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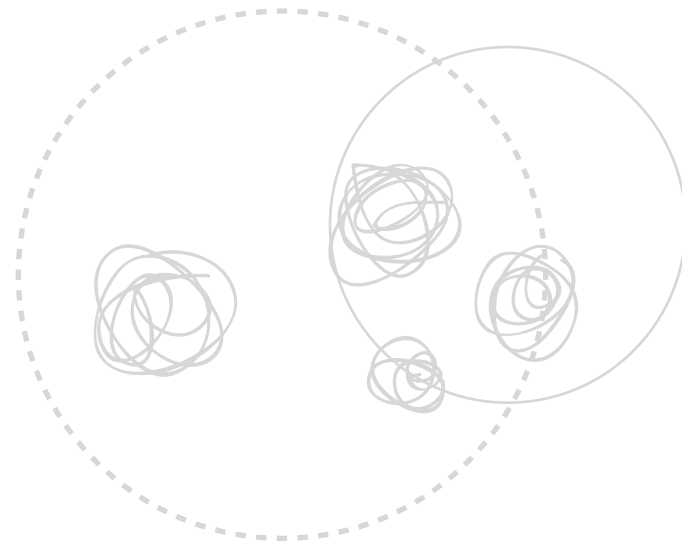# social innovation
studio
CMU School of Design

design,
place, &
social innovation
studio

design methods exploring children,
safety, and guns in Pittsburgh

work by seniors of the class of 2013
Carnegie Mellon School of Design

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Foreword *Laurene Vaughan, Studio Leader*

How can senior design students be catalysts for social innovation within a complex sociopolitical situation?

In October 2012 the School of Design at Carnegie Mellon University was approached by a local advocacy group, who wanted to know if it would be possible for them to work with design students on their current program of activity—the introduction of child protection laws into the State of Pennsylvania. The catalyst for their cause was to protect children from gun shootings. After some initial discussions it was decided that this would be an interesting studio for students to take and one where they could explore how design can exchange with complex social issues. The organization is the Citizens for a Safer PA and the sponsor was The Faulk Foundation. The Design, Place and Social Innovation studio that resulted was pitched to students, and 11 from the senior design year signed up, excited to explore the idea of exploring design for social good rather than consumption. On December 16, the Newtown shootings occurred, and with that the class went from being an exploration of a present but relatively subdued social issue, to being a studio exploring one of the hottest social and political issues in contemporary American life. Over the fifteen weeks of the studio exploration, the issue of guns in America has surged through the cycles of politics and media representation.

Throughout the Spring 2013 semester, students undertook a complex interrogation of the issue of 'guns and kids.' Through a range of readings, lectures, presentations and interviews, the studio members explored the social, cultural and political issues and contexts that any change to law or policy would occur in. We asked ourselves 'What can design do here?' We had to face the reality that guns within the context of North American culture is one of the wickedest problems a designer could tackle. The more we explored the more intermingled the elements of the phenomenon became. We soon realized that we weren't designing within the context of a wicked problem; this is a wicked ecology.

The studio was divided into two phases. Phase one saw us scoping the issue and undertaking a series of quick design exercises, using four approaches, that are the focus of the first part of the book. Students then moved to phase two where they individually explored a design approach or method that was of particular interest to them. These are showcased in the latter pages of this publication. The aim in the individual projects was not to design the perfect solution but rather to explore how a particular design approach could be used for such a complex social problem. They were asked to consider what are the strengths, challenges, limitations and implications of their various approaches. Our aim was to explore how design cannot only be used to think about social change and guns, but any social issue. As such the projects presented in this book should be seen as that, examples of different design approaches to design investigations.

This book is a summation of the work that was done in the studio over the course of one term. More information is available in the studio website designplacesocialstudio.info. Working on an issue as complex, delicate and important as child safety and guns has been challenging. The students in this studio have shown themselves to be designers of the first order; designers who in a fair, rational and creative way, can use their diverse skills and talents to help us design a better future.

Introduction

This book communicates a variety of methods that can be used when exploring the role of design within social innovation contexts.

We've used design methods to investigate a particular topic and then create a range of provocations that explore and communicate our discoveries. These provocations catalyze thoughts and conversation. They increase awareness. We have used the topic of children, safety, and guns within Pittsburgh as a case study for our explorations. The first half of the book is a compilation of our design research methods and findings done collaboratively as a class. The second half is made up of individual and small group projects based on this research in conjunction with personal interest and skill sets.

As a studio, The Design, Place, and Social Innovation members explored this topic in the Spring 2013 semester at the School of Design at Carnegie Mellon University. This studio is also part of the DESIS Network Lab (http://www.desis-network.org/), a community of design schools and design-oriented universities actively involved in promoting and supporting sustainable change.

To address a problem as wicked as children's gun safety, we have used different design approaches to explore the parameters of the social, cultural and political phenomenon that is guns within the context of the United States. After initially considering this as a national issue, we then focused on the topic more locally as it manifests in Pittsburgh.

The context for the studio was first proposed in October, 2012, before the Newtown Shootings on December 16, 2012. After this tragedy, the topic took a more prominent position in society. We observed the significant increase in quantity and depth of analytics, articles and discussions. We were able to look at the changes in public discourse as they were occurring.

What was the purpose of this studio?

- Identify the key issues that underpin a social problem and how design can provide a way to address the issue in practice;

- Design explorations that are applicable to the partner organizations;

- Create tools, approaches, or artefacts to communicate to the various stakeholders in the broader community;

- Address the questions: "How can we design our way into a better future?" and "How can we use design to support and enable behavior change?"

What was the goal of this studio?

- Use design to learn about sustainable behavior change;

- Develop a series of design tools and approaches that enable this;

- Engage in a real world project that requires us to work in an interdisciplinary and agile manner.

As a class, we fostered a collaborative learning and working environment among the students and the professor. We met twice a week as a group for three hours, but we continually discussed and worked together throughout the week.

As students in the senior class at the School of Design, we are familiar with each other's strengths and weaknesses because we worked together and shared studio space for the past four years. We are able to, at this stage in both our education and relationships, talk about a highly personal and polarized issue. With the ability to acknowledge the biases and differing perspectives of ourselves and others, we used these as a basis for intellectual and respectful conversation and progress.

As a group of people, we were comprised of 11 students, a professor, and a teaching assistant. The students were seniors studying Communication or Industrial Design, but over the past four years, we have each acquired unique skills, knowledge, and experience. As displayed in the Stakeholder Map on page 18, it was important for us to recognize our experiences in relation to others involved in this issue.

Laurene Vaughan, *Professor,* design research, place theory, place making, design for social change, practice-based inquiry

Anna von Reden, *Teaching Assistant,* visual design, narrative design, storytelling, scriptwriting, interface design

Jisoo Choi, visual communication design, branding & user research, user experience, user interfaces

Eunice Chung, communication and visual design, design strategy, experience design, people relations, user experience

Maureen Griswold, soft good construction, philosophy, service design, photography, experience design, design research

Michelle Guarino, communication design, user experience, html and css, event and community involvement, ideation

Aurora Parlagreco, communication design, print design, data visualization, storytelling, designing within systems

Danielle Parnes, systems thinking, sustainability, rhetorical analysis and frameworks, community organization

Sarah Read, design research, service design, behavioral decision making & analysis, risk communication

Hyun Sun Seo, branding and user research, visual communication design, photo documentation, psychological approach

Lena Tesone, visual and communication design, print design, storytelling, mapping, dreaming

Russell Tucker, systems thinking, information architecture, web design, experience design, brainstorming, web development

Laura West, physical prototyping, hard & soft goods, systems analysis, organizing, critical thinking

VALUES
RELIGION
NEWCOMERS
CENTERS
COMMUNITY
EVENT
RELATIONSHIPS
ENTERTAINMENT
NEWS
MEDIA
SOCIAL MEDIA
ADVERTISEMENTS
CULTURE
VALUES
FAMILY
TRADITION
MANUFACTURERS
STRAW PURCHASING
ECONOMY   FINES
BLACK MARKET
ACCIDENTS
TRAINING
HOMICIDE
THREATS   USES   SUICIDE
PROTECTION   HUNTING
FEAR
OWNERSHIP
ETHICS
CURIOSITY   EXPECTATIONS
RISK   EMPATHY
AGGRESSION   EMOTIONS   RIGHT
PERMANENCE   SAFETY
REVENGE
PRIDE   POWER
COMFORT

DISPUTE RESOLUTION
VALUES
SKILLS
EDUCATION
SAFE STORAGE   EMPOWERMENT
GUN SAFETY

MENTAL HEALTH
PUBLIC HEALTH
COST   HEALTHCARE

PHYSICAL ACCESSORIES
AMMUNITION   GEAR
STORAGE

GUNS

SOCIETAL ROLES
ACTIVISTS   RELIGIOUS   LEADERS   TEACHERS
LOBBYISTS
NRA
ORGANIZATION   POLICE   EX-POLICE
LEADERS   MILITARY   EX-MILITARY
COMMUNITY   CRIMINALS   EX-CRIMINALS
LEADERS
GOVERNMENT   DOCTOR   PEDIATRICIANS
EMPLOYEES

CHILD ACCESS PROTECTION ACT
GOVERNMENT   2ND AMENDMENT
POLICY   BUYBACKS
TAXATION
INSURANCE
ENFORCEMENT

MUNICIPALITY
STATE   PITTSBURGH
HOME
NATION
LOCATION   SCHOOLS
GOVERNMENT BUILDINGS   HOSPITALS
PUBLIC   SHOOTING RANGE
PROTESTS   WILDERNESS

GENDER
AGE   NON
PARENTS   WOMEN   RACE
VICTIMS/VIOLENCE
CHILDREN   WEALTH
WHITE MEN
AFRICAN AMERICANS
DEMOGRAPHY
GUN OWNERS
NON GUN-OWNERS

Gathering Information

It's complicated
There are an infinite number of ways to learn about social issues, and even more to learn about gun safety. We focused on understanding human experiences and developing a sense of empathy for the various stakeholders. Our approach involved gathering information, questioning it, and reflecting on it.

How we gather information
Our research was driven by the desire to understand the wide variety of people, institutions, places, and factors within the issue. We took a holistic approach to understanding the connections of influence and the impact of these relationships.

Where we gather information
It's crucial to gather information through a variety of methods and from diverse perspectives. This research has taken the form of both primary research through lecturers and interviews with key stakeholders and secondary research through articles, images, media, and literature.

Why we did what we did
Acknowledging the existing complexity, we explored possible methods, not solutions. We were drawn to themes, relationships, and contexts for different reasons, be it a personal connection, recognition of a design opportunity, or a local relevance.

Synthesis of Information

Below are a few of the themes we decided were most relevant to our focus on children's safety within Pittsburgh.

Community and Place

This issue exists within a historical context and we, therefore, needed to understand how it relates to time and place.

Pittsburgh's Historical & Cultural Context
Pittsburgh is unique in that its geography and history has created distinct neighborhoods. Despite their proximity, many of these have drastically different cultures and crime rates, and often have little communication with each other.

In regard to guns, Pittsburgh is situated within a strong western Pennsylvania hunting culture and tradition. Within the city there are many groups and individuals striving for gun safety, though they are not often working together.

Education
The effectiveness of gun safety education is widely debated. While understanding how guns work and how to safely handle them can decrease the risk of unintentional injury, it often gives parents a false sense of security, as children's curiosity is unavoidable.

Personal Motivation

Each instance of violence inherently involves a variety of people, and understanding the factors that push people to particular actions is crucial. While knowing how many guns were stolen in Pittsburgh in a given month is useful information, paired with an understanding of why people want to steal a gun provides a more holistic view of the issue.

Input

Patriotism	Location	Class
Family values	Education	Religion
Family tradition	History/Past	Mental Condition
Peer influence	Age	Policy
Individualism	Gender	Media
Community	Race	

Perception

Fear	Safety	Ethics
Risk	Power	Expectations

Individual

Desire

Power	Ownership	Revenge
Masculinity	Protection	Aggression
Pride	Curiosity	Individual rights

Action

Shooter	Unintentional	Non-suicide
Victim	Intentional	Lethal
Witness	Suicide	Non-lethal

Policy

Policy at the local, state, and federal level plays multiple roles within this issue. In addition to creating legal consequences, policy enables people to come together and articulate their desires. Through drafting a new regulation or through a public demonstration, grassroots efforts can be connected to the government. Law also provides the opportunity for people to give a reason beyond what they think. During a discussion, saying it's the law empowers the speaker and gives leverage to the opinion.

Second Amendment
The second amendment plays a big role in the historical context of weapons in the United States. The original intention of the law was to allow states to activate local militias if the federal government became too powerful.[1] Today, it's widely debated and often interpreted as an individuals right to bear arms.

Buyback Programs
Buyback programs provide monetary incentive to give up possession of guns, potentially decreasing the number of gun owners. The guns that are turned in are not the guns involved in violence, but are instead unwanted guns, such as inherited or broken weapons. In 1992, a Seattle gun buyback only collected less than 1 percent of all hand guns in the city.[2]

Complexities of Laws Making Process
Law often use language laypeople don't know, acting as a barrier to their understanding. Congressmen won't support laws if they can't accurately gauge the public support as they don't want to lose their seats. Organizations like the NRA with large lobbying budgets often override the voice of the majority of the public.

Regulation, Child Access Protection, Liability
Guns are exempt from the Consumer Product Safety Act and no federal agency has the power to regulate guns for safety.[3] If a child dies or is injured from another product, such as a soccer goal, there is an investigation often leading to regulation and design changes.[4] If a gun kills a child, it's not necessity malfunctioning, making it difficult to regulate.

Questioning Commonality

In our research we questioned some of the assumptions that exist within our culture to uncover root causes and implications.

Accidents
Many refer to occurrences of violence as accidents, but it's important to think about what makes something an accident. Does it have to do with intention or responsibility? If an object is designed to kill, is it accidental if it does what it is designed to do?

Media
In the media child deaths are often reported as "father accidentally shoots child whilst strapping them into a car seat" or "child accidentally shoots self or friend whilst playing with a gun that was found in the home". The term accident often means unintentional; the father didn't have any inclination of wanting to injure his child. Should the media represent these occurrences as accidents or as public safety issues?

Affordances
"Guns don't kill people, people kill people" is a phrase commonly used, but it fails to address the difference between a person and a person with a gun. A gun on its own is waiting for an interaction; when we see it we imagine all of its action possibilities. Once it's held by a person a gun scripts our actions. The person now has an ability they didn't possess before, just as the gun has a new ability it didn't before. This creates the inherent phenomena of the hybrid person-with-gun. Beyond solely the gun, its associated items, such as bullets, hunting apparel, and guns safes, also script our actions.

Culture
Within the United States guns undergo "black boxing," meaning they are normalized through the way we talk about them, represent them, and the presence they hold within the culture.

Guns are portrayed in a variety of perspectives in the media which makes it difficult to pinpoint their role: sexy, dangerous, powerful, scary, patriotic. These portrayals dictate how we rely on guns to address our desires.

1. David Hemenway, *Private Guns, Public Health* (Ann Arbor: University of Michigan Press, 2006), 158.

2. Lynn Thompson, "Gun buyback: Will it make a difference in Seattle, King County?," *New York Times*, January 8, 2013.

3. David Hemenway, *Private Guns, Public Health* (Ann Arbor: University of Michigan Press, 2006), 30.

4. David Hemenway, *Private Guns, Public Health* (Ann Arbor: University of Michigan Press, 2006), 30-31.

Studio Explorations

The following section is a collection of the design methods we used as a class to learn about the topic. They include Mapping Pittsburgh, Understanding Stakeholders, Visualizing Information & Envisioning Design Fictions.

Mapping Pittsburgh

Mapping demographical information through a given space and time is an important aspect of understanding complex place-based information.

By synthesizing highly specific information about people into archetypes, revealing patterns of culture emerge in ways only visualizations of data can reveal. People are highly pictoral by nature and maps tap into our tendency of parsing information in order to understand the given social construction of how members of a society relate to one another.

With this in mind, we began to investigate ways in which our maps could dissect the relationship between the demographic information of the Pittsburgh community and gun related violence within the city's borders. An initially daunting task of collecting complex data for each neighborhood in Pittsburgh in regards to race, income, age, education and gun related violence quickly revealed the complexity of the issue at hand. After collecting the data from a multitude of sources, we began to combine the information in ways that revealed the system of Pittsburgh's culture.

The multitude of data regarding Pittsburgh's demographic was dense; we decided upon visualizing five data sets that we felt were the most significant: race, bachelor degree achievement, income level, weapon violation rates and murder rates. Although the information was communicated at times in what could be considered a biased manner, it was done with the intention to highlight the most important aspects in order to make highly complicated material more accessible. For instance, only the top two most prevalent races were depicted in the race map to feature the primary racial stakeholders within a given neighborhood.

1. Brighton Heights
2. Perry
3. Summer Hill
4. Marshall- Shadeland
5. Spring Hill
6. Fineview
7. Mexican War Streets
8. Kirkbride
9. Manchester
10. Allegheny
11. North Shore
12. Troy Hill
13. Fairywood
14. Windgap
15. Sheraden
16. Esplen
17. Crafton Heights
18. Elliot
19. West End
20. Greentree
21. East Carnegie
22. South Shore
23. Mount Washington
24. Beechview
25. Beltzhoover
26. Bon Air
27. Brookline
28. Overbrook
29. Carrick
30. Knoxville

31. Allentown
32. Southside Flats
33. Southside Slopes
34. Arlington
35. Mount Oliver
36. Hays
37. New Homestead
38. Lincoln Place
39. Downtown
40. Hill District
41. Strip District
42. Polish Hill
43. Lawrenceville
44. Stanton Heights
45. Morningside
46. Highland Park
47. Lincoln-Larimer
48. Homewood
49. East Hills
50. Point Breeze
51. Shadyside
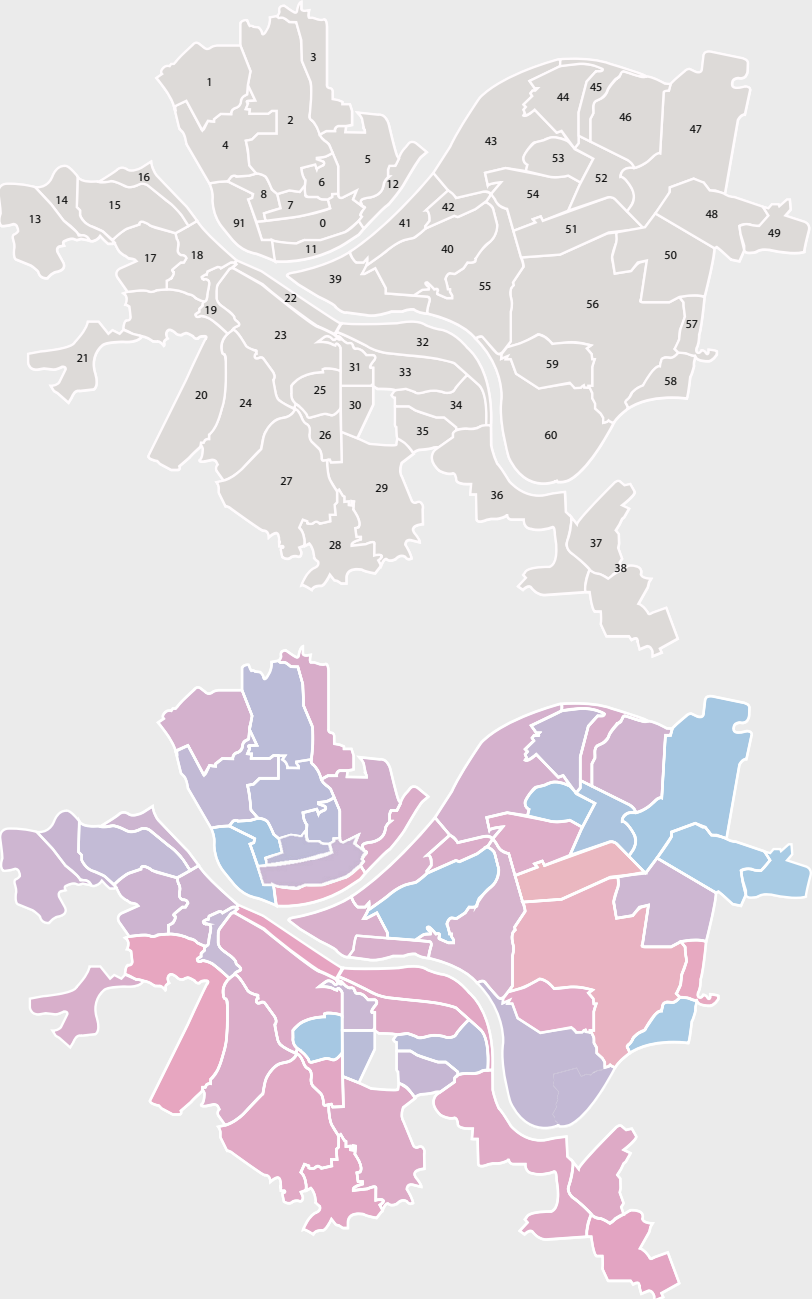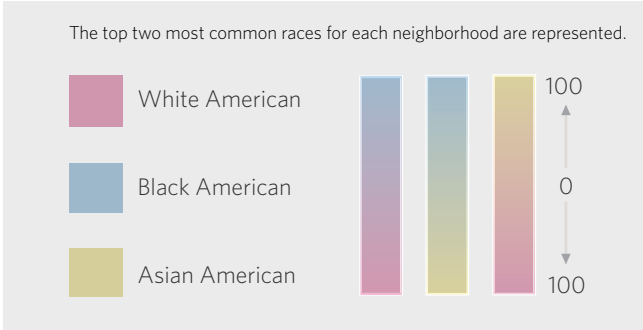52. East Liberty
53. Garfield
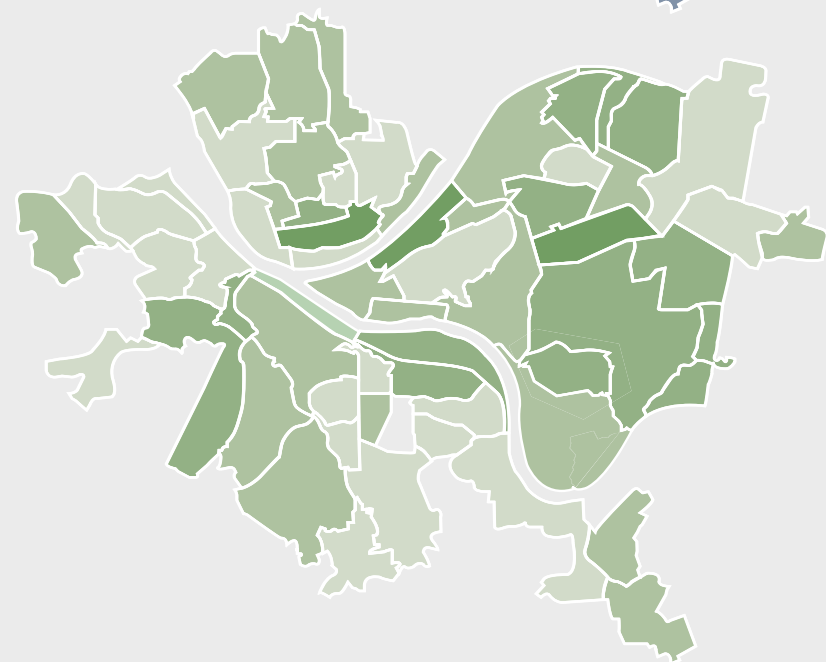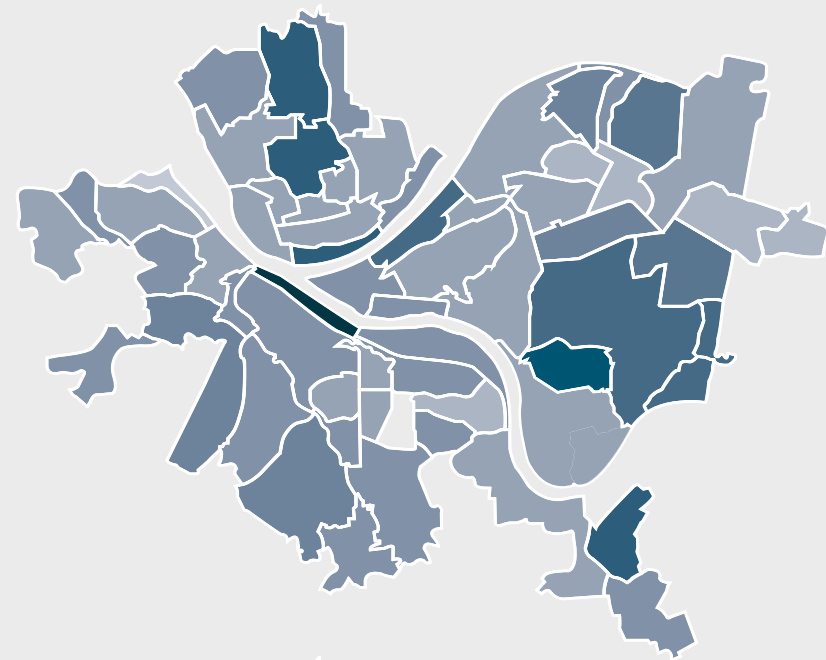54. Bloomfield
55. Oakland
56. Squirrel Hill
57. Regent Square
58. Swisshelm Park
59. Greenfield
60. Hazelwood

The top two most common races for each neighborhood are represented.

White American

Black American

Asian American

100

0

100
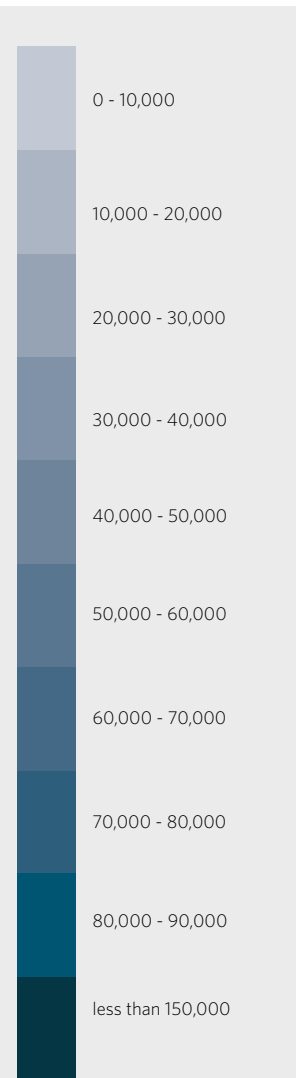
Income

The median income for each neighborhood is represented. The darker shade indicate higher incomes and the lighter shades indicate lower incomes.

- 0 - 10,000
- 10,000 - 20,000
- 20,000 - 30,000
- 30,000 - 40,000
- 40,000 - 50,000
- 50,000 - 60,000
- 60,000 - 70,000
- 70,000 - 80,000
- 80,000 - 90,000
- less than 150,000

Bachelor's Degree

The median level of bachelor degree achievement for each neighborhood is represented. The darker shades indicate a higher percentage and the lighter shades indicate a lower percentage.

- less than 10 %
- 10 % - 20%
- 20 % - 30%
- 30 % - 40%
- more than 10 %
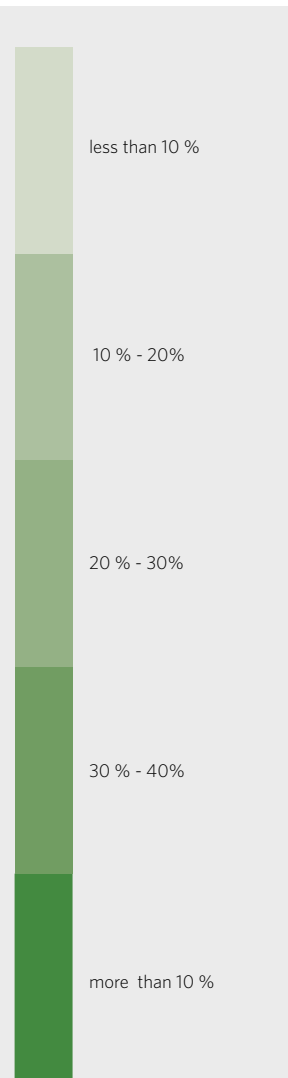
Murder Rate

The median murder rate for each neighborhood annually is represented. The darker shades indicate higher murder rates and the lighter shades indicate lower murder rates.

- less than 1
- 2
- 3
- 4
- 5
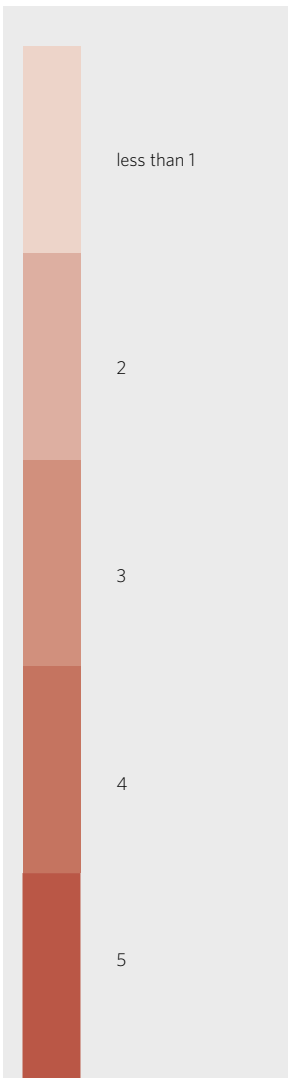
Weapon Violation

The median weapon violation rate for each neighborhood annually is represented. The darker shades indicate higher weapon violation rates and the lighter shades indicate lower weapon violation rates.

- 0 - 5
- 5 - 10
- 10 - 15
- 15 - 20
- 20 - 25
- 25 - 30
- 30 - 35
- less than 50
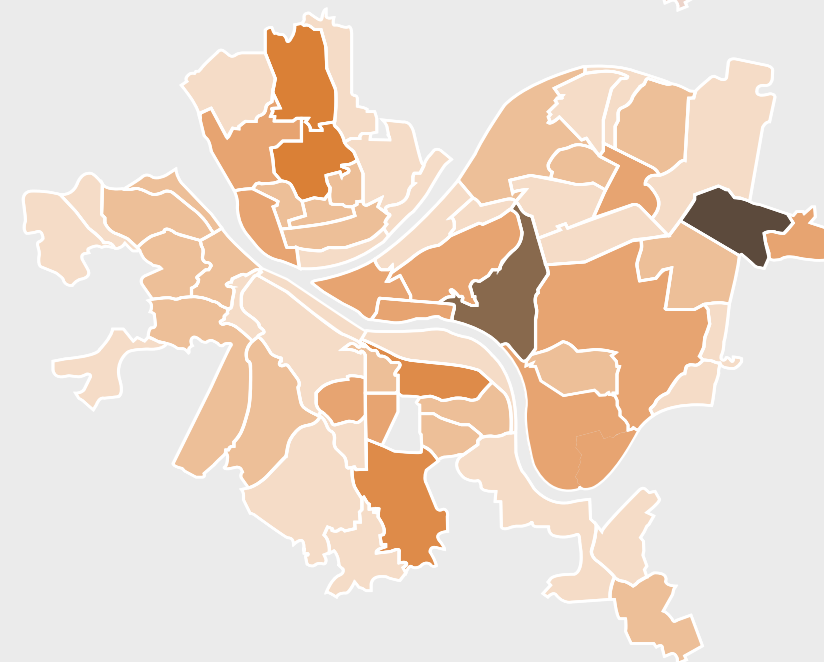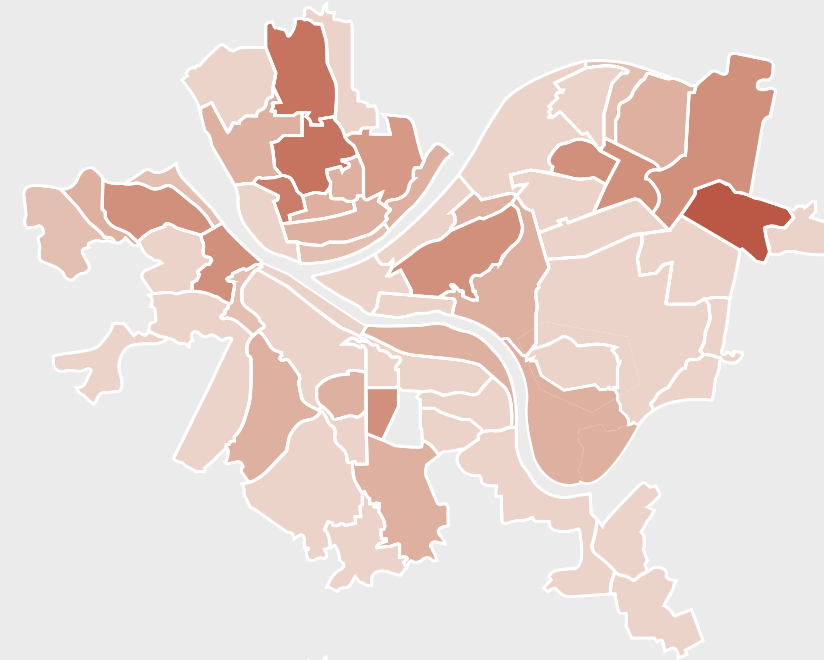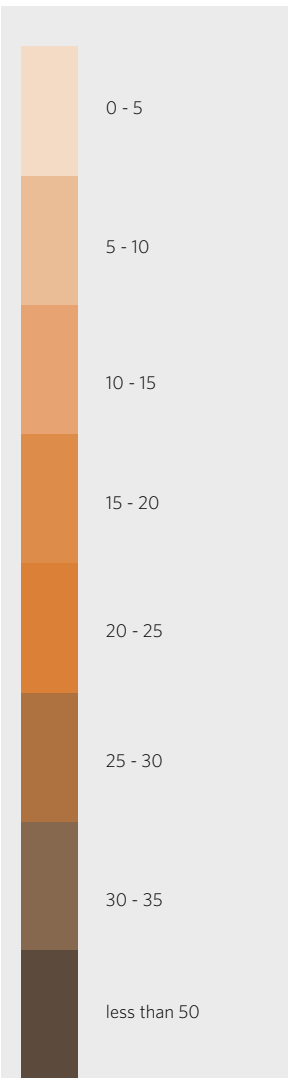
Understanding Stakeholders

A method to understand the complex relationships and diverse points-of-view of people involved in a system.

A persona brings tangibility to a complex problem by looking at a specific story.

Alexis *high school student*
Alexis is a high school junior who aspires to study biology in college and, at some point, go to medical school. She sometimes get overwhelmed trying to balance her schedule between homework, soccer practice, and spending time with friends.

Complex problems are sometimes referred to as "wicked" problems[1] because of to the interdependencies involved at hand. Wicked problems are contradictory and difficult because finding a "solution" to one aspect of the problem might reveal or create problems for another. The presence of guns is a wide topic that deals with a range of people, places, historical and cultural contexts, perceptions, behaviors, motivations, and policies. The components that make up complex problems cannot be seen in black or white.

We took a moment to reflect on what challenges we were facing in the middle of our projects. We asked ourselves, "What makes the gun space we're working with so *wicked*?" "What are the challenges we're facing?". Here is a collection of our answers:

Our challenges

- It's hard to get access to people who are involved in such a diverse and dispersed space.

- There are a range of perspectives and biases to work with.

- Conversations related to guns often lead to severely polarized arguments.

- Isolating an aspect of the problem is impossible because of the interrelations. Finding a manageable amount of information to work with, without losing the essence of the data, is also a challenge.

- As a designer, building empathy for the issue and the stakeholders involved is a challenge.

- The gun space deals with political and racial issues which stirs tension. The taboo nature of some of these topics can inhibit informative insights.

- The intangible and abstract nature of emotional, behavioral, and social aspects forces us to think critically about the methods, analysis, and synthesis we conduct.
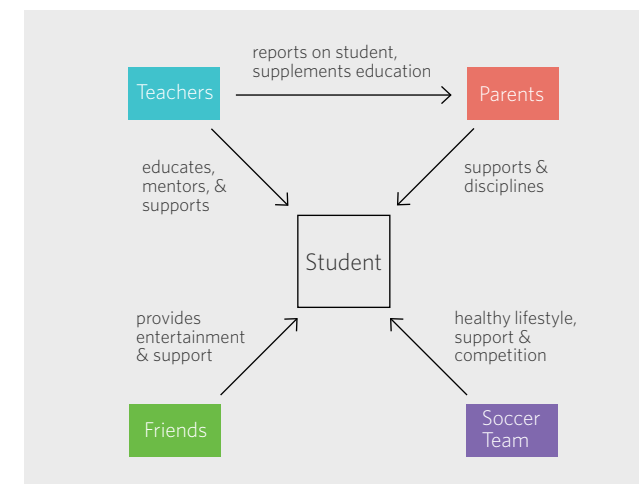
One way to break down a wicked problem is to look at the different people who are involved in the issue. We chose to analyze guns in Pittsburgh through people, because it adds a human quality to the issue. It also has helped our class understand the complexities that are characteristic of a wicked problem, and showcase some of the common or particularly moving experiences from community members. For this task, we utilized elements from stakeholder mapping and personas—two methods used by designers to bring a human element to a problem space.

Stakeholder mapping[2] is a method used by design teams in order to identify different people working within a problem space as well as the connections between those people or groups of people. Quite literally, the people identified in the map are those who affect or will be affected by the designed solutions. The people represented in the map may not be an exhaustive list of every person who is affected, but it's important to hit the key constituents at the very least. Designers often use hierarchy, color, and other visual elements to easily represent these relationships. A stakeholder map is useful throughout the entire design process, not just the beginning. It can be easily referred back to when things get particularly complex as a reminder of how the people in the problem space are connected and as a
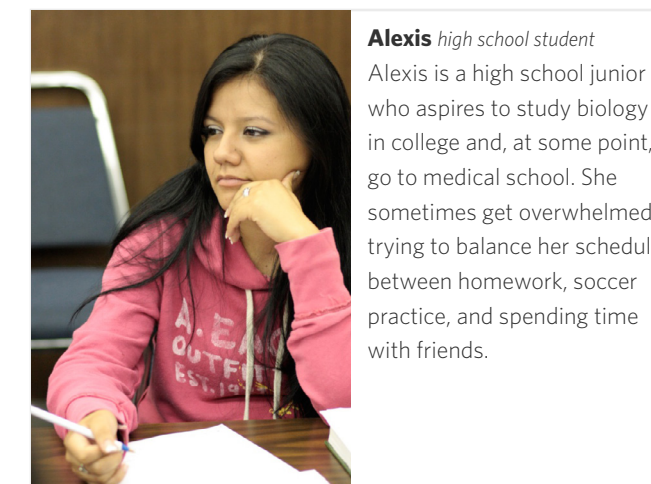
measure of how successful an idea is at solving the problem.

Personas[3] are a method in which observations and patterns of human behavior are consolidated into descriptive, fictional profiles. They're often used to identify commonalities among attitudes, behaviors, and motivations of people or customers rather than typical demographic information like age, gender, and location. Personas are created through design ethnography techniques like interviews, surveys, and behavior observation. Data from these methods is then analyzed into vignettes of different people types, which are considered in the designed outcomes.

What we did: We used the stakeholder map format to showcase the connectivity between people in the gun ecosystem of Pittsburgh, but added narrative persona information to show the human qualities of the issue. Our data was sourced from phone or in-person interviews conducted by our class with several Pittsburgh community members. The insights from the interviews served as a jumping off point for us to narrow our focus when executing our individual projects. A few of the stakeholders don't have a persona because we were not able to interview everyone working in this problem space, and we didn't want to make assumptions about them. The next page shows our resulting combined stakeholder map and personas.

1. Horst W. J. Rittel and Melvin M. Webber, "Dilemmas in a General Theory of Planning", *Policy Sciences*, no 4. (1973): 155-169, http://www.uctc.net/mwebber/Rittel+Webber+Dilemmas+-General_Theory_of_Planning.pdf.

2. Bella Martin and Bruce Hanington, *Universal Methods of Design* (Beverly: Rockport Publishers, 2012), 166-167.

3. Bella Martin, Bruce Hanington, *Universal Methods of Design* (Beverly: Rockport Publishers, 2012), 132-133.

The data here was sourced from phone or in-person interviews conducted by our class with several Pittsburgh community members. This layout visually represents the information gathered in a tangible way.

member of the police force

"I think the biggest issues from where I stand at the police force are straw purchasing and getting illegal firearms off the streets. There also needs to be support for young adults to find alternatives to crime."

young pro-gun college student

"Even though I didn't grow up in a house that had guns, I bought a gun not just for protection but because I enjoy shooting them. I'm also getting a permit to conceal a gun, but mostly so I can transport it across state lines. I do believe that the sum of American individuals should be more than the power of the government and that we should be able to protect ourselves."

victim of gun violence

"I would never own a gun because my family has been subject to gun violence on multiple occasions. I've had to build my reputation through my size and strength to defend myself. I'm not sure about the laws supporting tougher gun control — it doesn't feel like it will actually do anything."

community leader of foundation

"The only way to prevent accidental deaths is to make it a law to lock up a gun in the home."

pediatrician

"I talk to a lot of parents who have guns in their homes but don't own a gun lock. At the hospital we try to provide them for free because easy access to guns is an important factor in whether a child is injured in a home with a gun."

political non-profit organization worker

"I spend most of my time trying to meet people and inform them about guns in Pittsburgh for a statewide organization. I go to a lot of community meetings to talk to people about what they personally can do to move gun policy forward. The number of supporters is steadily increasing, but my biggest challenge is getting people across different neighborhoods in the city to band together."

member of the allegheny county death review board

"I study every child death in Allegheny County, and we try to make recommendations for prevention of similar future deaths. With guns, it's tough to try to protect children but not infringe on citizen's rights."

city council agent

"I think if we could teach young men that guns are not the best form of conflict resolution, we would see a lot less gun violence in Pittsburgh. We need to get them more involved in their communities so they find a support system to teach them good values. Our organization helps men who have made mistakes get back on their feet so they don't have another problem, but it would be better if someone could help them before anything happens in the first place."

pro-gun, pro-regulation citizen

"I grew up in a pro-gun culture in West Virginia. I don't think we need to get rid of guns altogether, but we need to be as strict with guns as we are with drinking and driving."

Visualizing Information

Exploring the visualization of complex data as a method for creating clear and relatable information.

Throughout our studio research process, we have encountered a staggering amount of statistics in relation to the issue of gun deaths, injuries, and costs. These numbers have been shocking, surprising, confusing, frightening, and at times contradictory, but they are just that—numbers. It can be difficult to look beyond the statistics and understand what they represent, whether this is people, money, lives, or deaths. In order to represent some of the statistics we encountered in a more concrete and powerful way, the class brainstormed what we considered to be the most shocking, moving, or otherwise powerful statistics surrounding guns, gun deaths, and children. Then, breaking up into pairs, we dissected these numbers and undertook a one hour exercise where our aim was to design solutions in a variety of media to best depict what these numbers represent.

Visualizations of complex information can be a useful method to help clarify and explain abstract ideas in relatable, concrete forms. Visualizations often use abstraction as a means to create clarity. It is important to note however, that data visualizations can also be misleading, distorted, and convoluted if not executed effectively. It is very difficult to portray information accurately in a way that does not alter the meaning or interpretation of these statistics. The following examples are not intended to serve as ideal examples of information visualizations but rather serve as representations of what such a method could produce.

The total cost of gun injuries and deaths daily amounted to 3 million dollars from public money in the 1990s.[1]

In visualizing this statistic, we chose to evaluate the information from an annual, rather than a daily, perspective. The annual equivalent totals over 1 billion dollars in taxpayer money spent on gun related healthcare costs. We then represented this number in two different ways to show its relevance, scale, and potential alternate applications.

In this example of information visualization, more value is placed on the statistical information rather than the visualizations themselves. The imagery supports the displayed information rather than providing the information on their own.
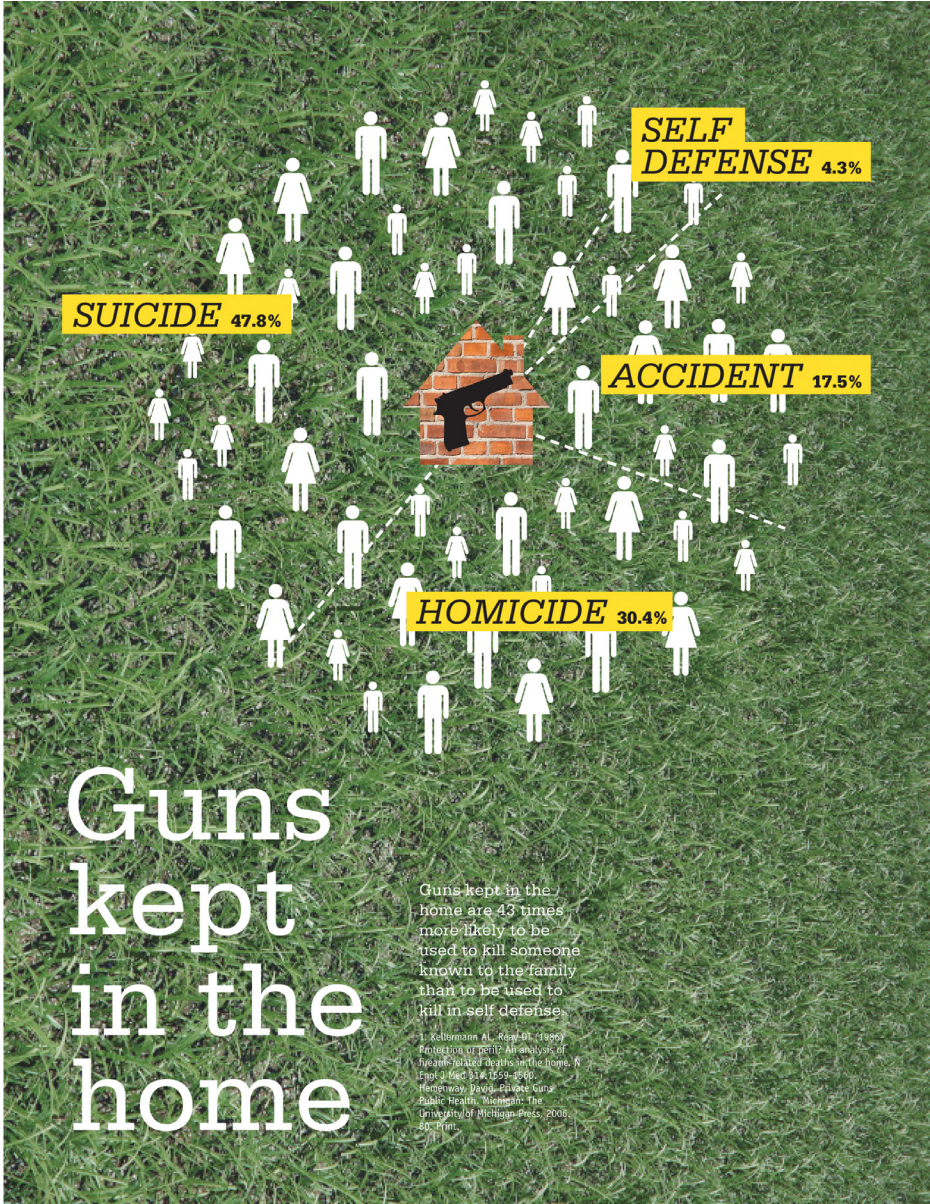
Visualization designed by Laura West and Maureen Griswold.
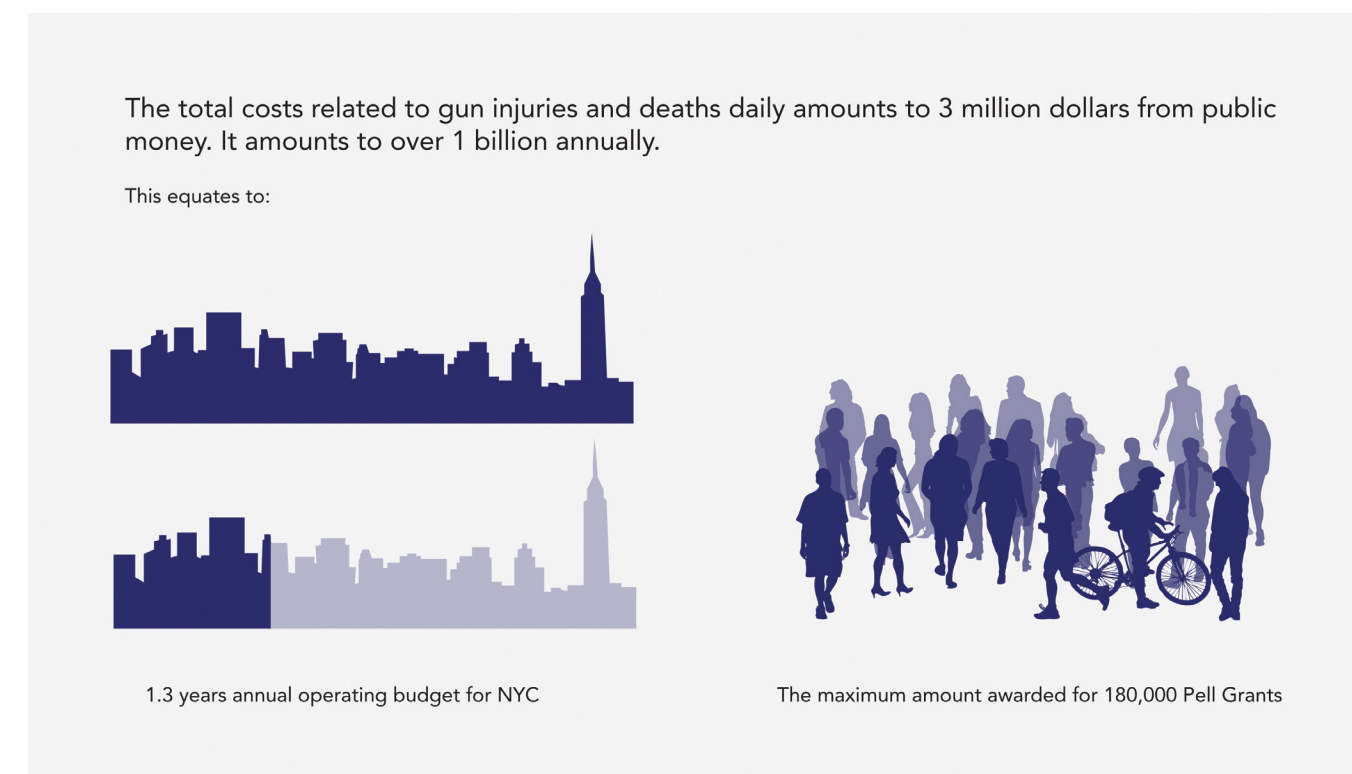
In comparing that 1 billion dollar figure to values that most people would view on a larger scale, (for example, the entire operating budget for New York City) we hoped to emphasize the vast size of this number. We were particularly interested in the additional comparison to Pell grants, which are governmental grants for college students. Displaying the number of grants that the government could offer to students if they didn't have to spend this money on healthcare shows how many people could be helped if priorities were changed; in particular, the ones that are most affected by gun violence.

1. David Hemenway, *Private Guns Public Health*, (Michigan: The University of Michigan Press, 2006).

The total costs related to gun injuries and deaths daily amounts to 3 million dollars from public money. It amounts to over 1 billion annually.

This equates to:

1.3 years annual operating budget for NYC

The maximum amount awarded for 180,000 Pell Grants

Guns kept in the home are 43 times more likely to be used to kill someone known to the family than to be used to kill in self defense.[1]

In visualizing this statistic, we wanted to show viewers the full weight of the information. We did this by showing icons of people, both men and women, young and old. They represent friends & family that have the possibility of being injured by having a gun in the home, and the details behind their deaths (suicide, homicide, accident, and self defense) proportional to the probability of that outcome. Visually displaying all the different people you are more likely to hurt by keeping a gun in the home helps people connect to an otherwise cold number.

1. A.L. Kellermann, D.T. Reay, *Protection or Peril? An analysis of firearm-related deaths in the home,* (The New England Journal of Medicine, vol. 24, 1986) 1559-1560.

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Every year in the U.S., unsecured guns in the home lead to 4,166 children being shot accidentally. [1]

In visualizing this statistic, our goal was to create a narrative representation of the comparisons between everyday accidents and the accidents that can result from guns.

This design, which is intended to be viewed as a motion piece, can ideally make such a number relatable to its viewers, emphasizing the commonality of the problem. We chose to focus on the word "accident" to show how frequent and possible, if unfortunate, these occurrences can be.

We were challenged to design a visualization that connected the statistical language to the imagery included. As our design relies heavily on visuals to relay its message, the quality and depiction of these images was an important consideration. Thinking critically about the visuals used and connotations they have, we created a piece that was at once relatable and a bit surprising. Having a gun in the home can be more dangerous than people realize, and we wanted to focus on the risks involved, hoping to alert viewers to the possible outcomes of having a gun accessible in the home.

1. *Injury Prevention & Control: Data & Statistics, 2001-2009* (Centers for Disease Control and Prevention, 2012).

Every year in the U.S., unsecured guns in the home lead to 4,166 children shot accidentally.

Accidents in the home happen every day.

Every year in the U.S., unsecured guns in the home lead to 4,166 children shot accidentally.

Envisioning Design Fictions

"Shallow are the souls that have forgotten how to shudder."
Leon Kass

Significant amounts of our lives are lived in ficticious worlds. Telling stories is a central aspect of human communication. As designers, we particularly like to tell stories, and we use them as a method to explore possible futures. The stories that designers create, manifest themselves as design fictions. Design fictions are futuristic and speculative stories that we can use to help make sense of our socio-technological future.

Design fictions may vary in their focus. Some design fictions are scary, and some are humorous, but all design fictions aim to provide critical insights into possible futures. The aim of design futures is to expose the viewer to an alternate reality and use the idea of the extraordinary to explain the ordinary. The following is a collection of design fictions that explore gun violence in the city of Pittsburgh. We used these design fictions as a means to explore and critique alternate futures or consider cultural or behavioral changes that could be possible.

In the future, what if there was a pill that took away the psychological pain of shooting someone?

What if authorized personal, such as doctors or police officials could choose to absolve you of your psychological pain by writing you a perscription?

What if these doctors and police officials could withhold treatment as a form of punishment for your crime?

"Help, I just shot someone" is the pill that takes away the pain. The psychological scars of gun violence can be seen everywhere we look in the United States. Not only do the victims of gun violence suffer, but those that have pulled the trigger. In the case of gun accidents, the psychic burden is tremendous to those who have accidently shot a loved one, or in the case of shooting in self protection. Wouldn't it be amazing if we could offer them some sort of relief?

While relief could come in the form of a pill in the future, so could punishment. Could there be a pill that made assailants lacking empathy for their victim, feel the psychological burden of taking thier life? The agency of the gun enables distance physically and emotionally from the target. To address that distance could we impose empathy upon assailants? Could this deter crime, or be a more fitting form of punishment than incarceration?

"Help, I just shot someone" is a play on the existing over the counter medications found under the "Help" brand. The brand includes cold and pain relief medications like, "Help, I have a headache", and "Help, I have a stuffy nose". The fact that this over the counter brand is something we encounter in the day to day is what makes "Help, I just shot someone" make us look twice. It makes us question what it means to be empathetic and how we can provide relief for those suffering in our community.

"What if there was a pill that took away the psychological pain of shooting someone?"

"Homicide and Empathy" created by Jisoo Choi, a ficticious addition to *Help®*.

In case you feel the pain...

What if every location you encounted had posted signs telling you if guns were or were not, allowed?

We have the right to guns, but do we have the right to live without them?

Imagine that you could simply look on Google Maps to check what areas guns are permitted or prohibited in. Would this give us new freedom and make our lives safer? Or could it open a Pandora's box where people could see exaclty where groups of easy targets to be terrorized are?

Could these areas be enforced? Could the culture of certain neighborhoods and locations change depending on there rules and regulations around guns?

"Societal Choices: Live With or Without Guns" created by Michelle Guarino.

Could new products or services arise out of this such as gps patches on all weapons, or the availability of gun lockers in different public locations so that people can move between gun permitted and prohibited areas?

All of these questions are provoked by just looking at an image of Google Maps that is divided up by gun regulation. Design fictions let us imagine all of the repercussions and possibilities just from a small policy change.

"It draws you in, challenges you, teaches you something new and leaves you looking at the world in a slightly different, hopefully better, way." *Noah Raford*

Design Fictions...
- ask "what if?"
- present the things that are certain
- find the humor in social issues
- use the extraordinary to explain the ordinary
- know that the future is dinner tonight
- explore truth vs. possibility
- are provocative

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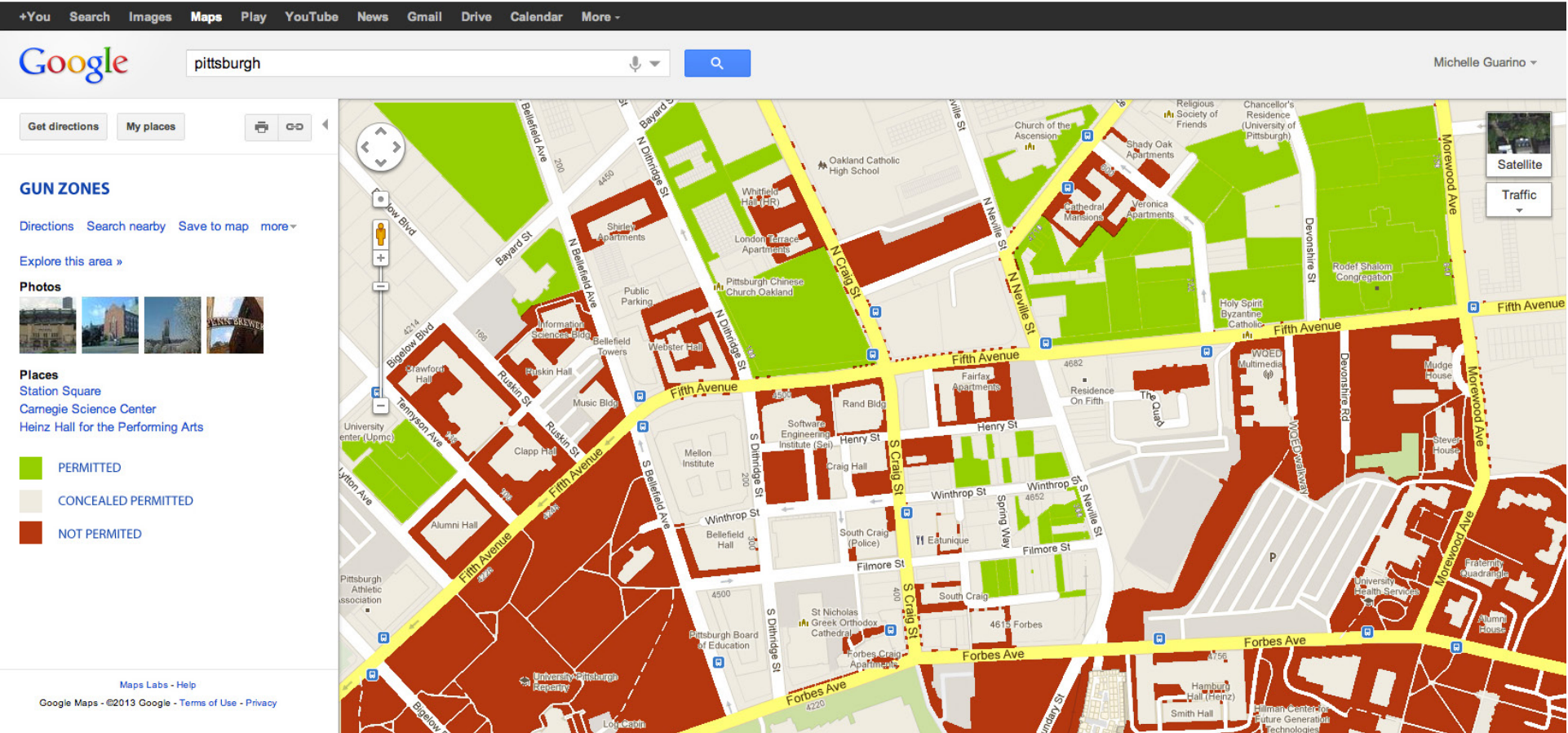
Individual Explorations

Based on our personal interests and skill sets, we created the following projects grounded in our studio research. We hope these methods will approach the problem in a new way.

Guns & Public Health

Aurora Parlagreco

A public health campaign provoking thought, discussion, and action around guns and gun safety.

Guns and the issues, debates, questions, and policies that surround them have become increasingly normalized in our society. We hear about them daily in the news. We've seen one, held one, shot one. We've felt victimized, we've felt safe.

In the 1990s, anti-smoking campaigns were successful in catalyzing social and cultural change. The behaviors and perceptions surrounding smoking (which was just as normalized, if not more so, as guns are today) changed dramatically in a short amount of time. This is an example of a successful public health campaign causing the public to consider smoking in a new way. What began as a series of images showing the harmful health effects of smoking evoked new thought, action, laws, and change.

The goal of this project is to employ the methods involved in anti-smoking and other public health campaigns, the goal of this project is to create a

similar campaign around guns and gun safety.

Through the critique and study of work around issues such as drunk driving, meth addiction, anti-smoking, and seat belt safety, I have begun to consider both the potential power and weakness of public health campaigns. Can type, image, realism, fictions, and words provoke social change in our society? What forms of communication are the most successful? The least effective? Can subtle differences and abstract concepts be made more visible and concrete? Do we react most strongly to emotional messages or hard facts?

The ideation and design of a public health campaign around guns is a means for exploring the answers to these questions is the focus of this exploration. Here I have created a series of images that mark the beginning of a system that will ideally spark debate, criticism, curiosity, and ultimately change.

Public health campaigns as a method of communication can be difficult to employ as they often deal with difficult and controversial subjects. The intended audience may have a wide variety of opinions and experiences, both positive and negative. Much like some other forms of advertising, these campaigns at times utilize what could be considered extreme language and imagery. For all of these reasons, it is important to ensure that the content, wording, and tone of the work is intentional, thought-out, and accurate.

In order to create a gun safety campaign that is compelling and thought-provoking, I began by looking at existing public health campaigns to see what tactics were used and to measure the success or challenges these methods rendered. The most effective were those that challenged perceptions through provocative imagery, careful design, and innovative messages. Some consistent themes and methods used in these ads and across various media included vanity, design fiction, images of children, visualizations of abstract ideas, objectification, discomforting images, and symbolism.

One public health campaign that is currently in effect is 'The Meth Project', which began in Montana and now has factions across the country. It is specifically aimed at teens and young adults but also addresses the family and friends of these individuals, focusing on the dangers of partaking in and becoming addicted to meth, warning its audience to try meth "Not even once."[1]

When designing my own campaign, I looked to these advertisements as inspiration, determining what did and did not succeed and whether the same would be true in my own work.

A method that I found to be effective in many instances was the connections advertisements draw between the issues they are addressing and the lives of their audience. By relating abstract statistics to numbers the greater population would understand (i.e., the number of fatalities resulting from 9/11), comparing every day activities to occurrences surrounding the chosen issue, and making use of everyday objects, concrete meaning

is given to more abstract and complicated ideas. This is shown in the above Meth Project advertisement, where provocative imagery and strong type show the diminished importance of a past concern in the wake of a meth addiction. Although there are clearly greater consequences that result from such a habit, focusing on a more trivial concern is evidence of the way that meth can effect any and all aspects of daily life.

Another engaging method that I have found employed in public health campaigns is exaggeration and fictitious, but probable, content. While we understand the short-term consequences of smoking or drunk driving, it is harder to imagine what problems could result from such issues in the future. What physical adaptations might future generations have to aid or halt the progression of these problems? How might we adjust the objects and tools we use surrounding these issues to hinder or enhance the consequences?

One of the greatest challenges I faced throughout this process was maintaining an intentional and meaningful viewpoint. Something I discovered as I worked was the very subtle differences that can exist between very different opinions. Portraying guns in a way that is pro-safety rather than anti-gun is

1. The Meth Project, Meth Project Foundation Inc., 2013, methproject.org

often difficult to distinguish. Opinions can overlap, intersect, or differ entirely. I had to make decisions about what angle, if any, to take, and whether to emphasize or diminish the existence of clear perspectives.

In a similar manner, I had to determine whether or not to utilize stigmas and stereotypes. Utilizing existing associations and preconceptions could be seen as offensive, but could also succeed at gaining attention and sparking conversation. In these instances, the pros and cons of each decision must be carefully weighed to ensure that the message is deliberate and effective.

Designing advertisements and campaigns like these provide a unique opportunity to push the boundaries of what is considered acceptable and appropriate. Unexpected imagery and controversial text can be very compelling to an audience. Even if the reaction is negative, a reaction at all is often enough to start a conversation that leads to innovation and improvement.

Through the study of past campaign examples, I have designed the following advertisements and content to challenge the current issues and dialogue surrounding guns and gun safety.

A print advertisement relating accidents that can happen every day in the home to those that may occur as a result of having a gun in the home.

4,166 children are shot accidentally by unsecured guns

23,085 messes are cleaned up

537 vases are knocked over

7,600 hands are burned on the stove

2,904 glasses of water are spilled

5,126 books fall to the floor

8,042 fingers are cut by a kitchen knife

ACCIDENTS HAPPEN EVERY DAY

A poster challenging the idea of where guns belong in our society by altering a familiar image in an unexpected manner.

WHERE DOES YOUR GUN BELONG?

A poster depicting a potential perspective in a gun-centric society.

easily harmed by a bullet

sees play, not violence

is curious

feels invincible

is naïve

WHO IS THE

easily controlled

strong enough to accidentally pull the trigger

missed the warning signs

IDEAL

innocently trusting of others

unable to outrun a predator

VICTIM

A print ad visualizing statistics through comparison and relatability.

$20,000,000,000

This is the amount spent on medical costs and loss of productivity due to gun injuries in America each year.* This amount does not begin to cover the emotional cost and loss of life. How much is too much? Make your voice heard regarding gun control.

*Statistical information gathered from William Kistner reporting for PBS Frontline

Campaign Design *Hyun Sun Seo*

Exploring design methods that raise public attention.

I believe that gun-related violence is significant in our society, and yet, not much effort has been made in public awareness movements, compared to other health campaign issues such as smoking and seat belts. Just like people smoke and drive everyday, there are deaths and injuries as a result of guns in our lives everyday.

For this particular gun-related issue, I wanted to explore design methods that raise public attention. I researched types of communication language that are used in current smoking and seat belt campaigns. I then used these design methods to create posters for an anti-gun campaign. The objective of the posters is to effectively bring public attention to the issues addressed in various design outcomes.

From my research, I found three distinctive types of communication strategies being used in current public campaigns. They can be categorized as directive, educational, and emotional methods. Firstly, the informative method uses the most direct, and simple words to catch people's attention. Secondly, the educational method gives knowledge and helps to understand the issue and the problem. Lastly, the emotional method brings threat, guilt or sympathy feelings to the issue.

To start with, a campaign design can simply use catchphrase. Short and strong lines quickly catch eyes and bring attention to a poster. The poster for seat belt campaign (1), uses a imperative sentence, 'Just buckle up' and tells the public how to behave. In order to initiate change in perception, a communication method needs be more engaging. So for designing an anti-gun campaign, I suggest to use a common idiom or metaphor that people are already familiar with and easily understand. For my design (2), I used the American saying, "Every purchase has its price" and put it in the context of gun violence. Because people are familiar with what the phrase means, they can perceive that gun ownership brings responsibility. Similarly in (3), the poster for seat belt campaign used rhymes in order to message explicitly. For my design (4), I rephrased the most common modern form of the poem in the poster in order to directly annotate that gun ownership is dangerous. Using metaphor effectively interests the public in the context through familiarity and a sense of humor.

Based on the premise that people need definite rationals and initiatives for changing perception, campaigns need to incorporate more active and engaging factors. Educational designs can effectively provoke the public by explaining knowledge about the issue. The poster for an anti-smoking campaign (5) annotates the fact that smoking harms a lung and therefore we need a change in the system. For an anti-gun campaign (6), I suggested a design that explains the fact that misplaced guns can be cycled in our society which is a potential danger. By teaching the public how their action changes the ecosystem, a campaign can be influential. Likewise, the seat belt campaign poster (7) helps the public to understand that seat belts can save lives in a real accident, based on the statistics of survival rate, which is one in nine survives in car accidents because of seat belts. Using this method, I also created a poster that demonstrates the statistical fact that a gun in the home increases chances of an accident to a loved one (8).

Lastly, emotionally arousing campaigns can successfully encourage the public to change their perception. Visual demonstrations of physical threat and emotional disturbance as

Informative Method used in Campaign Poster Designs and Comparisons.

(1)

(2)

Lock Your Gun

Every Purchase Has Its Price.

(3)

(4)

Roses are red,
Violets are blue,
Guns are hazardous,

And so are you.
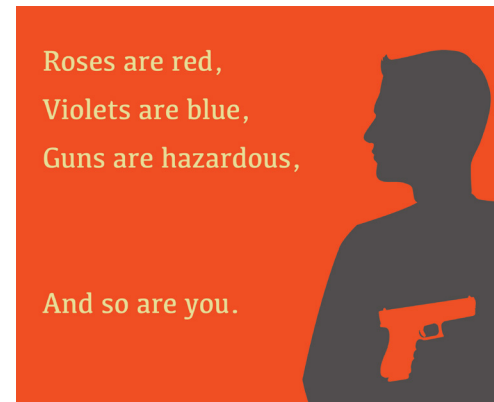
(1) Tom Corbett, "Just Drive : Distractions can wait." http://www.justdrivepa.org/ Rotators/ Published by Just Drive PA on 2011, accessed April 2, 2013.

(3) "Cross Your Heart, Not Your Fingers" http:// itsyourlifegetittogether.files. wordpress.com/2011/12/ crossyourheart.jpg"Published by Land Transportation Safety Laboratory on 2009, accessed April 3, 2013.

(5)

(6)

(5) "Smoking Causes Lung and respiratory System Destruction : If you really want to save the planet's life. Start with your own." http://www.dailydesigninspiration.com/advertisements/ddb/smoking-causes-lung-and-respiratory-system-destruction/ Published by DDB on November 17, 2011, accessed on April 2, 2013.
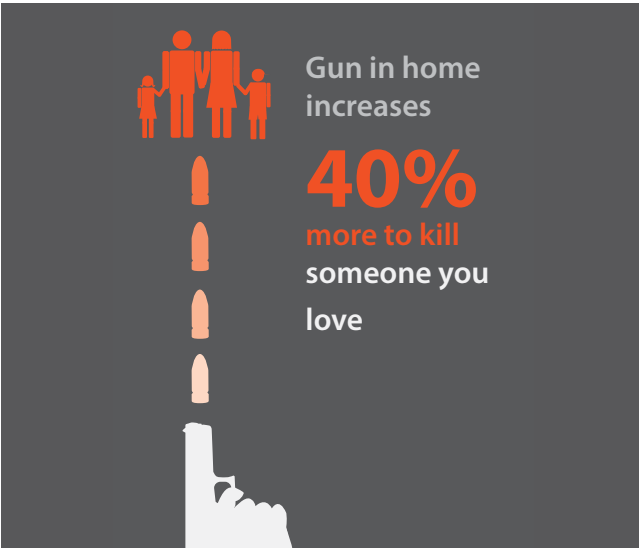
(7) Niels Alzen "Buckling Up Can Save Lives" http://www.adpunch.org/german-road-safety-organization-buckling-up-can-save-lives.html Published by The German Road Safety Organization; Deutsche Verkehrswacht on 2011, accessed on April 6, 2013.

(7)

(8)

(9)

(10)

(9) "When Smoking, You Are Burning Your Body" http://bbcicecream.com/blog/wp-content/uploads/2009/06/anti-smoking-ad-campaign-11.jpg Published by European Health Organization on 2011, accessed on April 5, 2013.

(11) Mike O'Sullivan "Seat Belts Keep People Together" http://theinspirationroom.com/daily/2008/seat-belts-keep-people-together/ Published by Rodney District Council at Saatchi & Saatchi Auckland, New Zealand on 2008, accessed on April 6, 2013.

(11)

(12)

a consequence of the issue effectively raises personal concerns about the issue. The anti-smoking campaign poster in (9) visually threatens and warns that smoking destroys the body. For an anti-gun campaign, I created a threatening image that disturbs the public and raise concerns in (10). Similarly, the seat belt campaign poster in (11) also brings sympathy in addition to threat component. The seat-belt campaign demonstrates the idea that family, friends, and loved ones can get hurt. As seen in (12), my anti-gun campaign design also asks the public to be concerned about family with gun ownership. I found that emotional communication in campaign design can be successful in giving the public a chance to take an issue personally, and to put themselves into the situation. Such designs can ultimately encourage the idea and importance of "safety" in the whole environment of campaign.

In short, people need acceptable rationals and initiatives in order to change perception and behavior. When designing posters for public campaigns, designers can take directive, educational, and emotional methods a way to encourage public awareness.

Guns & Personal Risk *Sarah Read*

An exploration in how designers can engage empirical findings about risk perception to design compelling and psychologically supported communications.

Guns in America is one of the most complex and controversial social issues of our time. Recently the issue has been branded as a matter of public health, akin to seat belt safety and smoking.[1] The rebranding is a result of the massive numbers of gun deaths and injuries reported every year. A large majority of these deaths are not from the tragic mass shootings like that of Sandy Hook Elementary in Newtown, Connecticut, but of citizen-to-citizen shootings. While 26 lives were unnecessarily lost in Newtown, in four months to the day of the incident, 3,446 more people in America have died from a gun.[2]

With nearly four million guns in America, one of the greatest threats guns pose are to the citizens who live in a household with a gun. Many Americans don't understand the risk of being shot or killed when a gun is brought into the home, even if the intention of having the gun is for self-protection. One group that is severely disadvantaged by having guns in the home are women. One in four women have been or are currently a victim of intimate partner violence.[3] When their abuser has access to a gun, women are over seven times more likely to be a victim of homicide. Several studies of data on female homicide indicate that intimate partner violence and access to guns is a serious problem in America.[3-8]

This project is an exploration in how designers can engage with a decision science approach to the communication of public health risk statistics regarding intimate partner violence and access to guns. One goal of the project is to extrapolate findings of psychological risk perception and communication research and to analyze effective communications of past public health campaigns to begin the ideation of ways to represent information about intimate partner violence and gun access that makes it compelling and easily understood.

Literature Review

When people evaluate risks, everyone interprets the information in different ways. A person brings all her past experiences and knowledge to mind and this knowledge implicitly influences the way she understands her personal risks. The way a communicator presents risk information can also influence how a person evaluates her own risk. These subtleties are studied in the areas of risk perception and communication.

Some of the documented results imply that risk communication is not "one size fits all" because different people will interpret information differently. For example, one study on environmental hazards found that women perceived more risk than men, minority participants perceived more risk than white participants, and white males perceived less risk than any other gender/racial group (named the "white male effect").[9] The white male effect is a possible result of a long history of white males having power in western society, and therefore they do not fear the world around them. Another study on risk communication found evidence to support system justification theory: that people who are most advantaged by the current state of the world are less compelled to change the state.[10] Relevant to our work, it's important to understand who is being most disadvantaged by the gun violence in America. Young black men and female intimates are two notable demographics that are year after year affected by guns.

Personal experience with a particular risk can have an effect on how one evaluates risk.[11] Halpern-Flesher et al. studied the relationship between personal experience and risk perception and found that people who have no personal experience with a certain hazardous event perceive it as more dangerous than a person with personal experience. One example of this would be if a person has lived through a tornado, she might perceive another tornado as less dangerous than someone who has never experienced a tornado. Interestingly, data indicates that people who have participated in a gun safety training course are less likely to store their guns unloaded and locked away.[1 12] As a result of taking the gun safety course, a gun owner might feel less fear towards the gun.

The presentation of a risk is just as important to how someone will interpret the information as knowing what factors implicitly influence your audience. Risks can be presented in many different ways: using words or numbers, using a frequency or probability phrase, including a graphic, and the inclusion of narrative information, which can all affect interpretation.

There are three main ways to present likelihood risk statistics:

- probability - The percentage of the time that the outcome occurs (i.e., there's a 70% chance the surgery will be successful).
- frequency - The frequency of the event occurring in a certain number of people (i.e., 70 out of 100 surgeries are successful). Frequency likelihood can be compared in one of two ways: rates and proportions
  - rate - The frequency of event A and event B occurring in the same size denominator (usually 10, 100 or 1000).
  - proportion - The frequency of event A and event B occurring where 1 is the numerator and the denominator varies (i.e., 1 in 7 vs. 1 in 10).
- verbal - Using a verbal term in place of a numerical term in a risk forecast (i.e., it's very likely that the surgery will be successful).

Schapira et al. studied how people perceived each type of risk information presentation.[13] They found that frequency formats were most preferred, and that participants were able to more easily use rates over proportions when presented with comparative risk information. Rates using small denominators of 10 or 100 were more easily interpreted than larger denominators.

A graphical display can aid the interpretation of risk likelihood. Graphical displays have been shown to help evaluation of both single and comparative risk information.[14] Stone et al. tested graphical displays for comparative risk reduction information, and found that the visual nature of having a graphical display (see figure 1, next page) helped with interpretation, but that the actual graphic shape was not a significant factor.

1. David Hemenway, Private Guns, Public Health (Ann Arbor: University of Michigan Press, 2006) , 8-26.

2. Chris Kirk and Dan Kois, "How Many People Have Been Killed by Guns Since Newtown?," Slate, last modified April 17, 2013, http://www.slate.com/articles/news_and_politics/crime/2012/12/gun_death_tally_every_american_gun_death_since_newtown_sandy_hook_shooting.html.

3. "Domestic Violence Statistics," Domestic Violence Research Center, accessed April 15, 2013, http://www.dvrc-or.org/domestic/violence/resources/C61/.

4. JE Bailey et al., "Risk factors for violent death of women in the home," Archives of Internal Medicine 157, no. 7 (1997): 777-82.

5. "Intimate Partner Violence and Firearms Fact Sheet," Center for Gun Policy and Research, Johns Hopkins Bloomberg School of Public Health, accessed April 15, 2013, http://www.jhsph.edu/research/centers-and-institutes/johns-hopkins-center-for-gun-policy-and-research/publications/IPV_Guns.pdf.

6. Matthew Miller, Deborah Azrael, and David Hemenway, "Firearm Availability and Suicide, Homicide, and Unintentional Firearm Deaths Among Women," Journal of Urban Health 79, no. 1 (2002): 26-38.

7. "When Men Murder Women: An Analysis of 2010 Homicide Data," Violence Policy Center, accessed April 15, 2013, http://www.vpc.org/studies/wmmw2012.pdf.

8. Lawrence A. Greenfield et al., "Violence by Intimates," U.S. Department of Justice, Office of Justice Programs, last modified May 29, 1998, http://bjs.gov/content/pub/pdf/vi.pdf.

9. James Flynn, Paul Slovic, and C.K. Mertz, "Gender, Race, and Perception of Environmental Health Risks," Risk Analysis 14, no. 6 (1994): 1101-1108.

10. Irina Feygina, John T. Jost, and Rachel E. Goldsmith, "System Justification, the Denial of Global Warming, and the Possibility of 'System-Sanctioned Change,'" Personality and Social Psychology Bulletin 36, no. 3 (2010): 326-338.

11. Bonnie L. Halpern-Felsher et al., "The Role of Behavioral Experience in Judging Risks," Health Psychology 20, no. 2 (2001): 120-126
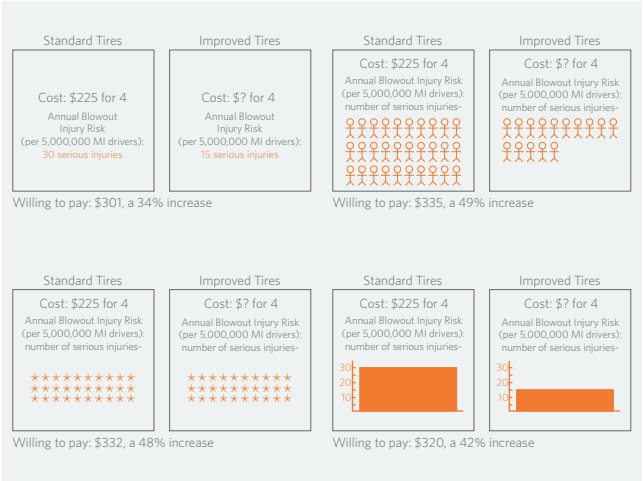
12. D.L. Nordstrom et al., "Rural population survey of behavioral and demographic risk factors for loaded firearms," Injury Prevention, no. 7 (2001): 112-116.

13. Marilyn M. Schapira, Ann B. Nattinger, and Colleen A. McHorney, "Frequency or Probability? A Qualitative Study of Risk Communication Formats Used in Health Care," Medical Decision Making, no. 21 (2001): 459-467.

14. Eric R. Stone, J. Frank Yates, and Andrew M. Parker, "Effects of Numerical and Graphical Displays on Professed Risk-Taking Behavior," Journal of Experimental Psychology: Applied 3, no. 4 (1997): 243-256.

15. Lisa M. Schwartz et al., "The Role of Numeracy in

more on narrative evidence. One possibility for this discrepancy could be due to the ease of understanding the narrative evidence. Similarly, participants were better able to evaluate stated likelihood in a percentage format (compared to verbal or frequency) when it was combined with narrative evidence.

Risk Information & Health

Information about health risks can come from public health campaigns and health professionals and organizations. Risk information is important in a health decision making context, but public health campaigns rarely rely on risk statistics. In 2012, the Center for Disease Control (CDC) launched a new anti-smoking public health campaign "Tips From Former Smokers," that incorporates graphic images, videos and narratives of people whose lives have been affected by smoking.[17] The advertisements don't explicitly present risk information, informing of possible consequences instead. If the advertisements compel audience members to go to the CDC website, they will see risk frequency statistics like "For every 1 person who dies from tobacco use, another 20 suffer from one or more serious smoking-related illness." Using visuals to get people's attention and secondarily providing scientific information is a common trend in public health campaigns.

In a personal healthcare decision making situation, i.e. choosing between two methods of treatment for an ailment, risk information takes precedence. There is a growing trend of patients wanting to engage in shared medical decision making with their doctors, not having doctors simply prescribe a treatment method.[18] This movement in healthcare decision making could mean that people generally want to know more information about the risks they face that could affect their health, and that there might be merit in letting risk statistics and information lead a public health campaign. One example to support this is the CDC's statistic "1 in 4 teen girls has an STD," which has been widely distributed by the media despite not being part of a specific public health campaign.[19]

Similarly, Schapira et al. examined graphical displays and found that a bar graph is more useful for presenting comparative risk information, but a highlighted frequency format (like the asterisk and stick figure display from Stone et al.) works better for a single risk.

An audience's numeracy level is an important factor in risk communication. Two of the likelihood formats communicators use are reliant on the ability of the audience to interpret numbers mean and, in some cases, be able to manipulate them. Numeracy is defined as the level of "facility with basic probability and numerical concepts."[15] Dieckmann et al. studied how varying levels of numeracy affected how people perceived likelihood and narrative information about risks. When only likelihood risk information was provided, all participants were able to evaluate the information, although evaluations of people with lower numeracy were more affected by the format it was presented in.[16] The researchers tested verbal, frequency, and numerical formats, with risk perceptions being highest for frequency formats, followed by verbal formats, and lowest for numerical formats. When likelihood risk information was accompanied by narrative information, people with higher numeracy focused on the stated likelihood, but less numerate participants focused

Design Explorations in Statistics

With the research in mind, I began to experiment with different ways to communicate risk statistics around intimate partner violence and access to guns in the home. Intimate partners kill more women in America than any other type of perpetrator.[4 20 21] In a study on risk factors for female homicide in abusive relationships, Campbell et al. found that having a gun in the home was a significant predictor for whether a woman in an abusive relationship would be killed by her abuser.[22] One statistic provided by the study is that a woman is seven times more likely to be killed by her abuser if there is access to a gun in the home.

Figure 2 shows one possible representation for this risk information is combining narrative evidence (this particular narrative is fictional, based on news articles of intimate partner homicides) and a numerically-formatted statistic, referencing the findings in Dieckmann et al. According to the study, this representation would be accessible to those with varying levels of numeracy. However, one potential shortfall of this format is if the narrative and risk information aren't interpreted similarly by those who focus on each piece, respectively.

Another exploration for this risk can be seen in figure 3, where a graphical representation is paired with risk information in a frequency format. The graphic is similar to those studied in Stone et al. Stating the baseline risk for a woman being murdered by an intimate partner when there is no access to a gun in the home might make this particular communication more effective for people to understand exactly how their risk changes.

As a matter of public health, the explorations presented are useful to how personal health risk information can be communicated. There is always uncertainty to the degree of success in extrapolating findings from the context of one study into another, however, the literature review and designed outcomes could be used as hypotheses for testing the efficacy of risk communication about intimate partner violence. Understanding best practices of risk perception and communication can give designers a beginning point for the creation of statistically-led public health campaigns.

Linda Morris, 27-year-old mother of two, was shot and killed by her boyfriend, 31-year-old Michael Patrick. The couple had no previous record of domestic violence. Neighbors said they heard shouting, then a gunshot, then quiet. Patrick was a hunter and owned several guns, including at least one handgun. It was not reported what the couple was arguing about.

The presence of a gun in the home increases the risk of female homicide by her abuser by 700%.

A woman is 7x more likely to be murdered if her domestic abuser has access to a gun.
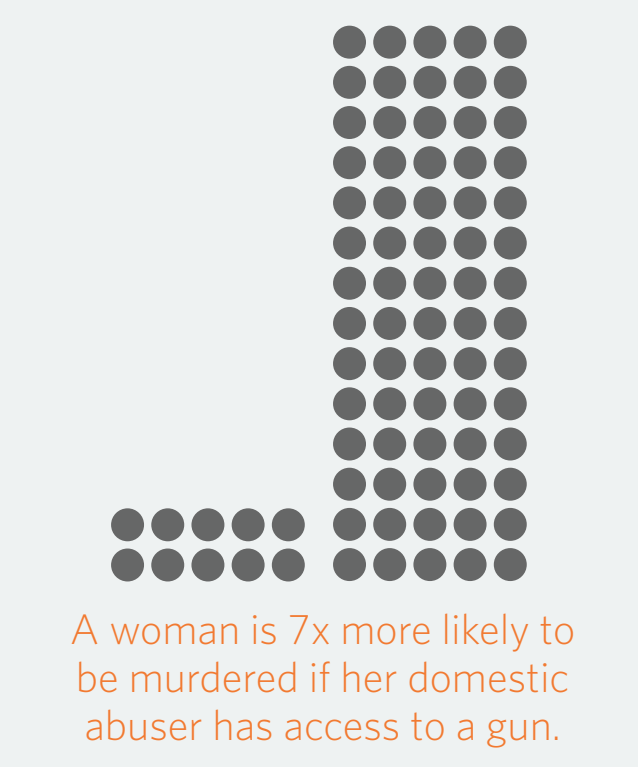
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16. Nathan M. Dieckmann, Paul Slovic, and Ellen M. Peters, "The Use of Narrative Evidence and Explicit Likelihood by Decisionmakers Varying in Numeracy," Risk Analysis 29, no. 10 (2009): 1473-1488.

17. "Tips From Former Smokers," Center for Disease Control and Prevention, last modified April 12, 2013, http://www.cdc.gov/tobacco/campaign/tips/.

18. Mary C. Politi, Paul K.J. Han, and Nananda F. Col, "Communicating the Uncertainty of Harms and Benefits of Medical Interventions," Medical Decision Making, no. 27 (2007): 681-695.

19. "Nationally Representative CDC Study Finds 1 in 4 Teenage Girls Has a Sexually Transmitted Disease," Center for Disease Control and Prevention press release, March 11, 2008, CDC website, http://www.cdc.gov/stdconference/2008/press/release-11march2008.htm.

20. James A. Mercy and Linda E. Saltzman, "Fatal violence among spouses in the United States, 1976-85," American Journal of Public Health 79, no. 5 (1997): 777-782.

22. U.S. Department of Justice, Office of Justice Programs, Violence against Women: Estimates from the Redesigned Survey, by Ronet Bachman and Linda E. Saltzman, Bureau of Justice Statistics, 1995, http://bjs.gov/content/pub/pdf/FEMVIED.PDF.

Place Intervention *Maureen Griswold*

This project explores the creation of a tool for change—an artifact that forces Pittsburgh citizens to come face to face with their assumptions.

The focus of the place intervention project was to explore a range of possible methodologies to evaluate and challenge mythologies surrounding gun usage in Pittsburgh. The intent was to communicate the danger and severity of improper gun usage to an uninformed public in a specific context. A possible solution route that I explored was incorporating statistical information into visual statements that would be placed within a public space in Pittsburgh. For the initial section of the project, I decided upon a statistic that pertained to gun usages dangerous effects on children which I later broadened in the second section. The objective was to interpret and dissect the statistic to understand its relationship to a defined target user within Pittsburgh and then create a physical artifact that would shock people into reflecting on the horrible effects of gun normality. This project explores the creation of a tool for change—a persuasively designed statistic that forces Pittsburgh stakeholders to come face to face with their assumptions.

I began the project by exploring initiatives that other designers and artists took to provoke social change through place interventions. The works of Candy Chang resonated with my initial research. Candy Chang's public art projects promote activism in communities by allowing reflection and agency. For instance, her project Before I Die, turned an abandoned house into a community center piece with the simple sentence "Before I die I want to_____" that could be filled in with chalk. In her words," Anyone walking by could pick up a piece of chalk, reflect on their lives, and share their personal aspirations in public space." (candychang.com/about) Additionally, I was informed by the class's initial exploration of place and the possibility it has to inform behavior and ignite memories. I wanted to incorporate the concept of place as a profound shaper of human perception.

In order to decide upon a target demographic for a place intervention project, one must figure out the demographics that are the source of the problem. In the case of this specific project, I identified the target demographic as middle class suburban Pittsburgh citizens since my research into the distribution chain of Pittsburgh gun ownership, showed that they were the source of illegal guns distribution. I then began thinking about a relevant statistic that would relate and shock my target demographic. At first I thought about choosing, "4,166 children are accidentally shot in 2010 in the United States due to unsecured guns in the home" but then shifted it to, "Everyday about nine children are killed by a gun." My reasoning was that an annual statistic was possibly too abstract for the target consumer to relate to and thus did not hint at the everyday debilitating effects of gun usage.

Once I decided upon this quote, I chose to incorporate some of the discourse that the target demographic use and relate to. The average middle class suburban parent chooses to own a gun for common American archetypes of protection, freedom and individualism. For this reason, I decided to incorporate the same language both linguistically and visually into the design piece. I designed the quote to state, "Everyday about nine children are killed by a gun—lock up your gun to protect America's future". Additionally, I incorporated patriotic colors in the initial design to further connect the language that the target consumer was familiar with to the quote. My intention was to reconfigure the discourse surrounding protection and freedom. The signs would be placed within a variety of contexts that middle class suburban Pittsburgh gun owners would frequent: schools, supermarkets and gun shops. I wanted the target demographic to think about the cost and the mythology of freedom by understanding how gun usage takes away the freedom of the most impressionable agents of our community—our children.

In the initial design, I explored the possibility of communicating through the variables of time, location and placement of information. In my first test, I placed the quote on a series of picket signs outside a supermarket. The public's reaction was a mixture of anger, sadness and confusion.

As one individual stated, "I don't want to have a gun but it is a matter of necessity. I have to protect my kids. I have to protect myself." Another individual revealed a heartbreaking narrative about the accidental death of a member in her community due to gun. Though I am unsure if my initial test caused behavioral change, it sparked a discourse between members of the community that no doubt influenced some perceptions on the cost of gun ownership.

"I don't want to have a gun but it is a matter of necessity. I have to protect my kids. I have to protect myself."

After my initial test, I tried placing the picket signs within other contexts such as a school, another supermarket and outside a gun shop. In all three places, the signs were asked to be removed within a half hour. I came to learn that placing such highly political signs within privatized spaces are ineffective. If one were to choose to apply space intervention within a privately owned context, I would highly recommend receiving permission before doing so. A problem that I ran into was the placement of the picket signs within a specific place. The first supermarket I went to, Trader Joe's, has a young and democratic target demographic that was likely more open to the idea of highly political and liberal signage. The other contexts—the school, the gun shop and the Giant Eagle supermarket—have far less young and democratic users on average.

I decided then to explore a different route to my methodology. Since the political nature of the signage was at odds with privatized businesses, I redirected my place intervention towards public contexts—bus stops. At bus stops, people often sit and reflect and thus there was an opportunity to incorporate a message board into the visual artifact to create a dialogue within the bus stop space. Additionally, I chose new statistics that related to all suburban gun owners only those who were parents: "An unlocked gun in the home makes the chance of accidental death four times higher " and, "Guns kept unlocked in homes are twenty-two more times likely to be involved in unintentional shootings than to be involved in injuring or killing in self defense."

1. An initial design that tested the effectiveness of combining political symbology, user language and statistics within private space.

2. A secondary ideation that tested the effectiveness of combining user language, gorilla campaign methodology and statistics within reflective public space.

The statements were less accusatory and more open with the intent to instigate a dialogue about unsafe gun usage. I used the same visual language as the first initiation of the methodology to connect the user with a patriotic and individualistic paradigm that is familiar to such individuals.

My final design had two variants that displayed one of the two statistics. My reasoning behind this was to see which statistic, if any, spurred a dialogue. If one were to adapt my methodology, I would recommend testing a variety of statistics to see which one is most effective. The question that headlined both variants was, "Do you lock up your gun?" The question was meant to incite individuals to reflect upon their own behaviors and experiences with guns. My placement of the posters again depended upon the target demographics. Which bus stops did suburban Pittsburgh gun owners frequent?

I decided to place the posters in bus stops that were close to gun shops to contrast it with my previous methodology. Instead of privatized institutions that led to high social friction, I placed the information within public places of low social friction so that my method could be more effective. The most significant aspect of this process was uncovering how to effectively put social information within a given context. To do so, one needs to understand the target user, where they frequent and also contextual constraints.

Suburban Pittsburgh Gun Owners

A cross-analysis of suburban middle class Pittsburgh gun owner's behavioral patterns within the city's urban and social structure.

☐ Initial Ideation   ☐ Secondary Ideation

Supermarket	Gun Shop	School	Bus stop

Neighborhoods

Neighborhoods that had median salaries were considered for testing. Such as...

📍 Oakland
📍 Downtown
📍 Southside
📍 Greentree

Pittsburgh Suburbs were also considered. Such as...

📍 Monroeville
📍 Penn Hills
📍 Mckeesport
📍 Wilkinsberg
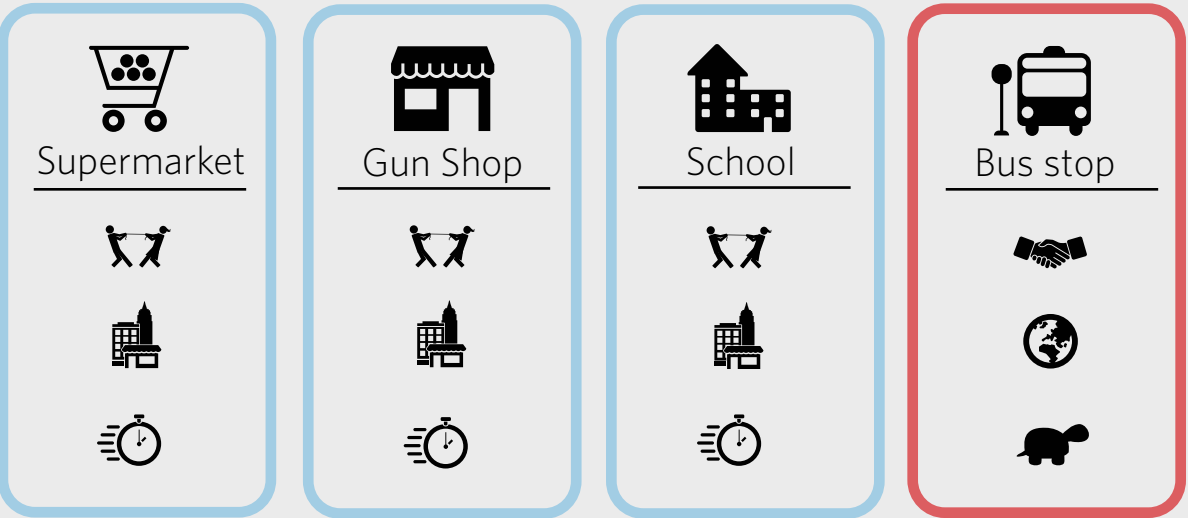
High Social Friction
Places in which testing became difficult due to social tabboo of placing the information within the context.

Low Social Friction
Places in which placing information was unhindered by social stigma.

Private Insitution
Places that were either privately owned or were exclusionary e.g. a school open only to children.

Public Institution
Places that were owned by the gov't and were inclusional. e.g. anyone can use a bus.

Fast Oriented Place
Places in which people were directed into active states and thus had less time to reflect.

Slow Oriented Place
Places in which people were directed into sedentary states and thus had more time to reflect.

46   47

Project ChildUnSafe? *Jisoo Choi*

A material analysis of current gun safety devices including Project ChildSafe's gunlock.

Project ChildSafety Kit: A booklet & a cable-style gun lock.

Keeping a gun securely at home is essential for children's safety, and it is a parent's responsibility to choose the right safety device for their situation. A wide variety of firearm safety devices are available in the marketplace, from a trigger lock to a gun cabinet each device is designed to prevent access to fire arms and with that, different types of injuries. Therefore, learning about the different kinds of safety devices that are available, what they do, and what they are appropriate for, is very important when people make a purchase decision. However, without knowing the limitations of particular devices, some parents might assume that using any types of safety device will keep their children safe.

In my individual design project exploration, I have analyzed the gunlock produced by Project ChildSafe. This is the most commonly used device for safe firearm handling among parents in North America. I have done this in order to help people understand the strengths and limitations of relying on a safety device without knowing what it is good for, and what it is not. This analysis includes a discussion of the background history of Project ChildSafe, the current problems with its gunlock, and presents some alternative choices that people can make to purchase devices that are appropriate to their needs. In addition to this analysis, I propose a communication strategy that could improve Project ChildSafe's ability to deliver accurate information of about their gunlock to parents.

Through both this analysis and proposed communication strategy, I hope to help firearm users, especially parents, to be more informed with devices and choose a gun security system that will best protect their children at home.

Project ChildSafe is a nationwide program developed by National Shooting Sports Foundation (NSSF,) and its purpose is to promote safe firearms handling and storage practices among all firearms owners. Especially, it puts a key emphasis on preventing children from accessing a loaded firearm in the home by providing free Project ChildSafety Kits. Since 2002, the program has received millions in funding from U.S. Department of Justice grants and firearm industries. Moreover, it established partnerships with governors, lieutenant governors, U.S. Attorneys, and community leaders and law enforcement agencies. Through funds and partnerships, Project ChildSafe could produce more than 36 million kits and easily distribute them throughout the states to gun owners.[1]

By reading the information above, I thought their objectives are laudable. However, as I physically observed Project ChildSafe's gunlock, their implementation provides a false sense of security. I got the kit from Kohl's Safety Center at Children's Hospital of Pittsburgh, where people in Pittsburgh usually get kits from besides the police department. Because of the fact that law enforcement agencies provide kits, it implies to community members that the lock is secure enough to protect their children. Unfortunately, you can find that this is not true when you

actually read the information about the lock.

What type of gunlock does Project ChildSafe produce? Project ChildSafe produces cable-style gunlocks. This type of lock has two major benefits: it requires firearms to be unloaded before the cable lock is installed, providing an extra level of safety; it can be used on most firearms, providing flexibility among different types of firearms. Other than these benefits, Project ChildSafe's cable lock was very disappointing. It was poorly made, being no more than a bicycle lock.

According to Project ChildSafe's website, their cable gunlock meets the California AB 106 Standard. I initially assumed that AB 106 would have strict requirements for securing weapons from children. Unlike my expectation, on reading the California Assembly Bill 106 Standard, I found out that the bill implemented only a minimal safety standard for firearm safety devices to reduce the risk of firearm-related injuries to children 18 years of age and younger. The guidelines that I believed Project ChildSafe followed were; firearm safety devices should be reusable, be adequate quality to prevent unauthorized users from firing the firearm, and ensure that these devices cannot be readily removed from the firearm except by an authorized adult user using the appropriate method of access.[2] Yet, since the lock is cheaply and poorly made, it defeats the proposed standard. As evidence, there are YouTube videos and articles showing even children as young as 11 can open the lock by using pliers or paperclips.[3] By knowing these facts, people should not use Project ChildSafe's cable lock as a primary protection of their children.

In addition to the poor manufacture, the cable style lock has the limitation that it cannot protect from theft since it is mobilized. This means that unauthorized users can not only remove the device and fire the gun but also steal the gun. Thus, if you are concerned about unauthorized person having an access to your gun as well as being stolen, this device would not be the right choice. There are alternative choices that are handy, a trigger lock and a lock box.

1. "Project ChildSafe." Program Overview. National Shooting Sports Foundation, n. d. Web. 2 Apr. 2013. <http://www.projectchildsafe.org/About/>.

2. Rossi, Randy. California. Department of Justice. Implementation of Assembly Bill (AB) 106. California: , 2001. Web. <http://oag.ca.gov/sites/all/files/pdfs/firearms/infobuls/0104.pdf>.

3. Blate, Alex. Project ChildUnsafe: Gun Safety FAIL. 2012. Video. YouTubeWeb. 10 Apr 2013. http://www.youtube.com/watch?feature=player_embedded&v=1U0CHhDm8EY>.

Top View

PROJECT CHILDSAFETY KIT
CONTAINS A BOOKLET
AND A CABLE LOCK

Bottom View

MADE IN CHINA

The trigger lock has both benefits and limitations. By sliding the lock through the trigger one side and closing up other side, you can use a trigger lock to block the trigger from firing. Yet, this is only when you used it properly. This does not limit the firing the gun as the trigger lock does not prevent loading. It is important to place the lock through the back of the trigger, not the front. Compared to the cable lock, the trigger lock cannot be used on a variety of firearms. This means that you need different trigger locks for different types of firearms. Another limitation of the trigger lock is that it does not prevent theft, which is similar to the cable lock.

The lock box is more expensive and provides a higher level of security than cable or trigger locks, because it is made out of metal. Since the weapon is concealed inside the box, you can keep the weapon unloaded or loaded to use it directly in an emergency. There are different types of lock boxes: mechanical ones with a key to open; and electronic ones with digits, handprint combination, or fingerprints to open. I believe electronic ones with handprint combination and fingerprints are more effective than the other two especially when you live in a dangerous neighborhood and want to be able to get your gun as soon as possible.

For a handprint combination lock box, you can create a key code by pressing buttons in the finger-slot. The benefit of this type of lock is that it could be opened under stress and even in the dark; it provides fast intuitive access. A limitation of the box is that it can be stolen, however, it is very difficult for an unauthorized user to open the box because the code can be set to any sequence of button presses. Similar to the handprint combination box, a biometric lock box is also very secure, provides quick access, and makes difficult for unauthorized user to open. Yet, it cannot be opened when the person sweats under stress.

In my analysis, I provided both detailed analysis of the Project ChildSafe's cable lock and general analysis of varying types gun safety devices. Having a general knowledge of the differences among safety devices and a specific knowledge of a model is important because each model's quality and safety standard may differ. The image on the right shows the packaging that I designed for Project ChildSafety kit. It includes area of production, limitation and regulation of the lock that improves delivering accurate information and a true sense of security to the users.

Kevlardigans *Laura West*

What if there was constant body protection as seamless as your clothing?

It seems that with current gun debates, we are giving more weight to certain parts of our Constitution than others. The focus is on the Second Amendment, which is the right to bear arms. In this design fiction, I aim to stress the importance of other rights that are outlined in the Constitution.

We are granted the natural right to life, which equates to a right not be killed, or abused or injured. If we are currently allowed to take our firearms with us wherever we go, why should we not be able to be protected from firearms everywhere we are as well? This is especially relevant because some of the most recent violent shootings have happened in public places, such as movie theaters and schools. These are places where people think they are safe.

We should have the choice to protect ourselves from the unknown. Movies and TV shows glamorize gun violence, but what if fashion could glamorize safety? Could we design a range of personal armor for everyday contemporary society? Armor that embraces our best technologies could be used to protect our fragile bodies from the possibility of gun violence.

In order to better address this issue, I chose to look at it using a design fiction, which creates a fictitious scenario about a potential future by describing that future in a way that makes it understandable. It is a way to speculate what could be possible, and

thereby start conversations about the social, cultural and ethical impact on everyday life.

In this design exploration, I propose a fashion line of Kevlar® apparel that would be targeted towards women and children. The fashion line would contain a range of items from pants to cardigans, all lined in Kevlar® for its bulletproof functionality.

My aim was to create a fictional situation in which these garments could exist; a fantastical world where children would need these types of protection because of a skewed sense of values and constitutional priorities. Through this exercise I raise questions about our current laws and our current values as a society. If we choose to have constant protection in the form of guns, we also need to have constant protection from guns.

An advertisement for the intended product. Protection can be stylish!

By creating a line of body armor for children, I hope to inspire a conversation about what our society feels is most important concerning gun rights and the ways that we protect our children.

What are the limitations to this idea?

In looking at the current range of products that offer protection from gunshots and other ballistic attacks, there are very few options. There are those products that are intended for use in overtly dangerous civilian situations, such as bulletproof vests for police officers and bodyguards. These protective vests are also purchased by others who feel that they might be in harm's way. There are also other vests and suits of armor that are intended for the military, which are much more robust and complex. These types of armor are much more suited to guerrilla warfare

STYLE CRUSH
KEVLAR
CARDIGANS!

thicker chest piece to
protect upper organs

protection woven into fabric
for normal draping of fabric

dual protection in
hood and body

hats could be required
at all times

protection would also span
back panel

adding details for personalizable
protection?
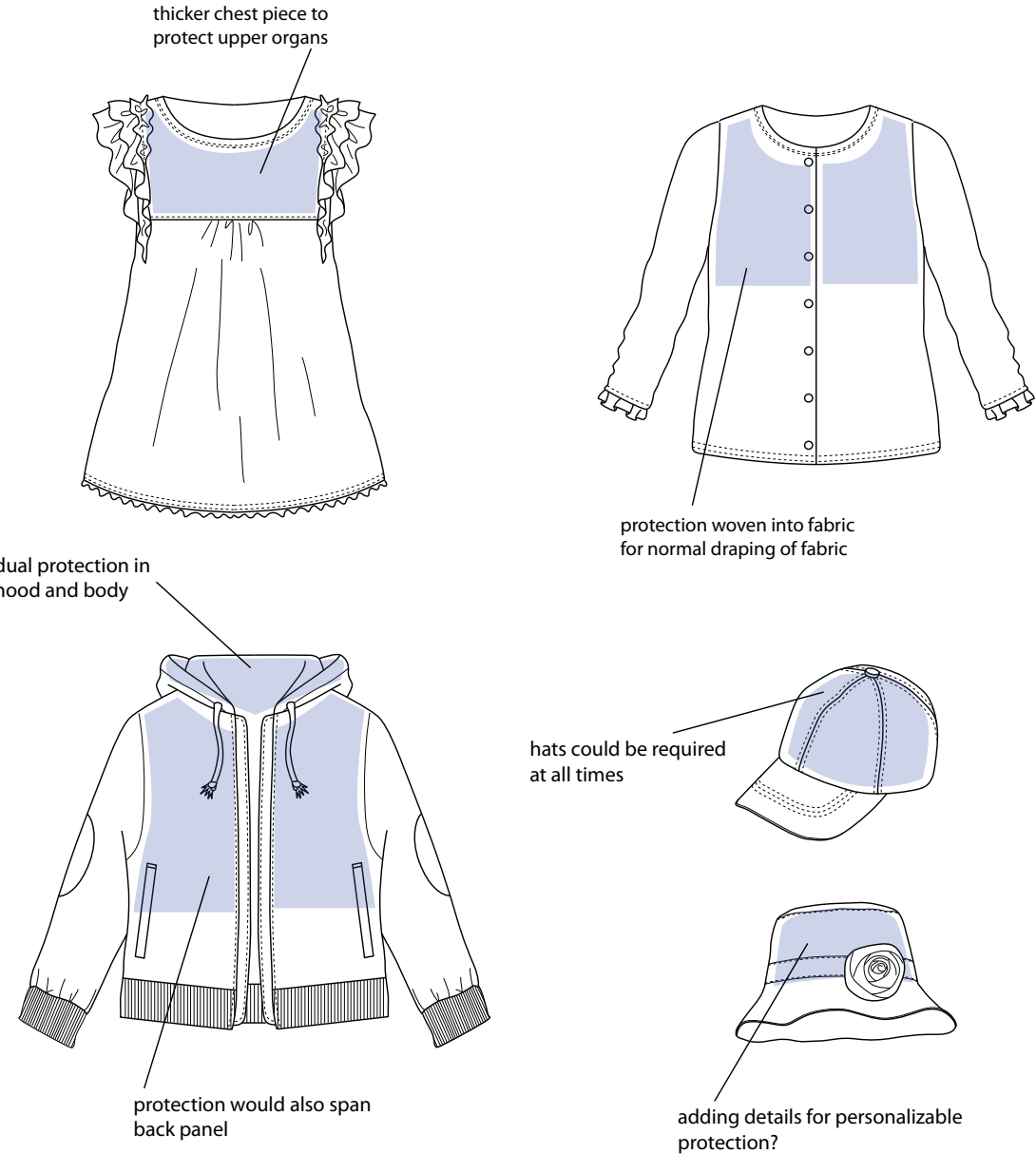
with multiple pieces that protect various parts of the human form. In the United States, body armor is regulated, which can limit its distribution to the general public. In all states excluding Kentucky, body armor is prohibited from sale to those who have a conviction for violent crime. The premise seems to be that already being incarcerated for a crime will then limit the protection available to you in the future.

What is the ideal material to incorporate protection into clothes?

Through new technologies, body armor has surpassed its predecessors in the protection that it offers, at a lower weight to the wearer. There are five types of armor that are currently in use, some of which are more suited for my purpose than others.

Ceramics based armor absorbs the energy of the bullet and shatters to slow down the impact and reduce injury. This technology is currently in use by the military. Ceramics are one of the more cost effective forms of protection, however they are one of the heavier options as well. While this is acceptable for grown men and women in the military, this isn't ideal for children.

Another option for protective armor is metal plates. These act like ceramic plates and absorb the energy of the bullet and prevent blunt trauma. These are the best for preventing blunt trauma, however like ceramics, there are concerns about weight.

Alternatively, there are fabrics that when used in laminates, are capable of stopping blunt trauma. Kevlar® fibers in particular are known for their use in most commercial grade bullet proof vests and have been the industry standard for over 10 years.

However, there is an emerging type of nanotechnology that shows promise for use in anti-ballistic armor. Carbon nanotube fibers, which are the same internal structure that made Damascus steel so unbreakable, have shown potential in the reinforcement of many different materials, from metal to body armor. This improves the strength of a given weight of protective material, or, stated differently, allows an equal amount of protection at a lower overall weight.

With continued development of this technology, the price could drop significantly and the capabilities of the product would make it an ideal technology to incorporate into traditional wearable clothing. Another nanotechnology that is also being developed is a polymer known as M5 fiber. It has been used already in prototypes of body armor and has shown great success. And, like carbon nanotubes, M5 has promise with more development.

What happens when a design fiction can possibly become a design reality?

Though initially intended to become a design fiction, I've found that over the course of the project, that this idea is feasible, due to new development in advanced materials. Although the feasibility is driven by manufacturing innovations, the social concerns in this country could also help this project become a reality in the near future.

More important than just the feasibility of this design, are the implications that it imposes. If everyday, fashionable, wearable body armor were to become a reality, what would that mean for the safety of our children? Would it mean that they'd feel more secure? Would it become the new school uniform that children would be perpetually armored? Would this literally become the new security blanket, used for more than just emotional protection of a child? While this solution has the potential to become reality, what would it mean of our culture and society if this were a reality?

G-Life Alert *Lena Tesone*

A design fiction.

The company Life Alert that provides services that help the elderly contact emergency services has recognized a new market for their product. This new market of vulnerable people in need of emergency services is young black men.

Life Alert now markets it's products and services to young black men under the name "G-Life Alert". The "G" stands for gangster. While the artifacts of the pendant and watch are the same for both Life Alert and "G-Life Alert", the service system is different. With Life Alert, when the customer presses the button on the pendant or watch, Life Alert's call center is contacted and the customer is connected to and emergency services dispatcher. The dispatcher then alerts the proper authorities of the customer's situation.

The service system for "G-Life Alert" is that when the customer presses the button on the watch or pendant they are connected to a dispatcher, who connects the customer to their inner circle of friends who will mobilize to pick up the customer in need and move to retaliate against who ever attacked their friend. This system is particularly effective in inner city neighborhoods that police and other emergency services tend to avoid.

"G-Life Alert" is something that is seen as something that is not only reactionary, but also a tool for gun violence protection. When an adversary sees that you are wearing the "G-Life Alert", they are aware that you are willing to retaliate and will be able to do so quickly. While gun violence rates amongst young black men spike after the initial introduction to the marketplace, eventually they dwindle due to the effectiveness of the product.

The "G-Life Alert" eventually becomes a fashion statement that is co-opted by rap and hip-hop performers that want to bolster their "gangster" identity. The "G-Life Alert" also becomes a symbol of solidarity against gun violence because its existence acknowledges the tragic normalization of gun violence against young black men in America.

"G-Life Alert" is a design fiction that explores how dark humor can provoke dialogue around social issues that often seem too wicked and complex to tackle. The "G-Life Alert" design fiction parodies the advertising of the company Life Alert provides medical and emergency home protection for the elderly who live independently.
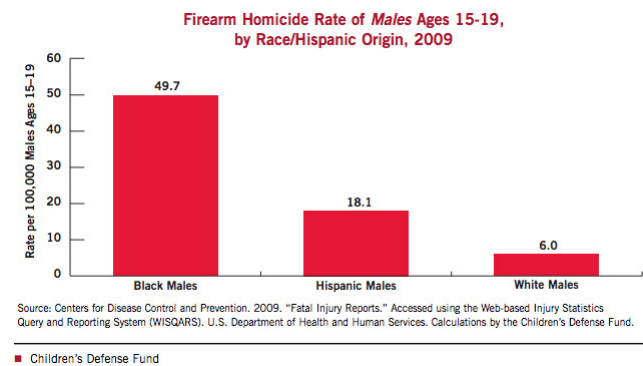
Life Alert is a service meant for vulnerable populations, and while we commonly recognize the elderly living independently as a vulnerable population, another less recognized vulnerable population is young black men in America. While "G-Life Alert" may be shocking at first glance, it is a satire about the normalization of gun violence against black youths in America.

For my individual project I wanted to provoke a dialogue around the role race plays in the gun control debate. It's always difficult as a designer to communicate controversial social and political issues such as gun violence, but the racial component of gun violence adds another layer of complexity to the issue. Young black men are disproportionately affected by gun violence and the Children's Defense Fund's "Protect Children Not Guns 2012" report states that in 2009 black males ages 15-19 were eight times as likely as white males of the same age group to be killed in a gun homicide.[1] If we are serious about discussing social innovation in the realm of gun violence this has to be addressed.

When deciding that race was the theoretical framework for my project, I had to ask myself, "What business does a middle class white girl, currently living in the bubble of academia at a top-tier university have talking about gun violence in America's black ghettos?" It takes a lot of huevos as a young white woman to say, "you know the best way I can think to communicate the problem of gun violence in Pittsburgh and the black community is to turn to satire."

Design fiction is the perfect method for tackling such a difficult topic, because design fiction creates a critical distance between the designer and the subject. The critical distance created by design fictions allows the designer to critique all sorts of controversial and taboo social situations.

1. The Children's Defense Fund Report, "Protect Children Not Guns 2012". Published by the Children's Defense fund, 2012. Accessed at http://www.childrensdefense.org/child-research-data-publications/data/protect-children-not-guns-2012.pdf on March 22, 2013.

Graph from the Children's Defense Fund's Report "Protect Children Not Guns 2012."

Firearm Homicide Rate of *Males* Ages 15-19, by Race/Hispanic Origin, 2009

Source: Centers for Disease Control and Prevention. 2009. "Fatal Injury Reports." Accessed using the Web-based Injury Statistics Query and Reporting System (WISQARS). U.S. Department of Health and Human Services. Calculations by the Children's Defense Fund.

■ Children's Defense Fund

Screengrab from Life Alert's website, www.lifealert.com.

"G-Life Alert" is meant to offend and plays heavily into stereotypes about urban, American, black culture. The aesthetics of the "G-Life Alert" webpage is overwhelmingly under-designed, visually cluttered, and "ghetto-fabulous". The voice of the website is loud, brash, and vernacular and the typography is designed to match that voice. In this case, the more ridiculous and racially insensitive the visual of the design fiction is, the more dark humor can be found in the piece.

While being racially insensitive and offensive may not be a normal tactic for communicating social issues, it is appropriate in this case because we all should be offended and disturbed by the normalization of gun homicide in the black community. In 2012, sixty-five children under the age of 18 were victims of gun homicide in Chicago alone, but these deaths lacked the media attention of the Sandy Hook Shooting. Embedded in this normalization of gun violence in ghettos is differential blame. The idea of, "well that's the ghetto, and stuff like that happens there, not the suburbs."[2] This collective attitude we have is disturbing and hopefully design fictions can help surface these deeper issues.

The criticism that I have for this explaination that that while it provokes discussion about the normalization of gun violence towards young black men, it does not address the structural causes of this violence. These structural causes of gun violence like poverty, joblessness, segregation, and addiction. It is also hard to understand who the audience is because for someone who has lost a child to gun violence, this is not funny at all. This appeals more to young people not directly affected by gun violence. With that in mind I do hope it provokes conversation about the issue.

2. Lawrence D. Bobo, "Time to Remove Race from Gun Debates: Straight Up: Calling out black-on-black crime diverts attention from taking on the powerful gun lobby." http://www.theroot.com/views/time-remove-race-gun-debate?page=0,0; Published by The Root.com on March 30, 2013, accessed April 19, 2013.

Graph from the Children's Defense Fund's Report "Protect Children Not Guns 2012."

■ Black teens ages 15 to 19 were nearly 25 times more likely to be injured by a gun during an assault than their White peers in 2009.

Assault Firearm Injuries for Teens Ages 15-19, by Race/Hispanic Origin, 2009

Source: Centers for Disease Control and Prevention. 2009. "Nonfatal Injury Reports." Accessed using the Web-based Injury Statistics Query and Reporting System (WISQARS). U.S. Department of Health and Human Services. http://www.cdc.gov/injury/wisqars/nonfatal.html. Calculations by the Children's Defense Fund.

Research Method *Eunice Chung & Danielle Parnes*

Helping leaders learn about community members' thoughts and feelings about youth safety.

This method aims to help local leaders learn what Pittsburgh community members think and feel about youth safety. In order to gather information and empower others to gather it, we have designed a tool in the form of a workshop that will help leaders better understand the perceptions of the people in their own communities.

The workshop objective is to uncover the stories, ideas, and attitudes of the relevant stakeholders, because quantitative data alone doesn't seem to reveal the social implications and diverse areas that may need problem solving in a holistic way. Informed with this type of qualitative information, we hope to enable community leaders to make better strategic decisions when attempting to tailor their efforts to reflect community values and goals.

The two main questions that are at the heart of this method are:

(1) What factors make someone feel safe and what does safety mean to someone?

(2) How do people envision the future of youth safety in Pittsburgh and what can we do to accomplish this?

Why we're talking about safety, and not guns

The point of the method is to explore the root of the problem: what are people relying on guns for and why do they need something to rely on? While guns may come up in the conversations we are facilitating, using guns as a starting point makes the assumption that guns are the cause of the problem in relation to safety in Pittsburgh. Starting the conversation with guns also has a polarizing effect, causing many to put up barriers and preventing productive conversation.

Insight from our initial research

From our research explained in the first half of this book, we identified a disconnect between the information resulting from the methods currently being used to understand gun safety in Pittsburgh, and what community members actually expressed. This gap is illustrated by the chart below. In Pittsburgh in particular, we found that there are a lot of disparate individuals and groups focused on either children's safety or gun violence; while they each have biases and distinct motives, this disconnect is one theme that seemed to hold true.

Given this understanding, we recognize that it is crucial to make use of a variety of types of methods and, therefore, information to create the most positive impact.

	Existing (based on our initial research)		Proposed
Method to gather information	Studies at large institutions by academic researchers		Opportunity for new methods for change agents in community to use
Resulting information	Quantitative data and statistics on gun violence and death	← disconnect →	What community members say asked about their neighborhood
Strategy for improvement based on resulting information	Use emotional narrative of post gun violence stories from the victim's point of view	Create new policy or policy reform to effect change	Opportunity for new strategy

What we learned about types of research

It is important to understand the implications of gathering and making use of quantitative data in relation to qualitative data. Based on the identified characteristics in the list below, we understand many of the reasons people lean toward quantitative research, particularly within the non-profit sector. It is generally easier to obtain, both in terms of time and money, and it fits better within our societal mental models as being reliable, with the sentiment that statistics don't lie.

Qualitative research
- Lends itself to small sample sizes
- In depth, narrative from fewer people
- Broader definition of research scope in advance
- Data is in the form of words, stories, pictures or objects
- Subjective: data gathered and analyzed by individual interpretation of occurrences
- Insights drawn from contextual information
- Information focuses on contextual data

Quantitative research
- Lends itself to larger sample sizes
- Specific, measurable info from a lot of people
- Narrower definition of research scope in advance
- Data is in the form of numbers and statistics
- Objective: data gathered & analyzed through precise measurement
- Insights drawn from numerical information
- Information holds true to larger context

1. Bella Martin and Bruce Hanington, *Universal Methods of Design* (Beverly: Rockport Publishers, 2012).

2. Vijay Kumar, *101 Design Methods* (Hoboken: John Wiley & Sons, Inc., 2013).

3. Lucy Kimbell and Joe Julier, "The Social Design Methods Menu: A resource for social innovators and entrepreneurs" (The Young Foundation, 2012).

Analysis of existing design research methods

An abundance of design research methods exist, so that's where we started. We first looked through a variety of existing tools to understand what type of insights the tools revealed.[1][2][3] We also considered what kind of experience the tools would create for the participants. We then organized a select group of these tools into five categories (listed below). The categories were informed by what we identified as important qualitative topics related to the issue of child safety and guns.

It was important for us to recognize that these research tools do not serve as an absolute, quintessential method to follow, but instead provide a new lens to look at complex problems and withdraw meaningful qualitative insights. The categories include:

Emotional probes
Emotional probes reveal the emotions, attitudes, and mental models toward a given system, service, relationship, or product. It is valuable in the problem framing process because it helps researchers understand the context and position of the stakeholders.
Examples of design research tools: picture cards, semantic differentials, diary studies, image boards

Understanding the ecology
Understanding the ecology of the issue is vital to making sound assessments and inferences. By having a better understanding of the macro-level view of the problem, framing and solving for the issues will be easier and lead to holistic, sustainable insights and solutions.

Examples of design research tools: stakeholder mapping, personas, business origami, user journey maps

Representation and analysis
Appropriate representation and analysis of the data collected can look very different for varying types of information. It is important to find appropriate and unobtrusive methods to present and work through qualitative data and to withdraw meaningful insights.

Examples of design research tools: affinity diagramming, concept mapping, thematic networks

Possible futures
Tools that paint a picture for possible futures reveal snippets of ideas that are informed by reality. Major social implications for the future can be unveiled through critical assessments of the future and how the future came to be.

Examples of design research tools: storyboards, describe drivers of change

Desires
Tools that explore the desires of the stakeholders capture information that reveals needs and gaps. Desires can inspire solutions and are important to consider given the fact that people of communities are at the center of the problem space.

Examples of design research tools: surveys, graffiti walls

These tools have the potential to effectively gather qualitative data, but we recognized that the tools needed to be adapted to the particular context we are working in.

Design of our workshop: Adaptation of existing tools to context

After understanding the existing tools, we chose three to adapt and strategically arranged them into a workshop, explained below. The goal of this workshop was to gather qualitative data about safety and trust in Pittsburgh. We did not mention the idea of "guns" at all because we were trying to uncover the reason why someone feels unsafe or distrustful in the Pittsburgh community—which can potentially start a conversation leading to firearms.

Part One: Image Cards
Area of focus: What factors make someone feel safe? How are people feeling about safety and danger in Pittsburgh? Why are they feeling this way?

How it works: We spread out about fifty 2.5" x 3.5" image cards that served as a prompt to help draw out stories and reasoning, recall experiences, and evoke conversation at the table. We then asked the participants questions (shown below) and asked them to pick out up to three cards that represent their answer. After a couple of minutes, the participants were asked to share their responses.

We asked:

- What cards represent safety to you? What cards represent danger?
- What cards represent trust to you? What cards represent distrust?

The questions were kept broad to avoid directing the conversation into a narrow space. The images on the cards ranged from literal to abstract representations—including words, textures, and shapes. They served well as the first activity because it opened up conversations without uncomfortable spotlights on the participants.

Part Two: Prompt Cards
Area of focus: How do people envision the future of youth safety in Pittsburgh and what can we do to accomplish this?

How it works: The prompt cards were presented in four categories: community, trust, risk & danger, and safety. There were sixteen cards from each category spread out on the table, allowing the participants to pick and choose cards that resonated with them. They were asked to fill out the cards with a variety of statements and questions, such as "I would feel safer on the streets if we had... because...."

The prompt cards served as probes for emotional, attitudinal, and perceptional information. As for the visual design, the cards were designed to be approachable, using handwriting for the questions and simple color blocks to visually differentiate the categories.

Part Three: Clustering
Area of focus: What common themes run through the participants' answers? What themes stand out to the participants?

How it works: After the participants filled out the prompt cards, we asked them to share a few that stood out. We then laid out everyone's completed prompt cards to find common themes among them. Participants and facilitators clustered related prompt cards in groups, eventually forming themes. The themes such as "reliable people" were written down on sticky notes so it was easy to move around while making connections.

Clustering helped us understand connections between seemingly unrelated things and to identify recurring themes. These insights, with further analysis and synthesis, would reveal opportunities for improvement and gaps or needs that could be fulfilled.

safety

I would feel safer if...
People take action when they see
something obviously wrong. Too
many bystanders but no one stepping
up.
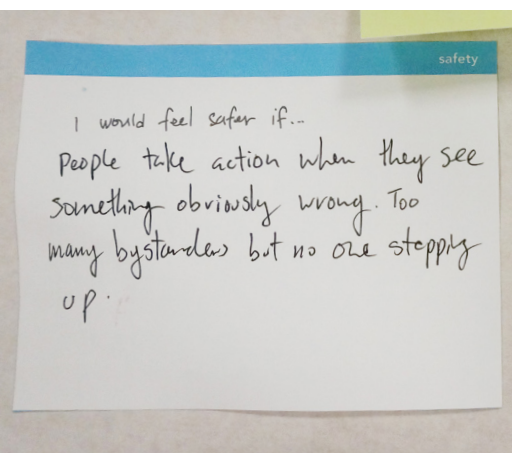
Testing our workshop

We spent an hour conducting this workshop with four Pittsburgh residents to test our adapted tools. To give a sense of how the workshop was planned, here is the schedule:

Schedule

- Introduction (5 min) - This included who we are, why we are holding the workshop, what value the participants bring to the project, what the participants should be expecting for the next hour, and how the information we collect from the workshop will be used.
- Image cards (10-15 min)
- Prompt cards (10-15 min)
- Clustering (5-10 min)
- Wrap-up (5-10 min) - We gathered written and oral feedback from the participants regarding the workshop.

Facilitation

Our goal was to create a comfortable environment for people to share information. We both acted as facilitators for the four participants in our workshop. This ratio created a good balance, as we wanted to ensure the participants didn't feel like they were being scrutinized by a group of researchers. It was important that we were transparent as facilitators, letting them know what to expect up front and thanking them for their valuable input.

To set a casual tone, we had light refreshments while everyone introduced themselves. Midway through the prompt card activity, we took a 3-5 minute break. This was not accounted for in our original schedule, but during the process we noticed a need for a conversational break from what felt like a long time of silent writing.

Documentation

To document our workshop, we had an audio recorder running throughout the session. Danielle was the timekeeper and primary note taker, writing down important insights or interesting points, while Eunice focused more on facilitating activities and taking photos. The documentation process needed to be unobtrusive to the workshop, so participants did not feel distracted or uncomfortable.

Participants engage in the image card activity that served as an ice breaker as well as an introduction to thinking about safety and trust in Pittsburgh.

Analysis and critique of tool and workshop

Measuring our success from the workshop was dependent on our ability to answer the original questions we posed with the data we collected. Below is our critical assessment of our workshop, which comes from feedback from our participants and our observations as facilitators.

Interesting observations
One of the participants expressed that the categories for the prompt cards led him to bias his answers to what would fit best in the category, instead of having his answers be unguided. Participants also asked if they could amend the prompt cards or provide multiple answers.

What worked well?
Participants expressed that they felt comfortable in the environment and at ease to share their thoughts. They also saw it as a positive experience to talk about things they don't normally think about. These topics included how much they know and don't know about Pittsburgh, the role of the family unit in talking about safety, comparisons of current neighborhood to childhood neighborhood, and differences between urban and suburban interactions. The participants also expressed that the prompts led them to think on a deeper level than a normal open discussion they would have, which was enjoyable. The selection of prompts gave the participants a range of topics to choose from, allowing them to respond to those that resonated with them.

What would we do differently?
A separate session focusing on exploring the possible futures of Pittsburgh safety would be valuable, because the participants tended to avoid the future oriented questions. Looking back, the future oriented questions seemed to be harder to answer than questions based on current happenings or past experiences.

Additional prompts regarding how people deal with risky and dangerous situations would have also been beneficial. We didn't get as much information about why people feel the need for protection, partially due to our time constraint. With one hour, the depth of our data was compromised because we wanted to

Participant provides written feedback on the workshop at the conclusion.

learn about multiple areas with multiple tools. In the future we would be more conscious of this balance between depth and time, possibly conducting fewer activities if we were in the same time constraints.

Conversations between participants were also limited. People agreed or disagreed with others, but didn't discuss to understand why there were similarities or differences in opinions. We could have played a larger role in pushing conversations deeper as facilitators by asking follow up questions when participants were sharing, and encouraging participants to discuss as a group. As a side note, having name tags could've helped the participants more comfortably address each other.

Analysis of data: Themes we learned about as important to Pittsburgh residents

By collecting information from participants in this workshop, we were able to learn about some Pittsburgh residents' experiences and attitudes. Looking at the themes that were drawn out in the last clustering session, we are able to recognize common threads and begin to draw conclusions. We only went through one pass of clustering, so they are broad themes. If we had more time in our workshop, it would have been productive to go through multiple passes of reorganizing the information or clustering it into narrower themes. The most significant themes included:

Reliable People

These cards express the associations the participants made with reliable people in relation to safety, community, trust, and risk. Their descriptions of reliable people included someone who is older and wiser than themselves, people who genuinely care about them, people who are predictable and always seem to make good decisions, people who are part of a community they trust, and people who are known to be knowledgeable about a particular topic. Through understanding why the participants associated these characteristics with people that are reliable, we can use this to inform characteristics of a particular campaign, program, or communication method.
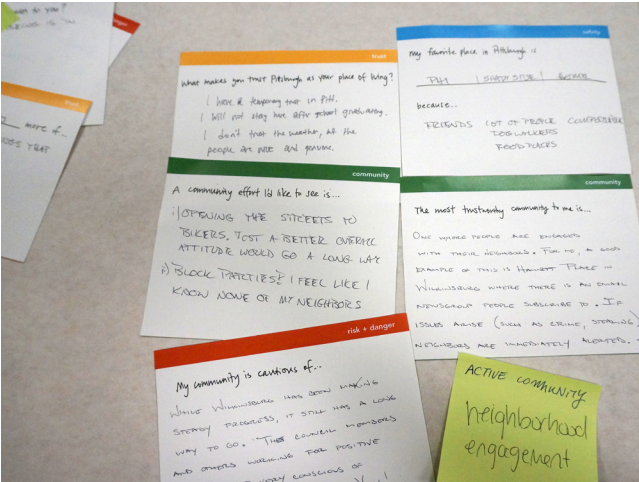
Active Community / Neighborhood Engagement

These cards mostly revolved around knowing one's neighbors and being aware of what is occurring around them. A few noted holding events as a way to facilitate community gatherings, such as block parties, while others noted infrastructure such as bike lanes. The ability to communicate with neighbors, whether through a formal system like email or through having more informal meeting spaces to converse with neighbors was brought up in conversation. We also uncovered participants' desires to be conscious of potential problems, such as gentrification, and to take a proactive rather than reactive stance.

Feelings and Perceptions

These cards were mostly about what caused someone to feel

in danger or uneasy. From this we uncovered what danger means to the participants, which included potential for either physical or mental harm. The role and relationship between the residents and law enforcement officials also came up. Notably, one of the participants mentioned the lack of understanding and communication between students and police. The dangers of walking alone at night were also mentioned, along with the concern that, while there are services to help avoid this, they are not utilized as much as possible. Many of the feelings of danger came not from participants' own experiences, but from a friend's experience. Knowing someone who was in danger in the same area or city as the participant lived directly related to their perception of danger there.

Conclusions

Trust plays a crucial role in relationships among neighbors, friends, government officials, and law enforcement. Perceptions are derived from personal experiences, as well as significantly from the experiences of those we trust. People who are reliable, known personally, perceived to be looking out for others as much as themselves, and who have a particular specialty or knowledge base often fill this role.

What's the value of this?

The workshop conducted shows a glimpse of the kind of valuable insights that can be gathered from community members — the people who are directly impacted by safety measures in Pittsburgh. The conversations took the form of discussions, not debates, allowing us to discuss issues that are highly polarized in a productive manner. The tools used helped facilitate discussions about safety that we don't normally think too much about. Engaging with other community members opened up the opportunity to see things from a neighbor's perspective, and gave context to the space of safety in Pittsburgh.

On a more logistical level, this workshop provided an example of how to adapt an existing method to a particular context. Understanding key considerations, such as creating an appropriate environment for the participants and unveiling root causes of issues, we gain a better grasp of the data and its implications.

What's the next step?

There are a variety of directions that can be taken with this information. The themes that came up can be used as the topic for more focused research, such as another workshop where more in depth and directed conversation would occur. In contrast, we could use the themes as the topic for further quantitative research to see if these opinions hold true within a larger sample of Pittsburgh residents. There are also an infinite number of variations that can be explored, such as holding the workshop with different demographics of people or within different neighborhoods, allowing us to compare the information that comes from people with different experiences and backgrounds.

StoryShare *Russell Tucker*

A combined qualitative and quantitative approach to sharing narratives about gun violence.

The Scenario of Gun Violence

When presenting information to the public about emotionally charged issues such as gun violence, disaster relief, or disease research, two typical approaches are used. One is to use personal narratives to show the human side and emotions behind the issue. The other is to use statistics and big numbers to show the scale of the problem. Portraying individual stories shows the audience that the issue at hand affects real human beings in a very vulnerable way; with their suffering being largely evidenced. Displaying big numbers tells the audience that the issue is far reaching; that many people are afflicted by the same problem. There are real limitations when only one of the two tactics is employed. Emotional empathy can be wasted without convincing the audience that the issue is large and requires interjection, and knowledge of a large issue is useless without emotional motivation to act.

StoryShare

StoryShare is a website that combines those two methods of personal stories with statistical data. It is a portal into user-generated content, where citizens of Pittsburgh can share their stories of gun control whilst also answering a number of demographic questions, thus enabling the collection of a large amount of statistical data. The stories turn the issue into a relatable experience to other readers, and the statistics show readers the scale of the issue. The goal is for these two combined methods to act as a communication tool for the city of Pittsburgh and provide a stimulus for citizens of Pittsburgh to take some form of action in the gun control space.

The Purpose of StoryShare

Using the two methods effectively enables readers to realize that the issue of gun control is large and important. Users can start to have intelligent conversations with other Pittsburgh citizens about the topic. It may also enable those who are otherwise silent to have their opinions on the matter heard. This process could manifest in an example as simple as a reader trying to learn more about Pittsburgh's gun laws, or as expansive as a reader starting to lobby for better gun control laws. StoryShare should educate, motivate, and inspire the community of Pittsburgh to action.

StoryShare allows citizens of Pittsburgh to read others' stories, see them visualized, and write their own stories.

StoryShare

read	write	see

Incidents of gun violence are tragic and often leave more than just the victim with a lasting impact. StoryShare is a place for you to share your story and experience the stories of every other citizen of Pittsburgh. Read others' stories about their experience with gun violence, See the wide-scale impact of every story combined, and Write your story to share with others and have your voice heard.

Read

Lorem ipsum dolor

Consectetur adipiscing elit. Proin et fringilla nisl. Curabitur placerat mi a ante ullamcorper dignissim. Praesent commodo tellus nulla, sit amet rutrum libero. Morbi dolor lectus, varius sodales

See

gun type **WITHIN** crime type

crime type vs. gender

Read

Citizens of Pittsburgh have recorded their experiences with gun violence through their own personal narratives. They've written a full account of the event in question, and can also share a picture and statistical information about the event and the people involved. Here you can experience their stories and see what they've seen.

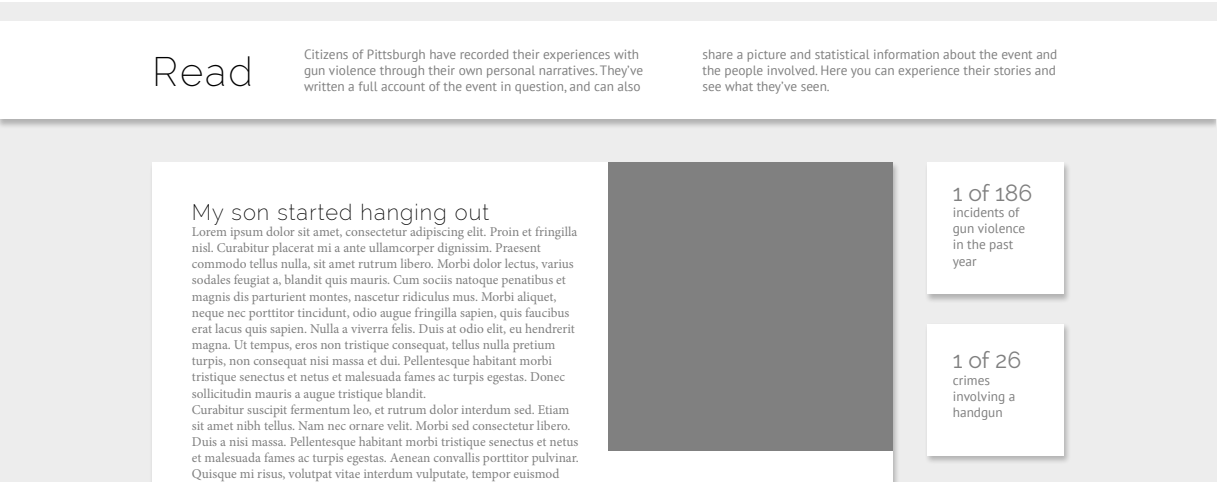### My son started hanging out

Lorem ipsum dolor sit amet, consectetur adipiscing elit. Proin et fringilla nisl. Curabitur placerat mi a ante ullamcorper dignissim. Praesent commodo tellus nulla, sit amet rutrum libero. Morbi dolor lectus, varius sodales feugiat a, blandit quis mauris. Cum sociis natoque penatibus et magnis dis parturient montes, nascetur ridiculus mus. Morbi aliquet, neque nec porttitor tincidunt, odio augue fringilla sapien, quis faucibus erat lacus quis sapien. Nulla a viverra felis. Duis at odio elit, eu hendrerit magna. Ut tempus, eros non tristique consequat, tellus nulla pretium turpis, non consequat nisi massa et dui. Pellentesque habitant morbi tristique senectus et netus et malesuada fames ac turpis egestas. Donec sollicitudin mauris a augue tristique blandit. Curabitur suscipit fermentum leo, et rutrum dolor interdum sed. Etiam sit amet nibh tellus. Nam nec ornare velit. Morbi sed consectetur libero. Duis a nisi massa. Pellentesque habitant morbi tristique senectus et netus et malesuada fames ac turpis egestas. Aenean convallis porttitor pulvinar. Quisque mi risus, volutpat vitae interdum vulputate, tempor euismod

1 of 186 incidents of gun violence in the past year

1 of 26 crimes involving a handgun

victim's income **WITHIN** crime type

Similar Services in Narratives and Statistics

Other websites and services have similar functionality, either with individual stories or large statistics. CNN iReport allows everyday users to post their own written news stories. The user experience is open and non-restrictive, allowing users to feel very self-driven and very inclined to write a large number of stories. Users that are invested in iReport are able to have informative conversations about the content, although users that don't write and just read won't be as connected. Meanwhile, Periscopic, a firm that specializes in data visualization, created an interactive site of visualizations about gun deaths and life expectancy. The visualizations effectively show how many people that are affected by gun violence and allow the user to explore the information by playing with filters and options. It is a relatively empathetic visualization because it shows each death's projected life expectancy and even a quick summary of the shooting, giving each data point just a little bit of human reference.

Unrelated to gun violence, Amazon's system of rating other users' ratings is a great example of mixing large statistics with smaller, relatable data points. Users' ratings for any given product immediately give that product both some quantitative and qualitative feedback, a rating and a written review, after which other users can note how helpful that review was. At any point on Amazon.com, you can see large scale quantitative ratings, qualitative descriptions, and quantitative confirmations for that qualitative information, so that both the ratings and the reviews can be as helpful as possible.

User Experience of StoryShare

On StoryShare, citizens of Pittsburgh can read about other citizens' stories of gun violence. The stories are the basic building block, and serve as the first qualitative point of data. When users write their own stories about gun violence, they are given the opportunity to write as much as they want just to
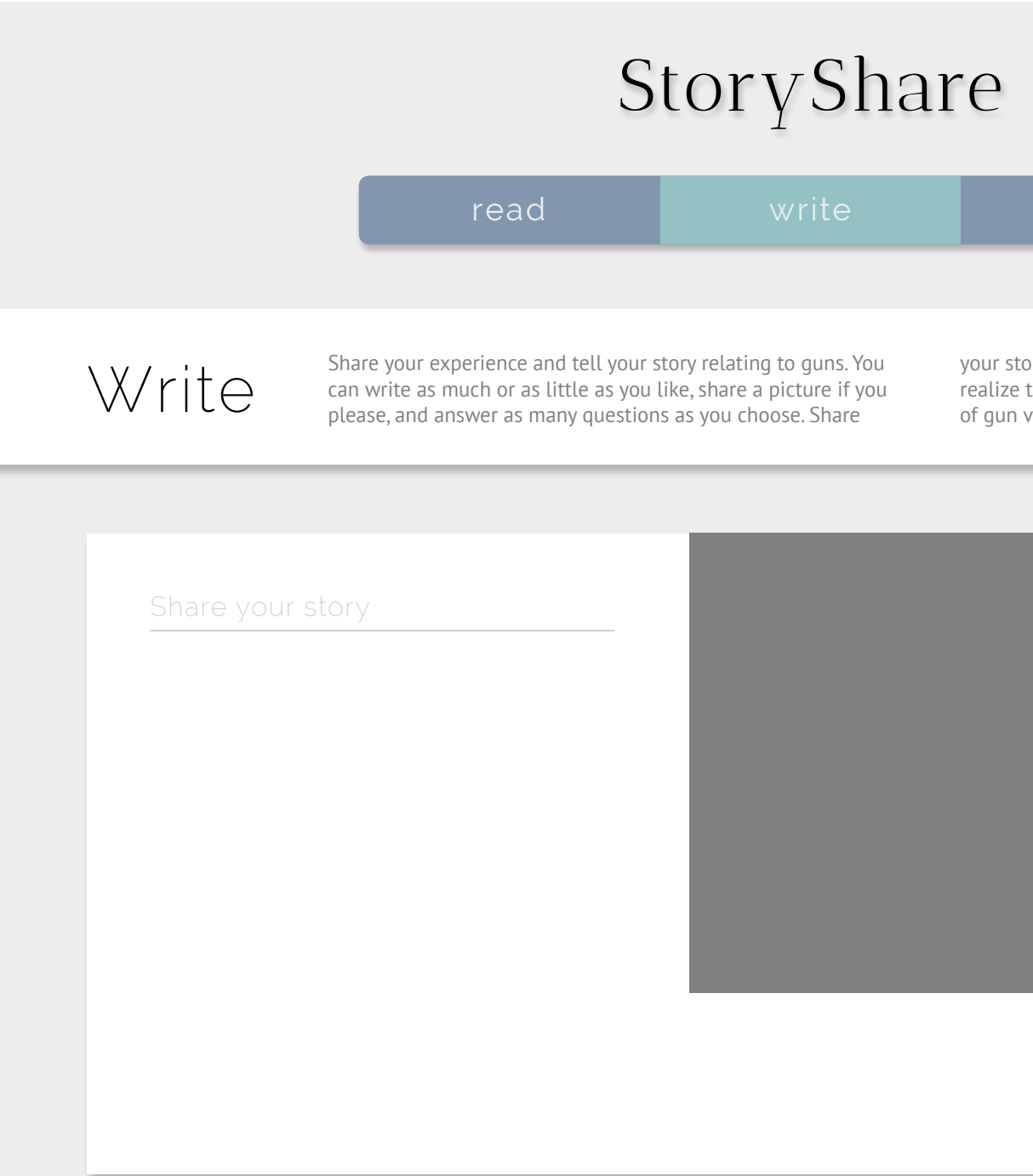
get their story out. They're also asked a number of demographic questions about the events that took place and the different people involved in it. This creates quantitative representations of the qualitative data through demographics such as race, gender, age, type of gun, type of crime, etc. The site then takes this quantitative data and assembles visualizations to graphically show the relationships between the demographics. The visualizations and the stories that supply the data for them are also linked, so the user can easily see the juxtaposition between the individual story and the large statistical data. When reading stories, users can also note stories that they "connect" with. This creates the quantitative support for the qualitative stories, showing which stories are most popular, which stories readers liked the most, or even which stories an individual user likes the most.

Conclusion

For an emotionally charged issue such as gun violence, it is important to demonstrate to users both the emotional, human side of the issue, so that they can empathize with the issue, and also the large statistical side of the issue, so that they see how wide reaching the issue is. StoryShare is a site that intelligently combines these two methods into a community tool for citizens of Pittsburgh. Users can go to StoryShare to read other peoples' stories about gun violence, write in their own story with as much information supplied as possibly, see stories turn into statistical data and vice versa, and vote on and see the stories that readers connect with the most. This uses a system of qualitative data, with quantitative evaluations on a large scale, and separate quantitative confirmations for each qualitative data point. Using these methods effectively creates a community tool that allows citizens of Pittsburgh to begin to have conversations about gun violence. StoryShare will educate, motivate, and inspire citizens of Pittsburgh to take action against gun violence.

Write

Share your experience and tell your story relating to guns. You can write as much or as little as you like, share a picture if you please, and answer as many questions as you choose. Share

Share your story

Share your Narrative *Michelle Guarino*

Building empathy through the collection of narratives for problems that are generally seen as black or white.

While researching different perspectives on guns, people find it easy to argue about flaws and statistics, but statistics lack empathy and stories. Is it possible to get the people from opposing sides to understand each other's point of view through their own experiences? This method explores storytelling and the ability for authors to separate their opinion from their experience, by creating a space that promotes collaboration of perspectives and building empathy into the gun discussion. In short, I asked people to share, with me and the public, about any experience they've had with a gun.

I chose to collect people's stories via two methods: one on the local scale through postcards, and the second through the digital technologies of blogging. By exploring these two methods there was a larger capacity to engage a broader, non-place based audience as well as a local grassroots population.

These stories become alive when someone reads them; if they aren't shared their meaning is wasted. In order for this method to be successful the stories must be shared, which can happen through a variety of means, depending on the goal and purpose in which this method is used.

Collecting Narratives Locally

On April 2nd, I sent out 1000 postcards to the households surrounding Carnegie Mellon University to hear their stories, but also to see whether or not people within Pittsburgh care about the issue enough to fill out a postcard and mail it back. I also left two stacks of postcards in two different locations around Pittsburgh to give people a chance to pick them up if they were interested.

I determined local scale success by how many letters are received, the speed in which they are sent back, if they lead people to the website and if it starts conversation. So far I've received postage from 24 CMU Neighbors; overall a low response rate.
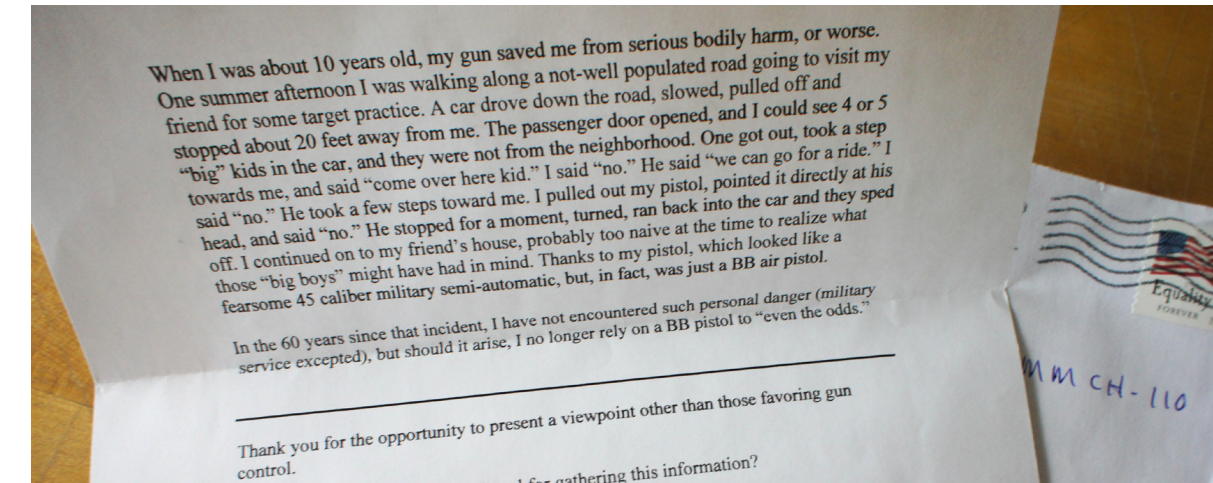
Collecting Narratives Online

I also created a website, www.shareyournarrative.wordpress. com, where the stories are shared permanently for the public. Using Wordpress I was easily able to create and manage a website where I could publicly display the postcards and stories I received. It also acted as a place where people could submit a story online if they wanted. The website enabled me to reach a wider audience that wasn't possible with the postcards. In addition, Wordpress allows tagging and filtering, which I used to gauge interest in each story. I could also see how long that interest lasted and in what country visitors were located.

Once the site was made, I asked some students from CMU to write a story themselves to pre-populate the site. With examples already on the site, people who were directed to it from a post card of link would know what to do + how it works.

On March 28th I made the website public and shared the project as an event on Facebook with all of my contacts (around 600 people). I debated sharing it as an event or a status. Sharing it as an event makes it stay on someone's homepage longer than a status and also asks them to participate, so if they accept they are held accountable socially. A status, on the other hand, can generally be overlooked. As people started to look at my event I began to receive stories, followers and a lot of likes.

A letter I recieved from a Carnegie Mellon University neighbor.

When I was about 10 years old, my gun saved me from serious bodily harm, or worse. One summer afternoon I was walking along a not-well populated road going to visit my friend for some target practice. A car drove down the road, slowed, pulled off and stopped about 20 feet away from me. The passenger door opened, and I could see 4 or 5 "big" kids in the car, and they were not from the neighborhood. One got out, took a step towards me, and said "come over here kid." I said "no." He said "we can go for a ride." I said "no." He took a few steps toward me. I pulled out my pistol, pointed it directly at his head, and said "no." He stopped for a moment, turned, ran back into the car and they sped off. I continued on to my friend's house, probably too naive at the time to realize what those "big boys" might have had in mind. Thanks to my pistol, which looked like a fearsome 45 caliber military semi-automatic, but, in fact, was just a BB air pistol.

In the 60 years since that incident, I have not encountered such personal danger (military service excepted), but should it arise, I no longer rely on a BB pistol to "even the odds."

Thank you for the opportunity to present a viewpoint other than those favoring gun control.

I gauged success online by the number of story submitted, the interest of followers, likes, reader count and how the site is shared among others online, and the discussions it creates. In total I've recieved 100 likes and 8 followers so far, and 16 stories submitted through the Google Form; overall a steady response.

Sharing Narratives

Because the studio was only one semester I only shared stories through my social networks, the Wordpress reader, as well as personally sharing stories with friends. However there are many ways the stories collected can be shared. Some possibilities include:

- A web presence by sharing stories through a Facebook page, Tumblr, Wordpress;
- A story exchange by setting people up to receive stories once they submit one;
- A chain mail or pay it forward email;
- Posters for people to write on and share;
- Stickers to share them with people and places;
- Packaging, for example for this topic area, gun packaging that shares the stories of both sides;

A postcard a student wrote where he listed over ten short stories.
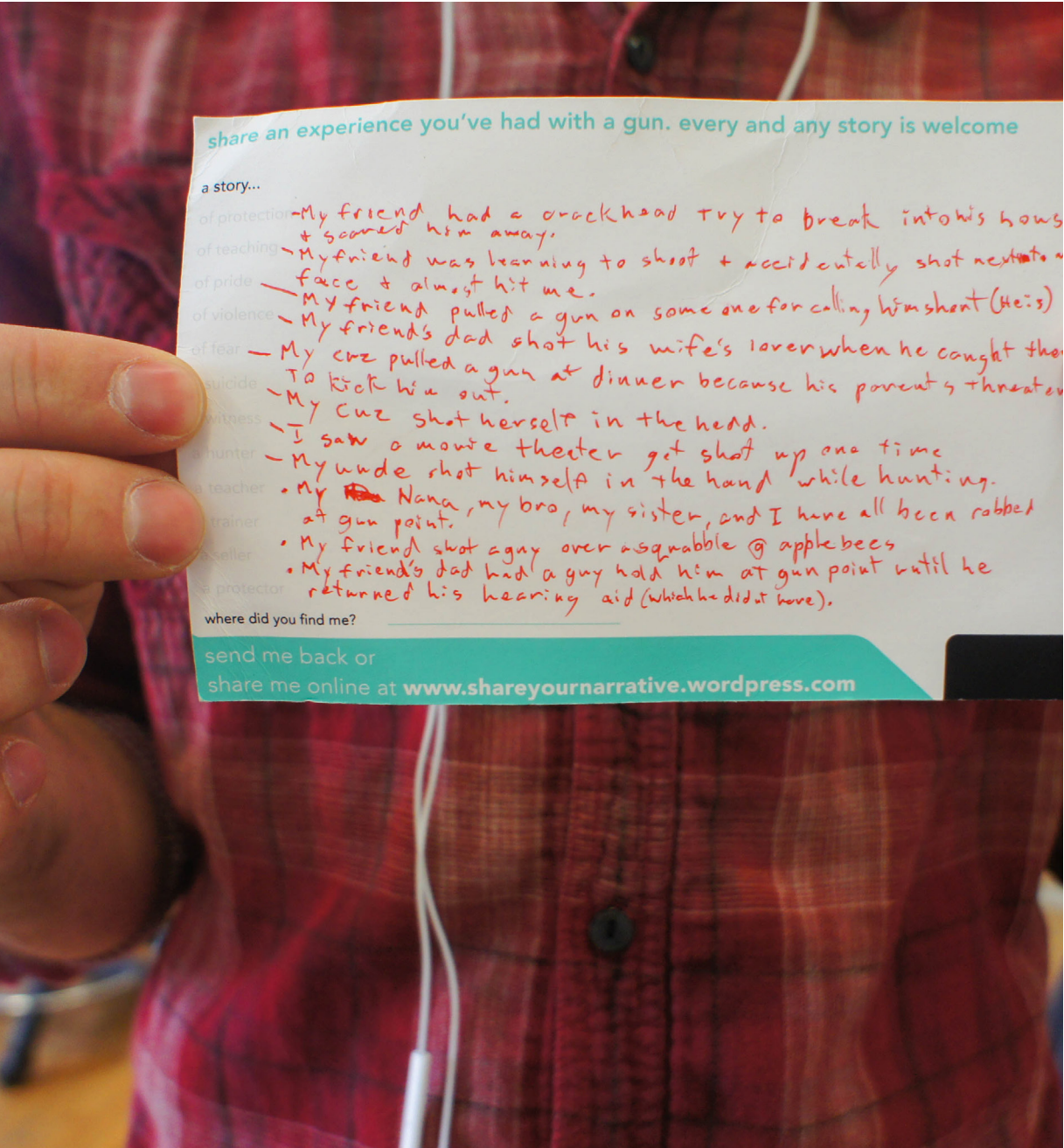
The www.shareyournarrative.wordpress.com website populated with 40 stories.

The Reddit discussion about Share your Narrative.

Unexpected Occurrences

The Use of Reddit

One of my Facebook contacts took my project and shared it on Reddit, a website where people up vote and down vote anything. They shared it on two different categories: guns and srs (shit reddit says) discussions. People from Reddit started to discuss the project, how they felt, or just voted if they liked it or didn't like it. It was a great way to see people take interest in the topic and explore it themselves. Reddit became a more effective sharing site than Facebook because it relied upon interest and curiosity, not whether I knew the person.

Separating Opinions and Stories

After the first 15 narratives, a few authors started to share the stories and included an ending paragraph that directly stated their opinion, even though their narrative naturally assumed the role of sharing their opinion. I spoke with several studio mates about how this was an interesting occurrence because people were struggling to separate the two. When opinions become outright, it may create the opportunity for people to argue, but this is not what I observed; people didn't blast it with comments.

Potential Problems

Acquiring Responses

Collecting stories only works if people respond; without a response there is nothing to be shared. If there is no interest, this method will eventually die out. However the number of responses will show if the topic is of interest to people on both the web and postcards. If a postcard takes a lot more effort than submitting online, it demonstrates that someone truly cares about the subject matter enough to mail a letter back to me about it.

Acquiring a Variety of Responses

There is a chance that the narratives received will be one-sided, so it is crucial that the medium allowed people of all opinions to feel comfortable sharing. The key is to actively reach out to both sides without favoring one. Keep in mind that the absence of an opinion may say something as well and you may be able to draw different conclusions.
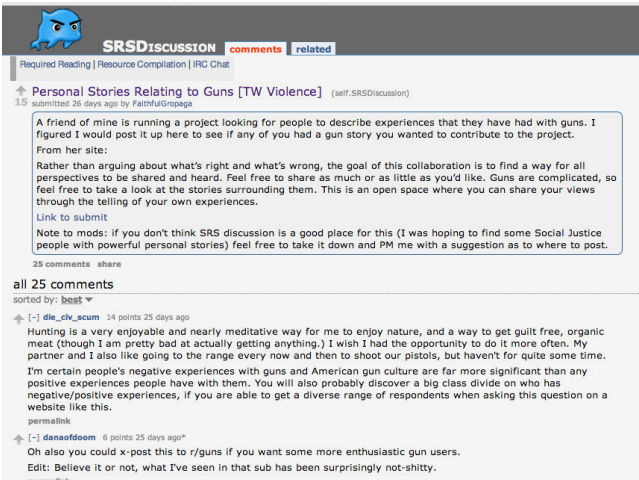
Keeping Interest: Comparing Two Approaches

On the web, by April 7th the website started to lose interest, with only a couple of views a day. Total I have 100 likes, a few followers, and I still recieve a story from time to time.

Locally, by April 29th, I stopped receiving letters. It is possible that more may show up, but without continuously seeking out the community it's unlikely that there will be more responses. This is a method that needs continuous attention to reach out to people to participate.

Conclusion

This method provides a large opportunity to aggregate information from different sources. After a certain amount of time, acquiring responses became my biggest challenge and the website required a lot of maintenance. In order to expand my collection of stories I submitted an Editorial Opinion to the Pittsburgh Gazette and I will continue to experiment with a variety methods of sharing. The method isn't very revolutionary nor innovative, but it aggregates information and interprets a problem in a new way. It's not about changing minds; but instead about starting an open conversation, so that maybe in the future we will start to think about social issues from other perspectives to communicate more effectively.

Fiction & Firepower

Anna von Reden, TA

A meditation on the role of the gun as a symbol in the arts, and our obligation to ask ourselves tough questions.

I have a confession to make, one that will surprise nobody who knows me even moderately well: I've been having trouble writing this piece, because, at any given moment, I would prefer to be writing fiction. Creative writing has always been my personal way of tackling complex problems and painful subjects. Granted, the majority of my work sits on the 'realer' side of magical realism, but it's very hard to find a topic more startlingly *real* (and simultaneously less magical) than that of gun safety and children. Trying to confront that reality for the last three months wearing my designer hat, stripped of wild metaphor and any semblance of dramatic structure, has left me exposed, and filled with doubt.

I should note, before I go any further, that this isn't a summation of statistics, nor a neatly crafted argument with an ultimatum and well cited sources. It's not even a 'method' in the true sense of the word—certainly not by the typical standards of design. If anything, it's a series of confessions: a sequence of anecdotes from my own life, as I've tried to piece together the purpose of violence—and in particular gun violence—in the art I consume and the art I create. It's a reflective piece. As the teaching assistant for this course, I've been surrounded by a studio of engaging, creative, envelope-pushing projects intended, by-and-large, to cause externalized reactions from the community. We as designers construct artifacts for others to grapple with, architect scenarios for others to live, or ask questions for others to

answer. Much as we sometimes fall famously prey to thinking ourselves 'the user group' of our own creations, it's seems rare that we really try to provoke the same unrest within ourselves that we aim to provoke in our communities. What follows is not intended to provoke much of anything in anyone, aside from, perhaps, the wherewithal to take a similar introspective dive.

I have a second confession to make: when I first met Laurene to discuss my teaching assistantship for the semester, I knew I'd be working with a senior studio, but very little else. When she told me that the class would be tackling the issue of gun-control and children, my first reaction was enthusiasm. In the wake of the Newtown shootings, there couldn't have been a more timely and deeply-needed design intervention. However, it was my second reaction—as I let my gaze dart suddenly downward—that was more powerful, and has left a longer lasting impression. Cue the paralyzing self-doubt that I mentioned earlier.

It just so happened that I'd blindly chosen a particular shirt to wear that afternoon: a shirt depicting a revolver and a butterfly knife hanging from a string of rosary beads. Sensationalist? Absolutely. And as Laurene and I sat talking about studio logistics, I found that I suddenly could not wrap my head around *why* I was wearing such a shirt, or why I had bought it, or why I liked that shirt so much (secret: I still like it, but I'll get to that).

The previous sentence is actually a little inaccurate. I do know exactly why I bought, wear, and enjoy that shirt. It reminded me of the protagonist of my longest piece of fiction: a man who struggles with the complex relationship between faith and violence, following society's introduction to a drug that alters a person's ability to believe in things. When I saw the shirt in the store, I was immediately interested in the juxtaposition of such a strong religious symbol and symbols of violence. After all, that's exactly what they are: *symbols*. I'm no more pro-gun than I am Catholic (I'm Lutheran, if anyone is keeping score), so I wasn't relating to either image with an explicit piece of my identity. The pull was more subtle than that—a reminder of what strong and what instantaneously weak creatures we can be, and of the strength and weakness that lurk quietly in both objects. Design

would probably describe this as clever use of semiotics. I tend to think about it as the root purpose of art: shock, not for shock's sake, but for the sake of the quiet meditation that follows.

Let's tumble out of that philosophical cloud and back into the design studio where I sat with Laurene. What I *really* couldn't wrap my head around, in that moment, was why I suddenly felt compelled to argue that guns serve enormous purpose as symbols in the arts, and why I simultaneously felt so *guilty* about wanting to make that argument.

> The pull was more subtle than that—a reminder of what strong and what instantaneously weak creatures we can be, and of the strength and weakness that lurk quietly in both objects.

In the weeks that followed, I found myself becoming paranoid. I began doing exactly as a popular internet meme these days so adamantly urges: looking at my life, looking at my choices—looking, for starters, at my Spotify library. I'm definitely not a curator of the world's most uplifting music, but I suddenly wondered how many songs in my current rotation mentioned violence, and, more specifically, guns. The prevalence of conflict in the songs I listen to is more-or-less 100%. I'm not sure

what that says about me, beyond that I tend to use songs as inspiration when I write, and I write about conflict. (As a side note: one could argue it's difficult to write something meaningful, that doesn't contain some form of conflict, since conflict is what drives plot and evolves character.) References to guns, however, were much harder to come by: four mentions in a current playlist of 78 songs. I'm both unsure and curious about how this ratio stacks up with other people's music libraries, but I have to admit that I was relieved to realize that the figure wasn't much higher.

Half of the time, if we call something 'a loaded gun', we're not even paying attention to the gun as an object.

The more intriguing thing I noticed during this exercise was the manner in which guns were referenced in those five songs. None of them are explicit; all are metaphorical. The most direct reference depicts a tense situation as 'a loaded gun, ready to go off at any minute.' Another song makes an ambiguous request to 'blow me away,' where it's strongly implied that the lyricist isn't looking to be impressed. The third is an instrumental piece called 'Fire Power' with sampled noises reminiscent of a modern action film, including car tires screeching across pavement. And finally, a haunting song by The Boxer Rebellion never actually mentions guns at all, but bears the title 'Semi Automatic', a decision that moves the piece from someplace opaque toward a discussion of martyrdom, or perhaps suicide.

The number of metaphors our society has developed to describe the use of a gun says volumes about the degree to which weapons have permeated the human subconscious. There is a notion in cognitive linguistics called a *conceptual metaphor* or

embodied metaphor. Embodied metaphors are image structures that arise from people using their own bodies and physical understanding of reality to make sense of abstract thoughts. The theory attempts to explain why we relate 'love' (abstract) to 'hunger' (physical pain), or to 'a battlefield' (physical space). It is also begins to illuminate our tendency to use guns as phallic metaphors, embodying notions of power, pleasure, pain and sexuality. Notice that in all of the previous examples, lyricists are not using feelings and experiences to help us understand guns. They use the gun to help us understand something else about ourselves: stress, over-commitment, despair, power, thrill, sacrifice—as if we as a species know so intimately what it is to use a firearm that we can draw comparisons to make meaning of these abstract concepts. Whether or not we truly have that intimate knowledge is up for debate.

But at some point in our history, a large majority of society probably *did* know what it felt like to use a gun. It's thought that most of these metaphors became embedded in our minds, and subsequently our societies, very early in our history. Most gun-related metaphors probably entered language at the same time as firearm technology, much in the same way the floppy-disk image became a permanent visual metaphor for 'saving' digital files, simply because floppy-disk technology arrived at the time that saving files first became an idea.

We tend to use embodied metaphors unconsciously. When we say something like 'the days ahead won't be easy', we're taking an abstract concept (days, time), and attaching an adjective (ahead) that translates days into space that we can physically navigate; the days are, literally, in front of our heads. The concept is no different with guns. Half of the time, if we call something 'a loaded gun', we're not even paying attention to the gun as an object. The object has receded to the backdrop, and all that is left is the horrific potential energy the gun embodies—and that we needed to communicate.

And we do need to communicate these ideas, don't we? People, as intelligent creatures, possess endlessly convoluted and powerful feelings, and, as *social* creatures, have a visceral

need to communicate those feelings to others. One may feel tempted to start a crusade, exterminating weapon metaphors, war metaphors, or other taboo comparisons from our language. Logic says that if we weren't always thinking about guns, we wouldn't pick up guns. That may be true, to an extent. However, I can't help but wonder, if all linguistic references to weapons were eradicated, what we would inevitably pick up *instead.* The abstract thoughts—pain, hunger, anger—aren't going anywhere, and conceptual metaphor theory suggests that we need something physical to attach to those feelings in order to make meaning of them, manipulate them, and learn from them.

One could argue that the role of the artist is to make these associations wisely and poignantly, to illustrate the complexities of our thoughts by probing the relationships between feeling and physicality that many people recognize but can't immediately articulate. One could also argue that the failure of the modern artist is that we've begun to make these connections so liberally, so *unwisely*, that we no longer understand meaningful relationships properly at all. In a way, our arts culture has developed much like neuroscientists believe the brain of an autistic child does: forming endlessly optimistic synaptic connections and then, at some pivotal moment, neglecting to prune them down to a network capable of properly analyzing the state of social reality.

And so, we continually fall back on guns, knives and swords as metaphors for our feelings, to the point where they have become a literary cliché, and don't help us understand anything deeper about ourselves. It's possible that I felt guilty about arguing for the necessity of guns as literary symbols, not because guns are horrific, terrible weapons that should not be mentioned, but because we've mentioned them so much they've ceased to be effective communication tools. Maybe I'm *gunning* for artists to find a more interesting way to embody the tragedy (and miracle) of the human condition.

I'm definitely not the first or the only artist to feel this conflicted. Actually, I'm fairly sure that the majority of the artists who produce the content I consume aren't particularly pro-gun

themselves. If anything, they use guns and other weapons in an attempt to explore the depths of human suffering, and caution their audiences against perpetuating the cycle of anguish by using violence as a means of retribution. I'm also fairly sure that most of them realize the delicate balancing act they are performing, but I would be interested to know how many writers, painters, filmmakers and other artists feel like they succeed in using weapons in ways that aren't gratuitous.

I can't help but wonder, if all linguistic references to weapons were eradicated, what we would inevitably pick up *instead.*

An interesting example of artistic conscience happened just last week. Bryan Fuller, one of my favorite television writers, and creator of the shows *Pushing Daisies, Wonderfalls,* and *Dead Like Me,* made the executive decision to pull from the air the fourth episode of *Hannibal,* his new NBC adaptation of the acclaimed serial killer story. The plot of the fourth episode involved a mother brainwashing her child to murder other children, and Fuller decided not to release the episode following the tragedy in Newtown, Connecticut, out of a desire to be "sensitive to the audience." He said the episode had originally been conceived as "an interesting exploration of a perversion of a family unit," and that the violence was intentionally "outlandishly horrific" so people could digest it as entertainment without being traumatized by the reality. "[Then] something outlandishly horrific happened in reality," Fuller continued to explain, "that took away from the entertainment value of the episode."

Much as I've always loved and continue to adore Fuller's work, his comments left me more than a little confused. Obviously, on one hand, his primary concern is entertainment. He makes it perfectly clear in his comments that he wants people to enjoy his shows, and that he wants, furthermore, to enjoy *writing* his shows, however gory and gruesome. And yet he clearly has a moral compass strong enough to prevent him from airing an episode that hits just a little too close to home.

I can't help but wonder, frankly, if perhaps his moral compass should be pointing in the opposite direction. Why is it alright to circulate media that uses violence and suffering to entertain, but shies away from approaching the topic in a way that is honest and raw? Are we really so afraid of audience's 'sensitivities', when we bombard them with 24/7 news-media coverage of actual events? Are we not thoughtful enough creatures to *want* to engage with more challenging and immediate fictional stories—to wrangle with them, face them head-on, and learn from them? In a way, Fuller's decision to pull his art from the air—particularly while leaving the rest of the show *on* air—can be construed as an insult to our strength as a species.

I also can't help but wish I could hear Fuller's full internal dialogue surrounding his decision. Maybe he was pressured by network executives. Maybe his comments summarize the full extent of his thoughts, but I doubt it. I doubt it because I've faced a similar decision in my own writing, and my internal dialogue was not that brief. Actually, it hasn't even ended.

Remember that protagonist of mine? The one who struggles with faith and violence, and motivated me to buy my provocatively-printed t-shirt? His story—my novel—has continually forced me to ask questions about the impact I am having on my audience. The work originally began with an encounter between the protagonist, Hale, and his lifelong best friend, Daniel. As federal detectives serving some kind of dystopian government where children are illegal, they were faced with a moral dilemma when Daniel found a toddler a closet during an investigation. Daniel tried to shoot the child based on protocol, and ultimately, Hale was forced to kill his best friend to save the little girl.

On the surface, the summary contains all the building blocks for classic story: a life-or-death decision with no out, a protagonist with a haunted past, a motive for a hero to rebel against the establishment—the list goes on. It's no wonder it sounds suspiciously like a scene out of the movie *Equilibrium*, or basically any other dystopian drama. It's also no wonder that it probably sounds painfully trite. I invented this scenario when I was about fourteen years old, after reading a mountain of books like *Crime and Punishment* and naïvely fancying my chances as the world's next Dostoevsky. I had no idea how much I had to learn.

Are we not thoughtful enough creatures to *want* to engage with more challenging and immediate fictional stories—to wrangle with them, and learn from them?

I was wise enough at the time, however, to realize I did have *some* things to learn. There's a famous saying: "write what you know." It's difficult to accurately portray people, places and scenarios we've never encountered. So, when I decided, as a teenage upper-middle-class white female, to try writing about a gun-wielding police bureau, I figured the responsible thing to do would be to learn as much as possible about guns. I recruited two friends of mine, both male: one of them a gun-owning civilian with an academic interest in weapons history, and the

other a graduate of an ROTC high school, and had them teach me everything I might need to make my fiction feel sincere.

I've continued to educate myself as I've continued to write the story, but I've found, over the course of a decade, that the more I've learned about the weapons, the *less* comfortable I feel writing about them. For a long while, the prologue of the story remained static, tacked on to the front of the tale like the exposed, misleading tip of an ever-changing iceberg. Soon, it wasn't the use of guns that bothered me about my work, but the opening scenario itself. I began asking myself why was I so blatantly using a child's life as a plot device. It mattered little that the child survived the encounter: putting the idea on the table seemed intentionally melodramatic without much purpose. The heart of my story had very little to do with children at all, much less violence toward children. It simply was a quick, tried, and true way to add some extra baggage to Hale, a protagonist who *already* had too much to ponder.

I yanked out the opening scene and my entire novel—ten years worth of ideas—began to writhe, and is still struggling to reshape itself. Maybe I wasn't working in a dystopian future. Maybe children weren't illegal after all. Maybe this story didn't revolve around a police force. Maybe the protagonist was an artist, not a cop. Maybe my message had very little to do with physical violence, and I was simply pinning my abstract notions of loyalty and loss to a tangible scenario because my adolescent mind hadn't yet learned a better way to express them.

An easier way to say this is: "Wow. Teenagers can be really, arrogantly, *hilariously* dumb."

That's not to say I now know everything, or that I've even really learned my lesson. Right after I tore the 'child + gun' scenario out of my story, I was crushed again by doubt. Perhaps, like Bryan Fuller, I was just shying away from an important issue. Maybe I was too scared to tackle the scene with the realism and tragedy that it merited. Maybe this was a sign that I didn't honestly have the tenacity to be a writer.

I honestly don't know the answers to those questions. I also don't

know that a satisfying answer exists. What I do think I know, is that the questions are absolutely worth asking. Whether one is a writer, a visual artist, a designer, an engineer, or an accountant matters little. As human beings, I think it's paramount that we relentlessly ask ourselves what foggy, formless thoughts we hold closest to our hearts, and what we do in the physical world around us to give meaning to those strange shapes. Is that a design method? I think it is.

I've attempted to share some of those foggy, formless thoughts with you in this essay, and I suppose another way I continue to quietly share them is by continuing to wear that t-shirt I was wearing while talking with Laurene. Even if, at the end of the day, the only reaction I receive is 'why would you wear that shirt?', it's a good start. It contains the question 'why'. And out of all things designers have to consider when tackling a problem as large as gun-violence—'who' and 'where' and 'how many' and 'at what cost'—the 'why' is possibly the most difficult to tackle, and also, maybe consequently, the most important.

Acknowledgements

Without the following people and organizations, this studio course would not have been possible:

Carnegie Mellon
Design

Falk Foundation

DESIS NETWORK Design for Social Innovation and Sustainability