the park. Sometimes the parking area is little too far for the elderly, especially for some disabled older adults, who may choose not to go to the IG space because it is too far away and getting there is too burdensome. In other hand, the locations of the parking areas for America's parks fall in a wild range. Some parking areas are very close to the space; some are farther away. Allowing cars to drive within the park and putting parking areas inside parks could benefit a lot of people; meanwhile, the consequences of allowing vehicles to enter the park is likely to cause a decline in safety; for instance, it would be more dangerous for the elderly to walk around in parks. Take the Chinese case: it is not suitable to allow vehicles to drive inside parks, since China has a very high population density in its cities. However, in certain sparsely populated cities in America, it would be a great idea to allow car driving in parks. Thus, a rationale exists for both approaches.



In America, more activity occurs in small groups and it is joined by fewer people. The spaces in American parks are dedicated to specific functions, such as dog parks or park band shells for shows. According to the observations of this researcher, most people interact solely

with their family members, and the elderly prefer to be active with their spouse when in parks. They do not usually join any intergenerational activities unless they join an intergenerational program for that purpose. Therefore, it is clear that elderly people in America are less motivated to participate in activities in public parks. Here, America would do well to learn from China and encourage the elderly join more group activities and to have more outdoor activities in urban parks, thereby improving the utilization rate of parks by the elderly.

In China, more seniors enjoy group activities, including group dancing, singing together, or tai chi. Furthermore, they like to talk with strangers in their group and meet new people. The result is, and we can see it reflected in the loneliness chart, feelings of loneliness are less prevalent among seniors in China than America. The reason for this phenomenon may be that seniors in China join more group activities. These kinds of activities provide more chances for them to interact with other people, resulting in a reduction in their feelings of loneliness.

One reason that allows people of different ages to enjoy time together is having the same interests. According to this researcher's observations, the intergenerational activities in China are actually self-organized interest groups, for the most part. These groups can attract people to come and join them, thereby providing plenty of opportunity for intergenerational engagement. Meanwhile, it is obvious that the spaces in China are not as accessible as America's. Therefore, one lesson Chinese parks can learn from America is to change their roads to ADA-type trails.

Based on these findings and comparisons, we have developed the comparative framework shown below:

	Global?	“Western”	“Eastern”
<i>Landscape Qualities</i>	Shade almost activities prefer to happen under half shade	The IG space scale is smaller	The IG space scale is larger
	Most activities happened on Flat Open Space	People prefer green spaces	People prefer dirt or paved spaces.
	Distance to Parking area or entrance within ¼ mile	Activities are more family/friend direction. Small group more than large group	Activities are mostly group formed, and people are attracted by interests
	Good Accessibility, both sight and physical	Almost all spaces are ADA available	Some spaces do not have ADA trails, rugged roads.
	Most activities are belonging to passive or active IG engagement	Passive	



For Globally Future Design:
The IG spaces should satisfy the general needs,
and fine-tune according to the specific culture.

Table 10: Comparing Four Park’s IG Spaces Qualities from Culture Aspects (by author)

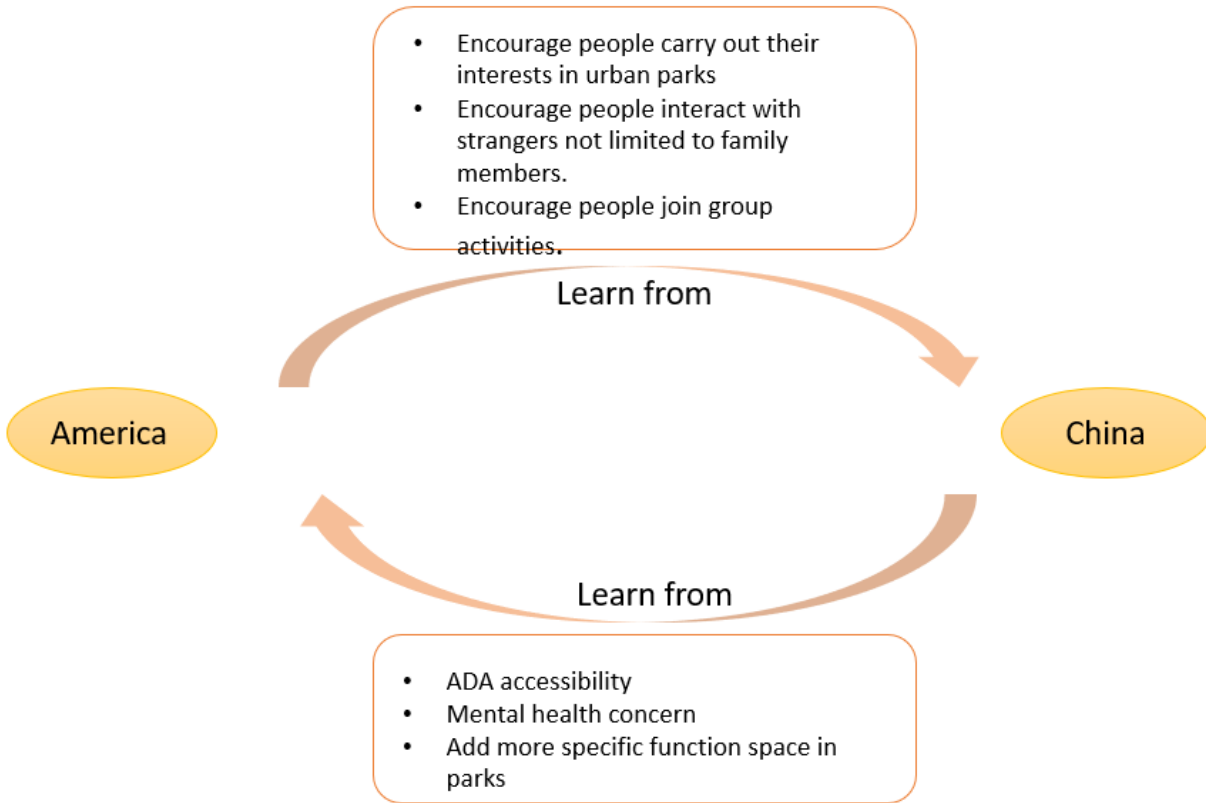


Figure 33: Lessons Learn from Each Other (created by author)

5.5 Conclusion

Although there are many shared and overlapping areas in both countries, it is difficult to build universal design guidelines that could satisfy all ethnic groups. Therefore, for the purposes of future park design, we recommend that designers remember to include sharing lessons with other designers in their plan.

Interacting with other people is a necessary social process to maintain mental health. Unfortunately, particularly among older citizens, such opportunities are nowadays sometimes lacking. In the case studies investigated above, no formal, scaled, intergenerational program was observed. While the four parks are all big parks that play a vital role in their city, the lack of consideration of the interaction of people of different age groups is a serious problem. When urban parks are planned in the future, particularly when designing their functional partitions and

sites, it would be wise not only to consider mono-generational groups but also to encourage intergenerational interaction.

Different activities may require different environments and landscape characteristics, but it is nevertheless clear that the use and meaning of urban parks for different ethnic groups still have many similarities. Different ethnic groups go to urban parks for the purposes of relaxing and spending time with friends and family. The parks offer a variety of activities and events as well as people from different places to meet. Personal interests lead people to find their own group and their own friends; thus, the urban park should also provide suitable environments for these interest groups.

Intergenerational activities have been confirmed to efficiently reduce the social isolation of the elderly. Sharing experiences with children and learning ideas from the young add vitality to senior lives. Feeling needed by other people also lets the elderly have a sense of belonging and peace. Even when people are not conscious of and weren't aiming to join an IG activity, the environment in parks already provides a great space for IG to happen—these qualities should be kept. The findings of this study support the point that urban parks facilitate and encourage IG interactions. What landscape architects can do is provide opportunities for IG activity in parks, but the IG process itself should not be forced. It should be a natural outgrowth of social behavior.

According to previous literature on intergenerational interaction, there may be a number of different activities that require status figures. All of these IG programs can happen anywhere in the park, based on the unique characteristics of a place. However, in this survey of four chosen parks, the intergenerational activities were always self-organizing or happened spontaneously. This comparison of parks in the United States and China revealed a number of similarities and differences between the parks. Finally, we have developed a design framework, as shown in

Figure 27. The data upon which the landscape qualities required for spontaneous IG activity were based come from this researcher's investigation and observation of case studies, and the other two are from the literature review. By combining these qualities, the specific characteristics of IG activity spaces that could be used around the world have emerged.

Indoor IG activities and programs are popular right now. But the outdoor activities that make use of urban parks are still lacking. However, as mentioned in Chapter three, the urban park is an ideal place for interaction with other people to happen. The location, the environment, and the qualities of the space are all perfect for creating an IG contact zone.

Returning to the landscape qualities of an ideal IG space, shared lessons could help fill out the spontaneous IG activity component of the fig. 34.

	<i>Spontaneous Intergenerational Activity Needs</i>	<i>Focused Intergenerational Programs Needs</i>	<i>Senior-Friendly Park Needs</i>
<i>Ideal Intergenerational Space Landscape Qualities</i>	<ul style="list-style-type: none"> • Shade nearby • Flat open space with good sight access • The distance to nearest Parking area/ Entrance should within range of 1/4 mile. • Provide seat around activities. 	<ul style="list-style-type: none"> • Road close to woods • Provide facilitators of the IG activity like tools • Provide painting walls • A field for growing seed and new plants • Enough space for outdoor games 	<ul style="list-style-type: none"> • Easy, simple signage • Frequent seating • Sufficient toilet • Safety environment • Good accessibility • Age-friendly design • First-add facilities

Figure 34: Hypothesis Ideal Intergenerational Space landscape quality

IG programs could be established in different places and need not be in one fixed place. Fortunately, there already have been studies about IG practice and its relationship with the environment. A review of previous literature could be undertaken to discover the most suitable environmental elements for an intergenerational space. By combining lessons learned from the literature review and the case studies, the essential elements of IG spaces emerge. Based on these qualities, landscape designers could manipulate spaces to encourage intergenerational interaction in urban parks, thereby promoting social connections among multicultural elderly. In this way, the social isolation problems of the elderly could be reduced.

CHAPTER 6

DISCUSSION

According to the findings above, the urban park could play its social role as promoting people from different generations interact together and reduce elder's social isolation. The natural environment function hasn't been tested in my study, so I think the next study could focus on how the nature elements and building the elements affect IG activities. In this way, the study about environment and IG practice could go further.

This thesis could be contributed to the future study of IG and environment study field, and benefit students or professionals who interested in this field. The global perspective used in this thesis could also inspire who study IG programs in a mix ethnic/ culture place.

For the parks in the USA, the barrier of promote IG in urban parks are some elders are not attracted into parks. They should host more activity which elders and youth both interested in. For Chinese parks, the barrier of promote IG activity is lack of consciousness. Many people didn't realize it is a important social interaction for elders, and some elders refuse to say they are lonely or in a depression feeling.

Then I will discuss some potential IG activities I think could happen in urban parks. Now as I observed and surveyed, most IG in urban parks are happened unintended, not purpose, there's not too much organized IG programs in parks now. Most well-organized IG are inside rooms, and they serve community scale not multi-community combined. We can think a more extensive system of IG connection in the future.

Few communities have programs that encourage and facilitate intergenerational relationships between children and older adults. However, parents can encourage relationships between their children and older family members (<http://edis.ifas.ufl.edu/fy1007>). Here are some activities that could help nurture the relationship:

Here are some potential intergenerational designs in the park:

- Intergenerational Playground
- Storytelling. Swapping stories is a great activity and can help build a connection.
- Planting seeds or gardening. This illustrates the stages of the life cycle. A container garden can be created if bending or space are issues.
- Weather watching
- Observation group of animals
- Outdoor library

Normally, to measure if the program could reduce senior social isolation and loneliness, it need time to record the same group of senior's emotions in a time period to see if they feel more connected. Because of the time limitation and location limitation, this thesis was limited by the time and didn't collect this data. In the future, if anyone interested in this study field they could continue this study, and use survey to record elder's loneliness condition changing. It would be a very useful evidence to support the hypothesis of IG engagement types.

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APPENDICES

A. Survey Contact Script

Good morning/afternoon. My name is Tianyu Wu and am a master student in landscape architecture from the University of Georgia's College of Environment and Design. I am currently conducting my thesis research on gauging causes and potential solutions of senior loneliness in urban parks.

I am contacting you today to ask if you would be willing to participate in a questionnaire as part of my research? The focus of my research is how to reduce senior citizens' loneliness and depression in urban parks, and the questionnaire is the way to help me decide which method is better.

I believe that your experience and feeling in the park would provide a valuable perspective for my research. This questionnaire will be taken about 15 minutes. The name of participants will not be recorded, and you don't need to give any personal information during the research.