5-2015

AURA: Social Impacts of Everyday Objects

Bijal Patwa
bkp7516@rit.edu

Follow this and additional works at: http://scholarworks.rit.edu/theses

Recommended Citation

This Thesis is brought to you for free and open access by the Thesis/Dissertation Collections at RIT Scholar Works. It has been accepted for inclusion in Theses by an authorized administrator of RIT Scholar Works. For more information, please contact ritscholarworks@rit.edu.
COMMITTEE APPROVAL

______________________________________________________________________________ Date:

Stan Rickel
Graduate Director and Associate Professor,
School of Design, Industrial Design

______________________________________________________________________________ Date:

Peter Byrne
Professor,
School of Design, Administrative Chair

______________________________________________________________________________ Date:

Bruce Leonard
Lecturer,
School of Design, Industrial Design
Abstract

Today, the relationship between subject and object has been reversed, and we are becoming more and more technology dependent, resulting in objects ruling us. The physical presence of people is losing its value. Small incidents or situations between strangers might lead to meaningful relationships. Everyday objects, such as a coffee table, salt-pepper shakers or phones are ubiquitous and are part of our lives in a way that influences our cultural and social behaviour. The effect these objects create is more important than the objects themselves. Hence the name “Aura”, for the objects created during my thesis. These objects have a way of creating interactions.

Different Auras explore various stages of interaction such as subject-object, subject-subject, object-object, and others. Auras try to form opportunities to allow this by using strategies such as playfulness, emotional instigators, usability or need. It is about the complete atmosphere created by people, objects, situations, interactions, and activities. This environment—that positively reinforces communication and possibly forms relationships—is what we are trying to achieve. Many decisions, feelings, thinking and actions depend on our environments rather than our inner selves. We act subconsciously because of the most subtle happenings around us.
Table of Contents

1. Statement 1
2. Introduction 2
3. Research 3
   3.1 Research, Analysis and Translations ........................................ 3
   3.2 Human: User Study ................................................................. 7
   3.3 Change in Human Behaviour: Influences and Effects ...................... 13
   3.4 Interaction ................................................................. 14
   3.5 Systems and Ecology ............................................................ 15
   3.6 Everyday Objects/Environment ................................................. 16
4. Directions 22
   4.1 Instigate Interaction .......................................................... 22
      4.1.1 Observations ................................................................. 25
      4.1.2 Translations and Inspirations ......................................... 26
      4.1.3 My Explorations/Ideation ................................................. 28
   4.2 Dematerialize ................................................................. 30
      4.2.1 Translations and Inspirations ......................................... 31
      4.2.2 My Explorations/Ideation ................................................. 32
   4.3 Accept Imperfections ....................................................... 33
      4.3.1 Translations and Inspirations ......................................... 33
      4.3.2 My Explorations/Ideation ................................................. 34
   4.4 Analysing Everyday Objects ................................................. 35
5. Final Concepts 36
   5.1 Aura 1 ............................................................... 37
      5.1.1 Usability and Interaction Design ....................................... 37
      5.1.2 Graphics ................................................................. 39
      5.1.3 Prototype ................................................................. 40
      5.1.4 Design Details ............................................................ 40
   5.2 Aura 2 ............................................................... 42
      5.2.1 Explorations ................................................................. 42
      5.2.2 Ideation ................................................................. 43
      5.2.3 Ergonomics ................................................................. 44
      5.2.4 Prototype ................................................................. 45
   5.3 Aura 3 ............................................................... 46
      5.3.1 Process ................................................................. 46
      5.3.2 Prototype ................................................................. 47
5.3.3 Design Thinking ......................................................... 48

6. Product Development and Testing ........................................ 48

6.1 Interactions and Usability Evaluations ................................. 49

6.1.1 Aura 1—Salt and Pepper Shakers .................................. 49
6.1.2 Aura 2—Phone Cases ................................................. 51
6.1.3 Aura 3—Coffee Table ............................................... 52

6.2 Production and Testing ................................................... 54

6.2.1 Aura 1: Mechanisms and Working .................................. 54
6.2.2 Aura 1: Engineering Drawings ........................................ 56
6.2.3 Aura 3: Engineering Drawings ....................................... 57

7. Bibliography .................................................................. 58

8. Appendix ...................................................................... 61

8.1 Figure Sources .............................................................. 61
8.2 Terminology ................................................................. 64
List of Figures

<table>
<thead>
<tr>
<th>Figure</th>
<th>Description</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>Figure 1</td>
<td>Domino Effect</td>
<td>3</td>
</tr>
<tr>
<td>Figure 2</td>
<td>Values</td>
<td>22</td>
</tr>
<tr>
<td>Figure 3</td>
<td>Instigate Interaction Introduction</td>
<td>23</td>
</tr>
<tr>
<td>Figure 4</td>
<td>My Observations</td>
<td>25</td>
</tr>
<tr>
<td>Figure 5</td>
<td>Translations and Inspirations</td>
<td>26</td>
</tr>
<tr>
<td>Figure 6</td>
<td>HAPTIC Exhibition A Tadpole Coasters B Cabbage Bowls</td>
<td>27</td>
</tr>
<tr>
<td>Figure 7</td>
<td>Piano Stairs</td>
<td>27</td>
</tr>
<tr>
<td>Figure 8</td>
<td>Ideation</td>
<td>28</td>
</tr>
<tr>
<td>Figure 9</td>
<td>Ideation</td>
<td>29</td>
</tr>
<tr>
<td>Figure 10</td>
<td>Dematerialize Introduction</td>
<td>30</td>
</tr>
<tr>
<td>Figure 11</td>
<td>Dematerialize Translations and Inspirations</td>
<td>31</td>
</tr>
<tr>
<td>Figure 12</td>
<td>Do hit chair</td>
<td>32</td>
</tr>
<tr>
<td>Figure 13</td>
<td>My Explorations/Ideation</td>
<td>32</td>
</tr>
<tr>
<td>Figure 14</td>
<td>A Wabi-Sabi Mug B Ant C Miya, candle bowl</td>
<td>33</td>
</tr>
<tr>
<td>Figure 15</td>
<td>My Explorations</td>
<td>34</td>
</tr>
<tr>
<td>Figure 16</td>
<td>Analysing Everyday Objects</td>
<td>35</td>
</tr>
<tr>
<td>Figure 17</td>
<td>Final 3 Auras</td>
<td>36</td>
</tr>
<tr>
<td>Figure 18</td>
<td>Concept Development_Aura 1</td>
<td>37</td>
</tr>
<tr>
<td>Figure 19</td>
<td>Concept Development_Aura 1</td>
<td>38</td>
</tr>
<tr>
<td>Figure 20</td>
<td>Concept Developments_Aura 1</td>
<td>39</td>
</tr>
<tr>
<td>Figure 21</td>
<td>Aura 1</td>
<td>40</td>
</tr>
<tr>
<td>Figure 22</td>
<td>Aura 1</td>
<td>41</td>
</tr>
<tr>
<td>Figure 23</td>
<td>Explorations</td>
<td>42</td>
</tr>
<tr>
<td>Figure 24</td>
<td>Direction 1</td>
<td>43</td>
</tr>
<tr>
<td>Figure 25</td>
<td>Direction 2</td>
<td>43</td>
</tr>
<tr>
<td>Figure 26</td>
<td>Ergonomics</td>
<td>44</td>
</tr>
<tr>
<td>Figure 27</td>
<td>Aura 2</td>
<td>45</td>
</tr>
<tr>
<td>Figure 28</td>
<td>Process</td>
<td>46</td>
</tr>
<tr>
<td>Figure 29</td>
<td>Aura 3</td>
<td>47</td>
</tr>
<tr>
<td>Figure 30</td>
<td>Aura 3</td>
<td>48</td>
</tr>
<tr>
<td>Figure 31</td>
<td>Interactions</td>
<td>49</td>
</tr>
</tbody>
</table>
Figure 32  Interactions .................................................. 51
Figure 33  Interactions .................................................. 52
Figure 34  Interactions .................................................. 53
Figure 35  Working A. .................................................... 54
Figure 36  Working B. .................................................... 55
Figure 37  Production Drawings ....................................... 56
Figure 38  Production Drawing ........................................ 57
1. **Statement**

My thesis focuses on the effects of everyday objects on culture and on the factors that change human behavior over time. Research and observations will determine some of the social impacts of design and how they influence personal change in individuals.

My approach towards the ideation will be to come up with values leading to positive changes that motivate people to practice more socially conscious behavior. My aim is to design products with human psychology as one of the factors in the design process. This will result in allowing designers to foresee the consequences of their work so they can design objects that have positive future outcomes.

Hence, the thesis would implement these aspects to create socially sustainable and responsible designs that improve health and life.

**Purpose**

To improve the social health of individuals and communities through everyday objects.
2. Introduction

Has the Digital Age caused people to become more and more introverted? Is there a fundamental difference between physical and virtual presence? How does a dependence on machines affect us? How will we as humans change in the future? What are the things that will effect these changes? As these questions bothered me, I started my research by investigating how human beings have evolved.

Archeologists have found evidence of the prehistoric origins of material culture. Early forms of our relationship with objects included an animistic appreciation of the physical world, such as believing feathers to be sacred or pebbles to have healing powers. Perfect necklaces made from ostrich eggs were used as gifts to cement social relationships between clans at the Kenyan site of Enkapune Ya Muta—Twilight Cave—about 40,000 years ago. Today the way we manipulate objects has become much more technologically advanced, but our existential and the frequently animistic utilization of objects remain unchanged. This indicates that it is an intrinsic part of human nature.\(^1\)

As mentioned in Jonathan Chapman’s book, *Emotionally Durable Design: Objects, Experiences and Empathy*, the event that most influenced the development of human species was neither the Russian and French Revolutions nor the introduction of the internal combustion engine. The revolution that made the biggest difference occurred on the savannah of east Africa half a millennium ago. Chapman terms it “The Cultural Big Bang,” which led to the development of individualism and materialism.\(^2\) Materialism was compatible with tribal life and did not hinder pair bonding, friendships or other vital social functions. The history of consumerism has shown that there is a relationship between change in culture and change in consumption patterns. Furthermore, it shows a move away from communal values towards individualism and materialism. It was not until very recently that the darker side of material culture was manifested, leading to extropersonal relationships, which engender feelings of personal emptiness.\(^3\) (Note that terms like “extropersonal” are defined in Section 8.2 Terminology.)

I wanted to study the factors that influence such changes and understand how all of it in turn, affects us. Through my research of past patterns and my findings of their resulting consequences, I came to understand that it is one huge domino effect. Cultural changes affect how we design objects and interact with them. These objects become part of our lives, affecting our social behavior, which in

---

2. Ibid., 58-59.
3. Ibid., 60.
turn influences our individual personalities. Maslow’s hierarchy of needs clearly suggests that humans are extremely social creatures. We have basic necessities which must be met for mental and emotional health. As a member of the digital generation, I have observed how everyday objects change our social behavior and who we are as individual human beings.

3. Research

3.1 Research, Analysis and Translations

![Diagram](image)

Figure 1: Domino Effect

After researching the topics of change in human behavior over time, social psychology, evolution of product design and its causes, systems ecology and its effects, etc.; I have constructed the figure shown above to represent how I understand the change takes place. According to my analysis this is how different elements are connected to each other or affect each other, forming a Domino Effect. Although, unlike the linear and single sided effect of dominoes, the effect here is mutual and interde-

---

ependent/correlated network of groups tipping into bigger changes—oscillating into the ripple effect as shown in the Figure. As the diagram is created with humans (Note: Text in blue color is associated with Figure 1) at the centre of it all, we can now view ourselves in relation to the bigger picture and see how it affects us. Let me explain some of the terms and concepts shown in this figure.

There are many different theories to explain why excess Materialism occurred. Some say it was because of lack of spirituality. Others say Materialism was an outcome of the Industrial Revolution and its overabundant production that led to excess consumption. Extreme overconsumption was out of control and led to devastating environmental decay. It also led to increased competition among companies and the development of new marketing strategies such as demand generation, sale targets, promotions, competitive analysis, etc. There were mass manufactured products everywhere, hyped by the advertising industry, resulting in a glut of billboards and banners creating visual pollution in cities. Products were more standardized and became focused on a larger market. This decreased their value. Design became practice without content, geared towards surface appearance. Design was used as a marketing strategy by organizations for financial success. The focus of design was on the ‘story’ of the object rather than how well it serves us (its function). How does this impact human beings?

As mentioned in Chapman’s book, Emotionally Durable Design: Objects, Experiences and Empathy, “There has been a move away from both intrapersonal and interpersonal relationships to a new mode of relations. The direction of this move has been to the surface. The resulting mode of relating is best described as extropersonal. This term is meant to describe an outwardly personal relationship. This outward focus denotes relatedness with the surface or exterior, as distinguished from the mind or spirit. As a result of excessive consumerism this extropersonal relationship is prominent.” Maslow’s hierarchy of human needs clearly states that we need love and a basic sense of belonging to both small and larger social groups. Replacing this need by superficial behavior or the virtual world leaves us with feelings of personal emptiness that we try to fill with the never-ending consumption of goods. Loneliness gets embodied as emotional hunger. Desire to engage in meaningful relationships with objects therefore comes from this emptiness, existing as a pointless effort to re-center oneself.

6 Ibid., 61.
9 Ibid., 60.
As we moved from modernism to post modernism in 1950, designers started giving meaning to the objects, way before function. Durability was not considered as a factor in the design process. Physical Matter was less important than the Idea.\textsuperscript{12} The design ethos ‘Form follows function’ was out, and ‘Emotional Design’ was in. Exploiting the feelings of emptiness experienced by people, design was turning into art, creating meaningful experiences through products. Design was used for financial profit and as a business strategy.

As designers start giving more importance to the surface quality of products and their marketing value, the real poetry of material culture fades away.\textsuperscript{13} Features or values that formed long term subject-object relationships such as durability, function, history, and personalization no longer exist. Moreover, relationships are formed based on false pretences derived from hyped-up marketing claims. Initially there is a honeymoon period where the consumer is excited about the new purchase and still full of curiosity. But ultimately the result is disappointment because of unreasonable expectations. When the everyday phase of the relationship with the manufactured object starts, the sense of an unsatisfactory experience makes the person move on to desiring and acquiring the next generation of the object.\textsuperscript{14} Objects are the physical forms of our true deep desires and our relationship with them is the reflection of how we behave in our personal and social lives. All these factors tell us who we are and how we live our lives.

Feeding off of this emotional instability, products are in fact deliberately made more fragile. They become part of our everyday life as we start needing them and depending on them. Everyday objects that engage the senses invade our lives and literally depend upon our care and attention in order to survive. Emotional attachment is formed based on mutual reliance and neediness.\textsuperscript{15} Humanizing objects or machines makes us lose the line between real and virtual, human and machine. We start craving perfection within ourselves, within relationships, within our environment, etc. Things like age, incompleteness, or dealing with problems that arise after the honeymoon stage bring us anxiety and sadness. We start taking medicines for depression, ADD, etc., instead of realizing that this is just life or the true reality of nature.

\textsuperscript{12} Ibid., 59.
\textsuperscript{13} Ibid., 62.
\textsuperscript{14} Ibid., 63-66.
\textsuperscript{15} Ibid., 72.
With the decreased life-span of objects, the pile of waste keeps increasing in the landfill. New business models such as ‘one-year smart phone contracts’ is driving an unnatural behavior of acquiring new things before it is time to do so from a product quality point of view. Products that could have been passed along become waste after a few months of use. Manufacturing processes take up the same amount of energy whether it is to produce a product with durable design or a product with a mere variation of surface design (color, form, feature, etc.). Hence in comparison with a product with a long life span and the probability of long usage, the energy used to produce generations of products for mere marketing purposes and targeted toward short lifespans is extremely wasteful. Manufacturing processes take up the same amount of energy whether it is to produce a product with durable design or a product with a mere variation of surface design (color, form, feature, etc.). Hence in comparison with a product with a long life span and the probability of long usage, the energy used to produce generations of products for mere marketing purposes and targeted toward short lifespans is extremely wasteful. Product stewardship is an important aspect of designing sustainable solutions.16

Globally, 20% of the world’s highest income countries account for 86% of total consumption. The poorest 20% account for a minuscule 1.3% of consumption. A gross inequity exists between economically developed and undeveloped nations, yet the environmental problems caused by excessive material consumptions affects everyone under the sun.17

In my opinion, formulating strategies to create emotional designs that blur the line between flesh and polymer, humans and machines, is not the answer to this problem. ‘Designing Dependency,’ ‘Creating Free Will,’ and ‘Inherent Feedback’ are some of the strategies mentioned in the book Emotionally Durable Design. I think it would merely be a band-aid solution, not the eradication of the problem from its roots. The book talks about increasing emotional attachment with objects to prolong the relationship of humans and products. This solves the environmental problem to a certain extent by reducing consumption, but does not address the psychological aspect. Fulfilling the psychological needs of people so that they can develop healthy relationships with objects as well as other people would be the right direction to take. We need to think about long term consequences or effects of our designs on human behavior. This way we are not just trying to solve a single issue but setting up a tipping point for solutions to a host of problems.

3.2 Human: User Study

In the 1960s, psychologist Stanley Milgram conducted an experiment to find answers to “the small world problem.” In other words, he wanted to know how human beings are connected. Are we all living in different worlds, working simultaneously but autonomously, or are we all linked to each other like a giant web?

Milgram’s experiment was to test these questions, by giving packages to 160 people living in Omaha, Nebraska and asking them to deliver these letters to a stockbroker who lived in Sharon, Massachusetts. Each person was instructed to write his or her name on the packet and send it to a friend or acquaintance who they thought would bring the packet closest to the stockbroker. For example if you had a cousin who lived right outside Boston you would be more likely to give it to him because even if he did not know the stockbroker he could get the letter to him in 2 or 3 or 4 steps. The whole idea was to know how many steps it took for each letter to reach to the stockbroker. It was found that most letters reached their destination in 5 or 6 steps. This experiment is where we get the concept of six degrees of separation. Many people had estimated it would take hundreds of steps to travel from Nebraska to Massachusetts, so the results were surprising. How did this happen? The answer is that all degrees of separation were not equal. Many chains followed the same asymmetrical pattern. For instance 16 out of a total of 24 letters received by the stockbroker came from the same clothing merchant, a Mr. Jacobs. Six degrees of separation does not mean everyone is connected to everyone in 6 steps. It means that a few people are connected to many others in a few steps, and the whole world is connected to each other through these special few. These special few are called “connectors”. Our social circle is not really a circle but a pyramid. This is how people are connected.

Word of mouth is the strongest form of communication, even in this digital age of mass communication and multimillion dollar advertising campaigns. With innumerable advertisements, so many online reviews from unknown people and ridiculous amounts of banners and environmental graphics it is extremely difficult to really know what is best for you and what you would like. There are some smart ways to filter through all the distractions, but it is still much more comforting if a friend recommends something when you want to shop or go to an expensive restaurant. Knowing that a trusted person has had a good experience with a particular choice and that this person knows your

---

20 Ibid., 32.
likes and dislikes makes it a much better way of making your selection. Companies think that because of their ubiquitous marketing strategies, word of mouth is losing its value, but it remains the most persuasive form of communication, with the potential to tip an epidemic.

Most people do not have a broad and diverse group of friends. We choose our friends based on similar attributes, age or race. But studies show that if a person lives in the same building or close proximity, these factors (age, race, similarities) become less important. **Proximity overpowers similarity.** Another study shows that if you ask a person the reason for a friendship they would say that they share the same attitudes, but when you quiz them, what they really have in common is the same activities. Their attitudes may in fact be very different. As mentioned in Malcolm Gladwell’s *The Tipping Point*, “we do not seek out friends, we associate with people who share same small physical space as we do.”

Today, the physical presence of people is blindsided as a social culture and *apps* that connect strangers such as Tinder are used to make friends based on similar personalities. There is nothing wrong with using technology or designed systems to make friends, but many fascinating possible relationships slip through the cracks this way. In my personal opinion friends made through random incidents, moods or unknown happenings are stronger or perceived to be more real. Possibility of the unknown or unplanned somehow seems more important for the beginning of a relationship. The ability to make a choice to connect based on your own perception of a person is paramount. Surprisingly, many interactions between two strangers who are total opposites can be quite extraordinary. These interactions might never occur in a perfectly designed system of virtual reality to make friends based on similar personalities. I conducted a discussion session about this with a young group of designers and 80% of them used their phones and virtual media to make new friends. As mentioned in *Wabi-Sabi*, it is vital to know when to make choices but more important to know when not to: just let things be.

The Japanese way of life, Wabi-Sabi, has a delicate balance between the pleasure we get from things and the pleasure we get from freedom from things. It is about acceptance of reality, naturalness and simplicity. Things are either devolving toward or evolving from nothingness. Truth comes from the observation of nature, things so subtle and evanescent they are invisible to vulgar eyes. How do we feel about what we know? Wabi-Sabi objects and images evoke an existential loneliness.

---

21 Ibid., 35-36.
23 Ibid., 59.
24 Ibid., 51.
25 Ibid., 42.
26 Ibid., 46,50.
and tender sadness, like the bare branches in winter after blossoming summer, the voice of a crow, etc. They also stir a mingled bittersweet comfort, since we know that all existence shares the same fate. This contrasts to the Western ethos that values those attributes of beauty that relate to perfection and permanence. We may wear blinders, use ruses to forget, ignore or pretend otherwise, but all comes to nothingness in the end: reputation, family heritage, historic memory, scientific theorems, mathematical proofs, great art and literature, and especially digital data. Natural disasters do not take us by surprise. While the universe destructs it also constructs. New things emerge out of nothingness. Our universe is a constant motion toward or away from potential. If we did not know differently, we might mistake a new born baby to a very old man on the brink of death.

“Behaviour is a function of social context.”

- Malcolm Gladwell 2007

The crime rate suddenly dropped in New York during the 1990s. What was the reason for this? Was the economy booming, giving jobs to many people who would have otherwise have turned into criminals? Or was the average age of people increasing so that there were fewer youths 17 to 29 years of age, the population most prone to commit crimes? The answer to both these questions is no. During this period, the economy was stagnant. In fact there were welfare cutbacks of the early 1990s. Many people were migrating into New York, making it a city of young people. In any case, these reasons would have a long term effect and therefore a gradual change in crime rate could be expected. But the decline of crimes committed was not gradual. Something else suddenly caused the crime rate to drop.

This something else is the Broken Window Theory. If one sees a broken window that is not repaired, people passing by assume that no one cares and no one is in charge. Soon more windows will be broken, spreading disorder from the building to the street, sending a signal that anything goes. In the city relatively minor problems like graffiti, public disorder, aggressive panhandling and littering are harbingers of more serious crimes. Crime is contagious and the tipping point for this epidemic is something physical like graffiti. The impetus to engage in a certain kind of behavior does not come from a certain kind of person but from a feature of the environment. Robert S. Wyer in his book “The Automacity of Everyday Life” argues that much of everyday life—thinking, feeling and doing—is

---

27 Ibid., 54, 57.
28 Ibid., 49.
29 Koren. Wabi-Sabi, 42,45.
30 Gladwell. The Tipping Point, 150.
31 Ibid., 140-151.
driven by current features of environment such as people, objects, behavior of others, settings, roles, norms, etc. as mediated by automatic cognitive processing of those features, without any mediation by conscious choice or reflection.32

An epidemic can be reversed by tinkering with the smallest detail in the immediate environment.33 This theory is also known as Power of Context. It suggests that the birth of criminals has very little to do with social injustice, structural economic inequities, unemployment, racism, decades of institutional and social neglect, psychological imbalance, genes, etc., but everything to do with little things in the immediate environment. The factors mentioned earlier are long term causes of bad behavior, but criminals need a push to actually become violent. The tipping point depends on their immediate environment. People are prompted to commit crime based on their perception of the world around them.

Preferences and emotions are actually powerfully and imperceptibly influenced by seemingly inconsequential personal influences. The same is true for certain kinds of environments. Our inner states are results of our outer circumstances.34

Two researchers, Hugh Hartshorne and M.A. May, cited in The Tipping Point, conducted an experiment where children were given their exams under different conditions, sometimes with less time available or a more strictly administered exam, one they could take home, another held in school. Hartshorne and May observed the cheating patterns of children. Some of the findings were pretty obvious. Smart kids cheat less than others, girls cheat as much as boys, etc., but general patterns of behavior consistency were not high. There isn't one tight circle of cheaters and other circle of non-cheaters. As you change one or the other variable such a location or subject or time or situation in which the test was administered, the kinds of cheating would change as well. The same kid who cheated six months back might not cheat today depending on these factors and situations. The researchers' conclusion from this experiment was that something like honesty is not a fundamental trait, or what they called a 'unified' trait. It is considerably influenced by the situation and his/her relation to it, and only partly depends on his/her intelligence, age, home background, etc.35

33 Gladwell. The Tipping Point, 146.
34 Ibid., 152.
35 Ibid., 155-158.
Counterintuitive to the above, when it comes to personalities we think in absolutes. This person is honest or that person is generous. Hartshorne and May think that this is a mistake. When we think only in terms of inherent traits, we are deceiving ourselves about the real causes of human behavior. Why do we make this mistake? Gladwell explains this by using a brain teaser: people were given cards with letters A and D and numbers 3 and 6. They were told that the rule was that only an even number can be behind a vowel. Which cards would you pick up to confirm this rule is true? The answer is A and 3 but most people gave wrong answers, some said only A, some said A and 6. But if the same question is framed in terms of people: one person is 16, one person is 24, one person is drinking soda, one person is drinking alcohol. The rule is no underage drinking of alcohol. How would you make sure it is being followed? Almost everyone will get the right answer: check the person’s ID who is 16 and the person’s who is drinking alcohol. We make this mistake because as human beings we are much more sophisticated about each other than we are about the abstract world. When it comes to interpreting other people’s behavior, human beings invariably make the mistake of overestimating the importance of fundamental character traits and underestimating the importance of the situation and context. It makes our world a much simpler and more understandable place. If we constantly had to qualify every assessment of those around us, how would we make sense of the world? How much more difficult would it be to make the thousands of decisions we must make every day about who to trust, who to love, who to give advice to, etc. As mentioned in *The Tipping Point*, Psychologist Walter Mischel argues that the human mind has kind of “reducing valve” that “creates and maintains the perception of continuity even in the face of perpetual observed changes in actual behavior.” When we see two people with two different and opposite characteristic traits, our reducing valve makes us choose one trait over another. We then try to make sense of the other trait by deciding that it is in service of the other or that both are in service of the third motive. Such analysis is done only because of a glitch in the way our brains are organized. A single person can have several characteristics. As Gladwell mentioned in *The Tipping Point*, “Character is more like a bundle of habits and tendencies and interests loosely bound together and dependent, at certain times, on circumstance and context. The reason that most of us seem to have consistent character is because most of us are really good at controlling our environment.”

There is a concept in cognitive psychology called “the channel capacity,” which refers to the

---

36 Ibid., 157-163
37 Ibid., 162.
38 Ibid., 157-163.
amount of space in human beings' brain for certain kinds of information. If we are given 20 glasses of ice tea and told to sort them in categories based on their sweetness, we would organize only seven groups before we start making mistakes. Or if dots are very quickly flashed in front of our eyes and then we are asked how many we saw, the number would again be up to seven. “There seems to be some limitation built into us either by learning or by the design of our nervous system. This limit keeps our channel capacities in general range,” the psychologist George Miller concluded in his famous essay “The Magical Number Seven.” Telephone numbers have seven digits because of this reason. Bell wanted them to be large enough to fit as many as possible but not so long that people cannot remember them and start dialing wrong numbers. The number seven is one indication of our intellectual capacity, our ability to process raw information.

We certainly have a capacity for feelings as well. Try to think of all the people whose deaths would leave you truly devastated. The list will be around twelve names. Scientists call these “sympathy groups” with whom we are deeply and truly connected. Relationships take emotional energy and require investment of time. Caring about someone can be deeply exhausting. With any number larger than twelve we start getting overloaded. We cannot be as close to others as we are with our sympathy group.

As mentioned in The Tipping Point: How Little Things Can Make a Big Difference, evolutionary biologist S.L. Washburn writes:

“Most of human evolution took place before the advent of agriculture when men lived in small groups, on a face-to-face basis. As a result human biology has evolved as an adaptive mechanism to conditions that have largely ceased to exist. Man evolved to feel strongly about few people, short distances, and relatively brief intervals of time; and these are still the dimensions of life that are important to him.”

- Malcolm Gladwell 2007

Now let us talk about our social channel capacity. A British Anthropologist Robin Dunbar has observed that primates — monkeys, chimpanzees, baboons and humans — have the biggest brains of all mammals. The region in the brain called the neocortex that deals with complex thought and rea-
soning is huge. What does the size of neocortex correlate with? After thorough research, observations, and experiments it was concluded that the size of the brain did not relate to eating patterns or distance travelled but it was directly related to the group size. In any species of primate, monkey or apes, the larger the neocortex is, the larger the average size of the groups they live with.44 This is to handle the complexity that comes with maintaining relationships.45

3.3 Change in Human Behaviour: Influences and Effects

Malcolm Gladwell in his book *The Tipping Point* mentions that little things can make as much difference as big things when it comes to persuasion. He writes about two studies to explain this. The first experiment was about observations from the news channels eight days before an election, noting that one anchor’s face always lit up when he said a specific candidate’s name. The group of people who were asked to watch his channel voted for that particular candidate. Another experiment showing the subtleties of persuasion took place with a group of students who were told they were helping with the market research study for new headphones. One group was told to nod up and down while wearing the head phones to test how well they worked in motion. Other group was told to nod sideways and the third group was told to hold still. After the songs were over they were told to hear an editorial argument about raising the tuition fees at their university. They were asked to fill out a questionnaire with a few questions about the headset and then the real question that the research aimed at: what did they think was the appropriate cost of annual tuition fees? Results showed that people who nodded their heads sideways gave negative input about the cost, people who were told to be still were fine with the current tuition fees, and the most surprising of all — people who were told to nod up and down found the editorial very persuasive and wanted the tuition to be raised even when it meant money coming out of their pockets. The simple act of moving their heads up and down for an entirely different reason was sufficient to cause them to make their decision.

“This isn't an obvious verbal message that we automatically dig in our heels against. It's much more subtle and for that reason much more insidious, and that much harder to insulate ourselves. Non-verbal cues are as or more important than verbal cues. The subtle circumstances surrounding how we say things may matter more than what we say.”

- Malcolm Gladwell 2007

In conclusion, we need to look at the subtle, the hidden and the unspoken, if we want to un-

3.4 Interaction

What happens during interactions? When two people talk, they go back and forth. They interrupt, move their hands, listen, make facial expressions, etc. When you look at interactions in slices of a fraction of a second, you see two people engaged in an elaborate and precise dance. The pioneer in this kind of analysis, called the study of cultural microrhythms, is William Condon. He did a research project during the 1960s where he decoded a four-and-a-half second conversation between a husband and a wife. After a year and half of observation and evaluations, he saw that the wife turned her head at the exact same time her husband's hand came up. He realized that besides talking and listening, people also engage in 'Interactional Synchrony.’ Conversations have a rhythmic physical dimension. Each person in the study, within the space of one, two or three and 1/4th seconds, would move a shoulder or an eyebrow or a hand, sustain that movement, stop it, change direction, and start again. These movements were perfectly in sync with each person’s own words, emphasizing and underlining and elaborating on the process of articulation. The speaker was dancing at his/her own speech along with others who were moving their faces and bodies to the same rhythm.

Further researches revealed that there is not just gestural harmony but also conversational rhythm. When two people talk, their volume and pitch fall into balance. The rate of speech and pauses equalizes. Two people who arrive at the conversation with very different conversational patterns find a common ground instantly. Everyone does this all the time. Babies that are a day or two old synchronize their elbow, hip and foot patterns with the speech of adults. Synchrony in human interactions is hardwired.

Malcolm Gladwell, author of The Tipping Point, writes about his experience communicating with a very persuasive salesman. He says that as soon as they sat across from each other they immediately fell into physical and conversational harmony, even before any attempt was made by words for persuasion. The salesman forged a bond with Gladwell with his movements and his speech. So what made him compelling? It is a fundamental physiological ability of which we are barely aware, kind of a super-reflex. It means having a personality that draws others into your own rhythms and dictates the

46 Ibid., 78-80.
48 Gladwell. The Tipping Point, 80-84.
49 Ibid., 80-84.
terms of interaction.\textsuperscript{50}

So this was about subject-subject interactions. Now let us talk about interactions and objects. If they can distract us, they can bring us closer as well. There is a Chapter called “Social Objects” in The Participatory Museum by Nina Simon. It mentions the qualities of social objects — Personal, Active, Proactive and Relational.\textsuperscript{51}

When people see a personal connection, they have a story to tell. Personal objects trigger natural and enthusiastic sharing.

Active objects directly and physically insert themselves into the spaces between strangers, sharing reference points for discussions. For example, when an ambulance passes, or fountain splashes you in the breeze, you feel complicit with other people who are similarly imposed upon by the object. Similarly, darts or ping-pong balls generate social connections by either capturing attention through flying objects or interrupting the personal space of people.

Provocation is tricky to predict. To work well, provocative objects must be surprising and relate to the viewers in a bold meaningful way.

Relational objects explicitly invite interpersonal use. They require several people to use them to work, and their design often implies an invitation for strangers to get involved. Telephones, game boards and seesaws are three examples of relational objects.\textsuperscript{52}

\section*{3.5 Systems and Ecology}

I will be explaining more about this later, but in order to understand how a system can be efficient, let us look at the rule of 150 mentioned in The Tipping Point by Malcolm Gladwell. A British anthropologist Robin Dunbar developed an equation which works for most primates. In this equation he plugs in what he calls “the neocortex ratio” of a particular species — the size of the neocortex relative to the size of the brain — and the result of the equation gives the expected maximum group size of the animal. The neocortex ratio of Homo sapiens is 147.8 which is roughly 150. This means that our brain capacity to have genuine social relationships is a group size of 150 people. The relationship here is the kind where you do not feel embarrassed to join your friend for a drink uninvited. You know them personally, who they are and how they relate to you. At this group size, orders can be implemented and unruly behavior controlled on the basis of personal loyalties and direct contacts.

\begin{itemize}
\item \textsuperscript{50} Ibid., 80-84.
\item \textsuperscript{51} Nina Simon; The Participatory Museum (Santa Cruz, Calif.: Museum 2.0, 2010), http://www.participatorymuseum.org/chapter4/ \space
\item \textsuperscript{52} Nina Simon; The Participatory Museum (Santa Cruz, Calif.: Museum 2.0, 2010), http://www.participatorymuseum.org/chapter4/ \space
\end{itemize}
This becomes impossible with larger groups. When things get larger, people become strangers to one another. This has been confirmed by looking into history and examining 21 different hunter-gatherer groups. The same number 150 keeps coming up again and again. People have been following this rule for centuries without getting the idea from contemporary evolutionary psychology. This same pattern holds true for military organizations. Planners have discovered by trial and error over centuries that it is hard to get more than this number of people sufficiently familiar with each other to work together as a functional unit. Companies have remained obdurately stuck at this size despite all the advances in communications technology since World War I.53

3.6 Everyday Objects/Environment

Why everyday objects? It is not only because of my interest in them but also because they are ubiquitous, subtle and part of our everyday lives, affecting us in ways that we do not consciously acknowledge.54 This in turn results in affecting us more than anything else.

Can everyday objects play a part in big social behavioral changes? Do they have the power for the tipping of an epidemic or bringing a change in cultural ecology? These questions arose in my mind while researching factors that bring change in human behavior and alter a person’s relationship with the outside world. As mentioned in The Tipping Point, there are three elements that constitute the greatest insight into why abrupt change happens the way it does. These three elements or characteristics are contagiousness, the fact that little causes can have big effects, and finally the fact that change happens not gradually but at one dramatic moment. Reasons for gradual changes — in social injustice, demographics and others — do not explain why some dramatic change happened suddenly. It happened due to small changes in the immediate environment.55 (Note: The words ‘epidemic’ and ‘contagious’ are not used as medical terms here. Gladwell has used them in a broader sense to describe the rapid spread of a social trend or new approach or new attitude or invention. I am following his coinage.)

The world we believe we live in is full of perceptions and assumptions, such as ‘change is gradual’ or ‘we characterize people with traits like loyalty based on experiences rather than situations,’ etc. However the real world follows the model of the epidemic as described in The Tipping Point, where we understand that ‘change can sometimes happen suddenly without any strategy’ or ‘people do things because of situations and it is not as simple as counting a few times of disloyalty and then character-

53 Gladwell. The Tipping Point, 179-181.
55 Gladwell. The Tipping Point, 9.
izing that person as disloyal.' We live in the world of perception so our brain can quickly function and analyse things by simplifying concepts that are in reality much more complex and influenced by a variety of other factors.

The world that follows the rules of epidemics is a very different world than the one we live in. The former is more abstract and therefore does not allow humans to consciously understand it or reason it. For example, why is yawning contagious? We all must have observed this many times that just by looking at a person yawning or reading the word yawn, we yawn. A feeling is planted in our mind. Contagiousness in other words, is an unexpected property of all kinds of things, and we have to remember that, if we are to recognize and diagnose epidemic change.56

We are heavily socialized to make rough approximations between cause and effect. If we want to communicate our condolences we say it softly in a deep voice at low volume. If we want to express joy we shout or speak loudly. We are trained to think that what goes into any transaction or relationship or system must be directly related, in intensity and dimension, to what comes out. For example, let us look at the puzzle where we are given a piece of paper and told to fold in half over and over again for 50 times. How high would the pile be? Most people would fold the paper in their mind’s eye and reply that it would be as tall as the phone book. If someone is really daring, he/she would say that it is as high as the refrigerator. But the correct answer is that the stack is as high as the distance to the sun and back, unimaginable as this may seem. This is an example of geometric progression. Epidemics are another example of geometric progression. As human beings we have a hard time with this type of progression, because the end result – the effect – seems far out of proportion to the cause. To appreciate the power of epidemics, we have to abandon our notions about proportionality.57

As the book mentions, the dramatic moment in an epidemic when everything can change all at once is called “The Tipping Point.”58 Sharp introduced the first low-priced fax machine in 1984 and sold about 80,000 of them in the United States that year. For the next three years business was running slow and steady. In 1987, enough people had acquired fax machines for it to make sense for everyone to have one in their homes and make it a part of their everyday lifestyle. A million machines were sold that year, and two million machines went into operation. 1989 was the tipping point for fax machines.

56 Ibid., 9, 10.
57 Ibid., 10, 11.
58 Ibid., 9.
Cell phones followed a similar trend. Through the 1990s they got smaller and cheaper, and service got better until 1998. That year an innovation in technology led to the tipping point where everyone started owning one.59

Trying to evaluate how our behavior is changing, I would like to go back to the Domino Effect where I explained how the advertising industry suddenly expanded with new strategies to sell mass-manufactured products among highly competitive markets. Is this making our task as consumers any easier? How does this affect us? There are hundreds of different advertisements about a hundred different cereals, all selling the product by emphasizing the same features: healthy, low fat, organic, preservative free, anti-oxidants, etc. This does not really make me want to turn to advertising as a resource for choosing the right cereal for me. Personally, I always want to stop the advertisements before they start, and I never believe them. Ellen DeGeneres’s comedy show ‘Here and There’ mentions how we are surrounded by such distractions today, how there are 700 channels on TV now instead of 10. She talks about everyday changes in lifestyle and how it is affecting an individual today, making us lose focus, inviting behavioral problems like ADD and procrastination.60 Malcolm Gladwell talks about the similar relation between our environment and behavioral changes. He says “It is not just the prosaic factors like weather that influence behavior. Even the smallest and subtlest and most unexpected of factors can affect the way we act.”61 He gives an example of an incident in New York City in 1964 when a young woman in Queens named Kitty Genovese was stabbed to death. Genovese was chased by an assailant and stabbed three times in the duration of half hour while 38 people in the neighborhood watched from their windows. None of the 38 witnesses called the police. This case provoked rounds of self-recrimination. This incident became symbolic of the cold and dehumanizing effects of urban life. Abe Rosenthal wrote in a book about this, “Nobody can say why the thirty-eight did not lift the phone while the woman was being attacked, since they cannot say themselves. It can be assumed however, that their apathy was indeed one of a big city variety. It is almost a matter of psychological survival, if one surrounded and pressed by millions of people, to prevent them from constantly impinging on you, and the only way to do this is to ignore them as often as possible.”62 However, the truth about Genovese might be a little more complicated than this. Two New York City psychologists, Bib Latane of Columbia University and John Darley of New York University, subsequently conducted many ex-

59 Ibid., 11, 12.
60 “Ellen DeGeneres - Here and Now”, https://www.youtube.com/watch?v=5V5lZjZcZ
61 Gladwell. The Tipping Point, 27.
62 Ibid., 27.
periments trying to understand the “Bystander Problem.”\textsuperscript{63} They staged emergencies in different situations and concluded that more people responded and took the initiative to call for help when they were alone rather than in a group. When people are in a group, responsibility for acting is diffused. \textsuperscript{64} They assume that someone else will make the call or they assume that because no one else is acting, the apparent problem isn’t really a problem. \textsuperscript{65} Perhaps Kitty Genovese might have lived if only one person saw the incident happening. The key to getting people to change their behavior sometimes lies with the smallest details of their immediate environment. \textsuperscript{66}

Hence advertisements, marketing strategies, overpopulated cities etc, change us to be more involved within ourselves and ignore most of the world and people in it during our interaction with it.

Another example of small details of the environment affecting human behavior to the point of an epidemic change is the Broken Window theory, as I discussed earlier. Everyday objects are ubiquitous and play a huge role as a part of our environment, influencing how we interact. It might be clean trains in New York City affecting the crime rate, or cell phones affecting our cultural ecology. Sounds, touches, colors, feels, vibrations, smells caused by products, etc. are part of our environment and do not exist in the virtual world. They play a huge role at our subconscious level. We tend to ignore most of them while we focus on more active (non subliminal) tasks. This is not necessarily a bad thing. The most ordinary objects have the largest impact as they become part of our habit and behavioural reflexes. As mentioned in \textit{Supernormal}, certain products such as pens, tape dispensers, scissors, bottle openers, etc. are timeless and essential to our daily existence. They become our environment. Designing such vital objects is a great responsibility. Details are most important, such as designing object feedback, creating objects that interact with the senses, kinaesthetic, developing simplicity and normalcy. For example, I observe people saying “There is too much silence, it is weird, put on the music or something.” This might be the result of our daily exposure to refrigerator sounds, hearing computer fans most of the day—a multitude of background noises subconsciously becoming part of our life and who we are as we evolve.

Human responses to the everyday things of the world are complex, determined by a wide vari-

\textsuperscript{63} Ibid., 28.
\textsuperscript{65} Gladwell. \textit{The Tipping Point}, 28.
\textsuperscript{66} Ibid., 29.
ety of factors. Some of these are outside the person, controlled by the designer and manufacturer, or by advertising and such things as brand image. And some come from within, from your own private experiences. Donald Norman’s book *Emotional Design* (Chapter 3) mentions three levels of design: Visceral, Behavioral and Reflective. The concept of Visceral Design, counterintuitive to the concept of *Wabi-Sabi*, talks about humans’ natural inclination towards certain features such as primary colors, slim curves, smooth surfaces, etc. comes from nature’s evolution to coexist humans with other species of the environment. *Wabi-Sabi* talks about beauty in ugliness, whereas the book *Emotional Design* suggests that humans have evolved to find certain qualities beautiful. The instinct to like symmetrical shapes and rhythmic sounds reflect the selection of fittest. At the visceral level, physical features—look feel and sound—are dominant. Make the car door feel firm and produce a pleasant chunking sound as it closes. The weight of the chef’s knife is an important part of the experience, so be sure it has the right heft. Make the car sleek and sexy as we love sensual curves and sleek surfaces and solid, sturdy objects.

Before an invention is made no one other than the inventor can imagine what purpose it will serve, but many times even the inventors turn out to be wrong. Thomas Edison thought that the phonograph would eliminate the need for letters written on paper: business people would simply dictate their thoughts and mail the recordings. The telephone was thought to be an instrument of business, and in the early days telephone companies tried to dissuade customers from using phones for mere conversation and gossip. One can think about making something new for a purpose and envision or assess it up to a certain point, but how it is perceived, used and re-invented depends on people, cultures, environmental and situational adaptations, experiences and many other complexities. It is about the mutual coexistence of the everyday object and its environment.

I remember my grandmother showing me how to wash a sari in a washing machine. She said that to avoid the entangling a *Saree* in the machine and damaging the fabric you should put the sari in a pillow case, button it closed and then put it in the washer. I cannot believe how smart and efficient an adaptation came to exist from a product sold for a completely different market! This shows how important culture, age, experience and intelligence are in giving birth to a new innovation. I also know that in Delhi, where drinking *Lassi* is a dominant part of their culture, washing machines served as a

---

68 Ibid., 66.
69 Ibid., 67.
70 Ibid., 67.
71 Ibid., 71.
72 Ibid., 71.
mischer for yogurt and water for huge events with 2,000 guests. If and when presented with opportunity, people are extremely creative and by nature are constantly innovating.

We as humans are biological creatures with physical bodies, arms and legs. A huge part of our brain is developed for sensory systems, continuously probing and interacting with the environment. Everyday objects make use of this interaction. Imagine cooking, feeling the comfort of a high quality, well balanced knife, hearing the sound of the cutting on a chopping board, or the sizzle when you drop food into the skillet, smelling the changing aromas as you add more ingredients. Remember the smell of fresh grass while mowing or playing tennis, hearing the twang of the ball against the racquet strings and its feel in your hand, the feel of turning a knob or noise from a switch when pushed. Touch, feel, vibration, smell, sound, visual appearance: these are real. You cannot imagine all this on a computer screen, where what you see may look real but has no feel, no scent, no vibrations, no sound. Therefore, there are many researches going on today for developing hybrid or augmented environments.

Maybe everything should be thought out keeping human nature in mind in order to provide psychological and sensual comfort. Maybe instead of a ringing alarm in our phone, we could wake up to gradual light like a sunrise. Or our eye pads could change from dark to bright as the morning approaches, or perhaps our beds could wake us with subtle vibrations like the tide. Giving importance to behavioral design, what role does birds’ chirping or water running on our body play?

73 Ibid., 80.
4. Directions

Evaluating my research, I decided to explore five values to bring in change human behavior in order to satisfy our basic psychological needs.

![Diagram of values]

**Figure 2:** Values

4.1 Instigate Interaction
With everyday objects, fast paced life and the virtual world distracting us, it has become difficult to focus on our present physical situation and being in the moment, to have a normal healthy conversation without interruptions, and even to observe or instigate conversation in public. Our social psychology is changing to be more extropersonal and independent of connections in public places. Dependency on objects is leading to a decrease in need-based human interactions. Hence, if we want to balance this change, we need to bring an extra push, or layout a platform of opportunities for instigating interactions among strangers.

Now why is this so important? To answer this question, let’s talk about the difference between friendship and acquaintances. As I mentioned earlier in my research, our social structure being a pyramid, a few people connect most of us. These handfuls of people with an extraordinary knack for making friends and acquaintances are called “connectors” by Malcolm Gladwell. Most of us shy away when it comes to cultivating acquaintances. We worry about how we would have to invest time and emotional energy in maintaining the relationship if it turned into a friendship. But connectors do not think like that, they collect people like stamps and are happy with casual relationships — once or twice a year sending birthday wishes or a new year’s card. This is who they are and they enjoy and thrive on it. Sociologists call these connections weak ties. They are people whom all of us can reach in only a few
steps, for one reason or another. They occupy many different worlds, subcultures and niches. Their ability to span many different worlds is a function of something intrinsic to their personality, some combination of curiosity, self-confidence, sociability and energy. In a classic 1974 study called Getting a Job by Mark Granovetter, he interviewed several hundred professionals and asked them how they had heard about this interview. 56% of the people had come through personal connection, 18.8% used formal means: advertisements, head hunters, etc., and roughly 20% applied directly. The interesting part was that majority of these “personal connections” were weak ties. He concluded that, when it comes to finding out about new jobs/new ideas/new information, weak ties are more important than strong ties. Your friends occupy the same world that you do. They might work with you, live around you, go to same clubs, churches, and parties. They mostly know everything that you already know. Acquaintances represent the source of social power. Granovetter came up with a phrase for this: The Strength of Weak Ties.

What happens when we are out in the physical world, besides conversations and verbal communication? In the book Emotional Contagion, the psychologists Elaine Hatfield and John Cacioppo and the historian Richard Rapson say that we infect each other with our emotions. When we smile back in response, it is not just imitating or empathizing with others. It may also be a way that people pass on their happiness to us. As our facial expressions are reflections of our emotions that come from inside, we consider the flow to be inside-out. Emotional Contagion suggests that the opposite is also true. If I frown, I make you sad. If I laugh, I make you happy. Some people are more expressive than others, hence they are more contagious. These people are called “senders” by psychologists. Their facial muscles are different. Experiments show that they have an enormous amount of influence on others. When people are asked to sit in a room with senders for two minutes without talking at all, the sender’s moods and emotions are passed on to others. A test on how are they feeling before and after the two minute encounter clearly shows this.

Besides what I mentioned earlier about today’s social pressures, my other concern is to foster the practice of living in the moment. Uniform digitalization of all sensory experience minimizes our possibilities for connections. There is a general lack of observation of the actual physical world and personal manifestations.

---

75 Mark Granovetter, Getting a Job (Chicago: University of Chicago Press, 1995.)
76 Gladwell. The Tipping Point, 38-54.
77 Elaine Hatfield, John T. Cacioppo, and Richard L. Rapson, Emotional Contagion (Cambridge: Cambridge University Press, 1994.)
78 Gladwell. The Tipping Point, 84-87.
4.1.1 Observations

Figure 4: My Observations

What instigates interactions? As you can see in Figure 4A above, a dog or a baby always brings peoples’ emotions to the surface and prompts them to interact. Maybe one cannot resist the sight when a baby smiles at you or a dog tries to be pampered by you. Or is it just easier to interact through a third party— baby or dog — because they are unaware of social norms?

Figure 4B shows how something very mundane (a familiar traditional park bench) becomes eye catching when given a twist. This object brings forth more curiosity and surprise than other contemporary bench designs. This change in an everyday object attracts the attention of a larger population and becomes a common or shared moment of surprise and wonder. It acts as a connection between people as they walk by.

Figure 4C shows how the common experience of travel might bring people together. Environmental attributes such as heat, the motion of the train, lack of sitting space and smell are the common elements that these passengers share. Being in a crowd might prompt an individual to either ignore their surroundings, mentally secluding himself/herself, or force them to be conscious enough to be courteous and offer help when needed.

You must have been told at least a few times by strangers that your shoe laces are untied or your car head lights are on, or there is a cloth stuck in your car door. Things like these might be regarded as
normal courtesy, like opening the door for someone, and most are forgotten after a brief “thank you.” But such acts could also serve to connect two people and start a conversation.

Games are major socializing tools and major contributors in bringing people together, whether it is at a bar among strangers, at a birthday party among friends or at a sports event with an audience and competitors. It is a fun and easy way to relax and enjoy yourself with others.

4.1.2 Translations and Inspirations

After observations and group discussions, above are my narrowed down translations of how interactions can be instigated. This can be done by thinking about how an object can precipitate activities. Can I create shared experiences that are spontaneous and incidental—like a fountain spraying water on people passing by as the wind gusts up, or a top twirling into another person’s personal space? Mere observations could bring people to communicate, as shown in the image above of a lady holding a baby and creating a poetic shadow. Can this be done by hidden meanings that one can see only when they are really looking, like an image in a comb or the shape of an animal seen in clouds and stars? Maybe people just need environmental distractions with elements of playfulness, surprise or curiosity to make them pause for a moment in their fast paced lives. Or perhaps interactions can come from sensory instigators that bring our emotions to the surface as we interact with the world.
Let us look at some of the inspirations now.

Figure 6: HAPTIC Exhibition

A Tadpole Coasters  
B Cabbage Bowls

Kenya Hara in his book *Designing Design* describes his HAPTIC Exhibition, produced in 2004. He says that his approach is not about creating but about awakening the senses. It is about how people perceive things through their senses. Eyes, ears, skin and other organs are sensory receptors, but the images carried by these words are much too passive to convey the true power of sensory organs. Human sensors are boldly open to the world, they are not “receptors” but active positive organs. An unlimited number of invisible sensory tentacles sprouting from the brain are exploring the world.  

Figure 7: Piano Stairs

“The Fun Theory” is an initiative by Volkswagen to try to bring change in people’s behavior. A musical installation was constructed on the subway stairs to see how many people would be prompted to climb the stairs instead of riding the escalator. As a result, 66% of the subway riders switched to using the stairs.

---

81 “Piano Stairs - TheFunTheory.com - Rolighetsteorin.se.” Uploaded on October 7, 2009, https://www.youtube.com/watch?v=2lxhzn0auyw
4.1.3 My Explorations/Ideation

![Figure 8: Ideation](image)

What connects us? How come all of us have to yawn if we see or hear another person yawn? What is it that we have in common with the majority of humans? Why can’t we just resist? I started thinking about this and exploring how I could provoke this tendency using different materials. I came up with things like the pleasure of bursting bubble wrap, the unpleasant reaction from the sound of chalk scraping on chalkboard, an urge to push the smallest domino just to see how the whole arrangement falls, etc. All these are either our subconscious instincts or examples of visceral design acting through the senses or emotions. As you can see in the above Figure, I started exploring this phenomenon with wooden dowels. Could they generate the subconscious desire to push them around? If so, this desire or instinct could be used as an opportunity when placed in an environment where people can connect. Salt and pepper shakers, part of our mundane daily environment, provide a perfect opportunity to avoid simply staring at the phone and eating alone at restaurants.
Cell phones have become an extension of our bodies. We always carry them and we cannot go out without them. When not in use, they can become an opportunity to interact with strangers. This can be done by creating subtle relationships between the phones.

Hanafuda (Japanese playing cards) or the game of dice could be used as screensavers. Just an observation could be eye catching or instigate communication between people. With cards, this observation could be the continuation of a visual story as illustrated in Figure 9. Hence, the creation of interesting visual patterns that might or might not complete a scene. It could turn into a game that people make up using their creativity and many screen savers. Likewise with dice it is a fact that if you got three and I got six, this comparison could make it interesting. We would be prompted to look or notice as a reflective behaviour because of our past experiences of playing dice.
This value is about effects on human psychology because of “humanizing” machines, standardizing objects and our emotional attachment with them. Idealizing machines, craving for perfection in our life, being away from reality, pointless effort to fill emptiness by objects and generating abundance of waste in landfills by over consumption are some of the reasons for creating this value. It is about healthier approach to looking at life.
4.2.1 Translations and Inspirations

After brainstorming on how the design of these objects could help us with improving our outlook on life instead of simply paralysing us, I came up with a few directions to work with. How can we transform the subject-object relationship? How could this change our thinking and hence the behavior we exhibit? We could either use the strategy of ‘breaking objects to gain’ just as piggy bank is smashed, or try to hide the objects by designing them to be invisible. As mentioned in the book *Super Normal*:

“Design, which use to be almost unknown as a profession, has become a major source of pollution. Encouraged by marketing departments it has become a competition to make things noticeable by means of colour, shape or surprise. Its historic and idealistic purpose to serve industry and the happy consuming masses at the same time, of conceiving things easier to make and better to live with, seems to have been side-tracked.”

- Jasper Morrison 2007

Hence creating something simple, basic, timeless, and completely normal to everyone gives more importance to daily activities and makes the product a part of your everyday life.
The Do hit chair was created by the Dutch Designer Marijn van der Poll, for Droog. It is a stainless steel cube that comes with a hammer to let the consumer shape it into any form they like. The whole idea is to be able to make it your own, to create the user’s participation in making art. Art is alive and fun, not untouchable, but real. Conscious user involvement in making a one-of-a-kind sculpture is encouraged. The experience becomes more important than the physical object itself.  

4.2.2 My Explorations/Ideation

These are some of my initial explorations. Figure 13A is a long pencil that you break like a stick and then use. The pencil is an important tool and has a certain charm and value in our hearts. It is part of our daily environment and has a subtle, hence strong impact on us.

Figure 13B was an exploration I did with Contemplation and Dematerialize on my mind. A glass hammer is an ironic metaphor for how we should think before running through life, and how we need to objectify objects. The bubbles you see in the hammer are actually forceful puffs of air from the iron rod used to make the hammer. This coincidence got captured forever when the glass was put into annealing oven to cool down, and now it tells us a story. People might perceive it as a story of force from the hammer hitting something if they did not know differently.

Contemplation is a value that is important as we move through our fast-paced lives surrounded by machines, noise and professional goals. We must take time to think, take a pause, not feel awkward to just sit back and enjoy nature or evaluate traditional paths. We must enjoy the process and not just long for the destination.

4.3 Accept Imperfections

4.3.1 Translations and Inspirations

Figure 14A is a Wabi-Sabi mug that suggests a natural process. Its scars and chips are a testament to a history of use and misuse. It is a result of just letting things happen by chance. It is unpretentious and has a strong sense of character. Figure 14B and 14C are contemporary takes on this value.

Figure 14B Ant is the design launched by Arc work designs. Stan Rickel, the graduate director of RIT’s Industrial Design program, is the driving force behind this. His initiative recognizes the opportunity and takes advantage of the capabilities of individuals with developmental disabilities to give
each Ant a unique character by building them. Because of this, the Ants develop a strong bond with the consumer, putting a face and story to the furniture pieces, unlike traditional mass manufactured products. This takes advantage of the human side of the objects. The character comes from the individuals and every consumer will know the unique story it comes with. “Not everything needs to be perfect, in fact the contrast is brought out more if it is imperfect” Rickel said. Imperfection is what you remember.  

Figure 14C is the work of French artist Nathalie Derouet. She created Miya, porcelain bowls inspired by Chinese and Japanese ceramics. She plays with light and translucency, creating thin walls with interesting patterns and textures. Her techniques leave natural effects throughout each vessel. She can then explore the limits, tensions and breaking points of the porcelain.

4.3.2 My Explorations/Ideation

![Figure 15: My Explorations](image)

By these explorations I was trying to bring about a positive consequence from a perceived negative action. Figure 15A is a coffee table that becomes darker every time you leave a ring. Coffee is used as a natural stain for the table. The beautiful plate comes from a bowl thrown off-kilter on a pottery

---

4.4 Analysing Everyday Objects

Figure 16: Analysing Everyday Objects
5. Final Concepts

![Diagram showing interaction types]

Figure 17: Final 3 Auras

Finally, combining all my explorations and values I decided to pursue developing three potential ideas into concepts — the salt and pepper shakers that explore subject-object interactions, the phone cases that explore object-object interactions and the coffee table that explores subject-subject interactions.
5.1 Aura 1

5.1.1 Usability and Interaction Design

Figure 18: Concept Development_Aura 1
Figure 19: Concept Development_Aura 1
As you can see in the above explorations, I tried to work on the usability of the product by making a plate with ‘place holder holes’ to quickly rearrange the shakers, strings to pull on for elevating the dominos again after they fell down, and also using a sliding belt with a sticky top surface to bring the fallen dominos back up to their original position with a sliding motion of the belt. After getting feedback from my professor, I started simplifying the concept. The whole point of the product is to give users the flexibility to tinker with it, so why try to rearrange it in the same fashion every time? Letting the user pick up the salt shaker and put it wherever they like will instigate the play factor and make it more original, not simply a matter of just tipping the pieces so that they fall down and then pulling them back up. Bringing out the user’s creativity will allow for more possibilities of communication and catch attention, while keeping it a very simple mundane thing for the user to just arrange the pieces subconsciously or play without giving much thought.

5.1.2 Graphics

![Concept Developments_Aura 1](image)

**Figure 20:** Concept Developments_Aura 1
Graphic explorations for subtle inspiration to play.

5.1.3 Prototype

Figure 21: Aura 1

5.1.4 Design Details

(1) Each unit’s size and shape fits perfectly in the palm of the hand for ease in picking up the salt and pepper shakers and being able to fidget with them as well as for its primary purpose of shaking it for salt and pepper.

(2) Ascending/Descending heights give it a playful character

(3) Materials wood and glass together make a musical sound, producing a pleasant emotion for the user

(4) Light weight units to play with on a firm heavy base to explore on

(5) Three of each making it a total of six, registers in mind, perfect medium between function and play.
Figure 22: Aura 1
5.2 Aura 2

5.2.1 Explorations

Figure 23: Explorations

As a continuation of my exploration with phones as shown in Figure 23, I started thinking about exploring the physical aspect of the objects rather than using screen savers to connect people. The above sketches show form explorations for fidgeting.
5.2.2 Ideation

Figure 24: Direction 1

Figure 25: Direction 2
Figure 24 and 25 are the final two directions I decided to proceed with. Direction 1 explores two forms that can be played with individually as well as together. It explores the possibility of object-object interactions, not just through form but through function also. These forms could be phone cases, and the function here would be the transfer of energy or charge from one phone to another. This need-based contact gives people an opportunity to initiate play. Direction 2 are battery powered portable universal chargers that people can borrow from each other to charge their phones.

5.2.3 Ergonomics

![Ergonomics Diagram]

**Figure 26: Ergonomics**

Each pair of parallel surfaces of the pyramid meets the other pair at an angle suitable for the human eye to read which is the range of 60 degrees when kept on a table the height of 2.5 feet.
5.2.4 Prototype

Figure 27: Aura 2

1. These Phone cases allow you to fidget with them and they have a playful quality to them which gets more fun when you add in another phone case.

2. It also allows transfer of charge which might be a point of communication through need, whenever your battery is low and you are stuck without a charger, leading to more fun if the users take it to next step.

3. The pyramid structure of phone also works as a stand

4. Form allows the user to always keep their phones upside down instinctively when not in use which could be a tipping point for behavioural change allowing interaction between people around you without distractions.
5.3 Aura 3

5.3.1 Process

Keeping my thesis in mind I explored many ideas with many materials such as glass, metal, wood, ceramics, etc. Hence lots of my explorations are not only quick mock-ups (to explore form and material) but they extend into the slow and thoughtful process used to craft these objects (as shown in the figure above). As you can see in the above image, the wooden table does not only have an inviting form for strangers but if you see closely the dual nature also comes from the wood used. One side is made by selecting the wood with more knots, textures, shades and grains in contrast to the other side which is closer to being flawless, although both are made from wood that comes from the same tree. Details come from the placement of the wood plank, knots and grains, finishes for metal brackets and the way I sanded it to make it look antique and aesthetically pleasing.

Figure 28: Process
This coffee table allows numerous types of subject-subject interactions. The table has an ambiguity to it that is open to interpretation. It is also a continuous form, which is a metaphor for possible connections. One can flip it over and use it as a shared connected surface as well. It serves as a platform for hidden opportunities of interactions.
5.3.3 Design Thinking

(1) The table, besides being perfectly flexible for the use of modern portable devices, is also influenced by the Japanese culture of tea ceremony as a social art form. As mentioned in *Wabi Sabi*, Leonard Koren found large, permanent objects too philosophically vexing to design.

(2) Detailing during woodworking is such that the two peeking ends of the table have different individual personalities. As the relationship grows the table ages with time, gaining character and creating an emotional bond with its users.

(3) Being an everlasting and durable design, it eliminates the need to buy objects in abundance, making itself a sustainable design.

Figure 30: Aura 3

6. Product Development and Testing
6.1  Interactions and Usability Evaluations

6.1.1 Aura 1—Salt and Pepper Shakers

![Image of Aura 1—Salt and Pepper Shakers]

<table>
<thead>
<tr>
<th>Building blocks</th>
<th>Compose Music</th>
<th>Art</th>
<th>Fidget</th>
<th>Striker</th>
</tr>
</thead>
<tbody>
<tr>
<td>Teams</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Figure 31**: Interactions
Some of the reactions captured from displaying the salt and pepper shakers were:

“The first thing I wanted to do was to push one to tip all of them”. Another reaction from a person at the art gallery was “Looks like so much fun, I just want to touch it and play with them”. After keeping the nicely arranged salt and pepper shakers (linear in ascending order) on the dining table for few days without saying anything at all or describing it to anyone, one of the unusual reaction was “I thought they were stuck to the base so I did not touch them.” But many people were observed juggling, trying to build the tallest tower, playing and competing, using them as a striker, subconsciously arranging them in different patterns while doing something else. I would say 70% of people were encouraged to interact with it. 30% just kept it back on the base in a random position.
6.1.2 Aura 2—Phone Cases

Figure 32: Interactions
6.1.3 Aura 3—Coffee Table

I decided to keep the table without any seating arrangements, in an active, open space such as a college corridor. This makes the piece of furniture open to interpretation. The dynamic and flexible situation—floor being infinite and vast variety of random people walking by—is a platform for people to use their creativity and be open to possibilities. The table looks sturdy and secure, but is in fact extremely light weight. Initially the students asked me ‘So how do we sit?’ but after becoming more

Figure 33: Interactions

<table>
<thead>
<tr>
<th>Do we sit on it?</th>
<th>flip it and use it as one surface</th>
<th>Ow how do we sit?</th>
</tr>
</thead>
<tbody>
<tr>
<td>‘ has a naughty play thing going on!’</td>
<td>sit on it!</td>
<td>Do i keep this on the table?</td>
</tr>
</tbody>
</table>
familiar with it, they started exploring the possibilities themselves and playing with the table’s dual nature. Figure 29 was captured without me being involved or telling them how to sit.

Some of the reactions when that table was displayed in the Beivier Art Gallery are as follows:

“It has a naughty play thing going on!”

“This will look great on my living room table”

“Looks completely different from every angle!”

“We are into wood furniture business, this is amazing. My favourite piece, you are a great artist.”

“I loved your thesis! The concepts and execution were amazing. Best in show I dub thee!”

Figure 34: Interactions

I tried to see what people’s reactions would be by changing a few things around such as the location and seating options. First product testing shows people’s interactions with the table at a coffee house with two cushions underneath it. I thought this arrangement would tell them to sit on the floor without giving out the exact positions to do so. Second exploration with a cushioned continuous linear seating brought them to use the table as I imagined they would to use it, but it did not result in more explorations at the later stages.

The predominant initial reactions for these situations was “How do I sit?” After I told them they could sit however they liked, the pictures above show some of their reactions. After getting familiar with the situation, the next reaction from a person was “I like the continuity of the broken part, it has a flow, sense of continuity even though it’s not. It is amazing, I do not know why.”

85 Bijal Patwa. https://www.facebook.com/bijal.patwa.3
6.2 Production and Testing

6.2.1 Aura 1: Mechanisms and Working

Figure 35: Working A
Figure 36: Working B
Figure 37: Production Drawings
6.2.3 Aura 3: Engineering Drawings

Figure 38: Production Drawing
7. Bibliography


“Ellen DeGeneres - Here and Now”, https://www.youtube.com/watch?v=5V5IzWgZzcY


“Piano Stairs - TheFunTheory.com - Rolighetsteorin.se.” Uploaded on October 7, 2009. https://www.youtube.com/watch?v=2lXh2n0aPyw


8. Appendix

8.1 Figure Sources

Figure 1: Created by Bijal Patwa

Figure 2: Created by Bijal Patwa

Figure 3:
A https://hollerlabs.files.wordpress.com/2013/08/screen-shot-2013-08-30-at-4-16-39-pm.png
C “People on phone”, http://e3240c4bb5dbc6ce55c-ad08ca0f2adcb3e04ec4a01e8d48b65.r5.cf1.rackcdn.com/wp-content/uploads/2013/10/People-on-phone_920x380_scaled_cropp.jpg

Figure 4:

Figure 5:

Figure 6:

Figure 7: Edward Xu, “Subway Piano Stairs – Odenplan Stockholm”. http://thecoolgadgets.com/subway-piano-stairs-union-square-nyc/

Figure 8:
A Created and photographed by Bijal Patwa

Figure 9: “Medieval Toys”, http://promobiledj.com/wp-content/uploads/2013/06/dice.jpg

Figure 10:
B https://ecowomen.files.wordpress.com/2013/01/cellphonespile.jpg
Figure 11:

Figure 12:

Figure 13: Created and photographed by Bijal Patwa

Figure 14:
A “Wabi Sabi/Yunomi/Kyusu”, https://www.google.com/search?q=wabi+sabi+pottery&espv=2&bih=667&source=lnms&tbm=isch&sa=X&ei=zjajVf7qBI46KQaD3a3WCE&ved=0CAQTyQUwBA

Figure 15: Created and photographed by Bijal Patwa

Figure 16: Created and photographed by Bijal Patwa

Figure 17: Created by Bijal Patwa

Figure 18: Created by Bijal Patwa

Figure 19: Created and photographed by Bijal Patwa

Figure 20: Created by Bijal Patwa

Figure 21: Created and photographed by Bijal Patwa

Figure 22: Created and photographed by Bijal Patwa

Figure 23: Created by Bijal Patwa

Figure 24: Created and photographed by Bijal Patwa
Figure 25: Created by Bijal Patwa

Figure 26: Created by Bijal Patwa

Figure 27: Created and photographed by Bijal Patwa

Figure 28: Created and photographed by Bijal Patwa

Figure 29: Created and photographed by Bijal Patwa

Figure 30: Created and photographed by Bijal Patwa

Figure 31: Created and photographed by Bijal Patwa

Figure 32: Created and photographed by Bijal Patwa

Figure 33: Created and photographed by Bijal Patwa

Figure 34: Created and photographed by Bijal Patwa

Figure 35: Created Bijal Patwa

Figure 36: Created Bijal Patwa

Figure 37: Created Bijal Patwa

Figure 38: Created Bijal Patwa
8.2 Terminology

**Extropersonal**: “There has been a move away from both intrapersonal and interpersonal relationships to a new mode of relations. The direction of this move has been to the surface. The resulting mode of relating is best described as extropersonal. This term is meant to describe an outwardly personal relationship. This outward focus denotes relatedness with the surface or exterior, as distinguished from the mind or spirit.”

**Reversal of subject-object relationship**: “When objects are endowed with spiritual qualities that we do not understand or believe to have emotional attachments with them, they start to rule us instead of serving our needs. This is called reversal of subject-object relationship.”

**Object feedback**: “A device has to give continual feedback so that a user knows that it is working, that any commands, button pressing, or other requests have actually been received. This feedback can be as simple as the feel of the brake pedal when you depress it and the resultant slowing of the automobile, or a brief flash of light or sound when you push some thing.”

**Transactive memory**: When people know each other well, they create an implicit joint memory system which is based on an understanding on who is best suited to remember what kind of things. This joint memory system is called “transactive memory system.”

**Saree**: A garment consisting of a length of cotton or silk elaborately draped around the body, traditionally worn by women from South Asia.

**Lassi**: A sweet or savory Indian drink made from a yogurt or buttermilk base with water.

**Honeymoon stage**: “The passionate early stages of a subject-object relationship could be described as a honeymoon period, a period of intense synergy within which everything is new, interesting and the consumption of one another is feverish. Honeymoon periods are by their very nature short lived and must ultimately give way to the inevitable onset of normalcy.”

2 Ibid., 59.
3 Norman, *Emotional Design*, 76.
4 Gladwell. *The Tipping Point*, 188.
5 “Saree.” http://www.oxforddictionaries.com/us/definition/american_english/sari