Roll, Duck, & Cover!

A collaboratively produced, critical game that generates a discussion around the visual representation of nuclear warfare in media

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Abstract
This research project explores how we can apply Emerging Design Landscapes such as Critical Design and Collective Creativity, in combination with traditional fields of visual communication to address societal challenges in cooperation with society.

In particular, this paper aims to question the visual representation of nuclear warfare, and how we could utilize Peircean Semiotics to better understand set representation.

The design outcome is a critical board game that at its core aims to create a discussion around the visual representation of nuclear warfare today and act as a learning platform that would help its user better understand the practice of semiosis.

Keywords
Nuclear Warfare, Semiotics, Critical Design, Collective Creativity, Media Image representation, Game design.

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## Contents

1. **Introduction** 1  
   1.1. Background and Problem Statement 1  
   1.2. Hypothesis and Research Question 2  

2. **Theoretical Background** 3  
   2.1. Peircean Semiotics 3  
   2.2. Collective Creativity 4  
   2.3. Critical Design 4  

3. **Method** 5  
   3.1. Workshop Format 5  
   3.2. Design Outcome 5  

4. **Design Process** 6  
   4.1. Design research 6  
   4.2. Developing the First Prototype 11  
   4.3. First Workshop 12  
   4.4. Developing Second Prototype 13  
   4.5. Second Workshop 17  
   4.6. Semiotic Workshop and Meeting with External Tutor 17  
   4.7. Final Iterations 18  

5. **Results** 19  
   5.1. Design Results 19  
   5.2. Continuation 23  

6. **Evaluation of Contribution** 24  

7. **Conclusion** 25  

References 26  

## Appendices  
Photographs from *Change* exhibition 1
1. Introduction

In this chapter I will present the background and subject of this thesis, and introduce the research question.

1.1. Background and Problem Statement

Throughout my studies and exploration of visual communication I sometimes pondered how we, as individual persons, understand and give meaning to the imagery we observe. Our understanding of how we sensorially perceive information is based on the previous familiarity we have towards that information. We are what we consume\(^1\), and thus we understand what we already perceived. This insight – we understand from what we already know, stands at the foundation of semiotics, the science of signifying, and led me to think about how media represents societal issues to us.

Media stands for the means of mass communication and includes venues such as TV, internet, cinemas and newspapers, and is at the core of our understanding of the world, as we primarily consume information through these channels. However, what we sometimes fail to understand is that the producers of media are seldom without bias and/or their own previous understanding of the subject. And thus they either propagate a particular opinion of unawarely reinstate the status quo. Media, through visuals, sounds and texts, creates a general consensus that is, in my perception, often lacking in criticality or not impartial. Therefore we are not able to comprehend the full scope of a particular story or topic, which is arguably needed for us to evaluate and shape a well rounded personal opinion.

One such thematic that is often portrayed in media is the nuclear warfare threat. Ever since the first thermonuclear bombs were detonated as a test in New Mexico, 1945 AD we have been living in a world where the complete destruction of mankind is a possibility (2053, 2003). This “storyline” of annihilation is captivating and thus sells well, it plays strongly on humanity’s fear, imagination and sense of drama.\(^2\) These storylines may it be in news or entertainment media are often accompanied by striking and iconic visuals.\(^3\) The big mushroom clouds looming kilometers high in the sky, sometimes with a red glowing core. Dystopian wastelands under the clouds of a nuclear winter and life mutated by radiation. A clock, ticking to midnight, as the world watches in terror.

It is generally speaking not inherently wrong to broadcast news stories or sell entertainment products based on these nuclear storylines and visuals. However, as mentioned, we should keep in mind that the way it is represented is often based on an previous perception and understanding of this topic, which could be flawed, and in the case of the nuclear threat, tainted with cold war propaganda, fear or political bias.

\(^{1}\) Consume in the sense of absorbing information

\(^{2}\) Think about entertainment products such as the Fallout game series or the movie Terminator 2, or the large amount of youtube videos concerning this subject, or the hysteria in the news concerning North Korea in 2017 as they successfully tested their new ballistic missiles.

\(^{3}\) For examples I refer to section 4.1.2. Visual Research.
In this thesis I will neither claim to understand the whole picture of the nuclear warfare threat nor try to distinct the sensationalized and fictitious from the real danger. The nuclear threat is but a canvas on which this thesis explores opportunities and sustainable design solutions for reflecting on media representation and for broadening our understanding of our own perception.

To do so, in this thesis project the aim will be to develop a tool for discussion around the subject of nuclear warfare. This tool, which will be a board game, will be conceptualized using a workshop application of collective creativity and Peircean Semiotics. The intent of this board game is to create a critical and safe space in which the players can discuss their interpretations of media visuals with regards to the nuclear threat.

1.2. Hypothesis and Research Question
For this research and design project the hypothesis will be the following: By Combining the theories of Collective Creativity, Critical Design and Peircean Semiotics with visual communication an effective framework will be created. Using this framework the development of a critical board game, that engages people in discussion around the representation of nuclear warfare in media, will be achievable. To do so I state the following question:

Can we use an experimental workshop application of visual semiotics in game design to create a discussion around the societal challenge of the nuclear warfare threat?

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4 Safe space in the sense that through the roll playing nature of board games distance is created with regards to ones personal beliefs.
2. Theoretical Background

In the following part of this paper the theoretical framework will be presented. This framework exist out of three prominent elements: Peircean Semiotics, Collective Creativity and Critical Design.

2.1. Peircean Semiotics

Semiotics involves the study of signification. In more simpler terms it tries to understand and systemize the generation of meaning through communication and reasoning. The origins of Semiotics lies in the second half of the 19th century, however one can argue that the practice dates back to the days of Plato in ancient greek (Jappy, 2013). In our work we refer mainly to the work of Charles Sanders Peirce and his triadic concept of semiotics, as this concept attempts to describe and systemize the process of signification in general and thus also includes visual imagery (Jappy, 2013).

The extend of the use of Peircean Semiotics in this thesis will be limited to the triadic relation between the object, the sign and the interpretant, and will therefore exclude much of Peirce extensive system. The triadic relational account can be summed up as followed: the sign represents the object to the interpretant. The object hereby is what is communicated, and could potentially be anything, but is defined in relation to its sign and its interpretant. The sign is communicating the object to the interpreter, and could therefore potentially by anything as well, however it has to cross into the existential and perceivable world to be understood (see Fig 1.). The interpretant is the effect the sign produces on the interpreter, and is understood by the interpreter previous understanding (Jappy, 2013).

![Fig 1. Basic Triadic Relational Account](image)

To better explain this concept we will take a look at the following example, which is a diagram explaining the missile ranges of North Korea.
The sign in this case is the diagram presented in Fig 2. The object could be the extent of the reach of different missiles currently developed North Korea. But could also include the intentions of the creator of this sign. The interpretant in this case could be your understanding of this image and how it impacts your feeling, perception and future interpretation of similar signs.

2.2. Collective Creativity

Collective creativity and co-creation refers to the act when two or more people are creative together (Sanders and Stappers, 2012). This often involves designers and non-designers. Designers contribute using their knowledge in visual language and design practices to facilitate a dialogue with the non-designers who assist through providing their experiences. The aim of this interaction is to produce some sort of design solution.

In a way, co-creation has been around for a while, often referred to as participatory design (Sanders and Stappers, 2012). But it is only recently that this approach has been receiving mainstream attention as organization and companies started to understand the advantage it could offer. It is often referred as to be part the a ‘New Design Landscape’ where design focusses less on the product, and more on the purpose that design solutions can contribute to.

2.3. Critical Design

Critical design is a new emerging design field aimed to express critique through design artifacts, in order to challenge preconceptions, to raise questions and to provoke debate (Jakobsone, 2017). A sub section of critical design is critical play.

2.3.1. Critical Play

Critical Play reimagines the idea of a game. Instead of an activity purely focused on relaxation or distraction, it argues that a game could be more: A platform for creative expression, learning opportunities and discussion about social issues (Flanagan, 2009).

Similar, games (and thus also board games) could be categorized as a “thridspace”. A social space where one can play and struggle and be capable of transformative experience with regards to social and political identity (Flanagan, 2009). While this concept might be difficult to grasp, in essence, it refers to a situation where the physical meets the conceptual in a manner where there is room for learning and growth.
3. Method

In the following chapter I will explain how the theoretical background will be applied in the design and research process.

3.1. Workshop Format

In this thesis project the aim is to use co-creativity in the setting of several workshops. During these workshops participants can not only provide feedback on our design process, but also contribute towards the ideation of the final outcome. Furthermore, we aim to introduce them to Peircean Semiotics and suggest a method for the analysis of media imagery co-operatively. By doing so, we aim at extracting a greater understanding of how society perceives the nuclear warfare threat, while simultaneously giving them the tools (semiotics) to be more critical in their own consumption of mass communication. The aim is to use a diversified demographic background regarding the participants of the workshop. People with both more liberal and conservative schools of thoughts are welcomed. Likewise the goal is to have not only Swedish people but also international participants. As Sanders and Stappers (2012, p. 23-32) wrote in the Convivial Toolbox, a workshop with participants from a very broad spectrum is generally beneficial as it can lead to more unique and varied results. Moreover, as Flanagan (2009) writes, diversity is a very important aspect in the critical play concept, as that leads to more inclusive gameplay (Flanagan, 2009, p. 254-259).

3.2. Design Outcome

The aim of this project is to design a tool, envisioned as a board game. According to Flanagan (2009, p. 253), games can offer a "third space" – a setting that offers a safe place to discuss social issues. The hope is that this will lead to a more engaged and open discussion with regards to nuclear warfare representation. Furthermore, a game setting could have the potential to teach basic semiotic thinking in a simple and fun way, by "repackaging" it as a game play element. Through playing the board game the players would therefore not only reflect on nuclear representation, but also use learn the tools to analyze and recognize processes of semiosis in everyday life. Therefore growing into a more critical consumer of media.
4. Design Process

In the following chapter the design process of the board game will be outlined. As mentioned in the previous chapter, the aim is to develop (using the theory as a framework) a board game that grants a safe place for discussion concerning the nuclear threat, and uses Semiotics as a gameplay element that aims to increase the players understanding of media representation in mass communication. This development is aided by co-creational workshops. However it is important to note that the scope of these workshops is limited because of the challenges we faced recruiting participants whom were willing to consistently contribute over the course a multitude of gatherings.

Furthermore I also would like to mention that the design implementation is conducted in collaboration with Fitim Selimi. Throughout the progress we worked together. Mr. Selimi was leading the game conceptualization and interaction design, while I was responsible for the illustration and the creation of the game art elements. The general visualization was constructed in a joint effort, where both contributed towards conceptualization and visual design concepts. This collaboration was done in order to make better use of our expertise's for achieving the best outcome, while simultaneously learning from each other in the process.

4.1. Design research

Before the design process commenced, a brief but important research track was performed. Already existing board games were analyzed, and visual information about nuclear warfare threats were studied.

4.1.1. Case studies

In order to have some sort of foundation of knowledge and context, we conducted two case studies of board games. One related to the subject matter called Nuclear War. A second one, called Bloc by Bloc was chosen due to its gameplay and critical elements towards society. Both of these boardgames were completely new to us and gave us a fresh perspective. Furthermore, by learning the rules and seeing how they are presented, our insights about this specific entertainment genre was increased We, of course, also made use of our general knowledge of board games such as Monopoly, Risk and Settlers of Catan.

4.1.1.1. Nuclear War

This satirical card game was developed in 1965 by Doug Malewicki an aerospace engineer. The aim of the game is to destroy all other players by playing different cards such as: nuclear warheads, missiles, anti-missile systems, propaganda, among others. You win by destroying the population of your fellow players. However if someone is about to lose, he/she can play all his current cards together in a "final retaliation" move, thereby initiating a chain of events that often ends in everyone losing. It was recently revamped on Kickstarter to celebrate its 50th anniversary, and has accumulated a small following of enthusiastic players. (Kickstarter, 2018a).

The game deals with a similar subject matter. However I think that our aim is different as we try to be more educative and initiate critical discussion. Furthermore while I can
image that it is fun to try to destroy each other, I believe we can be a lot more nuanced in our gameplay. The art in this game is quite joyful and childlike, which fits with in satirical approach (see Fig 3.). On the other hand, we want to develop a slightly more serious style, especially considering the subject matter of media representation. To conclude, I definitely see an opportunity for the creation of a critical game that handles this subject matter in a serious, but in a still funny way.

4.1.1.2. Bloc by Bloc
Bloc by Bloc is a semi-cooperative board game based and inspired by 21st century urban insurrections, such as Oaxaca City, Mexico in 2006, when a teachers strike ended up in the citizens occupying the city for six months, or Athens, Greece in 2008, when after the police killing of a 15 year old boy led to riots and students occupying campuses throughout the city (Out of Order Games, 2016). The game was developed by Out of Orders Games and successfully kickstarted in 2016 (Kickstarter, 2018b). In the game, you represent a faction in a randomized city layout (see Fig 4.). The faction includes: workers, students, neighbors and prisoners, whom together have to defend themselves against the government and its police and take over city blocks, while simultaneously pursuing their own hidden agendas. Through its complex and strategic game play it delivers an experience that criticizes societal issues of disenfranchised people in urban areas (Out of Order Games, 2018).

The game is difficult to learn, even while reading the manual extensively. The gameplay is very complex at times, and can easily lead to confusion or boredom. At the beginning
of our playthrough I felt lost, as I was unsure about my actions. Furthermore, because of the many components, it soon became chaotic. While I think with repeated playthroughs you might start to appreciate all the small details and elements of Bloc by Bloc, they initially pushed me away and, as a casual player, I probably would not play it again. However, we did find some elements which we believe could be potentially used in our design, such as the role playing element: in this game you take on the identity of a faction - and I can envision something similar happening in our game. The way you can play with different approaches (together vs. against each other) is also deserving of praise. Finally, I also appreciated how the developers made the game downloadable and printable in A4, making it more accessible for everyone.

4.1.2. Visuals Research
Aside from analyzing board games, a more in depth research of existing nuclear visuals and media representation was conducted. The analysis was divided into the two following categories: Nuclear Visuals and Mediatic Representation.

4.1.2.1. Nuclear Visuals
In order to have a broader understanding of how the nuclear warfare threat is visualized the following media were explored: Movies, TV shows, computer games, magazines, newspaper, art and other news outlets. The most prevalent image was, as expected, the mushroom cloud, often accompanied with a red glow. Furthermore, often in artworks and entertainment products, the mushroom cloud was set in scenery with famous landmarks such New York (e.g. Fig 5.). Missiles taking off, or sometimes airborne, were also regularly used to depict the nuclear threat (e.g. Fig 6.). This visual was both popular amongst news outlets and entertainment products. Other common representations were infographics, most often portraying the reach of missiles, or the frequency of nuclear tests (e.g. Fig 7.). Less common were dystopian wastelands, especially in magazines and news outlets, although, in some entertainment products, they were preeminently shown, such as in the game Fallout 3 and in the the movie The Day the Earth Caught Fire (see Fig 8.). In magazines, illustrations were often preferred, regularly satirical (e.g. Fig 9.). In conclusion, there was a heavy favoritism in serious reporting for ballistic missiles, while the mushroom cloud was most commonly featured in all media.

Fig 5. (Bonestell, 1948)  
Fig 6. (Cohen, 2018)
Additionally to deepening my understanding and perception of nuclear visuals, the knowledge accumulated will also be used for the semiotic cards in our first prototype as will be described in the following section (4.2. Developing the First Prototype). In later stages, this knowledge will be used for illustration purposes (See 4.4.2.3. Diplomacy Cards).

4.1.2.2. Mediatic Representation
Online articles concerning the nuclear threat published in the previous months (Sep/2017-March/2018) have been examined. This was done in order to understand the context around the media imagery, and thus the headline, the news outlet, and the body text were analyzed. The analysis was conducted spanning a wide range of political discourses spectrum with both liberal and conservatives outlets. However, the analysis was limited to media products in English. News organizations included, were (although not limited to): BBC News, The Guardian, Reuters, the Sun, Daily Mail, Breitbart, Fox News and CNN.

As expected, the usage of the mushroom cloud was common, especially in relation to sensational headlines (e.g. Fig 10.). In some cases the thumbnail for an article included the mushroom cloud as well, but once in the article the thumbnail was replaced with something less striking (see Fig 11.). The usage of Figureheads was also common, and were often featured in what is considered more serious news outlets such as The
Guardian and Reuters (e.g. Fig 8.). Tabloids and 'alternative' outlets such as The Sun and Breitbart made use of very sensationalized headlines, while more established outlets tended to be more conservative in that regard (see Fig 10. an Fig 12.). The news articles that were collected and analyzed are also used in the co-creational workshops to discuss the participants interpretation and to apply some form of simplified semiotic analysis to it.

Fig 10. Breitbart article (Nazarian, 2018).

Fig 11. BBC article (Rincon, 2018)

Fig 12. Guardian article (Haas and Smith, 2018).
4.2. Developing the First Prototype

One of the most important parts of this research project is the co-creational process. We believe that by working collaborative with society we will be able to design more complex products and design solutions. However, to make this process functional in a ten week window, compromises had to be made. Our development time and resources were limited and therefore the extend to which we can afford to collaborate with society was limited as well. Due to these constraints, we decided to develop a basic prototype that could serve as a spring plank for ideas and would set parameters for our discussions and design outcome.

Having already agreed that the desired design outcome would be a board game, we developed the idea that in the game you would represent different countries with thermonuclear weapons. You would go around the board using (see Fig 13.) a dice, and execute different actions depending on which tile you landed. In the game the goal is to complete nuclear disarmament of your country before 'time runs out'. The first version of the game included several so called "currencies" such as: nuclear weapons, money and population - all of which would be affected by in game actions. There were three general actions that could be conducted in the game. First you could draw an action card. The primary goal of these cards were to keep the game's momentum and fun, while simultaneously being critical and satirical towards societal, political and environmental issues (see Fig 14.). The second kind of action one could perform was “war”, in which the player battled using their nuclear weapons. The third action was analyzing visual imagery through “semiotic cards” (see Fig 15.). For this third gameplay element, the people would compare visual representations and discuss their meaning. This action is connected to a reward system, which we left undefined so we could explore it during the workshop.
4.3. First Workshop

4.3.1. Planning and Execution
We planned to conduct the first workshop on the 24th of March 2018. For this we contacted a wide variety of people both through open calls and personal messages. We targeted both Swedish and international people to strive for diversity. There were several setbacks with people cancelling their participation. However, in the end, we had 5 committed participants. We felt this was a great number for discussions and game development. With the participants invited we created the materials needed for the workshop, which included the prototype, as explained in the previous section, but also other materials such as blank papers, pens, and small objects so there would be wide range of possibilities to test out ideas. Additionally, we produced a simplified diagram of Peircean Semiotics (see Fig 16.) and collected news articles for analysis (as mentioned in section 4.1.2.2).

On the 24th of March, we started at 12.00 o'clock by explaining our concept and by presenting Peircean Semiotics. We continued with analyzing the news’ articles together - which led to a productive discussion around the participants' perception of the nuclear threat. The difference was notable as some people assumed to give little thought to it in their everyday life, while others took it more seriously. Around 13.00 o'clock we continued with explaining the game, and we started playing and discussing it (see Fig. 17). We had a surprisingly good time, however we did found many flaws in our prototype. We concluded the session around 14.30 as some people had to leave. We all welcomed them to come again for a next workshop if possible, and several expressed interest in doing so.

4.3.2. Learning Outcomes
From the feedback we concluded that the current prototype took to long to play, was to repetitive and in some cases not eventful enough. While the semiotic interpretation was interesting, it was flawed and did not contribute enough to the game. However we were encouraged to explore this game element further. Furthermore, the participants noted that there were to many components to keep track off, especially the “currencies” of money and population. Fortunately they very much enjoyed the concept of role playing as a nuclear power, and how alliances shifted throughout the game, they encouraged us to explore that aspect more.
4.4. Developing Second Prototype

Using the feedback we received and the ideas we developed during the first workshop, we started with the reconceptualization of the game. We further developed the role playing elements, decreased the complexity, made the game more fast paced, reimagined the semiotic analysis part and started shaping the visual language. What follows is an account of this process.

4.4.1. Conceptual Development

4.4.1.1. Background Story

While we already put the element of representing a country in the first prototype, we further explored this concept. In this version you are a diplomat with the task of representing your country while you travel throughout the world and interact with other players. You have a multitude of aims, including both nuclear disarmament and your own agenda, which you have to achieve before the “doomsday” clock strikes midnight. Throughout the game you make follow the decisions made by your own country (in form of action cards) and discuss visual representation and their effects (through semiotic cards – now renamed diplomacy cards).

4.4.1.2. The board

In this new version the board has two rows of tiles. On the inner row your diplomat travels from tile to tile using a dice, while on the outer row you can place your own tiles that represent either nuclear weapons or embassies. Using these tiles you can control non-playable countries and thus your increase your country's projection around the globe. Using your nuclear weapons you can also take control of countries controlled by other players. However, a doomsday clock is ticking and after each round (a round is when all players played once) it ticks one minute closer to midnight. When it hits midnight everyone who still owns nuclear weapons loses. Thus the game is a balance between projecting your power using your weapons, while also trying to disarm yourself in a smart way.

4.4.1.3. Countries, Affiliations and Hidden Agendas

In the beginning of the game you are given a random country to role play. The playable countries are United States, United Kingdom, France, Russia, China and North Korea. In addition you are given an political affiliation consisting out of the following: democracy, communism or totalitarian. Your political affiliation decides who are allies with each other and influences which action cards you have to pick. Finally you are also presented with a hidden agenda to add another layer of game play. Through action cards and diplomacy cards your allies might change throughout the game, creating, hopefully, a dynamic game.

4.4.1.4. Action Cards

In our first prototype the action cards were fun, and a good way to keep the game going and being interesting, so for this prototype we decided to keep them. However, we re-conceptualized and redesigned them in order to make the actions less repetitive and more impactful. We also decided to divide them into three categories, democracy, communism and totalitarian, so we could focus their function more on the political
affiliation, and thus add a more interesting layer of commentary to the game. (e.g. Fig 18.)

4.4.1.5. Diplomacy Cards
At the end of every round a so called ‘Security Council’ is organized, in which a diplomacy card drawn (previous called semiotic cards) takes place. On this card is an illustration inspired by the nuclear warfare representation in the aforementioned media outlets. The players are then allowed to discuss its meaning and the effect it has on the board game, this is followed by a consensus vote between them. Every country you control through nuclear weapons or embassies is one vote for you, therefore the more control you have, the more power you have in the voting.

4.4.2. Visual Development
The production of the visual components started late in the process as we initially prioritized the game play. However, the visual language is important, as it can help the player understand what is going on. The visuals directly relates to the core aim of this game and thesis. As the main argument is all about how different means of representation leads to different interpretations, and thus how we choose to represent our game is of paramount importance. This game has as for now two major visual components: the board and the diplomacy cards.

4.4.2.2. The Board
The design of the board developed with the following thoughts behind it: firstly, we wanted the background of the board to be a world map, but preferred to stay away from the conventional western focused map, instead we research maps that more accurately preserved the shape and size of countries. We found a map called the Autograph Map, created by Hajime Narukawa (Narukawa, 1999). In the map, the landmass distortion is kept to a minimum (see Fig 19). Using this map as template I started to develop the illustration for it. The aim was to make the map bright, colorful and dynamic so it would draw people in and make them excited to play. Elements in the map are enlarged to better communicate the geographical elements and landmarks, for example you can clearly see the mountains, rivers, forests and human structures, such as the Eiffel Tower and the White House. It was both a design choice, as well as an aid for people to understand the map’s unorthodox format better. Throughout the map there are also so called “societal challenges” added, such as the dependency on oil and the great plastic batch in the pacific ocean (see Fig 20.).

4.4.2.3. Diplomacy Cards
A major game element are the diplomacy cards, and the visual representations we produced for them were critically important. These visual representations are based on mediatic representation of the nuclear threat, and while these visuals have to be understandable and convey a story, they should still be vague enough to leave room for discussion and for the players’ personal interpretations, while role playing as a diplomatic representative for a country. Rather than use actual media imagery. We decided to create our own illustrations. This was to keep a consistent style and to not infringe on any copyrighted materials. (see Fig 22. and Fig 23.)
Fig 18. Example of action cards, second prototype

Fig 19. Autograph map by Hajime Narukawa (1999).

Fig 20. Process of the board during second prototype
Fig 22. Process of the diplomacy cards during second prototype

Fig 23. Example of diplomacy cards, second prototype.

Fig 24. Second Prototype.
4.5. Second Workshop

4.5.1. Planning and Execution
On the 15th of April, the second workshop was conducted. This workshop was specifically shaped to be more 'fun', as the main goal was the play the game rather than to analyze or conceptualize it, as was done during the first session. We invited participants from the previous workshop, as well as new people. After a brief introduction, we spend around two hours playing (see Fig 25.). Throughout the meeting, we gathered a lot of feedback and realized that the game itself was not yet functioning perfectly.

4.5.2. Learning Outcomes
The issues we encountered were as the following: All the diplomacy cards, while very engaging, unbalanced the game too much, as there was no limit to the effect that someone could impose on their fellow players. Trying to both control the board through nukes and de-armament before the time runs out led to a confused and conflicting usage of this game element. The neutral tiles did not add anything to the game. Instead, they led to frustration as they slowed the game down. The hidden agenda cards led to a very broad interpretation, and the participants were unsure how to achieve them. While the concept of playing as political ideologies worked well and was entertaining, the ally system was dysfunctional to a certain degree, as it was more fun to temporarily team up with people out of your own intentions. In general this prototype was a lot more enjoyable, engaging and unique and will have a great potential if we are able to resolve the shortcomings.

4.6. Semiotic Workshop and Meeting with External Tutor
On Wednesday the 18th we travelled to Växjö to both present our work at a semiotic workshop and meet our external tutor.

4.6.1. Semiotic Workshop
We were granted the opportunity to present our work to a selection of academic researchers during a workshop organized by Leticia Vitral (our external tutor). The aim of this workshop was for the attendees to discuss semiotics in relation to their own
research fields. This was a great chance for us to present our semiotic application and our prototype, which led to a small discussion around the game play and, especially, the visual representations used in the game.

4.6.2. Meeting External Tutor.
Later that day we met for a more extensive meeting with Letícia Vitral to play through the current prototype. Letícia Vitral is an expert of Peircean semiotics and we were curious about how she would perceive the functionality of the semiotic inspired game mechanics (the diplomacy cards), as well as about her general feedback on the game as a whole. After a productive 1.5 hour session we concluded the following: the diplomacy cards and the discussion that followed was engaging, however it could use some streamlining. We were also encouraged to explore more of the role playing aspect of the game, maybe through specific action cards in which people could embody their role as a representative through a small “performance”. Other less extensive outcomes were: There were too many embassy tiles in relation to the number of nuke tiles. The action cards were a bit too determining at times. And the effect of the semiotic cards should be limited to a number of set effects, perhaps constrained by a number of predetermined sentences with blank spaces to be filled by the participants.

4.7. Final Iterations
By taking into account both the feedback we received in the second workshop and in the meeting with our external tutor, we started implementing changes in order to make the game more functional. The aim was not to have a completely roughed out and balanced final version (this would be impossible in the time span we worked on this project). However, the mechanics had to work well enough in order to effectively support the critical aspects of the game (the discussion around nuclear warfare imagery.) The implementation were as following:

We dropped the aim of de-armament in the game, as this part led to a confusing gameplay. Instead we created more detailed hidden agenda cards. These new agenda cards had specific tasks written on them, that you have to accomplish before the clock runs out in order to survive/win. In order to be able to create more specific agenda cards we introduced the idea of naming the outer tiles of the board after countries so they could be conquered as part of agendas. An example of this is if you were a communist regime your aim could be to reestablish the 'iron curtain' by conquering specific countries on the board. We also dropped the ally system largely, as alliances were much better conceived organically through the players themselves. This choice influences action cards, which will need a general editing to make them more balanced in relation to the rest of the gameplay. Furthermore we decided to streamline ‘Security Council’ where the diplomacy cards are discussed and we added more constraints to its possible effect (e.g. giving a nuke, taking nuke, moving diplomat, building a wall). There were some smaller changes as well, such as: the amount of nukes you start with became higher, and embassies would instead be reworked so they would be activated through action cards.
5. Results
Below follows a description of the design result and in what we it could be further continued.

5.1. Design Results
The design result is a critical board game that uses simplified visual semiotics to generate a discussion around the nuclear warfare threat. In this section I will detail the different visual elements, game mechanics and purposes of the game.

5.1.1. Game Description
In this game you represent a nuclear country as a diplomat, you travel around the world (using a dice) trying to project the power of your nation using your diplomatic skills and thermonuclear weapons. Your aim is to achieve your hidden agenda before the “doomsday” clock runs out. Throughout the game you are subjugated to satirical and critical action cards and you will discuss visual representations and their effects in so called ‘Security Councils’.

5.1.2. Game Components
The following elements are included in the game.

5.1.2.1. The Board
The game board exist out of two rows of tiles. The inner row is where your diplomat moves through the game. The outer row is where you place your nuclear weapons, your embassies (shared control of a tile) and the fallout tiles. In addition the tiles in the outer row also represent countries. The map itself serves as a reference of the world, and on it we are expressing societal, political and environmental challenges. In addition the map is shaped in such a way that the countries are accurate in form and size compared the more ‘classical’ maps, creating, in a way, a more truthful but unconventional look at the world. (see Fig 26.)
5.1.2.2. Countries and Political Ideologies Cards.
You play as a representative for one of the following countries: United States, United Kingdom, France, Russia, China and North Korea. The country cards will be shaped in a way that represents the name board plaques during the ‘UN General Meeting’ to simulate the feeling of being a diplomat negotiating (see Fig 27.). In addition you are also given a political ideology which influences your hidden agenda and the action cards you pick (see Fig 28.). The following ideologies are included: democracy, communism and totalitarian.

5.1.2.3. Hidden Agenda Cards
In order to win - or my preferred term, to survive, the player needs to complete his or her objective (see Fig 29.) The objective is drawn at the beginning of the game and can be as followed: you have to take over a certain amount of countries tiles, you have to place a certain amount of nuclear weapons on the map, you will have to destroy the home tile of a specific other player, or you have make sure another player survives until the doomsday clock strikes midnight. The specific assignment is based on the political ideology the player plays at. For example: for a communist regime it might say “Restore the Iron Curtain”, for which you will have to control the baltic and east european states. Or if you are democratic it could say “Take Control the Oil Supply”, for which you as player need to take control over the countries in the middle east.
5.1.2.4. Placable Tiles

As you travel through the board you can place nuclear weapon tiles. In doing so you are taking control of those countries. In addition, through action cards you can also place embassies tiles on countries, which represent shared control of set nation. Lastly, if someone decided to fight a country controlled by another player, using its nuclear weapons, a fallout tile would be placed and that country is out of the game for a round. (see Fig 30.)
5.1.2.5. Action Cards
Every turn after you throw the dice and moved, you draw an action card based on your political ideology. These cards have effect such as: receive a nuke, move to specific country, place an embassy, among other. Some cards can be kept and played at a later point as well. On most of the cards a small story is written that relates to their effect. The stories are fun, satirical and critical towards the world, and add another layer of depth to the game (see Fig 31.).

5.1.2.6. Doomsday Clock
After every round (a round is concluded after everyone played one turn) the “doomsday” clock is adjusted one minute closer to midnight (see Fig 32.). Once the clock hits midnight the game is over, the players who achieved their objective “survives” the game, and thus wins. The design of this clock is based on the doomsday clock by the Bulletin of Atomic Scientists, but adapted in such a way to not infringe on their copyright.
5.1.2.7. Diplomacy Cards
After everyone has played a turn, the round is concluded and a ‘Security Council’ is called. In this meeting the players will analyze a visual representation on a diplomacy card, these visuals are based on mediatic representation of the nuclear warfare threat (e.g. Fig 33.). The players interpretations and arguments will lead to a vote to decide on the story and the impact the visuals will have on one player of the game (they can choose out of a selection of effects such as: take away nuke, move representative, among others). Every country tile under the control of a player represents one vote, a majority of votes is needed to realize the effect.

5.1.2.8. Game Manual
An manual was created to accompany the game. In the manual the rules are described and our adaption of Peircean Semiotics’ Triadic Relational Account is briefly explained. In addition I created a cover that aims to entice participants with using similar sensational nuclear visuals as the media does, but with a satirical approach (see fig 34.).

5.2. Continuation
As of right now, the playable aspect of the game is developed, including the necessarily visual components. However, other parts related to game design are still under developed, such as the packaging, branding and graphical components. In addition, the aim is to make this game available physically through quality production, and as a downloadable file for people to download from a dedicated website that will be online in fall 2018. Finally, the game will also be exhibited and played both in Växjö Konsthall in May 2018, and in the form of separate ‘satellite’ events.
6. Evaluation of Contribution

The main function of this game is for it to be a critical artifact that serves as a platform (or a third space) to generate discussion around the identified problem area. The problem area being that, either due to intent or visual preconception, imagery in media (the means of mass communication) tends to frame the societal issues of nuclear warfare in a sensational manner. By playing this critical game, players can reflect on their own personal understanding of nuclear warfare visuals and exchange their personal opinions in regard to the nuclear warfare threat with the other players in a pleasant and safe manner. The desired outcome is that this will create more critical individuals, which in turn could contribute to a more critical, and thus sustainable, society.

In addition, this written rapport attempts to provide a theoretical and design framework to engage with societal issues and their visual representation. Through a co-creational workshop that included a simplified triadic relational account of Peircean Semiotics, and a visual communication design process, a critical artifact was conceived.

I can confidently state that, while more exploration is needed to validate the extent of contribution, the above mentioned outcomes add to a more critical society and constitute change that will lead to a more sustainable world.
7. Conclusion

At the beginning of this rapport I stated that throughout my studies I have sometimes pondered about how we as individuals understand and comprehend the visuals we observe. The answer is of course simple, we comprehend using the knowledge we already hold. I related that to our understanding of how media visuals frame issues, in particular the nuclear warfare threat. Throughout this thesis, in a collaborative effort with both peers and society, I have explored media representation, and how we could engage with it through new and emerging design fields.

This was accomplished through the application of co-creation in a workshop format, and through the usage of Peircean semiotics, both together with society and in the final design outcome. This is applied to a critical artifact: a board game that incites a discussion around nuclear warfare framing.

The outcome is the framework we used and the functional and visual aspects of the board game. I hope that by reading this written rapport you are more able to critically reflect on how you perceive media imagery, and I invite you to play the game. It is called: Roll, Duck and Cover.
References


Appendices

Photographs from *Change* exhibition

From 19th of May to 3rd of June 2018 a public exhibition was held in Växjö Konsthall consisting out of the graduating projects of the classes Design + Change, Visual Communication + Change, and Design MA. This include the design results of this project: Roll, Duck, & Cover! What follows is the photographic documentation of this.