Hey Neighbor! Let's Play.

A thesis submitted to the School of Design, Carnegie Mellon University,
for the degree of Master of Design in Interaction Design.

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Abstract

"Hey Neighbor! Let's Play." Is a masters thesis evaluating the effects games and playful interactions have in building a sense of community. Throughout the thesis, I researched the emotional connections urban residents have with their communities and neighbors, and used the research data to develop installations for play throughout pedestrian staircases in the Southside Slopes, an urban neighborhood in Pittsburgh. From these installations, I collected user feedback and evaluated how the games affected various residents of the community. From the feedback, I was able to ultimately establish several design principles to inspire and facilitate future designers interested in designing neighborhood-based games.

Introduction

This thesis was conducted over a period of eight months (September 2011 through April 2012). The process was divided into five main stages:

1. Reading about and understanding the problems surrounding present day American communities;

2. Researching and evaluating Pittsburgh residents' emotional responses to their current neighborhoods and proposed solutions;

3. Selecting and studying a specific context, and ideating game concepts with this context in mind;

4. Designing, implementing, and iterating various neighborhood games within the selected context;

5. Evaluating the feedback from the implemented games and establishing a set of design principles from them.

Reading about Games and Communities

Key Insights

Unified neighborhood communities are dying.

Friendliness amongst neighbors is declining.

Games are a strong social bonding tool.

Members of strong communities are more productive.

Games have rarely been used to strengthen neighborhoods.

Reading about Games and Communities

Before I even understood what my thesis would be about, I began reading about the various topics I knew I would want to focus on: play, urban communities, and public space. I at first was not sure where the readings would take me, but I began to uncover several findings that work together to create the foundation for this thesis.

What I Did

Most of my earlier readings leaned heavily on the issues surrounding urban communities. I read many papers on community theory and books on the sociology of contemporary American life in order to understand the dynamics and social infrastructures amongst people today. I also read several books and papers on urban planning and public space in order to evaluate how physical aspects of a community impact people's behaviors and sentiments. Lastly, I read many books and researched existing projects exploring how games can be used as a social bonding tool. Throughout these topics, I discovered many findings and critical areas of interest that ultimately became my foci for this thesis project.

Play, Public Space, & Collabo

Reading about Games and Communities

What I Found

Several serious issues became evident throughout my reading. However, one stood out from the rest: unified neighborhood communities are dying. In his book Bowling Alone, Robert Putnam claims that American communities have been declining for the past century, becoming the source of several external community problems such as increased crime rates, a suffering economy, less participation in politics and in education. He explains:

> We are not talking here simply about nostalgia for the 1950s. School performance, public health, crime rates, clinical depression, tax compliance, philanthropy, race relations, community development, census returns, teen suicide, economic productivity, campaign finance, even simple human happiness – all are demonstrably affected by how (and whether) we connect with our family and friends and neighbours and coworkers.

Putnam claims that there are three societal changes that caused the breakdown of communities: mobility and sprawl, technology and media, and time and money. The average American family has become used to suburban landscapes, where it is difficult to walk or bump into neighborhoods, with an isolated after

Unified neighborhood communities are dying.

Reading about Games and Communities

school or work schedule that usually involves tuning in to the computer or television. Putnam argues that even amongst families have become separated from each other and do not value time together as much as families did years ago. People today work long hours, spend more time alone in their car than outside walking, and spend too much time isolated with their computers or televisions. This is the life style that has evolved throughout the past century and it is the lifestyle that fragments us as individuals from our communities at large (Putnam).

A second issue I discovered was that friendliness amongst neighbors is declining. Unfriendliness towards neighbors is a world-wide problem: recent surveys claim that " three-quarters of Americans confess that they don't know their next-door neighbors. In the UK, six out of ten people don't know their neighbor's names" (Botsman, 43). Strong relationships amongst neighbors are important for several reasons. In addition to strengthening an individual's attachment to place and sense of community, friendly neighbors can provide emotional support and prevent loneliness. Furthermore, friendliness amongst neighbors encourages a willingness to participate in the improvement of ones neighborhood, resulting in more active and effective members of their community.

Friendliness amongst neighbors is declining.

Reading about Games and Communities

Games are a strong social bonding tool.

In addition to this extensive research explaining the importance of strong neighborhood communities, there is groundbreaking research claiming that games are a strong social bonding tool. In her book Reality is Broken, Jane McGonigal dedicates a chapter to "Fun with Strangers", an exploration on how games "create communities from scratch". She frames the chapter with several examples of community-building games. One specific example is Ghosts of a Chance, an alternate reality game hosted by the Smithsonian American Art Museum. This game aimed to allow new and existing members of the museum to interact with the collection. What resulted was the members' interaction with each other and a new dialogue amongst strangers who shared only one thing: their connection to the museum.

Participants were asked to undergo six quests that allowed them to solve a fictional mystery about ghosts who lived in the museum. As part of these quests, players were asked to create objects that would eventually be displayed in a museum exhibit. The game prompted several discussions between players, collaborating to solve the mystery and get feedback on their works. The games popularity increased to eventually supporting a community of 6,000 members.

Reading about Games and Communities

Through this game, museum members were beginning to share a sense of community and place. Even in the game's three-month time frame, players were becoming more eager to support the museum. At the start of the game, one excited museum member stated: "So it's a combination between a puzzle and an art project. This is extremely cool. Are you guys in? I think we should all participate since it's a new idea for the museum. If they don't get takers they probably won't repeat it. Let's recruit for the new medium!". After the game was finished, another member explained his or her newfound sense of community: "It was really refreshing and definitely gave me a sense of community with the people who were coordinating the event and the other people participating in it." (ghostsofachance.com). According to McGonigal, the sense of community would not have easily been achieved without the use of game mechanics.

[b]ecause it was a 'game' and not a serious art competition, people who wouldn't normally feel capable of contributing artwork were free to try without risking embarrassment. The game structure gave a larger and more atypical museum membership an opportunity to participate in the making of the exhibit, through online discussion [T]he gameplay knocks down the 'fourth wall' And in doing so, it completely reinvents the idea of museum membership, making it possible for a real museum community to emerge., (McGonigal, 76 – 77).

Reading about Games and Communities

Why It Matters

A strong sense of community is important to instill in its members for several reasons: members of a social network that can communicate easily can self-organize become more effective agents in their community. If neighbors become emotionally invested in their social networks, they will take pride and care in maintaining their communities (Ahlbrandt & Cunningham). This reciprocal relationship (the community supporting its people, and the people supporting it) is essential to the overall success of the neighborhood: "Cities have the capability of providing something for everybody, only because, and only when, they are created by everybody." (Jacobs). Much research in Community Psychology has examined the impact of friendly neighborhoods. Statistical findings have shown that neighbors with friendly relationships are more likely to participate in community organizations (Ahlbrandt & Cuningham), and are less likely to suffer from isolation and loneliness (Unger & Wandersman). Friendly neighborhood relationships can lead to a stronger sense of community and attachment to place (McMillan) which ultimately instills a desire within neighbors to participate, maintain, and protect their community (Manzo & Perkins). Urban planners Lynne Manzo and Douglas Perkins state it best:

> Members of strong communities are more productive.

Reading about Games and Communities

affective bonds to places can help inspire action because people are motivated to seek, stay in, protect, and improve places that are meaningful to them. Consequently, place attachment, place identity, and sense of community can provide a greater understanding how neighborhood spaces can motivate ordinary residents to act collectively to preserve, protect or improve their community and participate in local planning processes.

It is clear that games are a strong social bonding tool. However, few attempts have been made to use games as community builders in urban neighborhoods. Aside from using games as ice breakers, I found no games that attempted to strengthen a sense of community within a confined living space such as a neighborhood or apartment building. This was a strong indication that there was a clear opportunity to utilize games in a way that had not been done before, and in a way that would take full advantage of the social advantages of games.

Once I had uncovered these insights, I knew I was ready to plan the thesis work ahead of me. I decided I eventually wanted to design and implement a game that would encourage friendliness and strengthen a living space's sense of community. But before building the game, I decided to gain a better understanding of Pittsburgh's urban residents.

> Games have rarely been used to strengthen neighborhoods.

Researching with Pittsburgh Residents

Key Insights

There are four main types of urban neighbors: Active, Chatty, Polite, Private.

People say they want to meet their neighbors, but actually don't.

If people bond with their physical space, they might bond with each other.

People feel safer when they recognize their neighbors.

People understand each other better when they can self-organize.

People feel a stronger bond to their environment when they can co-create It.

Researching with Pittsburgh Residents

Once I had established an understanding of the problems surrounding communities and the effects games can have, I was ready to begin researching the various emotional connections and personal stories from urban residents of Pittsburgh. The research was divided into two main sections. During the first round, I conducted casual interviews where seven different residents answered questions and filled out questionnaires within a booklet I had designed for the research. During the second research phase, I developed nine prototypes of various game concepts and presented them to three different residents in order to gain an understanding of what types of games they feel comfortable playing and what types of interactions they would like to pursue with their own neighbors. After both phases of research was completed, I evaluated the feedback and uncovered several patterns of interest that would help guide my progress.

What I Did

In order to prepare for the first phase of research, I created a workbook of ten different exercises for the participants to fill out. Exercises included making a collage to express what their current vs. ideal neighborhood is like; circling words in a grid to describe certain factors surrounding their living standards and

Researching with Pittsburgh Residents

relationships; and telling stories of their encounters with friends or neighbors. From these exercises, the types of issues that I was hoping to learn about dealt with:

- their emotional connection to their neighborhood;
- their relationships with their neighbors;
- their comfort towards strangers in various spaces;
- their desires to meet new people or neighbors.

Researching with Pittsburgh Residents

For the second phase of research, I created nine prototypes from three different residents. The overall goal of the prototype session was to discover how people felt about certain game mechanics, interactions, or ultimately what types of desires the residents have towards their neighbors. I developed each prototype and linked it to a main question that I wanted to ask from it:

Scavenger Hunt Race: Would people want to collaborate with their neighborhood if they shared a common enemy (an other neighborhood)?

Guessing Game: Who's the Neighbor?: If people were paired up by a system, would they be likely to start a conversation or friendship?

Fill in the Blank Puzzle: Would people respond better and participate more within their community if events, neighbors, and businesses were personalized and well visualized?

Ice Breaker: Would people talk to each other if they were given the proper cues?

Scoring Mechanism and Rewards: Do people need a realistic motivation (i.e. money) to be encouraged to play games?
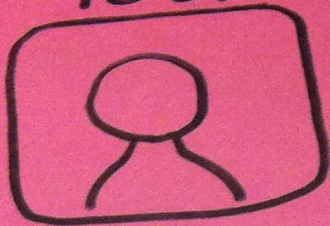
Researching with Pittsburgh Residents

Collaborative Construction Game: Would people bond by building something together? Do people want to help out their community if the opportunity is presented to them in a fun way?

Community Portal: Would people want a virtual space where they can communicate and self-organize as a community? What do people want to make public to their neighbors?

Notification System for Short, Low-Commitment Games
Would people be more motivated to play games if they received weekly triggers or reminders to do so?

Ludic Distraction for Ambient Familiarity
Would people be likely to introduce one another if there were an interesting conversation piece? Would people feel safer or more attached to their community if they recognized their neighbors?

Researching with Pittsburgh Residents

What I Found

From these issues and exercises, as well as from my observations of the city of Pittsburgh and other more casual interactions with residents, I was able to establish different patterns and findings. I discovered a spectrum of four general types of neighbors:

There are four main types of urban neighbors: Active, Chatty, Polite, Private.

Active

Chatty

Polite

Private

Researching with Pittsburgh Residents

The Active Neighbor
Someone who is invested in the well being of their neighborhood and is a leader in making sure their neighborhood holds up to a certain standard;

The Chatty Neighbor
someone who enjoys meeting their neighbors and is usually active in several organizations or clubs;

The Polite Neighbor
Someone who aims for short and peaceful interactions with their neighbors, but not to the point of establishing a friendship;

The Private Neighbor
Someone who leads a private life and prefers to not make any contact with their neighbors.

Researching with Pittsburgh Residents

From the interviews, I was also able to uncover several organizations tools that are currently used by urban residents:

- Phone Trees
- Bulletin Boards
- Management Offices
- Community Meetings

These findings helped me understand what types of residents one may encounter in an urban neighborhood as well as the types of social interactions they currently have, and the organization tools they currently use.

From the prototypes, I gained a much better understanding of what types of interactions neighbors are interested in. Although people expressed interest in meeting their neighbors during discussions and interviews, the prototypes revealed much more. I found that the residents felt most drawn to the concepts that encouraged interaction with the physical environment more than their neighbors. People were extremely uninterested and cautious about any type of straightforward interaction with a stranger, even if that stranger were their neighbor. Instead, they were more interested in the games that provided interactions with the environment as a bridge to maybe meeting their neighbor.

People say they want to meet their neighbors, but actually don't.

Researching with Pittsburgh Residents

Why It Matters

Once I was completely finished with the research, I felt that I had to change the goal that I had originally had in mind of bringing neighbors together so that they can easily meet, and instead I decided to focus on designing a game or playful service that would connect people with their environments directly, and maybe also with each other indirectly. Through this research, I had established three main goals for accomplishing this:

Ambient Familiarity: With this goal in mind, residents' interactions would be augmented through the game. Neighbors who might not notice one another normally could have each others' presence revealed to them subtly. This would support the neighbors' ability to recognize each other within their community, ultimately creating a safer and more comfortable environment.

Self-Organization: With this goal in mind, residents' understanding of one another as a community would be augmented through the game. Patterns of ideas, sentiments, or opinions within the community would be revealed to them subtly. This would support the neighbors' ability to understand their community as a whole, ultimately creating a stronger bond amongst the neighbors.

> If people bond with their physical space, they might bond with each other.

Researching with Pittsburgh Residents

Collaborative Construction: With this goal in mind, residents' productivity within the environment would be augmented through the game. Neighbors' interactions with the environment will subtly be revealed to the entire community, inviting others to join as well. This would support the neighbor's reciprocal relationship with their community and environment, ultimately creating a stronger emotional attachment to the area.

These three goals became the foundation for my next stages in the project. However, before brainstorming more concepts for the game, I had to choose a context and take time to study and understand it.

People feel safer when they recognize their neighbors.

People understand each other better when they can self-organize.

People feel a stronger bond to their environment when they can co-create It.

Selecting a Context

Key Insights

Boundaries are necessary in defining a sense of community.

Proximity between neighbors living spaces affects their desire to interact.

The game can still be strong if it simply uplifts people during their day.

Long-term commitment to a space affects one's interest in bonding with it.

Selecting a Context

After conducting the research, I felt strongly that in order to advance anymore, I needed to choose a specific context. The context would be an extremely important factor in the design of the game, the goals the game would have, and the types of relationships the game would be working with.

What I Did

Throughout the earlier stages of my thesis, I had explored several different types of neighborhoods and living facilities. I had originally wanted to focus on apartment living. I contacted several apartment residents and received over 80 survey responses on an online questionnaire. I also contacted several managers and discussed themes surrounding the thesis in order to become more familiar with their concerns as managers.

After receiving feedback from apartment residents and managers, I decided to explore public spaces surrounding residential neighborhoods. Ultimately, I established a set of patterns that I realized I was being drawn to:
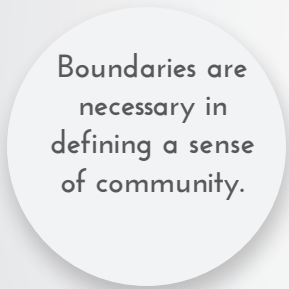
Selecting a Context

- I wanted the game to be set in a public and safe space where people would easily encounter it and also be willing to stop and interact with it;
- I wanted the game to be integrated within a certain infrastructure, a repeating element of some kind;
- I wanted the game to be in a location that people often encountered on a daily walk;
- I wanted the game to be confined to a single neighborhood.

After establishing these rules, I had considered various neighborhoods and elements such as the bus stops in Squirrel Hill, the telephone poles in Greenfield, and the alleyways in the Cultural District. However, I eventually discovered a neighborhood in Pittsburgh's Southside Slopes that was only a half-mile in diameter and had eight different pedestrian stairs. I decided to spend much time in this neighborhood in order to observe how people use the stairs and gain an understanding for the residents of the neighborhood.

What I Found

After many discussions with several apartment residents and managers, it became obvious that because of privacy issues and regulations, it would be extremely difficult to find an apartment that would allow any interference with
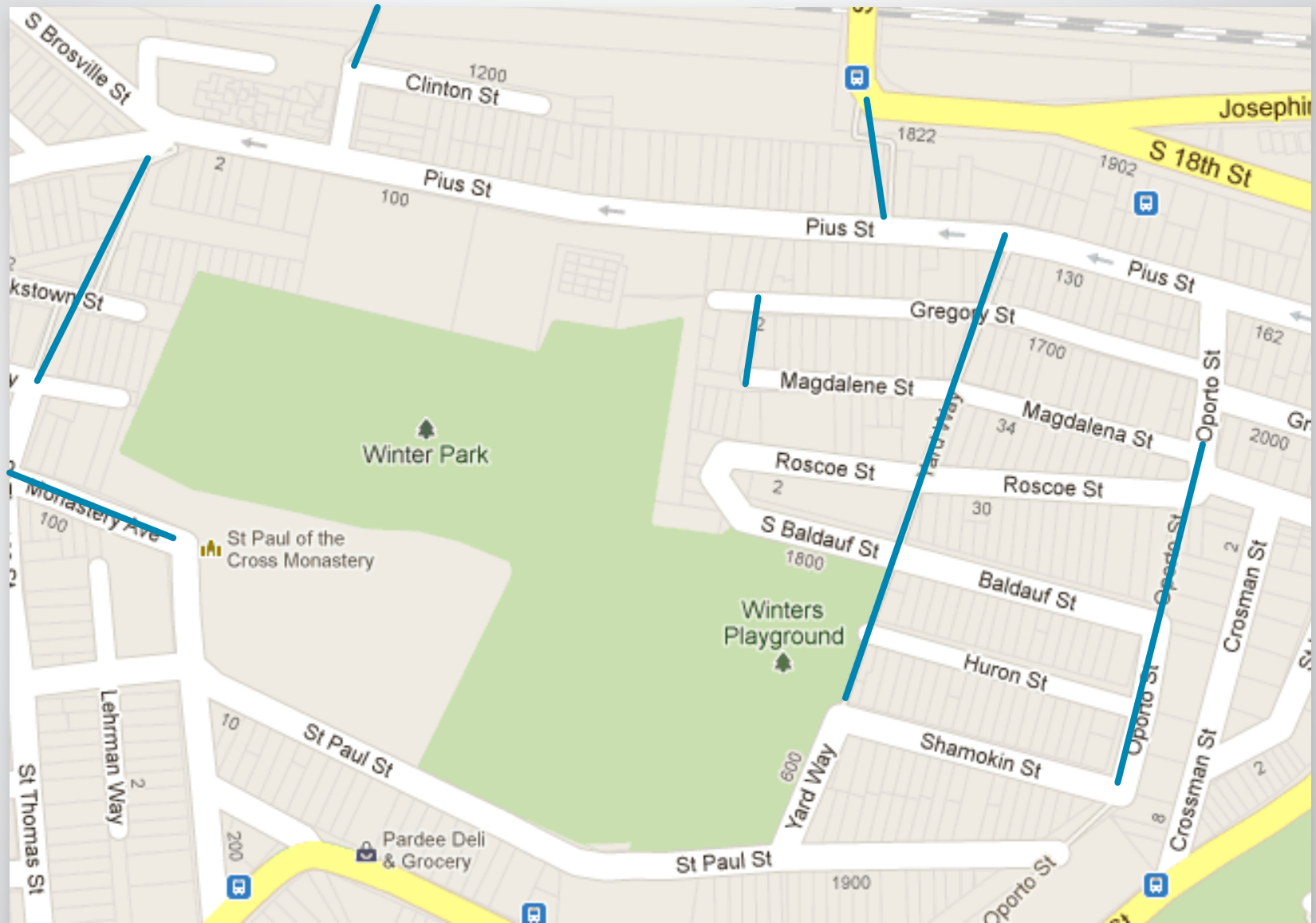
Selecting a Context

Boundaries are necessary in defining a sense of community.

privacy, décor, or general decisions made by management. From this finding, I decided to shift instead to more sprawled residential areas.

While I explored a wide variety of neighborhoods (including Squirrel Hill, the Cultural District, and Greenfield) I realized none of these areas had well-defined boundaries. This was an extremely important factor to me. According to game designer Jesse Schell, game must use boundaries in order to define its setting and rules. In order for the game to work, I felt the neighborhood must have a strong definition. Furthermore, community theorists argue that a community must know its boundaries in order to be self-aware and have a sense of community. Finally, after much searching I discovered a neighborhood with extremely well defined boundaries in the Southside Slopes.

In addition to the boundaries, I chose this neighborhood because of its large amount of staircases. As I observed the area, I realized the stairs would be a great context for the game since it is a space people use daily, in passing, and usually with one person on the staircase at a time. Also, people's relationships with the stairs indicated to me that it held a great opportunity space since the stairs are long and steep, and most people do not enjoy using them.

Selecting a Context

As I explored this setting more, I discovered the current relationships between the neighborhood and its neighbors. I noticed that the residents had a long-term commitment to the space: most were house-owners; many of the residents included young families with children; most of the residents were born and raised in Pittsburgh.

Why It Matters

Although I originally wanted to create a playful service that would bond people and improve the relationships amongst apartment residents, it became clear that these residents were not interested at all in interacting with one another. From this I slowly began to understand the correlation between proximity amongst living spaces and interest in connecting with one another.

Proximity between neighbors living spaces affects their desire to interact.

Proximity makes an enormous difference in the way people interact with one another. Sensitivity to proximity was a recurring theme in several of my primary readings: Jane Jacobs believes that the tight proximity of dense urban areas are necessary for walkability, some believe the sprawled proximity of suburban housing is what led to the fall of friendliness amongst neighbors, and William Whyte examined the importance of proximity between people and

Selecting a Context

their physical spaces in order to better understand their relationships with their environments. Obviously proximity is an element of residential living that should not be overlooked. My main insight from exploring various types of residences is that the proximity of living space between two neighbors is directly correlated to the amount of interest they have in playing with one another, so someone living farther away from is a more inviting play partner than someone living extremely close by. Many next-door neighbors share unspoken tensions and do not want to open their personal lives to one another. Playing together could be more awkward for these people than if they were to play with an unknown neighbor from farther away. For this reason, I decided to focus on outdoor, public spaces that would be encountered by people living within a more sprawled out neighborhood, specifically the neighborhood I found in Southside Slopes.

Throughout my observations in the Southside Slopes, I heard many comments of frustration and resentment towards the stairs. I realized a game or playful activity could be a great way to subtly shift people's attitude, distracting them from the physical exhaustion the stairs bring, and giving them an excuse to rest from the climb. This adds a new dimension to the purpose and meaningfulness of the game. It does not only serve to build a sense of community, it is also

The game can still be strong if it simply uplifts people during their day.

Selecting a Context

simply a device to uplift people's attitudes and improve the sentiments towards their environment.

After the exploration of this neighborhood in Southside Slopes I felt confident that the neighbors would be open to playing the games. Because most of these residents hold long-term commitments to the area, I was assured that these neighbors would be more interested in activities with their community than an apartment renter or student who was planning to move from the area soon.

Overall, the context was extremely inspiring and held many qualities I wanted to augment through my game. Once I felt confident with the context, I was ready to begin designing.

Long-term commitment to a space affects one's interest in bonding with it.

Designing Installations for Play

Key Insights

Delight and Connection are the main goals for each of the games.

Communication helps to establish and define the community as a whole.

Exploration can allow residents to learn more about their neighborhoods.

Expression allows residents to be heard and be creative.

Designing Installations for Play

Finally after months of reading, researching, and observing the context, I was ready to begin designing a game that would actually be implemented and tested on. I spent much time reflecting on the past insights I had gained from previous stages in the process, and after evaluating them, I brainstormed a series of game concepts and uncovered new insights from them.

What I Did

While beginning this phase of the process, I knew there was much to consider from the earlier stages. I began by refreshing myself with all of the insights I had previously acquired:

Members of strong communities are more productive.

Games have rarely been used to strengthen neighborhoods.

There are four main types of urban neighbors: Active, Chatty, Polite, Private.

People say they want to meet their neighbors, but actually don't.

If people bond with their physical space, they might bond with each other.

People understand each other better when they can self-organize.

People feel a stronger bond to their environment when they can co-create It.

Boundaries are necessary in defining a sense of community.

Proximity between neighbors living spaces affects their desire to interact.

The game can still be strong if it simply uplifts people during their day.

Long-term commitment to a space affects one's interest in bonding with it.

People feel safer when they recognize their neighbors.

Designing Installations for Play

These insights became my inspiration and foundation for a brainstorming session where I developed a portfolio of 35 different game concepts. Every game does not capture every insight, but they are all loosely based off of the previous findings. As I began developing the various concepts, I noticed a series of patterns unfolding:

- Asynchronous Interaction
- Ambient Play
- Co-creation
- Community Communication
- Integration with day to day activities

These five themes tied beautifully with the previous findings. They became the synthesized guidance for my brainstormed concepts.
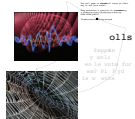
Designing Installations for Play

With those patterns in mind, once I completed the brainstorm, I organized the concepts into six main groups based on what type of fulfillment it would provide within the neighborhood:

- Exploration
- Communication
- Organization
- Delight
- Connection
- Expression

Each category represented an important goal I wanted the games to encompass. They were eventually used to help guide the design goals for the final games.

Expression

Stair Polls

olls

Word Play
Magnetic
oety
Boar

NONSENSE

Co-Draw
Group
Drawings

This draw
needs one
monster
est. 2 t
il u
ig 41
st)

Controllers

Controller Stair

Co-Poetry

eeling
Stairs

Exploration

Stair Sounds
Ambient
Soun

Stair Hunt
Stair Scavenger Hunt

Stair Pet
Stair

Do you see him? i
Shows up top

Parallel Stairs
Parallel
Stair
Univers

Chutes&Stairs

Chutes an
Ladder

I Spy
Stairs
that S

Top&Bottom
Bottom
to To

Connection

Stair Clock

Stair Clo

Stair Trivia
Sta Trivia

Music Stairs
Musical
Stairs

Jigsaw Steps
Jigsaw
uzzle
Boar

Board Games
Asynchronou
Board Game

Staircam
Staircam

Stair Comp
Stair Ga

Organization

Who's There?
Stweets
Stair Chat
Stair Board

Trading Post

Communication

TeleStairs
DailyQuestion
StairSecrets
Whispers

Delight
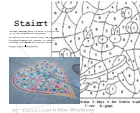
Stair Art
Stair Photos
Nonsense
Photo Booth

Silly Stories
Stair Calls
Slides&Stairs

Designing Installations for Play

What I Found

Once these six groups had surfaced, I spent time evaluating them, trying to rank them, and figuring out what was so important about each one.

I immediately realized that the "Communication" and "Organization" groups should be combined into one. When reviewing the game concepts that were in the "Organization" group, I realized I was not particularly drawn to any of them. Organization aimed to improve the formal interactions between neighbors, but none of these games focused on the social connectivity in the way that the "Communication" group's games did. I decided to merge the "Organization" group with "Communication" and focus more on how a game can augment social, communicative interactions instead of dry, formal ones.

I later realized that the "Delight" and "Connection" groups stood apart from the others. Both delight and connection were goals I had in place for the games as a whole. It was difficult choosing which game concepts to place in these groups since I aimed for each one to encompass these two features. For this reason, I saw these two groups as a larger, more holistic goal, where the other four groups served as subgroups of these two. It became clear that all of my

Delight and Connection are the main goals for each of the games.

Designing Installations for Play

games should aim to spread delight and connect people to each other and their environment.

The "Exploration" and "Expression" groups each represented wonderful goals; however, they were not as necessary as Delight or Connection. The "Exploration" and "Expression" groups fit well with the "Communication" group to become the three sub-goals of the games.

- Exploration invites residents to take a moment to observe their environment, and hopefully see it with a new perspective.
- Expression invites residents to be creative and allows themselves to be heard by their community.
- Communication invites residents to organize themselves and understand their community socially as a whole.

Why It Matters

I felt strongly that the game I would design should be delightful and should connect residents with their community. Delight was important to me because delightfulness uplifts people, and could help them feel more positively about their community. Connection is also extremely important because it is what forms

Designing Installations for Play

bonds and allows for a strong reciprocality amongst residents and between residents with their environments.

However, these larger goals could be achieved through the use of either communication, exploration, or expression. For this reason, I decided to design three games, all of which would aim to delight and connect people, but each would either focus on communication, exploration, or expression. Each is equally valid and important.

Communication helps to establish and define the community as a whole.

Games that focus on communication can be empowering for a community because without communication, the community as a whole remains undefined. When people are able to communicate properly as a group, they can understand who they are holistically and how they as individuals fit into the whole community.

Exploration can allow residents to learn more about their neighborhoods.

Games that focus on exploration can be extremely insightful for any resident within a community. Once neighbors begin to interact with their environment on a day-to-day basis, simple things become ordinary and begin to blend into the background. A shift of perspective within a person's environment is healthy

Designing Installations for Play

for anyone to have, and can inspire new insights and bonding with one's community.

Games that focus on expression can empower residents to speak their minds and be creative. Also, if a framework that allows for expression is presented to residents in a neighborhood, it can inspire them to communicate something they normally would not.

Together with the focus on delight and connection, these three goals were used as inspiration for the final three games I eventually designed.

Expression allows residents to be heard and be creative.

Implementing and Evaluating

Key Insights

Freshness keeps a game interesting and creates long-term engagement.

Seamlessness allows residents to interact directly with their environments.

Exploration invites residents to observe and gain new perspectives.

Distinction allows a game to be unique and distinguish itself.

Delight uplifts people and leads to a more cheerful, upbeat attitude.

Approachability invites all people to play and makes clear who the game is for.

Collaboration allows people to work together and bond through a shared activity.

Beauty inspires people and leaves them feeling uplifted.

Clarity lets people know how the game is used.

Implementing and Evaluating

Once I had synthesized the goals of the games the three categories of exploration, communication, and expression, I decided to explore games that focused on each of these goals (three games total). I evaluated short popular games that people would recognize easily and considered how they could be custom designed for the staircase in Southside Slopes. I ultimately came up with these three games:

- I Spy: A fun childhood game of exploration and looking for interesting things around an area
- Magnetic Poetry: A common product of magnets people display on fridges that makes for a fun pastime and an interesting form of expression
- Polls or "Would you Rather": Fun activities people use that allows for communicate that makes it easy to learn more about a group of people and to see where an individual lies within that group

Before implementing the three games, I wrote out a rule set for each game in order to guide its game play. I implemented the games and iterated each one based on the way people seemed to be interacting with them. Total, I created one version of "I Spy", two versions of "Stair Polls", and three versions of "Stair Poetry".

Implementing and Evaluating

I Spy

What I Did:

My original goal for I Spy, in addition to being delightful and encouraging people to connect with one another, was to invite people to explore their surroundings. I hoped this game would help people observe their neighborhood, and maybe take a moment to stop and look around instead of just walking down the stairs as usual.

My Original Ruleset:
Each step will have the words "I SPY ⎯⎯⎯" on them. Kids and parents can use supplied chalk to fill in the sentences. If they do not want to write anything, they can also simply look for the items listed.

I used a stencil to paint the words "I SPY" on each step using washable chalk paint, and left small amounts of chalk next to the stairs for people to fill in the blanks as they please.

Implementing and Evaluating

What I Found

After a full day, I returned to the staircase to find that all of the spaces had been filled. People's responses were varied and even imaginative, and it was clear that the installation had inspired some fun. However, after a few more days, the installation remained untouched and it became clear that people's interest in the game had reached a plateau. Ultimately, people stopped filling in the blanks and stole all of the chalk.

What Worked:

- It elicited a quick response
- It was easily understood
- It was installed in an ideal location
- It encouraged observations of the area
- It integrated well with the stairs

What Didn't Work:

- It lost appeal quickly
- It relied on elements (chalk) that were easy to steal

ISPY A BROOM

ISPY A KITTY CAT

ISPY Ice cream

ISPY

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Why It Matters

After observing interactions with the installation, I spoke with people about their personal experiences with the games and evaluated the feedback. Ultimately, I discovered three main insights: the importance of freshness, seamlessness, and exploration.

The first insight I discovered from this game was the importance of freshness. After noticing that people were only interested in the installation for the first 24 hours, it became obvious that freshness was an important factor in designing this type of game. Freshness describes the sense of novelty and excitement in an activity. This results from the craft of the game's experience over a long period of time. Freshness is mainly created by the material of interest curves. Interest curves include any peaks, plateaus, or dulls within a person's long-term interest in the game. Ultimately, Freshness results in people's long-term attachment to the game, establishing people's commitment to it.

A second insight I discovered from this game was the importance of seamlessness. This game was particularly successful because it had such a connection to its physical environment. People were happy to fill in the blanks

Freshness keeps a game interesting and creates long-term engagement.

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Seamlessness allows residents to interact directly with their environments.

left for them, and some would even begin to draw around the installation. The game served not only to bring people to interact with it, but also as an inspiration for more creative activities. This game proved to be seamless with its environment, making for a more successful experience. Seamlessnes describes the sense of the game belonging to its context. This results from a smooth integration between the game and the environment in which it is installed. Seamlessness is mainly created by the material of context. Context includes any physical, spatial, or environmental surroundings. Ultimately, seamlessness results in people's engagement with the context, establishing a bond between the people their physical environment.

Exploration invites residents to observe and gain new perspectives.

A third insight I discovered was the importance of exploration. After I spoke with several people who interacted with this game, I realized many of them were not physically writing answers but were reading the responses and using them to look for the things described. One person confessed to me that he spent much of his time looking around the area for a cat, since it was written on the stairs. Exploration became a large part of the success of this game. Exploration describes the act of observation or searching throughout a specific area. This results from encouraging people to look around and think about

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their environment. Exploration is mainly created by the materials of cues and pointers. Cues or pointers can be created with visuals, words, drawings, or by manipulating the environment. Ultimately, exploration results in people's discovery of their surroundings, establishing a new perspective and appreciation for the area.

In addition to these insights, I discovered much about the important elements of contextual game design from my other installation, "Stair Polls".

Stair Polls
What I Did

My original goal for Stair Polls, in addition to being delightful and encouraging people to connect with one another, was to invite people to communicate as a community. I hoped this game would help the residents learn more about who they are as a neighborhood and how they fit in individually.

My Original Ruleset:
These stairs will ask neighbors to answer a simple multiple choice question each day. Neighbors will reveal what their more popular choices are for various topics.

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The results of the polls would be self-evident as people answer the questions.

What I Found

Throughout the installation of this game, most people did not feel compelled to interact with it. It did not attract much attention and it was placed in a particular staircase that was extremely windy and difficult to keep anything installed in. My first iteration of this installation was a poster of bubble wrap where passersby were presented with two options (for example night and day or dog and cat) and residents would pop the bubble for the one they chose. After a few days, it was difficult to notice any interaction with the posters, and I was receiving much confused comments from people. I then created a second iteration of the game where a poster read "Would you Rather " and then gave two options (for example, "read a book" or "go to the movies"). This poster did create much more interaction, but also resulted in some confusion and much interference from the weather.

Dog

DOG DOG DOG DOG DOG

DOG DOG DOG DOG

Would You Rather...

Read a book?

Go to the movies?

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What Worked:
- It was in a popular area, leading to interesting responses
- It led to an understanding of the whole community
- It became a conversation topic
- It was uplifting to interact with

What Didn't Work:
- It was difficult to maintain because of weather
- It was not obvious how to use or who it was for
- It did not catch people's attention easily

Why it Matters

After observing interactions with the installation, I spoke with people about their personal experiences with the games and evaluated the feedback. Ultimately, I discovered three main insights: the importance of distinction, delight, and approachability.

The first insight I discovered through this game was the importance of distinction. A few days after the first iteration of this game was implemented, I

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Distinction allows a game to be unique and distinguish itself.

received feedback from someone expressing much confusion about the project. They commented that they originally assumed the poster was an official notice from the city of Pittsburgh. This proved to me that distinction was an important quality for my installation to have in order to give itself a voice and separate itself from its surroundings. Distinction describes the sense of uniqueness and personality. This results from consistent language, patterns, and style that captures the game's personality. Distinction is mainly created by the material of voice. Voice includes any verbal or visual styles that is unique and true to the personality of the game. Ultimately, distinction results in people's emotional connection to the game, establishing a bond between people and the game.

Delight uplifts people and leads to a more cheerful, upbeat attitude.

The second insight I discovered through this game was the importance of delight. Although the first iteration of the game (the posters of bubble wrap) did not appear to result in much feedback or use, I learned from speaking with people that it was successful for different reasons. When talking to several people about the various installations, their faces particularly lit up when remembering this one. People were quick and happy to let me know that they popped as many bubbles as they could, not paying attention to the rules of the game, but simply enjoying that interaction. This led me to understand the importance of

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delight. Delight describes the sense of upliftedness after a simple experience. This results from language, visuals, fun interactions, or pleasant aesthetics within the game. Delight is mainly created by the material of lightheartedness. Lightheartedness includes silliness, sense of humor, or cheerfulness. Ultimately, delight results in people becoming uplifted after using the game, instilling an up-beat and optimistic attitude within them.

Approachability invites all people to play and makes clear who the game is for.

The third insight I discovered through this game was the importance of approachability. While receiving feedback on the installation, one resident expressed why she did not interact with the game by explaining that they assumed it was left for a specific audience that did not include herself. The game was not clear about who it was intended for, and because of this, residents were afraid to interact with it, fearing it may not be left there for them. This led me to understand the importance of approachability. Approachability describes the sense of accessibility. This results from the proper use of space so that it is obviously intended for public use. Approachability is mainly created by the material of space. Space includes any public areas where the game is installed as well as the game's proximity to private spaces. Ultimately, approachability results

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in people's feeling of shared ownership of the game, establishing a connection between the people who use it.

In addition to these insights, I discovered much about the important elements of contextual game design from my other installation, "Stair Poetry".

Stair Poetry
What I Did

My original goal for Stair Poetry, in addition to being delightful and encouraging people to connect with one another, was to offer a framework of interaction that would inspire expression and creativity. I hoped this game would allow people to express themselves, feel like their thoughts can be heard within their community, and better understand one another.

My Original Ruleset:
These stairs will encourage residents to express themselves by displaying a large amount of words attached on to the railings with velcro. People can manipulate the words however they'd like.

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What I Found

Throughout the design of this game, I created three iterations. The first was simply a series of words attached to the railings of the stairs with velcro. I had hoped that people would see the words and move them around to create their own phrases and sentences. However, after several days, no interaction was visible. At this point I created a second variation of the game, where I created phrases with blanks in them such as "It's Time For A ____" or "Down Came The ____ " "Use Time ____", and I left pens for people to fill in the blank cards. This did result in better feedback, but not much. Also the responses from this version of the game were dull and not too creative (For ex: "It's Time For A Cold Beer" or "Down Came The Rain" or "Use Time Wisely"). Finally, I created an installation that showed a full story with blanks in it for people to fill in with markers. This final iteration resulted in a much larger amount of interaction and much more interesting results.

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What Worked:
- It elicited creative responses
- It encouraged social activity
- It was eye catching and inspiring
- It allowed the community to co-create

What Didn't Work:
- It was placed in a staircase that was not used often
- It appeared to be a static piece of art that was not to be touched

Why It Matters

After observing interactions with the installation, I spoke with people about their personal experiences with the games and evaluated the feedback. Ultimately, I discovered three main insights: the importance of collaboration, beauty, and clarity.

The first insight I discovered through this game was the importance of collaboration. After noticing so much interaction with the third iteration of the game, I spoke to people who used the installation as a party game. The group

little

light

what

too

fo

it's time for X COLD BEER!

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Collaboration allows people to work together and bond through a shared activity.

was having a small get-together at their home, and all decided to bring their beer to the stairs to play with the game. From this story, it became clear to me that these installations are a spectacle for the residents who live around them and they are a great conversation piece or tool to use for collaboration. Collaboration describes shared effort in a specific activity. This results from both asynchronous and synchronous person-to-person interactions. Collaboration is created by the material of co-creation. Co-creation includes sharing any type of activities that ultimately create a unique, holistic experience. Ultimately, collaboration results in people's sense of community, bonding and connecting people to one another.

Beauty inspires people and leaves them feeling uplifted.

The second insight I discovered through this game was the importance of beauty. When I was visiting the installation, a large group of elderly people were walking the stairs for exercise. As they walked down the stairs, they all stopped to admire the words along the railing. I watched them as they slowly walked down. They were smiling and discussing the installation, and seemed to be extremely excited by it. I walked over and they eagerly asked if I was the artist, and were quick to tell me they thought it was beautiful, and they appreciated the work I was doing. One of the members of this group was even

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taking several photographs of the installation, and even took some of me with it. This showed me the importance of beauty. Even though they did not interact with it, these passersby were obviously inspired by the beauty of this installation. Beauty describes the sense of a pleasing appearance. This results from care and deliberate thought on the visuals as well as the smoothness of the wholistic experience. Beauty is mainly created by the material of aesthetics. Aesthetics includes any visual properties, as well as the holistic experience. Ultimately, beauty results in people's feeling inspired by their environment, resulting in an uplifted attitude and a connection to the area.

Clarity lets people know how the game is used.

The third insight I discovered through this game was the importance of clarity. Although the people from the previous story found the installation beautiful, they did not want to touch it. One member of the group even told me he would never touch it because " it belongs in a museum". While this was a compliment of its beauty, it showed me that the game lacked clarity. The interactive qualities were not made clear by the installation. Clarity describes the sense of understanding. This results from thoughtful consideration of how to make key interactions obvious to the people using the game. Clarity is mainly created by the material of affordance. Affordance includes any implications resulting from

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the physical appearance and design of the game pieces. Ultimately, clarity results in people's feeling of curiosity about the game, opening the door to invite people to play and interact more with it.

Once I had evaluated these insights, I synthesized all nine of them to create a set principles. For each principle, a material that helps to establish it was described as well as the emotional quality it creates.
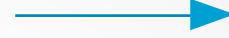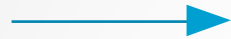
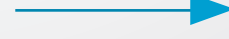| Materials		Principles		Qualities
Affordance	→	Clarity	→	Curiosity
Context	→	Seamlessness	→	Spatial Engagement
Voice	→	Distinction	→	Emotional Connection
Interest Curve	→	Freshness	→	Long-Term Attachment
Space	→	Approachability	→	Shared Ownership
Lightheartedness	→	Delight	→	Upliftedness
Aesthetics	→	Beauty	→	Inspiration
Co-Creation	→	Collaboration	→	Community
Cues and Pointers	→	Exploration	→	Perspective
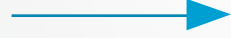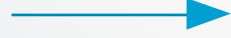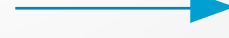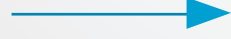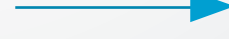
Reflection

These principles are extremely important for communicating to other designers the important qualities that should be considered when designing neighborhood installations for play. Other designers who attempt to design their own rendition of this genre can be guided by the insights I uncovered through my own experiences. Furthermore, it is important that future designers understand how to implement these principles and what types of emotional qualities result from them. For that reason, I paired each principle with various qualities that can help future designers gain a full understanding of them and guide them to use them more easily.

If I could continue with the thesis, I would love to design and implement a game that aimed to encompass as many of the principles as possible. From this I could potentially be able to evaluate the principles more carefully and draw further conclusions from them. Another possible next step for this installation would be to conduct a workshop where I can teach other designers these principles and guide them through their own design process creating a neighborhood-based installation. This way I can evaluate the ease of understand each person has with the principles. I could also use this to understand what is missing from the principles, and what questions people have when reading them.

Conclusion

Overall, I feel this thesis project was a success. I was able to read and learn about current issues surrounding communities and games, and make my own conclusions through my research with Pittsburgh urban residents. I used the readings, research findings, and my own intuition to design and implement various games within a specific context and I ultimately discovered many insights about what types of considerations are important to keep in mind. Most importantly, I synthesized these insights and I truly hope that these insights can inspire and empower future designers to develop and discover more about similar neighborhood-based installations.