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## **Visualizing the Invisible**

*An exploration of the Radioactive Image within the Chernobyl Exclusion Zone*

**A Master's Thesis for the Degree of Master of Arts (120 credits) in Visual Culture**

**Fannie Frederikke Baden**

Division of Art History and Visual Studies  
Department of Arts and Cultural Sciences  
Lund University  
KOVM12, Master Thesis, 30 credits  
Supervisor: Peter Bengtsen  
Spring semester 2020

## **Acknowledgements**

I would like to take this opportunity to thank all of those who have supported me during the writing of this thesis. My supervisor Peter Bengtsen, my friends and colleagues Wibecka Oliver and Lee Mann. My friends Marcus Bengtsson, Ali Jihad, James Dawson, and Björn Kristensson. My close friend Mette Sørensen, my partner Melker Larsson and my inspiration Anna Burstedt.

Most importantly, I would like to thank my parents Karsten Baden and Lisa Baden for always encouraging me to pursue knowledge no matter its fame or obscurity. For bringing me to countless of museums and feeding me anecdotes of history and culture. My bonus father Troels Pedersen who always listen. My brother Mikkel Baden for his uplifting spirit. The teachers at the Visual Culture programme. I would not have been able to complete my master's studies without all of your support and guidance.

## **Abstract**

Visualizing the Invisible:

An exploration of the Radioactive Image within the Chernobyl Exclusion Zone

Fannie Frederikke Baden

This thesis explores the radioactive image and poses the multi-layered question: ‘(how) can radioactivity exist as an image, when it cannot be seen, heard or felt?’. By having no sensorial qualities, radioactivity is often narrated in popular media by metaphoric association. Through close analyses of selected scenes from HBO’s tv-series *Chernobyl* (2019) the study suggests that a variety of tropes create a visual language for describing radioactivity. Subsequently these tropes affect tourist images of Pripyat (a town near the Chernobyl power plant) by conforming the visual representation of the area. The thesis further relates the fascination with the area to the concept of the sublime. By way of the conducted analyses, this suggest that the radioactive image can exist only when it is contextualized by linguistic guidance.

**Keywords:** Radioactive Image, Nuclear Disaster, Chernobyl, Disaster tourism, Visual tropes, Radioactivity, Semiotics.

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## **Glossary**

Atomgrad: A Soviet town created with the purpose of housing families and workers of a nuclear facility (either nuclear power plant or nuclear bomb factory).

Chernobyl victims: Anyone directly affected by the disaster. Mainly referring to those in the area of southern Belarus, and northern Ukraine.

Disaster tourism: Tourism at sites of disaster. Disaster defined as either natural or human made.

Liquidators: The people who were cleaning/working on the post-disaster site of Chernobyl.

Post nuclear environment: A place that has been affected by radioactivity and is now radioactive.

Radioactivity, radiation: In this thesis radioactivity/radiation refers to ionizing radiation which can penetrate materials and cause cellular damage.

Radionuclides, radioactive nuclides: The radioactive rays (nuclides) in singular.

Ruin porn: A fascination with buildings where people once lived.

## Introduction

The grey constructions shot up into the blue sky. All around us the lush green fields were blooming with prosperity and the power that only nature knows. It seemed like only seconds ago that the warm summer breeze was playing with the locks of my hair. Now the air inside the car seemed to be the only air we had. 'I want you to remember this', my mother said. Her blue eyes were chained to the outside and her brows furrowed in anger and despair. My ten-year-old mind gazed out the window at the nuclear power plant's round concrete constructions that were billowing towards the sky like eclectic pyramids. It all seemed so peaceful and yet it was only moments ago that we closed the windows to the car and my parents started to go on about radioactivity and danger in hushed voices.

I called my mother to ask her about this memory of mine. Her voice immediately turned grave as she asked me, if I remember what she once told me. I answered yes, because she had said that these constructions would be the demise of humanity and that they were built on the foundation of greed. It struck me as odd then, how could anything this picturesque and beautiful be the cause of such hatred from my peace-loving parents? I did not understand what she meant then, but I do now.

You cannot hide from radioactivity. The furtive rays constantly penetrate our bodies and lingers like an uninvited guest in our homes. Background radiation is natural, and it has only increased in the past hundred years. There is a myriad of reasons for this, but it begins with the discovery of radium, which led to the invention of nuclear power, bombs, and cancer treatments. Of her discovered matter, scientist Marie Curie said: '[...] these gleamings, which seemed suspended in the darkness, stirred us with ever new emotion and enchantment.'<sup>1</sup> I often return to this memory of mine of the enormous chimneys of the power plant. How they seemed to greedily swallow up all the light that drenched the surrounding fields. But a nuclear power plant is merely a retainer for these fantastical gleams that Curie spoke of. Still I remember the urgency in my parents' voices when they told my brother and me that the power plant was parlous because of the radioactivity it produced. But why do we fear what we cannot see? And fear what exist regardless of our intervention? I later learned that in their youth my parents experienced the world's worst nuclear disaster: Chernobyl. They both remembered it vividly and they both protested against

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<sup>1</sup> M. Curie, *Pierre Curie: With Autobiographical Notes by Marie Curie*, tr. C. & V. Kellogg, New York, Dover Publications Inc., 2012, p. 49.

nuclear power in the famous movement: *Nuclear Power? No thanks!* that re-emerged after the disaster.<sup>2</sup>

Radioactivity has become an epitome of mysticism and fascination in the Western society. It often appears in apocalyptic fictional films or as the transformative agent in turning a human into a superhero. It is also a topic of the emerging climate debate, because nuclear power is one of the cleanest and most efficient types of energy despite the risk of radioactive fallout. Somehow in the past few years the Chernobyl disaster has managed to transgress into the fictional realm through film and video-game adaptations of the disaster and contaminated grounds of the town Pripyat, which is located nearby the power plant. This, in turn, has sparked an interest in disaster-tourism of the actual area. It made me wonder how a visual depiction the world's worst nuclear disaster can lead people to not only desire a tour on radioactive soil but also how they understand and use the concept of radioactivity in their own images. Because even though radioactivity in itself does not possess those gleams that Curie spoke of, I still think she was right. Every time I return to the memory of the power plant in the French province, I am enchanted, and I feel new emotions. I feel the hatred that my parents seeded in me; I feel the fear from the invisible danger that made us close the windows. But I also feel the love for the clean lush beauty that surrounded the dark construction and I feel the thrill of enchantment of the good that radioactivity can provide. Maybe these are the same feelings that thrill-seeking visitors of Chernobyl and Pripyat feel when they tour the radioactive grounds. Nuclear power is built on the foundation of good. On the wish for clean energy and love for our planet. However, at the same time its radioactive rays can cause long-lasting destruction and create a dystopian apocalyptic future where those grey chimneys may just become the pyramids of our civilisation.

When we no longer could see the power plant, my parents opened the car windows again. But how did they know the danger had passed when it was invisible? Was it because the power plant was out of sight, out of mind? How do we decipher radioactivity and how does the fictional visualization of it affect the way we experience nuclear spaces? When we got home, I was given my first '*Nuclear Power? No thanks!*'-badge to wear on my jean jacket, as if that sight of the nuclear power plant had reminded my parents of the fear that Chernobyl once seeded in them. I wore it, because I remembered the lush clean fields.

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<sup>2</sup> Energibevægelsen OOA, 'Energibevægelsen OOA's historie – kort fortalt', *Organisationen til Oplysning om Atomkraft* [website], 14 Jan. 1998, para.1986, <<http://www.ooa.dk/oa/historie.htm>>, accessed 14 May 2020.

### ***Aim and research question***

This thesis aims to explore the topic of how the visualization of radioactivity affects how we understand and conform to a post-nuclear environment. By analysing scenes from the tv-series *Chernobyl* as well as tourist-images of the grounds of Chernobyl and Pripyat, I aim to discuss how radioactivity is made visible through visual tropes and symbols. I further consider how these tropes and symbols correlate between Chernobyl as a product of popular media and tourist images seeking to depict radioactivity. By investigating how radioactivity is visualized I aim to lay the groundwork for understanding the visual language for radioactivity and coining the term: *The Radioactive Image*. The following are the research questions that will guide my thesis:

How does *Chernobyl* visualize radioactivity?

How did visualization of radioactivity shape tourists' images of Chernobyl?

What characterizes the visual language of radioactivity and the radioactive image?

### ***Background and relevance***

On Saturday the 26<sup>th</sup> of April 1986 the time had just reached 1:23 a.m. when the unthinkable happened. In northern Ukraine, reactor number four at the nuclear power plant 'Chernobyl' exploded as the result of a safety test gone wrong. The split-open reactor sent a massive cloud of radiation into the atmosphere and contaminated as much as three quarters of Europe.<sup>3</sup> The official death toll from the 'worst nuclear disaster in history' is only 54, however scientists suspect that the

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<sup>3</sup> S. Alexievich, *Voices from Chernobyl*, London, Dalkey Archive Press, 2005, p. 2.

real number is among the thousands because of radiation induced health issues.<sup>4</sup> On the 27<sup>th</sup> of April the city of Pripyat was evacuated. The modern *atomgrad* was located only 3 kilometres from Chernobyl and was home to approximately 44,000 power plant workers and their families.<sup>5</sup> On the 2<sup>nd</sup> of May a 30-kilometre Exclusion Zone was



Figure 1: Daily Mail: Map showing the Exclusion Zone.

established.<sup>6</sup> The zone, as shown in red in figure 1, marks the most radiation-contaminated area from the disaster. Despite decontamination efforts, the area remains highly radioactive and will be for many years to come.

Because of the severity of the disaster Chernobyl has become a household name alongside Fukushima, Hiroshima, and Nagasaki when speaking of radioactivity. Besides having nuclear destruction in common, those nuclear events acted as defining moments in human history. The Fukushima disaster in 2014 caused Japan to replace their nuclear power with fossil fuels until a new set strict safety measures were met.<sup>7</sup> The bombing of Hiroshima and Nagasaki in 1945 caused Japan's retreat from World War II.<sup>8</sup> In April 2006, the former leader of the Soviet Union Mikhail Gorbachev stated that the Chernobyl disaster perhaps was the real cause for the fall of the Soviet Union in 1991, because the disaster changed the Soviet people's trust in Soviet nuclear power.<sup>9</sup> In the 1980s the Soviet Union was considered to be the world's safest and most prosperous when it came to the use and development of nuclear power.<sup>10</sup> Due to the tensions of The Cold War when the Chernobyl disaster struck, the Soviet Union wished to keep up their façade as a nuclear empire.<sup>11</sup> Therefore, in the words of scientist and chief of the Chernobyl-commission Valery Legasov, the clean-up action was founded on conflicting interests, and lies were a natural occurrence when it

<sup>4</sup> K. Brown, *Manual for Survival: a Chernobyl guide to the future*, London, Allen Lane an Imprint of Penguin Books, 2019, p. 3.

<sup>5</sup> Brown, p. 27.

<sup>6</sup> Brown, p. 67-68.

<sup>7</sup> World Nuclear Association, 'Nuclear Power in Japan', *World Nuclear Association* [website], 2020, <https://www.world-nuclear.org/information-library/country-profiles/countries-g-n/japan-nuclear-power.aspx>, accessed 25 May 2020.

<sup>8</sup> K. Brown, *Plutopia: Nuclear Families, Atomic Cities, and the Great Soviet and American Plutonium Disasters*, New York, Oxford University Press, 2013, p. 70.

<sup>9</sup> A. Higginbotham, *Midnight in Chernobyl*, London, Transworld Publishers, 2019, p. 368-369.

<sup>10</sup> Higginbotham, p. 16-17.

<sup>11</sup> Brown, *Manual for Survival*, p. 233-234.

came to the levels of radioactivity, use of protective gear, and human-costs.<sup>12</sup> This conflicting and at times missing information led to suspicion and mistrust among the Soviet people, who had formerly seen the Soviet nuclear industry to be the most successful in the entire world, as well as a sign for a prosperous communist society.

Today the Exclusion Zone serves as a reminder of how fragile our lives really are. Apart from natural weathering of the buildings, theft, and graffiti, the city of Pripyat stands as it was left in 1986.<sup>13</sup> Undone dishes, a pair of shoes waiting to be worn and a mug stained dark from where the coffee once evaporated. The old Soviet apartments testify to the lives of the people that once roamed the streets of Prip'yat as well as the expectation of a swift return. Towering in the distance of the abandoned city lies the enormous sarcophagus that seals the Chernobyl power plant. The site of Prip'yat and Chernobyl is like taken from a film about nuclear apocalypse. The area symbolizes not 'what if' a nuclear disaster struck, but what could happen if a nuclear power plant is not managed correctly.

Radioactivity was discovered and defined by Marie and Pierre Curie in 1903. The term defines the electromagnetic power that can be measured when atoms split in the process of becoming matter.<sup>14</sup> Radioactive emission can cause damage to the DNA, which then leads to several health issues like cancer or foetal deformities.<sup>15</sup> The historian Kate Brown explains that 'Radioactive nuclides come in great variety, and each nuclear emergency releases a unique cocktail of radioactivity.'<sup>16</sup> Which means that there are many different kinds of radioactivity that causes different health issues. What they all have in common is the ability to harm human cells. Therefore, to simplify this thesis the term 'radioactivity' will be used as an umbrella term.

In May 2019 a sudden spike of interest hit the general public when the streaming-service HBO released the final episode of the historical drama tv-miniseries *Chernobyl* which depicts the initial disaster as well as the clean-up efforts. The series caused a massive increase in Google searches on Chernobyl, which can be seen in Figure 2, and soon a peculiar interest arose.<sup>17</sup> In 2011 parts of the Exclusion Zone opened up for tourism, but only few visited the radioactive

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<sup>12</sup> *Chernobyl: Valery Legasov Tapes – Legasov's Original Own Voice HD Compilation #01*, [online video], 2019, <<https://www.youtube.com/watch?v=UKtEK5jjxxY>>, accessed 4 Mar. 2020.

<sup>13</sup> Brown, *Manual for Survival*, p. 8.

<sup>14</sup> M. Curie, *Radio-Active Substances*, London, Franklin Classics Trade Press, 1904, p. 32.

<sup>15</sup> C. Tuniz, *Radioactivity A Very Short Introduction*, Oxford, Oxford University Press, 2012, p. 28.

<sup>16</sup> Brown, *Manual for Survival*, p. 93.

<sup>17</sup> Google Trends, 'Chernobyl' [online image], 2 April 2019, <<https://trends.google.com/trends/explore?date=all&q=chernobyl>>, accessed 2 Apr. 2020.

grounds.<sup>18</sup> However, after the debut of the *Chernobyl* series the nuclear tourist-industry in the Exclusion Zone, allegedly welcomed more than 74,000 tourists during 2019.<sup>19</sup> According to the Ukrainian government, this is a fivefold increase that started after March 2019, which was when the *Chernobyl* series was announced.<sup>20</sup>

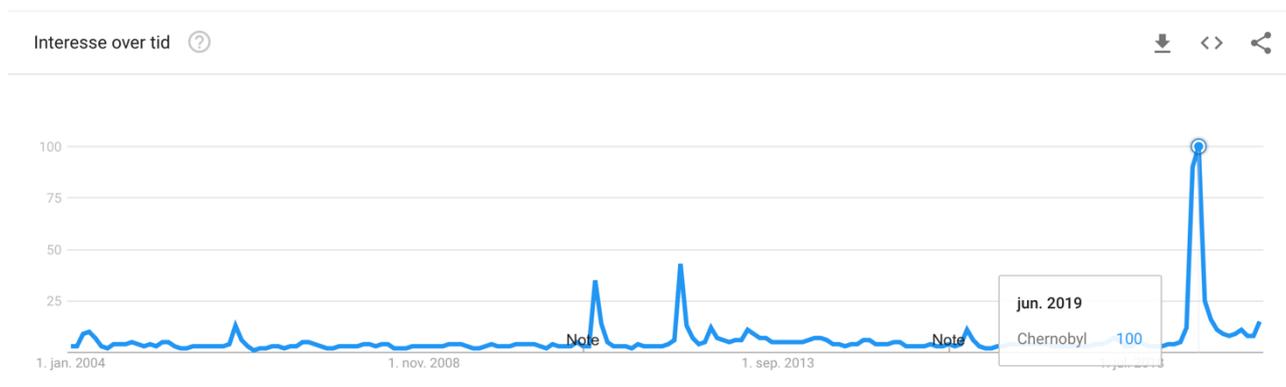


Figure 2: Google Trend statistic showing the data of interest in search queries for ‘Chernobyl’ on Google from Jan. 2004 to Apr. 2020.

It could be imagined that radioactivity, nuclear disaster and an abandoned city would discourage people from visiting the toxic grounds of Chernobyl. Instead, the Exclusion Zone (mainly Pripjat) is today the second most visited tourist destination in Ukraine.<sup>21</sup> How did this gruesome tv-series inspire so many to visit? The city of Pripjat offers tours of ghostly time-capsules of Soviet kindergartens, apartments, and the live witnessing of a post-nuclear environment. Some tourists, are even lucky to meet some of the elders who returned to their homes in the Exclusion Zone, these are often called *Chernobyl-Babushkas*.<sup>22</sup> While they are experiencing all of this, the tourists have been given the chance to measure the dangerous levels of radioactivity themselves by either renting or purchasing their own Geiger counter.<sup>23</sup> Most tourists document these experiences with their very own camera’s and some post them on social media for the world to see.

<sup>18</sup> Higginbotham, *Midnight in Chernobyl*, p. 356.

<sup>19</sup> State Agency of Ukraine on Exclusion Zone Management, ‘In the exclusion zone, 21 routes for visitors have been approved’, *Official State sites of Ukraine* [website], 2019, <<https://www.kmu.gov.ua/en/news/u-zoni-vidchuzhennya-zatverdzheno-21-marshrut-dlya-vidviduvachiv-dazyv>>, accessed 17 May 2020.

<sup>20</sup> State Agency of Ukraine on Exclusion Zone Management.

<sup>21</sup> M. Hunder, ‘HBO show success drives Chernobyl tourism boom’, *Reuters*, 4 June 2019, <<https://www.reuters.com/article/us-ukraine-chernobyl-tourism/hbo-show-success-drives-chernobyl-tourism-boom-idUSKCN1T51MF>>, accessed 17 May 2020.

<sup>22</sup> Solo East, ‘Lists of Sites we visit & itinerary for our 2-DAY Chernobyl tour’, *Tour Kiev* [website], 2020, <<https://www.tourkiev.com/itinerarytwo>>, accessed 17 May 2020.

<sup>23</sup> Solo East.

As of today, Chernobyl still faces a lot of issues. With climate change, the planets increasing temperature is drying up natural habitats and making them prone to forest fires. This has been known to occur in the Exclusion Zone, which is in fact very susceptible to fire. Whenever a fire breaks out on the still very contaminated grounds, radiation is released. On the 4<sup>th</sup> of April 2020, a big forest fire was accidentally started by a local. It took five days to extinguish and within the affected area, the radiation spiked to sixty times the amount measured before.<sup>24</sup> Instead of making headlines, the fire was largely ignored by news-media and diminished in light of the COVID-19 pandemic. However, had the fire not been extinguished, we may have had another nuclear disaster at hand. Because all of the contaminated nature would have turned into ash and released radioactive particles that then could have swept over Europe once again as it did in 1986.<sup>25</sup> Considering how the *Chernobyl*-series inspires people to visit the Exclusion Zone, I wonder how the series reflect on their interpretation of danger, health-risk and radioactivity in relation to the area itself. It is interesting to consider how radioactivity is conveyed visually in fictional products like tv-shows because it affects how people interpret and act in relation to a very real danger. This is why a term like ‘the radioactive image’ would be interesting to coin, seeing as it would make us able to discuss radioactivity in the context of a visual discourse and open up for interpreting some of these visualizations with a common vocabulary.

### ***Empirical material***

This thesis will examine three different bodies of empirical material that visually depicts the Chernobyl disaster. The first body is the historical drama tv-miniseries *Chernobyl*. I chose this material as the example of how popular media portrays radioactivity, and more importantly because this specific series prompted the spike in tourism in the Exclusion Zone. The first of five episodes of *Chernobyl* was released on the 6<sup>th</sup> of May 2019, and the last on the 3<sup>rd</sup> of June 2019. The series was written by Craig Mazin and directed by Johan Renck. It was produced by the American

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<sup>24</sup> A. Roth, “‘Bad News’: radiation 16 times above normal after forest fire near Chernobyl”, *The Guardian*, 6 Apr. 2020, <[https://www.theguardian.com/environment/2020/apr/06/bad-news-radiation-spikes-16-times-above-normal-after-forest-fire-near-chernobyl?fbclid=IwAR2mM\\_Fm5auUWoOTyw5qbRWjWv0HuTtBRJXnK6CdR8SHb2FyWOLjm8tXn-M](https://www.theguardian.com/environment/2020/apr/06/bad-news-radiation-spikes-16-times-above-normal-after-forest-fire-near-chernobyl?fbclid=IwAR2mM_Fm5auUWoOTyw5qbRWjWv0HuTtBRJXnK6CdR8SHb2FyWOLjm8tXn-M)>, accessed 7 Apr. 2020.

<sup>25</sup> N. Evangeliou, Y. Balkanski, A. Cozic, W. Min Hao, A.P. Møller, ‘Wildfires in Chernobyl-contaminated forests and risks to the population and the environment: A new nuclear disaster about to happen?’, *Environment International*, vol. 73, Dec, 2014, p. 346-358, <<https://www.sciencedirect.com/science/article/pii/S0160412014002608>>, accessed 15 Apr. 2020.

streaming website Home Box Office (HBO) and Sky UK.<sup>26</sup> The series depicts the initial Chernobyl disaster in 1986 as well as the following stages in the clean-up action and trial. Within this series, I chose to analyse two scenes which both engage in the first two stages of the disaster. The first scene appears in the first episode called '1:23:45', I call this scene 'The Railway Bridge Scene'. The scene begins at 0:28:30 and ends at 0:30:24. The other scene appears in the second episode called 'Please Remain Calm'. I call this scene 'The Hospital Scene'. The scene begins at 0:04:30 and ends at 0:06:12.

The second body I chose to study are tourist photographs of Pripyat. I chose three photographs of Pripyat that were uploaded onto the social media platform Instagram. The photograph's have been selected by ensuring they included the hashtags: #radioactivity, #chernobyl and #exclusionzone. I will speak more about my method of selection in the subsection about methods. The photographs have been taken by the usernames: @lozleisure, @fannyloveink, and @jospricevisual.

The third body I chose to study are two tourist's videos of Pripyat, both have been uploaded on the online video platform YouTube. The first one is by tourist Neil Ansell with the username: Abandoned Explorer. The video is called '*Inside Chernobyl's Hospital Basement (Scariest Room In Chernobyl)*', and is filmed from Ansell's point of view. The video is 15:04 minutes long. The second video is created by tourist Benjamin Rich, with the username: Bald and Bankrupt. The video is called '*Searching For The Chernobyl Resettlers*', and is filmed from Rich's point of view. The video is 10:19 minutes long.

## ***Ethics***

In the field of visual culture, we often conduct fieldwork with the intention of understanding a place and the visual properties that connect to it. When I initially explored the idea of writing about an invisible entity in the surroundings of disaster, I had to consider whether it would be necessary to conduct fieldwork in this dangerous environment. I chose not to visit Chernobyl for two reasons. Firstly, the uncertainty of the quantity of radiation. According to the World Health Organization's (WHO) latest rapport from 2016, there is still a considerable amount of toxic radiation that can lead

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<sup>26</sup> Internet Movie Database, 'Chernobyl', *IMDb* [website], 2019, <<https://www.imdb.com/title/tt7366338/>>, accessed 17 May 2020.

to cellular damage when visiting Chernobyl.<sup>27</sup> Despite this, the Ukrainian government still welcomes guests. Ukraine has a relatively low gross domestic product (GDP) per capita compared to other European countries, which leads me to my second important ethical reflection.<sup>28</sup> I do not wish to exploit the victims of Chernobyl, nor contribute to create new ones. To enter the Exclusion Zone, I would have to pay a guide. Many citizens in the surrounding areas earn their living by making tourist tours inside the radioactive Exclusion Zone. While the risk for one-time visitors may not be great if proper precautions are taken, guides are subject to long-term exposure. Thus, they are risking their lives to entertain guests and keep up a ‘risk free’ façade. I, as a researcher do not want to exploit people by paying them to put their lives in any danger that they do not have to face.

### ***Theory and method***

The thesis explores aspects of radioactivity which have not been contextualized before in a visual discourse. Therefore, I have decided to rely on semiotics to study and decipher the visual tropology which occur in *Chernobyl* and selected tourist images from the Exclusion Zone. By comparing my findings between the fictional and real-life depictions, I want to identify visual tropes for the representation of radioactivity. Because semiotics and visual experience is interrelated with aesthetics, I will include aesthetical theory as well. These are the theories crucial to my thesis.

### ***Theory***

Semiotics set out to study the interpretation of signs and how they function to communicate meaning. The structuralist, linguist, and semiologist Ferdinand de Saussure conceptualized the ‘sign, signifier, signified’. Saussure noticed that the linguistic sign and our psychological interpretation of a sign is united by an associative bond, and there is no inherent link between the

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<sup>27</sup> ‘1986-2016: Chernobyl’, *World Health Organization*, 2016, p. 3.

<[https://www.who.int/ionizing\\_radiation/chernobyl/Chernobyl-update.pdf?ua=1](https://www.who.int/ionizing_radiation/chernobyl/Chernobyl-update.pdf?ua=1)>, accessed 21 Jan. 2020.

<sup>28</sup> The World Bank, ‘GDP (current US\$) - Ukraine, Sweden, France, Spain, United Kingdom, Russian Federation, Belgium, Germany, Romania’, *World Bank national accounts data, and OECD National Accounts data files* [website], 2020, <<https://data.worldbank.org/indicator/NY.GDP.MKTP.CD?locations=UA-SE-FR-ES-GB-RU-BE-DE-RO>>, accessed 25 May 2020.

signifier and the signified.<sup>29</sup> By this Saussure intend that language is constituted by a system of signs. When we speak the word 'tree', the sound-image accounts for an actual tree. However, this is not a specific tree but only the concept of a tree. The signifier is therefore the word 'tree' and the signified is an actual tree. To Saussure this means that the relationship between the sign and signified is arbitrary, because it follows how society traditionally has used a specific word (linguistic sign) to signify a specific object.<sup>30</sup> These signs and signifiers can be translated into visual impressions like the written word, which Saussure argues that people tend to pay more attention to, because it is more memorable than the spoken word.<sup>31</sup>

Radioactivity in itself is free from any sensorial qualities, only the written and oral word for it constitutes the meaning of a concept of radioactivity. The interpretation of this concept relies on the knowledge of the individual. Therefore, there does not exist a common ground for how we interpret radioactivity. Post-structuralist, linguist, and semiologist Roland Barthes' study on the *Rhetoric of the Image* (1964) was founded on Saussure's concept of the sign, signifier, signified, and develops it by attributing them to an image to study their ability to generate meaning in an image.

In Barthes essay he analyses a pasta advertisement from Panzani. According to Barthes an advertisement is the most candid image because of its intention, which is to sell a product.<sup>32</sup> Within the image, Barthes identifies three kinds of messages (1) the linguistic message, (2) the literal message, and (3) the symbolic message. (1) The linguistic message is the text that accompanies the image like a title, a label, or subtitles. The linguistic message is two-fold and can be broken into: denotational and connotational.<sup>33</sup> According to Barthes, the denoted linguistic message refers to the sign as is, like the name of the pasta company: Panzani. At the same time, the name of the company bears the connotational linguistic message which is that the name (or sign) *Panzani* signifies 'Italianicity'.<sup>34</sup> Barthes states that because most visual media (film, dialogue, comic strip, etc.) is accompanied by a linguistic message, it proves that our society is not a civilization of the image, but rather a civilization of writing.<sup>35</sup> He argues that an image can be directed by the linguistic messages *anchorage* and *relay*. The anchorage functions as a guidance for

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<sup>29</sup> F. d. Saussure, *Course in general linguistics*, tr. W. Baskin, New York, Columbia University Press, 2011, pp. 65.

<sup>30</sup> Saussure, p. 74.

<sup>31</sup> Saussure, p. 25.

<sup>32</sup> R. Barthes, 'Chapter 8: Rhetoric of the Image', in *Elements of Semiology*, New York, Hill and Wang, 1977, p. 152-153.

<sup>33</sup> Barthes, p. 153.

<sup>34</sup> Barthes, p. 153.

<sup>35</sup> Barthes, p. 155-156.

the viewer to understand the image which, without the text has a plenitude of interpretations in itself.<sup>36</sup> Barthes defines relay when text and image ‘stand in a complementary relationship’, like in film where dialogue and image work together to convey a narrative.<sup>37</sup> (2) The literal message refers to the denoted image. Barthes calls this ‘the first degree of intelligibility’, which is when a person is able to identify an object, like a dog, within an image as more than just a shape.<sup>38</sup> He further argues that a purely denoted image cannot exist, because the viewer automatically interprets objects as more and attach meaning to the otherwise ‘denoted’ signs.<sup>39</sup> Despite Barthes rejection of the purely denoted image, he does acknowledge that the photograph is the only kind of visual expression that has the quality of being seen as denoted, because of its analogical nature. Barthes explains this by referring it to the ‘myth of the photographic naturalness’, where a photograph may provoke the consciousness of ‘being-there’ (within the image), but with the awareness of the photograph is from a time that has passed.<sup>40</sup> Therefore, according to Barthes a photograph eludes history.<sup>41</sup> (3) The symbolic message refers to the connoted image. Barthes defines this as being the meaning that viewers attribute to a system of signs within an image. The signs are deciphered by cultural code, which varies depending on the individual’s lexicon.<sup>42</sup> A lexicon is a body of knowledge within a person, where ‘one lexia can mobilize multiple lexicons’.<sup>43</sup> Barthes call the collection of lexicons within a person their *idiolect*.<sup>44</sup> Not everyone share the same lexicon, and therefore meaning is produced as an intersection between the creator of the images and the consumer.<sup>45</sup>

The etymology of the word ‘trope’ stems from Greek and means ‘to turn’.<sup>46</sup> In literature science, tropes are used to decipher how and why figurative language is constructed and used. An example is ‘life is a box of chocolate’, the which really means that you never know what life brings.<sup>47</sup> In cinema-studies a trope is specified by Art-director Michael Rizzo as ‘[...] a universally identified image imbued with several layers of contextual meaning creating a new visual metaphor’.<sup>48</sup> I decipher these interpretations in relation to semiotics, which is that for something to

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<sup>36</sup> Barthes, p. 155-156.

<sup>37</sup> Barthes, p. 157.

<sup>38</sup> Barthes, p. 158.

<sup>39</sup> Barthes, p. 158.

<sup>40</sup> Barthes, p. 159.

<sup>41</sup> Barthes, p. 159.

<sup>42</sup> Barthes, p. 160.

<sup>43</sup> Barthes, p. 160.

<sup>44</sup> Barthes, p. 160.

<sup>45</sup> Barthes, p. 160.

<sup>46</sup> L.H. Kjældgaard (ed.), *Litteratur: Introduktion til teori og analyse*, København, Aarhus Universitetsforlag, 2012, p. 95.

<sup>47</sup> Kjældgaard, p. 96.

<sup>48</sup> M. Rizzo, *The Art Direction Handbook for Film*, Amsterdam, Focal Press, 2005, p. 321.

become a trope it has been repeatedly used and contextualized in an image. Literature researchers use tropology to critically ask the authors why they do not 'just' write what they want to say.<sup>49</sup>

Likewise, I will use tropology critically to ask about the authenticity of establishing a visual trope for radioactivity, when radioactivity in itself has no visual qualities. Because of the nature of this thesis, I will only be able to find tropes within the *Chernobyl*-series as well as the tourist images, which may not be universal in the bigger picture.

The sublime is defined by the philosopher Edmund Burke (1757). He characterised the sublime as an aesthetic experience that is founded in the strongest emotion a person is capable of feeling which is astonishment. Astonishment renders the individual incapable of feeling anything else, yet astonishment is founded on a degree of horror.<sup>50</sup> Horror is like fear and terror which resembles pain, and to Burke pain is an inferior feeling because pleasure is derived from pain.<sup>51</sup> However, even if the sublime is terrifying, we can take pleasure in it, because it reminds us of everything good in our lives.<sup>52</sup> The sublime can be accompanied by the sense of the unknown, which Burke calls obscurity.<sup>53</sup> Therefore the sublime can be incomprehensible, and at times we need our imagination to understand the concept. Because our imagination is the place where fears and hopes and passions are collected, it is also the place that generates 'new' ideas, with the disposition of, what Burke describes as: '[...] those ideas which it has received from the sense'.<sup>54</sup> It, being imagination. Therefore, the imagination will immediately connect the experience of the sublime to something terrifying because that is what it (the sublime) is founded on. A sublime entity cannot be painted because a painting will allow us pleasure of imitation as well as the knowledge that it won't hurt us.<sup>55</sup> Therefore, only words can describe it as is. Burke further argues that the sublime has to be experienced from afar, because if you are amidst the dangerous you will only think of it as dangerous, whereas if you see it from afar, your imagination can still cause you the same fear, but with the knowledge that you are distanced and thus 'safe', but only 'safe' with the degree of uncertainty.<sup>56</sup> An experience of the sublime can be explained like a thunderstorm. We know it is dangerous, yet it is astonishing because of how the natural powers are working so

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<sup>49</sup> Kjældgaard, *Litteratur*, p. 96.

<sup>50</sup> E. Burke, *The Philosophical Inquiry into the Origin of our Ideas of the Sublime and the Beautiful*, London, Howlett and Brimmer, 1823, p. 74.

<sup>51</sup> Burke, p. 35.

<sup>52</sup> Burke, p. 85.

<sup>53</sup> Burke, p. 82.

<sup>54</sup> Burke, p. 12.

<sup>55</sup> Burke, p. 83-84.

<sup>56</sup> Burke, p. 83-84.

incomprehensibly. Therefore, we feel terror, but not so much that we cannot take pleasure in it, because we are watching it from afar.<sup>57</sup>

### *Methodology*

During my research I found much of the information on Chernobyl to be conflicting. Therefore, I decided to rely on published material rather than online sources for historical information. Many of the books about Chernobyl is written by researchers with knowledge originating from archives and interviews with former liquidators and their families. I am aware that those, as well as much other literature of the disaster, may be biased. Most of the actual *remaining* documents from the Chernobyl disaster are either radioactive or classified and unavailable for students, which made it difficult to cross-check facts. Comparatively, published material on the Chernobyl disaster was the most reliable source of information.<sup>58</sup>

I chose tourist photographs of the Exclusion Zone from the social media platform Instagram according to which photographs that I repeatedly saw during my initial research. I made my selection between the photographs, by looking at their hashtags. A hashtag functions as linguistic guidance which signifies the context of the photograph. The hashtags I chose were: #radioactivity and #chernobylexclusionzone, in chapter two section 2.3. I make use of the hashtag #ferriswheel. The hashtags can be seen in the appendix. I chose these because they refer to what my thesis embodies, which is the search of radioactivity in images of the Chernobyl Exclusion Zone. I chose to only pick photographs that had been uploaded after the *Chernobyl*-series aired. I write uploaded and not taken, because it is hard determining when anyone has captured an image, seeing as Instagram is a platform where you can upload any picture from any time. Moreover, I decided to choose Instagram images, because the social media platform is so widely available for and used by anyone. The tourist videos in this thesis, was chosen because of the video quality and their title. YouTube like Instagram is available for and used by anyone.

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<sup>57</sup> Burke, p. 83.

<sup>58</sup> I write remaining, because during the 1990'ies many documents were destroyed by the KGB. Brown, Manual for Survival, p. 233, 235.

## *Previous research*

Previous research within the field of visual culture and the visualization of radioactivity in itself is non-existent. During the research for this topic, I came across a single study of the visual implication of radioactivity in *The Incredible Hulk* by media-researchers John Darowski and Joseph J. Darowski (2016). The study focusses on how Hulk's appearance has changed with the development of American nuclear ideals. It suggests that society's perception of radioactivity motivates the superhero's appearance and characteristics.<sup>59</sup> This had me think that this is not a singular case but could be applied to multiple superhero character's like X-men or Spiderman. Including, how radioactivity in superheroes may work as a vessel for communicating the social and political stances on nuclear power and warfare. However, this makes for another study in the future. Aside from superheroes, there exist a study on the visual implications of the mushroom cloud in Danish gossip magazines by historian Søren Hein Rasmussen (2009).<sup>60</sup> As a historian Rasmussen's study is focused on the historical aspect of why these images were created in relation their time and how they contributed in creating a positive attitude towards nuclear bombs in the Danish citizens during The Cold War. This study was helpful to my thesis, because it validated my own observations of how nuclear power / warfare serves as a constant paradox between good and bad representations in popular media. However, the study still did not offer any direct research the actual visuality of radioactivity.

Within cultural sciences the topic of Chernobyl has received few publications in recent years. Most are written by historian Kate Brown who is considered a leading expert within the field of nuclear culture. Brown approaches the disaster by relying on archival material, witness testimonies, and interviews which she herself conducts. Despite her thorough studies, her publications do not delve into the field of radioactivity's visuality, but rather mentions media publicity of the disaster in relation to societal changes like the fall of the Soviet Union.<sup>61</sup>

In general Chernobyl is not a subject at loss for research, only in the field of humanities it seems like researchers prefer to rely on historical facts and archive material rather than the visual depiction of radioactivity itself. In light of the disaster's 30<sup>th</sup> anniversary in 2016, a rediscovered academic interest within Chernobyl seem to have emerged, but mainly in the hard

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<sup>59</sup> J. Darowski, J.J. Darowski (ed), 'Smashing Cold War Consensus Culture: Hulk's Journey from Monster to Hero', in J.J. Darowski (ed.), *The ages of The Incredible Hulk*, North Carolina, McFarland & Company Inc. Publishers, 2015, p. 7-23.

<sup>60</sup> Rasmussen, S.H., *Den Kolde Krigs Billeder*, København, Gyldendal, 2009.

<sup>61</sup> Brown, *Manual for Survival*, p. 147, 154, 171-172.

sciences which focus on the long-term radiation damage of the environment and wildlife in the Exclusion Zone.

### ***Disposition of the thesis***

When I began my journey to research the topic of radioactivity and Chernobyl, I repeatedly came across two sentences in the books I read. That the Chernobyl disaster took place in ‘the age of the peaceful atom’ and that the Chernobyl nuclear power plant initially was going to reflect the proud Soviet attitude towards nuclear power which was to ‘make the atom a worker, not a soldier’. I felt it was imperative for the thesis to reflect these two sentences that were so important for the people in the former atomgrad.

Chapter one is called ‘The Age of the Peaceful Atom’, this is meant as a direct reflection on the time which the *Chernobyl* tv-series is set. Therefore, the first chapter begins by introducing the creation of Pripjat as an atomgrad and the fate of some of the Chernobyl victims, to establish why the disaster was so devastating to the Soviet people. This introduction contextualizes the following analysis of the two scenes from *Chernobyl*. I will begin by giving an overall reading of the scenes in a chronological order, following with a semiotic analysis in which I will identify the signs and signifiers within the scene to decipher visual tropes. The first chapter will end in a short conclusion called ‘De/coded Visual Language for Radioactivity’. It partly concludes how the *Chernobyl* series build a visual language for the viewer to ‘see’ and understand radioactivity and how this in turn can affect the viewers experience hereof, hereby concluding the first of my research questions.

The second chapter is entitled ‘Let the Atom be a Worker, not a Soldier’. It deals with the tourist images from Chernobyl, and how the increase of tourism has affected the space. The chapter begins with an introduction to tourism in the area, then proceeds into identifying different visual tools and tropes for radioactivity in reality. The chapter ends in part conclusion of how visualization of radioactivity shapes the tourists’ images of Chernobyl, hereby concluding the second of my research questions.

The third chapter discusses my findings from the previous two chapters and studies them from the point of aesthetics, as well as characterizing the visual language for radioactivity.

The end of this chapter will try to coin the term of the radioactive image. Thus, this chapter aims to answer the last of my research questions.

## Chapter 1: The Age of the Peaceful Atom

Within the willowing marshes of the Ukrainian Polesian swamp, the Soviet Union's first big atomgrad arose. Formerly seen as a wasteland, only cultivated by a few peasants, the city of Pripyat grew to become a utopia for young Soviet families.<sup>62</sup> The city offered good schools, a beautiful natural environment with white-sand beaches along the Polesian river, good infrastructure and newly built apartments. All because of Chernobyl; the Soviet Union's biggest and most prestigious nuclear power plant.<sup>63</sup> To work there meant an opportunity for young engineers to gain a prominent future within the Soviet nuclear industry.<sup>64</sup> Because of the trust in the Soviet Union's superiority in safe nuclear power, Pripyat was located only three kilometres from Chernobyl, and was built for the workers and their families.<sup>65</sup> In 1986, Pripyat's population measured nearly 44.000 people.<sup>66</sup> All thriving on the prosperity that Chernobyl bestowed upon the city. The citizens harvested the benefits in the shape of a well-stocked supermarket and the ability to own their own apartment.<sup>67</sup> Thus, to live and work in the atomgrad meant gaining independence fast, which was a rarity in the Soviet Union.<sup>68</sup> This all came to change.

The day after the Chernobyl disaster, on the 27th of April 1986, the inhabitants of Pripyat were evacuated.<sup>69</sup> They were told to pack only the most necessary and soon buses took them away from their homes. Once they arrived in Kyiv and Moscow, they were stripped of all their possessions, in an attempt to limit the radioactive particles from spreading among the citizens. Their clothes were replaced with government issued attire and their hair were shaved off.<sup>70</sup> Much like nature, hair can absorb and deposit radioactivity. Imagine it like taking a shower. Warm water will open the hair cuticle. Once conditioner is applied to the hair, the open cuticle will obtain the moisture from the conditioner. When you step out of the shower, the cold air will close the hair cuticle, leaving it smooth from the conditioner. Like conditioner, radioactivity can become embalmed in the strands of people's hair. This is why pets were not evacuated.<sup>71</sup> These people with shaved heads and government issued clothing came to be known as 'Chernobylites' and were feared

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<sup>62</sup> Higginbotham, *Midnight in Chernobyl*, p. 18.

<sup>63</sup> Higginbotham, p. 22.

<sup>64</sup> Higginbotham, p. 18.

<sup>65</sup> Higginbotham, p. 18.

<sup>66</sup> Brown, *Manual for Survival*, p. 27.

<sup>67</sup> Higginbotham, *Midnight in Chernobyl*, p. 17-18.

<sup>68</sup> Higginbotham, p. 17-18.

<sup>69</sup> Brown, *Manual for Survival*, p. 27.

<sup>70</sup> Brown, p. 37.

<sup>71</sup> Brown, p. 86.

among the public. ‘Chernobylites’ were often publicly dismissed for being radioactive.<sup>72</sup> Their bald heads became the first visual signifier for the Chernobyl disaster, and thus the one thing that people could actively avoid, because even if the radioactivity was invisible, the people were not. I will refrain from calling the victims of Chernobyl by the name of ‘Chernobylites’, because it makes them the Other.<sup>73</sup> By labelling a certain group of people, I would adhere to a culture of ignorance that though it has surpassed, it still remains a sad memory in many of the Chernobyl victims. Unfortunately, I was unable to obtain any images of the shaved Chernobyl victims. Only the tales of the civilians which Kate Brown documented in *Manual of Survival* (2019) and journalist Svetlana Alexievich’s *Voices from Chernobyl* (1997) bears witness.<sup>74</sup> Former Deputy Head of the Executive Committee of the Shield of Chernobyl Association, Sergei Vasilyevich Sobolev once commented on the existing footage of the disaster:

‘If anyone did manage to record any of it, the authorities immediately took the film and returned it ruined. We don’t have a chronicle of how they evacuated people, how they moved out the livestock. They didn’t allow anyone to film the tragedy, only the heroics.’<sup>75</sup>

Due to the tensions of The Cold War, the Soviet government deemed it better to calm the large population, hereby the international news media too, by only showing the heroics and not the disastrous side of Chernobyl.<sup>76</sup> The shaved Chernobyl victims may have been deemed too ugly and too tragic to film. Instead the Soviet government focused on capturing the pretty and patriotic: the heroic acts of liquidators saving the world from nuclear disaster. Proving that even if an accident occurs, it is not beyond the Soviet Union’s ability to restore everything to normal. The images in figure 3 show frames from a Soviet approved propaganda film depicting only parts of the evacuation of Pripyat. In the frames Soviet generals can be seen, standing on the streets and making sure that every citizen is safely evacuated. One general is gazing towards the sky through binoculars. Whether they realized it or not at the time, the footage accidentally captured actual glimpses of the swarming radioactivity.<sup>77</sup> The white dots in the frames capture radioactivity’s actual

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<sup>72</sup> Brown, p.

<sup>73</sup> I have my understanding of ‘the Other’ from H. Bhabha, ‘The Other Question: the stereotype and Colonial Discourse’, *Screen*, vol. 24, no. 6, 1983, p. 20-21.

<sup>74</sup> Alexievich, *Voices from Chernobyl*, p. 41, & Brown, *Manual for Survival*, p. 44-48.

<sup>75</sup> Alexievich, *Voices from Chernobyl*, p. 138.

<sup>76</sup> Brown, *Manual for Survival*, p. 22.

<sup>77</sup> *Chernobyl’s Cafe* [documentary], dir. M. Baudocq, Prime Video, 2016.

visuality, which is much like the gleams that Marie Curie noted as emanating from embodied radioactive substances.<sup>78</sup> It is unusual to be able to see radioactivity, seeing as its fluorescent property only appears when either air is ionized enough or when it embodies an object, like the old radium clocks from *American Radium Dial*.<sup>79</sup> These glowing dots in figure 3 therefore signifies the actual danger that the Pripyat citizens were exposed to, since the dots are heavy radiation hitting the camera lens. At the time, I can imagine that these visions of radiation may have been ignored and passed on as normal film issues, because they would only have been visible once the film was developed. It is not like today, where we have instant access to the visual material, we record through digital technology.



Figure 3: Screenshots (ftlc.: 17:21, 17:16, 17:17, 17:19) from 'The Real Chernobyl': Film from the evacuation of Pripyat, filmed on the 27 May 1986.

Paradoxically, the people who were saved from the radioactive areas did not subsequently pose any threat but were made invisible and stigmatized for being radioactive.<sup>80</sup> At the same time, the people who were tasked with saving residents and cleaning up the disaster were exposed and celebrated as

<sup>78</sup> Curie, *Radio-Active Substances*, p. 61-63.

<sup>79</sup> Curie, p. 31. & K. Moore, *Radium Girls: the dark story of America's shining women*, Illinois, Sourcebooks, 2017, p. 2-3.

<sup>80</sup> Alexievich, *Voices from Chernobyl*, p. 107.

heroes, but were in fact very radioactive.<sup>81</sup> Today this leaves us an interesting perspective of how people deal with danger, because society so often relies on visual signification to determine whether something is good or bad, healthy or unhealthy.<sup>82</sup> Søren Hein Rasmussen (2009) argued that advertisement in women's magazines from the 1950s, used images of nuclear bombing to deliberately force a positive attitude in the Danish citizens towards nuclear bombs. Likewise, the Soviet governments images of Chernobyl were made to reinforce a positive attitude and trust in the Soviet citizens that they were not under threat of any danger. However, contradictory to the case of the nuclear bomb, the Chernobyl disaster did not have any visual indicator for the amount of radioactivity. The citizens would have to rely on the spoken word and the images of the clean-up effort. Today we know of the actual true scale of the Chernobyl disaster, but all of those real documenting images will remain forever destroyed by the *KGB* (committee for State Security), leaving the truth of the disaster to be passed on in history by accounts from Chernobyl victims, liquidators and their families.<sup>83</sup> These stories as well as the few archival documents that were left, were the foundation behind the creation of the *Chernobyl* series.<sup>84</sup> Roland Barthes (1997) chose to analyse an advertisement because he meant that the intention was clear.<sup>85</sup> I believe that the intention of the *Chernobyl*-series is just as clear. It lies in the official description and categorization of it that it is a 'historical drama', meaning that the series tries to adapt and depict the Chernobyl disaster with historical accuracy into film. Since Chernobyl was a nuclear disaster, the *Chernobyl*-series must intend to show a historical event where large amounts of radioactivity were unleashed. Thus, it begs the question of how they visualize this invisible killer?

### ***1.1. The Railway Bridge Scene***

I will now present my interpretation of the railway bridge scene. Though short, the scene is one the most memorable in the entire *Chernobyl* series and has become known among fans as 'The Bridge

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<sup>81</sup> Brown, *Manual for Survival*, p. 92-93.

<sup>82</sup> I am thinking about disease and disaster, not thoughts on morality.

<sup>83</sup> 'KGB' is short for the translated English version: Committee for State Security. They functioned as both the main security agency and the secret police during the Soviet Union.

<sup>84</sup> Internet Movie Database, 'Chernobyl'.

<sup>85</sup> Barthes, *Elements of Semiology*, p. 34.

of Death'.<sup>86</sup> In this scene the citizens of Pripjat are gathered on a railway bridge to watch the fire at the Chernobyl power plant from afar. I will begin my analysis by giving a full chronological description of the scene, before moving into decoding the signs/signifiers by using Roland Barthes' semiotic theory of the three messages (the linguistic, literal and symbolic) to analyse how radioactivity has been visualized in this scene. Because of the inability to include moving images in this document, I decided to limit my semiotic analysis to four frames within the scene, but with the ability to contextualize them with the knowledge and dialogue from the overview. The frames will be introduced in the overview.

### *1.1.1. Overview of the Railway Bridge Scene*

The splash of liquid clunks into a tin mug. A man lifts a vodka-bottle to stop pouring while the liquid inside the bottle shines in the glow of the streetlamp. Next to him, his wife offers a child a biscuit, meanwhile more people seem to gather on the railway bridge. It is dark, yet the light sum of voices gives the indication of a cheerful atmosphere. People are smoking and the couple starts conversing while sharing the mug of vodka:

Woman: 'What do you think makes the colours?'

Man: 'Oh... It's the fuel for sure.'

Woman (mockingly): 'Oh. It's the fuel for sure?'

They both laugh while looking at each other.

Woman: 'What do you know about it? You clean floors at a train station.'

Man: 'My friend, Yuri, works at the power plant. He says it runs cold. No gas, no fire. Just atoms. Yuri says the only thing is, you can't walk right up to the fuel. If you do, a glass of vodka an hour for four hours.'

Woman: 'Isn't Yuri a plumber?'

Man: '...at the nuclear power plant, yeah.'

A slight smile appears on the woman's face as if she does not really trust Yuri the plumber but

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<sup>86</sup> M Schellenberger, 'Why HBO's "Chernobyl" Gets Nuclear So Wrong', *Forbes*, 6 June 2019, <<https://www.forbes.com/sites/michaelschellenberger/2019/06/06/why-hbos-chernobyl-gets-nuclear-so-wrong/>>, accessed 17 May 2020.

settles with her husband's reassurance; Afterall Yuri does work at the power plant. She affectionately leans her head on his shoulder and remarks: 'It is beautiful'. He answers: 'Yeah'. Their conversation is short but chillingly so. Because once their conversation is over, the sum of voices intensifies, and we are finally allowed a glimpse of 'the beautiful'.



Figure 4: Screenshot (0:29:19) from ep. '1:23:45', *Chernobyl*: Citizens of Pripyat Standing on the railway bridge watching the fire at the Chernobyl power plant.

The frame switches from a close-up of the couple to an image from afar. The collective voices of people intensify in conjunction with the background music. As seen above in figure 4, the citizens of Pripjat are hurled together on the railway bridge to watch the peculiar fire at Chernobyl. Emerging from the core of the fire is a blue pillar of light. The voices quiet and only the music plays as we are now presented with beautiful slow-moving images of multiple blonde women's hair dancing in the wind, while ashes start to fall around them.



Figure 5: Screenshot (0:29:37) from ep. '1:23:45', *Chernobyl*: Pripyat citizen watching the fire, ashes falling around her and lands in her hair.

At first the ashes appear white like snow falling elegantly through the air. However, they turn black, like ashes, when they touch the skin and hair of the people on the bridge. Figure 5 shows the flowing white ashes are contrasted with the black background and how those ashes that have fallen in the blonde hair have turned black. The big white splotch is supposedly meant to be a streetlamp but there are none placed there in the image of the bridge (fig. 4) and thus the white light seems out of place, but still eerily aids the ashes to reflect the light in the dark. First, only a few flakes of ash gently flow through the wind only to be accompanied by more and more, joining in a crescendo of downfall.

Suddenly the picture is turned upside down and the streetlamp illuminates the falling ashes from below, much like figure 7, but with less ash. The amount of ash now increases rapidly, becoming larger white silvery specs in the light of the streetlamp, making it look like a snowstorm. The camera zooms out and we see the people from below all of the sudden. The frame switches again and we are now experiencing how people are happy and calm despite the situation. We see ashes falling on the lips of a woman in the crowd. We see a woman smiling as a speck of ash falls on her hand while she grasps the rail of the bridge. We see how the man from the couple mentioned earlier, now kissing their baby which he lifts into the air so that they too can frolic and enjoy the snowstorm. We see a lady, helping and encouraging her child to touch the ashes.



Figure 6: Screenshot (0:30:15) from ep. '1:23:45', *Chernobyl*: Child reaching to touch the ashes.

Then the frame switches and we observe the children playing in the ashes. They laugh and play as if they were in a giant sandbox or outside on a snow day. In figure 6 a little boy is reaching his hand out to touch the ashes smiling - it is a moment of delight. The scene ends with the same image of the streetlamp turned upside down as pictured in figure 7. The sky is dark but gradually turns into blue and then becomes light as the streetlamp shines from below. We cannot see the streetlamp, only the light and how more ashes than before seemingly emanates from the light source.



Figure 7: Screenshot (0:30:21) from ep. '1:23:45', *Chernobyl*: Streetlight turned upside down, illuminating ashes from below.

### 1.1.2. *Semiotic analysis of the Railway Bridge Scene*

In the beginning of the scene, we are presented with a dialogue between a couple. This dialogue functions as anchoring linguistic message, because it establishes not only what the scene entails but also directs us to what we are meant to notice. When we are presented with the image in figure 4, we realize that the blue torch is the fuel on fire, because of the conversation. Blue is the colour for cold which is why the man assumes that it is the nuclear fuel. After all his friend Yuri, who worked at the power plant, said that the power plant runs cold. This linguistic message further connotes the trust that existed between the Soviet people and nuclear power, since the couple seem to find some consolation in the plumber Yuri's words, since he *works* at the power plant albeit he must be informed. Moreover, some of the viewers with the lexicon of radioactivity may be familiar with the Cherenkov effect. The Cherenkov effect is a phenomenon that appears when large amounts of radioactive nuclides collide with the molecules in the air and emit a glowing blue colour.<sup>87</sup> Therefore, to the people with this body of knowledge, the image of the blue pillar of light is not only a linguistic message but becomes a connoted image that reflects dire circumstances. The interpretation of the blue pillar is therefore twofold, on one side it can be anchored and understood by just the conversation, and on the other side it can be a connotative image in itself, if the viewer possesses the lexicon of the Cherenkov effect. The dialogue has further linguistic messages being to drink 'a glass of vodka an hour for hours', if exposed to the atomic fuel. At first, this appears as an informative and denoted linguistic message. However, it also adheres to the myth of vodka as a protective measure against radioactivity that was established among the liquidators during the 1980s. In relation to the image of the blue pillar of light, the linguistic message becomes further connoted, as it works together with the image in a relay to foreshadow of the outcome of this fire: that the fuel will spread among people. Luckily, the couple is already drinking vodka during this dialogue, which is a denoted image that signifies them having a good time. In relation to the image, it becomes a connoted signifier for them already having taken 'protective' measures against the nuclear fuel they can see from afar. However, we as the viewers with the lexicon of radioactivity, already know that they are not safe, even if they are watching the fire from afar. Because in case of radioactivity, neither distance nor vodka will protect them.

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<sup>87</sup> Edp Sciences, 'Cherenkov Effect', *Le Centre national de la recherche scientifique* [website], 2020, <[https://www.radioactivity.eu.com/site/pages/Cherenkov\\_Effect.htm](https://www.radioactivity.eu.com/site/pages/Cherenkov_Effect.htm)>, accessed 2 May 2020.

When the specs of ashes start to appear, it is what Barthes calls a literal image or a denoted image.<sup>88</sup> The ashes adhere to ‘the first degree of intelligibility’, because we know that since the power plant is on fire the ashes must stem from it. Though, I argue that viewers are watching the scene, aware that the Chernobyl disaster unleashed dangerous amounts of radiation. Consequently, the viewers may make the connection that these ashes could potentially not be as innocent as they appear. During the scene we follow the process of how a few slow specs at first soon turns into a ‘snow storm’ of ashes. The first visual signifier of the ashes being more ominous than first perceived is in figure 5, where we observe how the ashes turn black once they land in the woman’s hair. In the beginning of this chapter, I provided the lexia of how the Chernobyl victims had their hair shaved off. Therefore, the ashes turning black becomes a symbolic message that foreshadows the future of the Pripyat citizens. Albeit it is only when having this lexicon that the ashes connotes a *direct* visual indication of radioactivity at first.

Figure 7 is repeated twice. The image that I selected is from the last repetition. The first one is the same except that there are fewer ashes ‘emanating’ from the light. That the image is repeated, and the scene ends with this, is an indication and reminder for the viewer that this is important. In figure 7 the picture is turned upside down, to make it look like the ashes are flowing upwards from a light source. The colours of the light are mirroring the fire at the power plant: the yellow core that gradually turns lighter until a blue colour much like the one from the Cherenkov effect (fig. 4), surround the edges of the light yellows. At first glance, the first degree of intelligibility tells us that this is a streetlamp turned upside down, but when asking why it is so, it becomes clear that this composition offers us a symbolic message. The ashes upwards movements in relation to the colour-scheme connotes radioactivity escaping the core of the burning power plant. Moreover, when the ashes ‘escape’ the light source they become gleams suspended in darkness, just like how Marie Curie described the visual properties of radium: ‘[...] these gleamings, which seemed suspended in the darkness, stirred us with ever new emotion and enchantment.’<sup>89</sup> If the viewer possesses this lexicon, the lexia of these ashes may evoke their lexicon so that they are able to draw the connotative connection to the image of the ashes being ominous and radioactive. Furthermore, these gleams that the ashes portray becomes much like the ones that were accidentally captured in the figure 3 in the introducing section to this chapter, and thus they assert themselves as visual indicators that are intertextual with reality. Whether or not you

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<sup>88</sup> Barthes, *Elements of Semiology*, p. 153.

<sup>89</sup> Curie, *Pierre Curie*, p. 49.

have the lexicon of Marie Curie or the evacuation film, the visual narrative guides you by its composition to make the connection to the image being connoted albeit a visual signifier for radioactivity, with the linguistic message that you are watching a historical dramatization about the Chernobyl disaster to anchor this deciphering of meaning.

At this point, the suspicious viewer has caught on with that the falling ashes may either be radioactive or, in fact, be the visual embodiment of radioactivity. The scene shows multiple frames of ashes falling like snow on the people as well as the children. In figure 6 the viewer is faced with a child reaching for the ashes. This image can no longer be deciphered as a literal message, because the previous scenes make the viewer instantly connotate the ashes. Which is why, the scene suddenly seems so chilling. The image in figure 6 becomes a symbolic message that signifies the largest group of Chernobyl victims: the children. Most of the time, when we think of or search for images on the Chernobyl disaster, we are faced with a tableau vivant of frail bodies of children. It is a common fact that the children suffered most from the disaster, because of their susceptibility to iodine-131 which causes thyroid cancer, as well as their still developing bodies not being able to escape the radiation damage in their DNA. The boy, in figure 6, who is reaching for ashes with delight allows us to see this innocent moment of pure joy. It adds another layer to the symbolic meaning which is that children often are portrayed as innocent and naïve. Instead this child becomes a signifier and a symbolic message for the naivety that was established in the earlier linguistic message of the conversation, where the couple found confidence in Yuri the power plant plumber's knowledge of nuclear power.

The railway bridge scene's system of codes is working together to introduce the undisturbed relationship between the Chernobyl power plant and the citizens of Pripyat. The scene presents the viewer with the first visible signs of radioactivity in the shape of ashes, light and colour. The ashes functions as a visual indicator for future societal health issues. The ashes on the women's hair is a reminiscence of the women losing their hair because of radioactivity, the visual – but invisible – indicator of the ignorance of the becoming of 'Chernobylite'. The children playfully interacting with the ashes, becomes an indicator for what is now known as 'Chernobyl Children'. Likewise, it is a symbolic message of people's naïve attitude towards the situation in front of them. All of these relations are intertextual and allows us to read the scene twofold, whether or not the viewer has the lexicon of the Cherenkov-effect, shaved heads, or Marie Curie's gleams. By repeating the ashes in relation to denoted things like the fire and the streetlamp as well as their turn of colour when falling on the people, they create meaning of radioactivity because they are

anchored by the conversation in the beginning of the scene. Because the ashes are so constantly repeated in this scene, they become a trope for radioactivity.

This beautiful constructed scene alternates between fear and delight, like the actual paradox that nuclear power and radioactivity in itself presents. The unknowing citizens are exposing themselves to immense levels of danger, which later proves to affect their health. This is why this scene is so immensely hard to watch. Because the viewer is aware of the slow-to-rapid movements of the ashes which symbolises how the radioactivity is increasing by every moment. When the child reaches for the ashes it is a symbol of reaching for the future, which in the times were seen as being a nuclear society. In a way, this symbolism reminds me of Michelangelo's *The Creation of Adam* (1508-1512), where God is pointing at Adam and their fingers nearly touch. God, as an entity is bigger than Adam the human and thus, they can never be on the same level. Likewise, between human and radiation, radiation will always be the taker of life as well as the giver. Notable is also that Adam is the 'child' and likewise is the child reaching for ashes. Naïve and playing with the powerful. This scene of the railway bridge is constructed to show the lack of knowledge and vulnerability towards radioactivity. It is completely fictional as well, because 'The Bridge of Death' was closed during the disaster because a military rehearsal was performed.<sup>90</sup> Thus, this purely fictional scene is made with the intention of showing the escaped radioactivity for the first time.

## ***1.2. The Hospital Scene***

On the outskirts of Pripjat lies the hospital. At the time of the disaster, Pripjat's hospital received the first liquidators showcasing symptoms of radiation poisoning. Even though it was an atomgrad hospital, most of the hospital staff did not have any experience with radiation induced injuries and neither was the hospital prepared for any larger scale nuclear disasters.<sup>91</sup> The lack of equipment together with the incompetence of the hospital staff led to many patients being mistreated for their burns before they were shipped off to the bigger and more qualified hospitals in Moscow.<sup>92</sup> The hospital scene in Chernobyl depicts the initial panic and chaos between the first patients suffering

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<sup>90</sup> Schellenberger, 'Why HBO's "Chernobyl" Gets Nuclear So Wrong'.

<sup>91</sup> Brown, *Manual for Survival*, p. 237. Higginbotham, *Midnight in Chernobyl*, p. 135.

<sup>92</sup> Brown, *Manual for Survival*, p. 13-15.

from the first signs of acute radiation sickness and the hospital staff who all try to comprehend the nuclear disaster at hand. I will begin my analysis by giving a full chronological description of the scene, before moving into decoding the signs/signifiers by using Roland Barthes' semiotic theory of the three messages to analyse how radioactivity has been visualized in this scene. Because of the inability to include moving images in this document, I decided to limit my semiotic analysis to three frames within the scene, but with the ability to contextualize them with the knowledge and dialogue from the overview. The frames will be introduced in the overview.

### *1.2.1. Overview of the Hospital Scene*

It is daytime, and a cascade of sirens is blaring, and we are faced with the brisk arrival of an ambulance outside the hospital where many other ambulances already have lined up. The frames are tinted green throughout this entire scene. The paramedics are rushing to get the patients inside the hospital. They all look exhausted, stressed and shocked as they are trying to comprehend the number of victims streaming into the hospital. The frame changes and we are met with the backs of two nurses walking through the hospital-halls. Around them patients are accumulating either walking around aimlessly or sitting against walls or on staircases looking ill. A short conversation between the nurses are held:

Nurse 1: 'Get everyone started on an IV.'

Nurse 2: 'We don't have enough.'

Nurse 1: 'All the children then.'

Nurse 2: 'We don't have enough!'

Nurse 1: 'As many as you can. Where's the old man?'

Nurse 2: 'He's set up a burn ward in 16.'

Nurse 1 rushes away to the burn ward, leaving nurse 2.

The frame changes and we are now in the burn ward that nurse 2 spoke of. Here the halls are crowded, and power plant workers are sitting still in their operational clothes with burned faces, waiting to get treated. Nurse 1 rushes through the crowded hall and into a room where she stops dead in the doorframe, staring in disbelief.

Nurse 1: 'What are you doing? What is that?'

The frame switches, and we see how an elder doctor desperately is trying to treat a firefighter's burned face by gently dotting it with a soaked cloth. The doctor exclaims:

Doctor: 'Milk. It's milk. Much better than water.'

The firefighter is groaning in pain, trying to fight the doctor's hand.

Nurse 1: 'No, no, no. Stop. Stop!'

Doctor: 'What are you doing?'

Nurse 1: 'These are radiation burns! Their clothes are contaminated! Help me! Get it all off. We're taking it down to the basement.'



Figure 8: Screenshot (00:05:06) from ep. 'Please Remain Calm', *Chernobyl*: Nurse 1 removing firefighter's boot.

While nurse 1 and the doctor discuss the burns, the firefighter seems to get worse. When nurse 1 explains that they are radiation burns, the frame changes to an image of nurse 1 trying to remove the firefighter's grimy shoes as figure 8 shows. The floor is wet and scattered with yellow bits of debris. She rushes to take the boot off. In front of one boot lies the milk-soaked cloth from the failed attempts to treat the radiation burn. When nurse 1 begs the other nurses to help her, the frame switches and we can now see the many more firefighters are positioned in the same room. Fast, the other nurses begin to remove their clothes.



Figure 9: Screenshot (00:05:48) from ep. 'Please Remain Calm', *Chernobyl*: Nurses throwing firefighters clothes into a pile in the Pripyat hospital's basement.

The frame changes and the point of view is now positioned at the end of a long hallway inside a dark room as pictured in figure 9. The image is dark, and the colours are muted. The green hue that formerly tinted to images becomes more prominent in the basement. The nurses are rushing in a straight line to drop the firefighters' clothes in a pile, before hurrying back. The only sounds are the rushing footsteps and the thuds from when the clothes land in the pile. A loud clonk is heard, when a helmet falls from the pile onto the concrete floor and rolls out of sight. The frame changes and we are faced with nurse 1, who has just dropped a load of clothes. A confounded expression appears on her face as she stops dead in her tracks and her eyes turn to look down. The frame switches to a closeup of her hand, as pictured in figure 10. Her hand is burned red, and her white coat is dirty from ashes from the firefighter's clothes. The frame changes as nurse 1 looks up, with a stern expression on her face. She then returns to hurrying down the long basement hall, to continue her work. The frame shifts back to the pile of clothes that is pictured in figure 9, and we can see how it is slowly growing taller and more helmets clonk's as they fall off and disappear into the darkness.



Figure 10: Screenshot (00:05:57) from ep. 'Please Remain Calm', *Chernobyl*: Nurse 1 looking at her burned hand after having carried the firefighter's clothes.

### *1.2.1. Semiotic analysis of The Hospital Scene*

The Hospital Scene offers a very clear and distinctive linguistic guidance of how embodied radioactivity looks. The dialogue between nurse 1 and 2 signifies how the incapacity of the hospital leads to a lack of medicine and appropriate spaces to treat burns, e.g. the set-up of a burn ward. It is a linguistic message that bears the connotation of an underprepared and inefficient hospital to treat a larger scale disaster. The linguistic message further works as an anchorage for the viewers to understand that the amount of people in the hospital are patients waiting for treatment. In the dialogue between nurse 1 and the doctor the viewer is given the denoted linguistic message, which is that the redness of the firefighter's face is caused by radiation. This message further works as an anchorage for the viewer to understand that the red-faced power plant workers sitting in the hallway, also are suffering from radiation burns. Nurse 1 exclaim that the firefighter's clothes are contaminated and that they need to be removed. Therefore, the linguistic message is clear, the burned faces and clothes are radioactive and thus, they become denoted visual signifiers for radioactivity. We do not have to use our lexicon to decipher because we have been told clearly what

to look for. The linguistic message is therefore, according to Barthes, an anchorage.<sup>93</sup> This scene quickly tells the viewer which radioactive indicators they need to look for, therefore I will focus on identifying some of the less clear symbolic messages that are hardly noticeable.

The first symbolic message is found in the green hue that all of the frames (fig. 8-10.) have been tinted. Historically, radioactivity has been coded green because of the green fluorescent light that physical radium emits. Clocks during World War I were painted with radium and shone with a magical green light.<sup>94</sup> The bones of the Radium-factory workers shone green too from the radium that they had consumed.<sup>95</sup> Superman's only weakness: radioactive kryptonite, is green too. By tinting the images green, the scene creates the symbolic message that radioactivity is all around them, doctors, firefighters and nurses alike, it is inescapable. In the basement (fig. 9-10.), the green tint has been enhanced, and thus the symbolic message tells us that the space is more radioactive because the radioactive clothes are being gathered in one space. The theory of the green tint being a visual signifier for radioactivity can be further proven, since this green tint did not exist in The Bridge Scene. It only came about once the disaster had unfolded and is enhancing in its colour depending on the amount of radioactive materials gathered in the frame. The green tint is repeated throughout the *Chernobyl*-series. Because of this repetition and enhancement of colours I identify this as a visual trope for radioactivity.

In figure 8, nurse 1 is kneeling in front of the firefighter to remove his boots. The floor is wet and small pieces of debris are scattered around. We know from the first episode (the railway bridge scene) that the Chernobyl power plant has been on fire, albeit the firefighter has come from there, and the debris is therefore a subtle visual signifier for danger. Again, we have been warned from the dialogue that the firefighter's clothing is radioactive, thus the debris must originate from the scene and be radioactive. With this in mind, the boots work as a symbolic message of how the direct contamination of the firefighter's boot is being transferred to the nurse by an 'indirect direct' exposure. This way, nurse 1 becomes the second link in a chain of contamination, which can be seen by her newly-developed radiation burn in figure 10. When nurse 1 grabs the boot with her left hand in figure 8, her wedding ring can be seen. The denoted message is that she is married, however it is a symbolic message that signifies her very 'ordinary' life outside of the hospital as well as normalcy in an abnormal situation.

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<sup>93</sup> Barthes, *Elements of Semiology*, p. 155-156.

<sup>94</sup> Moore, *Radium Girls*, p. 42-43.

<sup>95</sup> Moore, p. 277-278.

In figure 9, the point of view is positioned behind but at the same height of the growing pile of clothes. The clothes are dropped quickly, and the literal message tells the viewer that it is because it is radioactive, and they have to work fast. But the symbolic message adheres to our lexicon of how Chernobyl victims were treated after the disaster. Often the Chernobyl victims were discarded and their symptoms stemming from radiation exposure blamed on something else. People were led in the dark, by being told that vodka would save their lives and that the radiation exposure was minimal. The clothes being dropped in the dark, green tinted (radioactive) basement, signifies the 'burial' of evidence and the silenced victims. The disappearing helmets becomes a symbolic message of how firefighters are no longer individuals but rather becoming liquidators; a body serving to clean the disaster. By letting the viewer be at the same height as the pile, it is a direct correlation and symbolic message of how we too, were indirectly harmed by the disaster, and that there was nothing we could do, other than watch. The frame in figure 9 is repeated in the end of this scene. It becomes like a 'nature mortem', a picture that show the everyday objects being collected in one space and will, with the lexicon that we have today, never be picked up again. Therefore, they symbolise the emergency frozen in time. This becomes an eerie physical memory of the firefighters. Because of how the clothes has been repeated in this scene, they are not a visual trope for radioactivity, but rather a trope for how people were treated.

In figure 10, we see nurse 1's hand from her point of view. It is denoted, that she has been carrying the firefighter's radioactive clothes, but it is a surprise that she has gotten a radiation burn. This is a connotative image which implies the scale of radioactivity that the clothes possess. On the edge of her white coat, ashes from the firefighter's clothes are visible, this is a continuous trope from the railway bridge scene. In this way she, who threw away the firefighter's clothes becomes not a picture of authority, but one of the ordinary people. Showing that even though she tries to be an authority as to how the clothes are being dealt with, she becomes a third link of contamination. Showing that even those who were working to help the victims and conquer the disaster are just as helpless to the invisible danger as we are. The red burn is so consequently visually repeated and even stated in a linguistic message as being a radiation burn, that they become a trope for radioactivity.

### 1.3. *De/coded Visual Language for Radioactivity*

During these analyses I have found three repeated ways of how radioactivity has been visualized in *Chernobyl*: (1) ashes, (2) colours and (3) burns. All of these have been repeated multiple times throughout the scenes and therefore they can be identified as tropes for radioactivity. The series constantly engages and challenges the viewers lexicon by leaving radioactivity up to their interpretation and imagination, because it can never be visualized as is. To be visual it needs to be visualized through metaphoric association, which I will try to decode below. In order to provide a description for the visual language for radioactivity that is used in the *Chernobyl* series.

The bridge scene plays with the notion between fear and delight that radioactivity seeds in people. I mentioned this in the introduction to this thesis to reflect my own personal experience of it, that we experience radioactivity as good because of nuclear power, cancer treatments and x-rays, but we think it is bad because of the damage that it can cause to our bodies and the environment. The railway bridge scene mirrors the general experience of radioactivity among the public. It is something invisible, that we do not really consider in our daily life. Instead we put our trust into the power plants and their workers. The scene shows the innocence of the Chernobyl citizens, but it also portrays their naivety. But as a researcher looking back at the disaster, can I really permit myself to call them naïve? With the visual guidance that the scene provides and the knowledge – lexicon – I have of the disaster. I understand that the (1) ashes are mimicking the invisible radioactive rays that are falling around the citizens. Likewise, can most of the people watching the series, because they know it is about *Chernobyl*. But really what the series does is questioning if we, the viewers, are naïve ourselves. Not only do the ashes not choose where they land but will land regardless because of gravity. Radioactivity defeats gravity and can go anywhere and however they want, and I think the flipping of the image shows this very well (fig. 7). It looks like a reactor core, but again it is us who puts this connotation to it. We feel such a strong emotional response to the scene that it earns the nomenclature ‘The Bridge of Death’, because the people remain ignorant and naïve to their own danger. But could there not be other places where we, the viewers, put our trust, in our lives that could take the same dark turn? We relate to these characters because we feel sorry for them, but would we not react the same way?

The (1) ashes become ominous because of how they turn black as they touch the skin of the people. But what ashes do not? The only way the ashes becomes a trope for radioactivity is because of the connotation from our lexicon that we attribute to it. I even started to think of how

ending the scenes, like with the clothes being piled up and the ashes appearing from the light source were repeated twice but enhanced and 'worse' in second time that they were shown. It must be because they want us to really see this and notice it. Since the series is called *Chernobyl* and there is the inherent understanding of it depicting the initial nuclear disaster unfold, it is implicit it has to do with radioactivity, thus I believe we look for it. But it also means that the series is guided or 'anchored' as Barthes calls it to be about radioactivity. I thought of how we then would perceive the series if we did not have the dialogues about what was happening in the scenes, and if we then would understand and see radioactivity. I do not think so. Instead I believe it would be a peculiar fire and there would be a lot of ashes and the children delightfully playing in the ashes. But it is not the same in the hospital. Because why else should the nurse get a burn on her hand matching the burn of the firemen's face? One must think that it may have something to do with a disease spreading or a chemical burn, but it would be a peculiar disease in connotation of the rest of the series.

The (2) colours are part of this connotative image. The blue pillar emitting from the Chernobyl nuclear power plant would not have been synonymous with radioactivity had it not been stated that the fuel runs cold, with cold traditionally being coded blue. As for the ones with the lexicon, the Cherenkov effect is clearly visible in this image. It is a part of the semiotic code to understand that the (1) ashes are radioactive by aiding the yellow light source with a dark night sky to emulate the fire and blue torch. Another colour that is repeated is the green-tint that shows directly after the disaster. The tint is green like radium, and the colour which is repeated in our cultural visual understanding of any radioactive object. Thus, I reason that colour must be a trope in *Chernobyl* for radioactivity. I decided not to call the colours 'green' or 'blue', because I think even think the ashes turning black is a sign of radioactivity. Therefore, a variety of colours can become a visual trope for radioactivity, but some may only be if a linguistic message accompanies them. With that said sometimes these colours can be denoted and not mean anything else than just a colour but because of our symbolic understanding and thus connotation to nuclear culture, I believe it is correlated and we can speak of these colours as adhering to a colour-trope for radioactivity.

The (3) burns is another more direct visual indication of radioactivity. It cannot be misunderstood because we are informed in the hospital scene of how they look. But does that mean that the burns are denoted and how does a denoted message become a visual trope? This is where the viewer is to trust the linguistic message if they are to understand the narrative. By accepting that these burns are caused by radioactivity the same type of red burns later in the series connotes the

initial description of radiation burns. Therefore, the burns in relation to the area of Chernobyl are a visual trope for radioactivity, because they cannot be anything else unless directly stated.

To decode and code radioactivity proves to be an interesting analysis that carries its fundament in using the linguistic message as an anchorage. Without knowing that the series is about Chernobyl and without any dialogues between the people, the fire would just be a peculiar fire, the ashes would just be ashes. The music may indicate that danger is present, but the danger could just be the fire itself. The colours may just be the way that the director decided to edit the series, and the burns could just be an indication of an uncontrollable fire. The clothes may just have been thrown in the basement because they were dirty and needed washing, and maybe the nurses hand got burned because the metal from the helmet because it was still warm or there was blood on the clothes? Barthes said that there are many ways of interpreting an image and without an anchorage it is difficult to know exactly what you are looking for.<sup>96</sup> Therefore, the answer lies in the title *Chernobyl*, a household name. We are meant to look at the things that we know or remember, we are supposed to reminiscence about the disaster and the radioactivity that caused the world's worst nuclear disaster, catastrophe and death. By the title the historical drama tv-miniseries *Chernobyl* anchors the story by using all three messages to depict that the atom has never been peaceful in its luminous self.

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<sup>96</sup> Barthes, *Elements of Semiology*, p. 155-156.

## Chapter 2: Let the Atom be a Worker, *not* a Soldier

Within the willowing marshes of the Ukrainian Polesian swamp, lies the Soviet Union's first big atomgrad like an apocalyptic wasteland. The Chernobyl disaster transformed Pripyat completely. From being the attractive utopia for Soviet families to becoming a live dystopian example of nuclear catastrophe. The grounds reciprocate exactly what radioactivity itself does: fear, anger, and love. Despite mixed feelings for the grounds, anecdotes from the former inhabitants often reminisce on the grief of what was lost rather than the space it has become: “ [...] *They sowed our land with corn. Our house is lying there, and our school and our village council office. My plants are there and two albums of stamps, I was hoping to bring them with me. Also I had a bike.* ”, Yura Zhuk told journalist Svetlana Alexievich (2005) about her village on the outskirts of Pripjat.<sup>97</sup> The pains taken words serve as a stark contrast to the reviews on tourist-tours within the Exclusion Zone: ‘ [...] *The whole area was just amazing and the fact that it was not very crowded meant you got a real sense of how deserted and eerie it is. Surprised we were able to get as close to the reactor as we did and certainly obtained many excellent photographs.* ’ the user DuncanH304 wrote on TripAdvisor about his experience of being on a ‘Chernobyl Tour’, which they rated 5 out of 5.<sup>98</sup> It is no secret that the *Chernobyl*-series bestowed a rise in popularity of tourism in the Exclusion Zone. Touring the grounds is said to be a unique experience, because you are presented with a post-nuclear environment which is still very much radioactive. At the same time, visitors are allowed to explore some of the ruins of the lost Soviet atomgrad with the chance to indulge in the art of photography while a tour-guide ensures their safety by cautiously guiding them through the contaminated grounds. Cultural journalists’ Glenn Hooper and John J. Lennon (2017) suggests that disaster tourism is a product of the growing information society and fosters the belief that once a disaster has struck an area, it will not strike again.<sup>99</sup> Today, when searching for information on Chernobyl it is quickly learned that the Chernobyl power plant is no longer producing electricity and has been encapsulated by an enormous sarcophagus to keep the radioactivity from escaping. One will also be informed of the growing tourist-industry in the area as well as the Ukrainian

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<sup>97</sup> Alexievich, *Voices from Chernobyl*, p. 223.

<sup>98</sup> DunchanH304, ‘Great Experience’, *TripAdvisor* [website], 12 March 2020, [https://www.tripadvisor.com/ShowUserReviews-g294474-d3370334-r750620970-CHERNOBYL\\_TOUR-Kiev.html?m=19905](https://www.tripadvisor.com/ShowUserReviews-g294474-d3370334-r750620970-CHERNOBYL_TOUR-Kiev.html?m=19905), (accessed 11 May 2020).

<sup>99</sup> G. Hooper, J.J. Lennon (eds.), *Dark tourism: practice and interpretation*, London, Routledge, 2017, p. 137.

government's encouragement of visiting the area 'under guidance'.<sup>100</sup> The majority would trust governmental authority and the many tourist agencies, especially when there exist positive reviews from former tourists online. Not only does Chernobyl become part of a franchise - it is almost developing into its



Figure 11: L. Stacevičius: In Pripyat, tourists photographing and measuring levels of radioactivity at a burial site for radioactive objects.

very own subculture. One in which the Pripyat serves as a stage where tourists can partake in an apocalyptic fantasy. Afterall, the city has it all: a franchise, ruin porn, tragedy and radioactivity.

What most Exclusion Zone tourists have in common are the tourist images. The TripAdvisor 'DunchanH304'-user even made it clear in their review that the photographs were important to his 'great experience'. The tourist photography and videos serve as a documentation to 'prove', that they have been at the most radioactive place in the world. Many tourists capture the decaying buildings, lost toys and everyday object like Yura Zhuk's lost collection of stamps. However, most tourists capture the skyrocketing radiation measurements at the few hot spots within Pripyat.<sup>101</sup> The area becomes fetishized through the tourist representation, because they capture these 'deserted and eerie' moments of the contaminated grounds which Chernobyl is famous for. In reality a photo-session looks more like the image in figure 11, a collective spectacle of trying to obtain the most 'excellent' photograph. The tourist images serve as documentation, but also commodification. They become a kind of 'safe' merchandise that you can bring with you once you leave the radioactive grounds. Because the area itself commodifies radioactivity seeing as that is what the tourists are there to see, when they visit 'Chernobyl'. But how can anyone decipher that a person really has been on the actual site of the disaster, if their images only show ruins and apocalyptic scenery? How does visualization of radioactivity shape tourists' images of the Chernobyl area?

<sup>100</sup> L. Kolirin, J. Guy, 'Chernobyl to become official tourist attraction, Ukraine says', *CNN Travel*, 11 June 2019, <<https://edition.cnn.com/travel/article/chernobyl-tourist-attraction-intl-scli/index.html>>, accessed 21 May 2020.

<sup>101</sup> 'Hot spots' refers to the most radioactive places.

## 2.1. Photographing Measurements

Most recognize a Geiger counter, whether it being from elementary school physics or television. The small handheld device measures radioactivity by calculating the rays that strike the device. By showing a number on a small screen as seen in figure 12, it accounts for the amount and strength of radiation in a given area or object, depending how the device is held.<sup>102</sup> In figure 12 a tourist can be seen holding a Geiger counter in front of an old burial site for radioactive objects in Pripjat, in order to measure the radiation in the area which is here depicted at 5.79 mSV.<sup>103</sup> When radioactivity hits a Geiger counter a bib-sound is released, signalling the user of the existence of the invisible rays without them having to look at the screen. The number of bibs increases with the amount of radiation in an area, if something is highly radioactive the sound of the machine will turn into a crackling noise before eventually becoming a sound-alarm. When I researched the tourist images, I realised that many of them had a Geiger counter in the image, like the one in figure 12. Most Chernobyl-tourists are lent one or they can rent their own in the gift-shop upon entering the area.<sup>104</sup> By including the machine in the tourist image, it becomes a direct visual implication of radioactivity.

In relation to Barthes semiotic theory a tourist-image that includes Geiger counter may be the quintessence of all messages. The machine is a tool for measurement and therefore the number appearing on the screen is a denoted linguistic message seeing as it appeals to our first degree of intelligibility, where we know that the machine measures radioactivity. However, when the number is deciphered regardless of being ‘good’ or ‘bad’, the linguistic message becomes connoted, since the number now signifies safety/danger. According to Barthes we cannot remove



Figure 12: Screenshot of @lozleisure Instagram post. Photograph shows a Geiger counter held in front of a burial site for radioactive objects in Pripjat.

<sup>102</sup> Tuniz, *Radioactivity*, p. 9.

<sup>103</sup> mSV is micro sieverts, a unit for measuring radioactivity, Tuniz, *Radioactivity*, p. 29-30.

<sup>104</sup> S.R. Kelleher, 'As Seen On TV: Fans Of HBO Series Flock To Chernobyl, Geiger Counters In Hand', *Forbes*, 9 June 2019, <<https://www.forbes.com/sites/suzannerowankelleher/2019/06/09/as-seen-on-tv-fans-of-hbo-series-flock-to-chernobyl-geiger-counters-in-hand/#7d05d71c3897>>, accessed 12 May 2020.

the connotations from an image, simply because we attribute them with a connotative value dependent on our lexicon.<sup>105</sup> In figure 12, the Geiger counter is held in front of an old burial site for radioactive objects in Pripjat. The image is representing a momentary reading of an already deemed radioactive area. We know the area is radioactive because of the yellow radiation trefoil-symbol indicating radioactivity next to the Geiger counter. The trefoil sign is a standardized visual trope for radioactivity, because it was until 2007 the international symbol for a radioactive area.<sup>106</sup> Why it was changed is because of societies growing fear of future generations not being able to recognise the trefoil and therefore wanting to make it even more understandable as a sign of danger. Even though the trefoil is a symbolic message for radioactivity, it still does not give us an exact measurement of the invisible entity. Therefore together, the composition of all three elements: the readings on the Geiger counter, the burial site and the trefoil becomes what Barthes calls a ‘relay’ seeing as both the text and the image work together to convey an intended meaning, which is that this particular area is still highly radioactive. When we are faced with this image (fig. 12) on Instagram with the hashtags: #chernobyl exclusion zone and #radioactivity, we directly attribute the meaning of ‘Chernobyl’ to the measurements on the Geiger counter. The measurements become a symbolic-message anchored by the linguistic message that the Instagram user ‘Lozleisure’ describes in the caption of their image: ‘[...] visiting the Chernobyl Exclusion Zone was pretty fascinating. Eerie, sad and incredible all at the same time.’. The post tells us that the number is not normal because they are in Chernobyl, albeit it is ‘expected’ to be ‘eerie, sad, and incredible’, because it is radioactive. I came to think of the Geiger counter as a real visual indicator of radioactivity. Because the number both scares and reassures people of what is normal and what is not. Most people probably do not know the background radiation in their own homes, and therefore the linguistic message of the radioactive experience is supported by the linguistic message found in the caption of the Instagram post.

The *Chernobyl* series make use of the Geiger counter as well. Often, the viewer is allowed a glimpse of the device or are told the numbers with an underlying enthusiasm or apathy how either how low or high they are. But we are never allowed to see and dwell on the machine for long. Instead the series uses the noise of the Geiger counter to let us decipher the criticality of a scene. The noise is used to build up and intensify a tension among the viewers to let them know the

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<sup>105</sup> Barthes, *Elements of Semiology*, p. 158.

<sup>106</sup> D. Dahlstrom, ‘New Symbol Launched to Warn Public About Radiation Dangers’, *International Atomic Energy Agency* [website], 2017, <<https://www.iaea.org/newscenter/news/new-symbol-launched-warn-public-about-radiation-dangers>>, accessed 10 May 2020.

danger that the characters are facing. Seeing as this thesis is interested in finding the visual implications of radioactivity my question is: why are we not allowed to see the number appearing on the Geiger counter? The answer may be simple. The series wants us to feel the terror of the invisible, and the invisible killer can surge through anyone and anything without their knowledge. The overall theme of the series is ‘lies’ and how lies can disrupt human relations and lead to mistrust and catastrophe, just like Valery Legasov claimed the conflicting interests about Chernobyl did.<sup>107</sup> By never allowing the viewer to see the numbers on the Geiger counter it causes an uncertainty and a critical perspective on who is lying and who is telling the truth. It is a way to make the viewer understand and relate to the Chernobyl victims, who also were given all kinds of different numbers from the Soviet government.<sup>108</sup> Thus, the *Chernobyl* series makes you want to rely on the visual aspects to understand the amount of radiation in the dire circumstances. Considering that radioactivity is invisible, and its damage to the DNA cannot be seen before it is too late, it is the absence and presence of radioactivity in one and the same place which make people critical and suspicious of the given numbers. By giving a Geiger counter to a tourist, you allow them to become the truth-seeking soldiers, who can conduct the detective work that the series did not allow us. It is a ‘see for yourself’-situation, to prove whether or not the radioactivity that the series envisioned is true or not. Because as a tourist you do not possess the same ability as a professional filmmaker to showcase radioactivity through special effects like ashes, and even if you do have the ability to touch in real life, you may not want to get a radiation burn just to prove the existence of radioactivity. The Geiger counter is a ‘mild’ and easy way of seeing the invisible rays and therefore I see the images of a Geiger counter to be substantial in showcasing radioactivity. The way that the machine is repetitively used in tourist images, it becomes a trope for radioactivity.

## ***2.2. Touristifying Pripyat’s Hospital Basement***

The Ukrainian government has attempted to seal off the hospital basement in Pripyat. Despite this, tourists can be escorted illegally to see the firefighters’ clothes as depicted in the *Chernobyl* series for an undisclosed price.<sup>109</sup> As I explained in the first chapter some of the contaminated debris

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<sup>107</sup> *Chernobyl: Valery Legasov Tapes – Legasov’s Original Own Voice HD Compilation #01*.

<sup>108</sup> Brown numbers given to the public.

<sup>109</sup> GEO Stalk, ‘Pripyat hospital’, *Chernobyl Explorer* [website], 2019, <<https://chernobylexplorer.com/Pripyat-Hospital>>, accessed 26 May 2020.

entered the hospital by being stuck to the firefighter's boots and clothes. During the decontamination of Pripyat, the hospital was not deemed necessary to clean, therefore the firefighters' attire still lies in the basement and has made the space one of the most toxic and dangerous places in Pripyat.<sup>110</sup> The few dare-devils who enter the old hospital building will find that everything has been left in a chaotic mess, and the basement is no different. The hospital building bears the first-hand-witness to the initial turmoil that the disaster brought upon the underprepared hospital, as well as the staff's effort to comprehend the situation at hand.

During my research I barely found any photographs of the basement as it stands today, instead only a handful of videos exist on the social media platform YouTube. I believe this is due to the fact that the basement is a highly contaminated space, and therefore it is only a certain kind of tourist who dare to enter. Moreover, the tourist may only be permitted in the basement for a certain amount of time. The limited time does not allow for composition, and a video is a simpler way of capturing as much of the experience as possible without having to compromise on getting a 'good' picture. In many ways the tourist-videos of the basement are similar to the evacuation film from 1986 that I discussed in the introduction to chapter one. Both were recorded only once and neither had the possibility to check the film nor remake the scene. The tourist may have had the ability to check their tape and remake it on the spot, but they most likely will not because they that would have to stay longer in a highly radioactive space. In the *Chernobyl*-series the hospital scene was the first to directly comment on and showcase radioactivity in the shape of burns. Because this scene communicated radioactivity so clearly, I wonder if the space would communicate it just as clear in real life? I will now present three frames from tourist 'Abandoned Explorer's YouTube video *Inside Chernobyl's Hospital Basement (Scariest Room In Chernobyl)*. Here I will try to find how the radioactivity is communicated in the tourist images and how the space of the basement has been made available (touristified) to fit the tourists wish for a radioactive experience.

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<sup>110</sup> GEO Stalk, 'Pripyat Hospital'.



Figure 13: Screenshot (4:29) from tourist 'Abandoned Explorer's video: Firefighters close scattered in a room in the basement of Pripyat's hospital.

In figure 13 we are faced with the chaotic remanence of the nurses attempt to store the firefighters contaminated clothes. The scene is not foreign to those who has seen the *Chernobyl*-series except that the clothes in the real image is far less curated than the one in the hospital scene (fig. 9). Without the linguistic message of the video title, we may just see a dirty old room with different clothing articles on the floor. Instead the video title functions as an anchor to guide our experience and let us know that we are inside the 'Chernobyl hospital basement'. The video title further works as an anchor by telling us that we are experiencing is the 'scariest room in Chernobyl'. Seeing as Chernobyl bears the linguistic connotation of radioactivity and is therefore considered 'eerie', letting the room be described as 'scary' I reason that it must contain higher levels of radioactivity.

In figure 14, the tourist can be seen holding a Geiger counter on the top part of a firefighter's boot. The *Chernobyl* series taught us that (especially) the firefighters boots acted as a link in the chain of spreading contamination from the initial disaster. By showing the Geiger counter's measurement of the boot, it becomes apparent that it is still highly radioactive, and thus it is a symbolic message that acts like a confirmation to the series portrayal of the clothes, that it is indeed highly radioactive. In figure 15, we are shown how the tourist is measuring the radioactivity from the sole of another boot. The number on the Geiger counter is much higher than before, and therefore this image becomes a symbolic message to the danger that these boots represent.



Figure 14: Screenshot (5:36) from tourist 'Abandoned Explorer's' video: Tourist measuring the top of firefighter's boot.



Figure 15: Screenshot (6:05) from tourist 'Abandoned Explorer's' video: Tourist measuring the bottom of firefighter's boot.

It further confirms the title and becomes what Barthes call a relay. The image of the boot being measured together with the title, works together to convey the message that it is a 'scary' place because the measured radioactivity is so high. Had the tourist not measured the boots, it would just have been an old every day object that may be radioactive because it is within 'Chernobyl'. But it would not be scary. Instead the Geiger counter visualizes the radioactivity, and by showing the viewer how the number quickly increases depending on where on the boot it is held, it simultaneously increases the experience of it being scary, because we have the lexicon that radioactivity, in regard to Chernobyl, is dangerous. Therefore, the connoted image works together with linguistic message to decipher the tourists' intention behind these images: to show that the basement and clothes is indeed very radioactive. The boots are repeated in *Chernobyl* series as well as the tourist video of the basement, does this mean that they are a trope for radioactivity? I earlier argued that the boot in the series was a trope for the people and not radioactivity, but in relation to

the tourist videos, I think that they could be. However, only if they have the connotation of being the firefighter's boots, which means being located in the basement, and only if they are shown specifically in relation with a linguistic message like the Geiger counter. How else are we to decipher that a boot is a liquidator's footwear?

The purpose behind the video may vary in reasons. It could serve as an educational video of how radioactivity is absorbed into objects. It could be a warning as to why you should not enter the building. In reality the video's purpose takes shape as an exotic fascination with the morbid. The shoes and clothes were worn by the first liquidators, to see them it is like watching a 'forgotten' memorial. The video's title encourages a 'shock factor' by claiming the space to be the scariest. However, what makes the images seem insincere is the lack of protective gear. The tourist is holding the Geiger counter with their bare hands as seen in figures 14 and 15, measuring discarded protective gear. This paradox seems almost unethical. How can the tourist proclaim the room to be most radioactive while they themselves signify that they are invincible, and the radioactivity won't touch them? The image's meaning suddenly intermingles with the nativity that Hooper and Lennon proclaimed comes with the disaster tourists: that they will not be touched by the radioactivity.<sup>111</sup> The tourist's video of the hospital basement therefore signifies part of a trophy-culture, a culture where showing by doing is valued and the most dangerous deserve the largest trophy.

During my research I noticed that in earlier tourist videos of the basement from before June 2019 that the space looked different. In older videos of the basement, there are windows letting light in.<sup>112</sup> Seeing as the basement now has been sealed off, I can imagine that the windows may have been blocked and that is why the place is so dark in 'Abandoned Explorer's video (fig. 13). In earlier videos of the basement, there are doors to some of the rooms, and you can still see the firefighter's helmets on the floor.<sup>113</sup> In newer videos the helmets are gone and probably sold as old Soviet paraphernalia. The doors have been taken off their hinges, and the basement is darker. This way the space has become 'touristified'. The removal of doors gives more visibility. They want us to see the reminisces of the Chernobyl victims and they want us to document it, because it gives the tourist a better experience, one that they can reciprocate in their videos and thus inspire us, the viewers, to go there because it really does look like the *Chernobyl* series with the scattered clothes

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<sup>111</sup> Hooper, Lennon, *Dark tourism: practice and interpretation*, p. 137.

<sup>112</sup> *chernobyl 2013: the hospital basement with highly contaminated clothes* [video], YouTube, 'bionerd23', 1 Sep. 2013, <<https://www.youtube.com/watch?v=9LN2V4DsP0s&t=195s>>, accessed 10 May 2020.

<sup>113</sup> *Alone in the Zone footage – radioactive basements – hospital in Pripjat* [video], YouTube, 'podniesinski', 19 June 2019, <[https://www.youtube.com/watch?v=a4W\\_Gg7Am0Y&t=1s](https://www.youtube.com/watch?v=a4W_Gg7Am0Y&t=1s)>, accessed 10 May 2020.

in a dark basement. It begs the question if Pripjat's hospital basement is becoming a constructed radioactive reality?

### 2.3. #pripjatsferriswheel

In the middle of Pripjat's city square lies an amusement park with a towering Ferris wheel. It was supposed to open on the 1<sup>st</sup> of May 1986 in relation to the May Day celebrations. Due to the swift evacuation it was never taken into use and is today highly contaminated. At first glance this weathered construction does not appear radioactive, yet it is often depicted in tourists' images with the accompanying hashtags: '#radioactivity', '#ferriswheel', '#chernobyl exclusionzone'. Hashtags are usually used as an anchorage that guides the viewer's understanding of what they are looking at within an Instagram picture. Hashtags can thus be used to distinguish photos focused on radioactivity from photos of general ruin porn. This section will look at two different examples of Instagram pictures of the Pripjat Ferris wheel and analyse them in accordance to Barthes theory of the three kinds of messages: the linguistic, the literal and the symbolic. To delimit my analysis, I will not speak of the images captions but only focus on the three hashtags mentioned above. A picture of the hashtags (including the ones above) and translation of figure 16's caption can be found in the appendix (under 1a, 1b, and 2a).

Figure 16 shows a person posing in mid jump in front of the Ferris wheel. The linguistic messages of the hashtags are all denoted. The use of the hashtags #ferriswheel and #chernobyl exclusionzone, tells us of the location where the photo was taken. We can deduce that the photo depicts a visit to the Exclusion Zone and posing in front of the Ferris-wheel in the city: Pripjat. Because Chernobyl is a household name, the hashtag #radioactivity adheres to the first degree of intelligibility. We understand that the area where the tourist is depicted



Figure 16: Screenshot of @fannyloveink Instagram post. Photograph show tourist posing in front of Pripjat's Ferris wheel.

is radioactive. The tourist's body language is a literal message of momentary joy. It becomes a symbolic message that signifies the amusement park finally coming to life, as a space for joy. Which in turn is a symbolic message for how the tourism of the space is more about getting that perfect shot rather than commemorating or acknowledging the disaster. It seems as if we are supposed to look at the tourist in the image, as if they show us, triumphantly, that they are not afraid of radioactivity. It is hard to decipher radioactivity within figure 16, because aside from the hash tagged Ferris wheel, which is a known symbol for Pripjat, there is not much to indicate that this specific photograph is a photograph of radioactivity.

Figure 17 is guided by the same linguistic message as figure 16. However, in this image there are no people. The Ferris wheel is positioned in the middle of the picture and we can see the concrete path underneath it. In the foreground is a twig with yellow moss and some red stems that has been blurred. In the corners of the photograph a dark filter has been added. With its colours and absence of people the photograph serves predominantly as a connotative image. It connotes the 'eeriness' that tourists often connect with this space. By darkening the image, it also becomes more serious and makes us question what exists beyond the darkness. The visual editing of this image connotes a lot of feelings associated with the area and, perhaps radioactivity. If the viewer possesses the lexicon, they may know that the concrete was used to cover the surfaces of Pripjat to contain radioactivity in the ground below. This image connotes that by including a lot of the concrete surface between the Ferris wheel and the twig. The colours, too, are a symbolic message for radioactivity. The yellow colour of the twig is reminiscent of the commonly-used trefoil-warning signs used in radioactive environments. The inclusion of the colour in this photograph can thus be seen as a subtle visual reference to radioactivity. The same yellow colour is also repeated in the

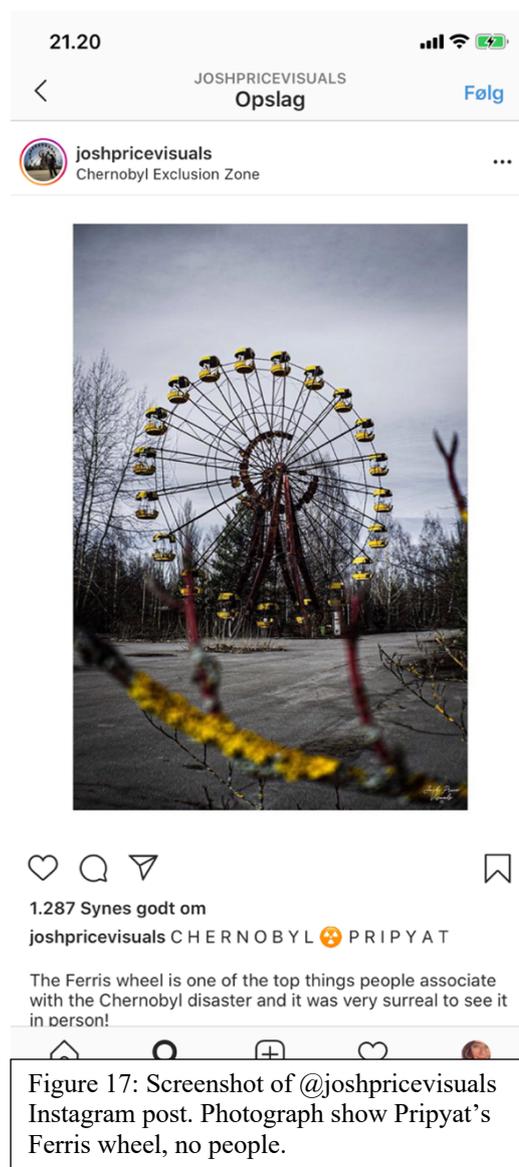


Figure 17: Screenshot of @joshpricevisuals Instagram post. Photograph show Pripjat's Ferris wheel, no people.

Geiger counters and tourist hazmat suits. It can therefore be argued that this is a visual trope for radioactivity.

While similar in some respects, the two tourist photographs also have differences. The only connotation to radioactivity in the first, is created by the use of hashtags. The other show radioactivity through editing and framing of the photograph. Ultimately, however, it is the inclusion of the hashtags that clearly communicate radioactivity in the photos, thus setting them apart from general ruin porn. The prominence of the Ferris wheel in these, and other, tourist images is also of interest, though it does not communicate a sense of radioactivity per se.

#### **2.4. 'Enjoy Chernobyl'**

In this chapter, I have found how different visualizations of radioactivity have shaped the tourists' images of Chernobyl. I have touched on the visual implication of a Geiger counter and how it anchors as well as confirms radioactivity in an image, and how in turn, an image is constructed to make the Geiger counter a focal point. Because the Geiger counter is a repeated occurrence in tourist images that depicts radioactivity, it even becomes a trope for it. I have written of how the firefighter's boots have been repeated in the tourist video to capture the largest amount of radioactivity on their Geiger counter. And how in turn, the time limit forces the tourist to video-tape their experience instead of photographing. But also, how the basement has been changed in accordance with the tourists' desire for having a 'dark and very radioactive experience'. The firefighter's boots have been a repeated symbolic message of the radioactivity that the firefighters endured during the initial disaster, in both the *Chernobyl*-series as well as the real-life depictions in the tourist video. The firefighters' boots become an intertextual trope for radioactivity, but only in the context of the Pripjat hospital and the Geiger counter's measurement. Another trope for radioactivity that shaped the tourist's images is the Ferris wheel, but only if it is accompanied by linguistic messages in shape of hashtags. Otherwise it would be just ruin porn. Besides radioactivity all of these tropes have in common the tourists' desire for urban exploration in the apocalyptic post-nuclear environment. A desire which most likely is founded on the wish to gain an embodied (but not *too* embodied) experience of the disaster. As described in background section of this thesis, information about the disaster is contradicting. By going to the area, people are able to see it for themselves and gain first-hand knowledge about the disaster that has been so surrounded by secrets.

The ‘see for yourself’ culture is mirrored in the tourist images by the measuring of radioactivity. To go to Chernobyl is an exotic experience, and I can imagine that people must feel drawn and repelled at the same time. The space is hostile, and some parts of the Exclusion Zone are lethal. Yet other places measure only slightly higher than the background radiation in an ordinary big city. The Ferris wheel, as an example is placed in an area which has been decontaminated multiple times. The Chernobyl disaster was, after all, the worst man-made ecological catastrophe in history because it left a whole area polluted with radioactivity and uninhabitable for humans for many years to come.<sup>114</sup> Yet, even if the place is uninhabitable for people, the nature and wildlife seem to have taken over the abandoned buildings and carefully curated roads. As if it is nature’s own attempt of taking back the marshland that once roamed the area. According to historian Kate Brown, post-nuclear spaces are often turned into ‘nature reserves’, but ones with: ‘[...] strange rules posted at the entrance: ‘No dogs. Do not step off the gravel paths. Do not pick up any masonry object’’.<sup>115</sup> Brown argues that the fencing and designation of it being a ‘nature reserve’, normalizes nuclear disaster and soothes and reassures the population of its supposed ‘safety’.<sup>116</sup> In many aspects this is true for the Chernobyl area as well, which has become a ‘tourist destination’, with rules and carefully curated trails for visitors to trot while they reminisce of human life. The ability to measure radiation themselves, lead tourists to an excitement but with the perceived knowledge of being ‘safe’ under guidance by the rules. Much like how the Soviet government used to reassure the Soviet population of their superiority in controlling nuclear disaster. This ‘walk in the park’ may invite you to ‘enjoy Chernobyl’, but if the tourist really is on the hunt for more knowledge and ‘embodiment’ of the area, they may even indulge in the visit of a ‘resettler’ within the Exclusion Zone.

On the edge of Pripjat lies a small house. It was built in 1958 by its inhabitant Ivan Ivanovic, who despite warnings decided to return to his house.<sup>117</sup> Not many former residents are able to return to their homes, seeing as most are either deemed too radioactive or have been demolished. To re-settle is also expensive because it is funded by the resettlers themselves.<sup>118</sup> Many resettlers have very few resources to deal with the post-nuclear environment, seeing as they cannot

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<sup>114</sup> Brown, *Plutopia*, p. 282-283.

<sup>115</sup> Brown, *Manual for Survival*, p. 10

<sup>116</sup> Brown, p. 10.

<sup>117</sup> *Searching For The Chernobyl Resettlers* [online video], YouTube ‘Bald and Bankrupt’, 24 Dec. 2019, <<https://www.youtube.com/watch?v=qQ5MTAXPMI0&t=134s>>, accessed 10 May 2020.

<sup>118</sup> Brown, p. 291.

cultivate their own land' and hunting is strictly forbidden.<sup>119</sup> Therefore some join tourist-bureaus to become part of the Chernobyl-tours to receive groceries (mainly vodka) as payment. Many of the resettlers are slowly poisoning themselves by living in the area and some, despite the rules, still eat their own crops. These people are radioactive because of their constant consumption of radioactive foods.<sup>120</sup> It is a mystery to many how they continue to live to a high age under such circumstances. I wanted to touch upon *one* of the tourist's way of visualizing radioactivity within Ivan Ivanovic, and how this specific visualization adheres to creating a popular culture surrounding Chernobyl. The frames are taken from tourist 'Bald and Bankrupt's YouTube video *Searching for The Chernobyl Resettlers*.

Figure 18 show the back of Ivanovic inside his home. His t-shirt is red and, on the back the tourist agency 'Chernobyl Welcome's logo is placed above a white text that spells: 'Stop staring at my glowing body! I was on radiation diet...'. 'Radiation' is written in yellow and the 'o' is shaped like the trefoil radiation symbol. The direct denoted linguistic message instructs the tourist not to stare at his 'glowing' body, insinuating that it is glowing because he ate radioactive food.



Figure 18: Screenshot (5:24) from tourist 'Bald and Bankrupt's video: Resettler Ivan Ivanovic in their home. Back of their t-shirt saying: 'Stop staring at my glowing body! I was on a radiation diet...'.

The connoted linguistic message lies in the 'was', implying to the tourist that he is not on a

<sup>119</sup> Brown, p. 291.

<sup>120</sup> Brown, p. 292.

radiation diet anymore because the tourist came with food for him. Still the connoted linguistic message implies to the tourist that Ivanovic himself is radioactive and aware of it. 'Radiation' is made to stand out since it is printed in the universal yellow colour for radiation. Another connoted linguistic message is the construction of the sentence: 'I was on radiation diet...', not I was on 'a' radiation diet. This is a connotation to the wildly stereotyped experience of east European English being poor. Thus, to some thinking that this is something that Ivanovic himself could have said. The '...' emphasizes the conversation as a lingering thought, thus inviting the viewer to think about what they just read.

In figure 19, we can see the front of Ivanovic's t-shirt that says: 'Enjoy Chernobyl'. The linguistic message is denoted in itself: to enjoy where we are. But the typography of the text is written the same font as the popular Coca Cola symbol, and therefore it becomes a symbolic message that makes 'Chernobyl' appear as if being part of popular culture. The connoted image (typography) with the linguistic message work together in what Barthes call 'relay' to convey the symbolic message that you can enjoy Chernobyl like you can enjoy a Coca cola. By wearing it, Ivanovic presents that by deciding to stay, he might as well enjoy Chernobyl.



Figure 19: Screenshot (5:50) from tourist 'Bald and Bankrupt's video: Resettler Ivan Ivanovic in their home. Wearing t-shirt saying: 'Enjoy Chernobyl'.

These two frames from 'Bald and Bankrupts' tourist video, carries the symbolic-message of the 'Othering' of the Chernobyl victims that I spoke of in the introduction to chapter one. By wearing the t-shirt, Ivanovic does not only tell us that he is radioactive, he further confirms some of the tourists' stereotypical belief that everything and everyone in the Chernobyl Exclusion Zone is radioactive, because of the connotation the place carries. By wearing the t-shirt, he is making himself a stereotype. Whether he knows it or not, seeing as he may not know what the t-shirt says. By wearing it, Ivanovic presents like a theatrical representation of the 'radioactive' Chernobyl resettler. To visit resettlers, like Ivanovic, proves that radioactivity is the real commodity. It is a commodity to the extent where people (the resettlers) are being stereotyped via visual signifiers, to the point where they are reduced to nothing more than a 'product' of Chernobyl. Almost as if they themselves are the embodiment of radioactivity, which the tourist tries to capture in their images to make the atom return as their worker and through the image, their very own tourist souvenir.

## Chapter 3: The Discussion of The Radioactive Image

Throughout this thesis, I have taken you on an exploration of how radioactivity has been visualized in the *Chernobyl* series and tourist images of the grounds affected by the Chernobyl disaster. I have established the fictional tropes for radioactivity that appeared in the *Chernobyl* series and I have also established how the inability to visualize radioactivity in itself led tourists to rely on Geiger counters, yellow colours, and hashtags/captions. By investigating these, I seek to lay the groundwork for discussing the visual language for radioactivity as well as coining the term: the radioactive image. Therefore, this chapter deals with the last of my research questions through a discussion, to ask what characterizes the visual language of radioactivity and the radioactive image?

In order to start this discussion on coining the term of the radioactive image, I will first debate the visualization of radioactivity in relation to aesthetic theory. Because any visual experience is interrelated with aesthetic, and especially one that calls for such fascination that it causes people to visit and photograph the radioactive spaces. I imagine it must be grounded in more than just morbid fascination and ‘proof’. Therefore, I will relate radioactivity’s in/visible qualities in fictional and real images to aesthetics.

Next, I will debate the visual tropes that I have acquired throughout my analysis, and how these are created in relation to the fictional and real depiction of the Chernobyl disaster, to understand what characterizes a visual language for radioactivity.

Last with all of the above in mind, I will try to define and coin the term of the radioactive image. To theorize it and its importance in relation to the discourse of visual culture.

### ***3.1. Radioactivity and Aesthetic-value***

The grounds affected by the Chernobyl disaster may seem enchanting at first glance, yet beyond the abandoned façade lies the hard truth. The radioactivity is constantly contaminating and polluting the entire area, leaving what was once a Soviet nuclear utopia, deserted and uninhabitable. We, as people, cannot comprehend radioactivity in itself because it is larger than us. But we can understand the environment that it left behind. The lush nature, the Ferris wheel, the hospital, and the many abandoned homes. The spaces carry the witness of a former Nuclear era of the Soviet Union, and it

is unfathomable how 44.000 people got up and left their homes as is and never returned. All because of something invisible.

Psychologist Sigmund Freud (1919) coined the term ‘the uncanny’ as the notion or feeling of finding a strangeness in the familiar. I can imagine that to visit the Chernobyl area engulfs this feeling of the uncanny. Afterall, without the notion of the high levels of radioactivity nor the disaster, Pripjat just look abandoned.<sup>121</sup> When the Exclusion Zone tourist’ show an everyday object in their images most will know that they are radioactive because of the connotation to the area that they are in. This connotation can be shaped by a linguistic message (dialogue, caption or hashtag), but the radioactivity cannot be seen. E.g. the firefighter’s boot in the Pripjat basement, most will know that it is radioactive because they have the lexicon derived from the *Chernobyl* series. However, by measuring it with a Geiger counter it confirms the objects identity as a liquidator’s footwear. The use of the Geiger counter functions as a protection from the feeling of uncanniness, because it visualizes the unfamiliar ‘radioactivity’ and makes it familiar by visualizing it in numbers. The familiarity with the numbers allows the viewer to connotate a value of either good or bad so that they can establish a lexicon for the specific object. However, the scale of the Chernobyl disaster is so large that a single person with a Geiger counter would take years to decode and map all of the radioactivity in the area, not to speak of them receiving a lethal dose on their mission. One could argue that they could get help by a team, but then it would be counterproductive to the goal of the tourist, which is to find and prove the actual doses radioactivity.<sup>122</sup> By getting help, the ‘see for yourself’ approach would be devalued by the historical connotation of lies that surrounds the disaster. Therefore, the whole post-nuclear space will remain undeciphered and uncanny because the historical disturbance of the trust that makes it a familiar but unfamiliar territory. Still there remains a fascination among the tourists to visualize this invisible power and engage with the uncanny through the images. As if this is the only way that they can comprehend radioactivity, by adding their own connotative value to it. The signifier for radioactivity heightens the images and gives them an aesthetic value of either ‘descent’ or ‘eerie’ to commemorate the experience of being in the Exclusion Zone.

The Geiger counter help the tourist and viewer to comprehend radioactivity when embodied, but not in itself. Because radioactivity consists of invisible rays that constantly exist regardless of our intervention, in the Exclusion Zone it is possible to measure in much larger

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<sup>121</sup> I acknowledge that something abandoned is uncanny in itself because it asks why it is abandoned and it is a strange familiarity to leave ordinary ‘functional and good’ objects behind.

<sup>122</sup> See page 49.

quantities because of the disaster. Hence, I argue that radioactivity in its own invisible form is sublime. Radioactivity in its purest form, especially in relation to a disaster with the scale of Chernobyl leaves us astonished. Philosopher Edmund Burke (1757) explained that the feeling of astonishment to be the utmost feeling that the sublime can evoke.<sup>123</sup> Astonishment is founded on a degree of horror and because we observe the sublime from afar, where we are ‘safe’ but still close enough, we can derive pleasure in it.<sup>124</sup> This is because the sublime reminds us of everything good in our lives.<sup>125</sup> Like the sublime, radioactivity is incomprehensible, and in relation to the Chernobyl disaster it is also terrifying. It is its invisible presence within visible absence that renders many people confounded and astonished, because how do you decipher the position of something that can potentially kill you when you are incapable of visualizing it as is? This uncertainty of observing a harmful entity in a carefully curated space (like Pripyat) is exactly what makes radioactivity sublime. It is the invisibility and the rejection of it being able to harm us when we are following the rules set by the tour-guide, which creates the experience of it ‘being seen from afar’. Thus, making us able to explore the grounds it inhabits. This only adheres to nuclear spaces. Because outside nuclear-spaces we would not consider radioactivity in the same way. In relation to my own childhood experience of the nuclear power plant in France, it becomes clear to me that the experience was sublime. Because my parents had closed the windows to the car, thus we considered the car a ‘safe’ space to watch the power plant from. It was the ‘rules’ of closing the windows, set by my parents which made me feel safe when they started to talk about the dangers of radioactivity. But it was the beauty that surrounded the power plant and the mightiness of the construction that left me astonished and slightly terrified of the invisible danger that according to my parents roamed the area. The experience was and still feels incomprehensible.

The *Chernobyl* series tries to depict this experience of the sublime as well. The railway bridge scene is trying to convey the experience of the sublime, by the way it tries to visualize radioactivity. The characters know that this peculiar fire is dangerous. But because they are located far away from the power plant, they do not think that they are in any immediate harm’s way. Therefore, they watch the fire and let their children play with the ashes with delight. To the viewers the scene may also reflect a certain kind of sublime feeling, because we are rendered astonished as to how they cannot know of the amount of radiation swarming around them. Yet we watch the scene from afar, feeling safe though we could find ourselves unknowingly in the same

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<sup>123</sup> Burke, *The Philosophical Inquiry*, p. 74.

<sup>124</sup> Burke, p. 83-84.

<sup>125</sup> Burke, p. 85.

situation. The scene is terrifying because it relates to the human experience of uncertainty. This proves Burke wrong, in the sense that he believed that the sublime only could be communicated by words. Because its translation into painting would allow us the pleasure of imitation as well as the knowledge of its (the paintings) inability to harm us.<sup>126</sup> While this is true for the tourist images that work as a ‘safe souvenir’ as debated in chapter two, the moving images of the series is immediate and does not render us much more time to consider our positions.

### ***3.2. The Visual Language for Radioactivity***

In the previous chapters I have identified different visual tropes for radioactivity. In the *Chernobyl* series the tropes were ‘ashes’, ‘colours’, and ‘burns’. I have also established how the inability to visualize radioactivity in itself led tourists to rely on Geiger counters, yellow colours, and hashtags/titles for visualization of radioactivity in the post-nuclear space. I have found that all of these tropes call for a need to be contextualized in order to mean radioactivity. This is either done with the existing lexicon of the viewer, or by the help of a linguistic message that often accompanies these images (fictional or real) in shape of titles, captions, dialogues or hashtags. An image of an abandoned building, like the Ferris wheel, or a fire are not arbitrary signifiers for radioactivity, just because society, in the words of Saussure, has agreed on this decision.<sup>127</sup> Instead the images are carefully curated by a system of codes to ‘mean’ radioactivity. Therefore, the visual language for radioactivity relies on connotations, linguistic-anchorage and repetitive signs in a post-nuclear / nuclear environment.

I came to realise that many of these images exist on the notion of nature versus manmade. Radioactivity is both. It exists in our natural environment but has been increased because of manmade inventions like nuclear power, bombs and disasters.<sup>128</sup> In the *Chernobyl* series they relied on natural elements like ashes and colour to determine radioactivity in a scene. Even the burn shows the nature of radiation, because that is what happens when large amounts comes into contact with human skin. The series was able to communicate radioactivity in this way, because of the ability to create special effects and composition that emulate radioactivity’s natural behaviour, e.g. the movements of the ashes in figure 7 in the overview of the railway bridge scene in chapter one.

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<sup>126</sup> Burke, p. 82-83.

<sup>127</sup> Saussure, *Course in general linguistics*, p. 74.

<sup>128</sup> Tuniz, *Radioactivity*, p. 4.

Tourists' do not have the same tools for creating the same stylized visual experience of radioactivity, and therefore they need to rely on the Geiger counter to envision radioactivity, the same goes for the titles and hashtags. Thus, the notion of radioactivity appears via human constructed machines and the linguistic messages that accompany the tourist images. The paradox that I find in this observation is that meanwhile the *Chernobyl*-series portray radioactivity in its most natural form, it is also the most humanmade because it is constructed by machines and editing software. Therefore, the more 'real' and 'natural' experience of radioactivity is through the tourist' images, because they are only as able as the technology they have at hand. They can describe radioactivity through text, by telling us that they are standing before a radioactive environment, and thereby they ask of us, to make a choice of whether we trust them or not. But by showing the Geiger counter in their image, they confirm their statements and thus the images do become more 'natural' and 'momentary'. Almost like the notion of a 'pure' image that according Barthes only a photograph could be assigned. Meanwhile, a photograph is always connoted, it is capturing a momentary experience of radioactivity, hence confirms history which is that the Chernobyl disaster did happen. Thus, both in fiction and in reality, we need radioactivity to embody something to have it adhere to a visual language for radioactivity. Otherwise, we are speaking of invisible rays and maybe that in itself is enough in relation to the denoted image with a controlling linguistic anchor that tells us: you may not see us, but we do exist. Thus, it is embracing the nature of radioactivity, which is the invisibility.

### ***3.3. Coining the Radioactive Image***

Radioactivity is sensationalized and ignored. The radioactive image allows us to look at a nuclear space with both aspects of this discourse in a language in which we understand it. The usual extremist terms of radioactivity in the Exclusion Zone, like danger and health-risk are coincided with the reassurance of safety because of the decontamination and limited time being spend there. Radioactivity is not usually spoken of in relation to an image, but it is everywhere in these emerging tourist photographs and popular media like video games and film. The more I delved into the matter of radioactivity, the more I realized that for it to be seen and comprehended it needed to manifest. This it does in every living thing because of the way it absorbs. Therefore, I came to this description for a start:

‘The radioactive image is an image which showcase a physical object: a body, an item, or a place that has been or are affected by radioactivity. This includes; visual damage, nuclear power plants, Geiger counters, abandonment, and X-ray photography’.

I did not touch upon X-rays in this thesis, but I find it important to include as being part of the radioactive image because it is a historical radioactive component that is being used in visualizing the inside of a body.<sup>129</sup> Likewise, is an image of a deformed child or a superhero because a radioactive image is created and becomes existent when it is influenced by radioactivity.

The issue with this explanation arises when debating whether or not a radioactive image should only consist things that are visually affected by radioactivity. Seeing as many images, and especially the ones of nuclear victims do not show any sign of radiation unless they undergo a physical examination. Therefore, they need a linguistic anchorage to direct the viewer to know that what they experience is radioactive. We see this over and over again in the thesis’ semiotic analyses that the visual implication of radioactivity is either stemming from the viewers lexicon (e.g. the Cherenkov effect), a Geiger counter or by an accompanying dialogue, captions or hashtags. Therefore, the radioactive image relies on embodiment to exist, but a linguistic message to be visual. But what if we can no longer rely on language?

In the introduction to this thesis, I mentioned how my parents came to think of a nuclear power plant in France as a visual signifier for radioactivity. So much so that they closed the windows to our car. They did so, because they had the lexicon of Chernobyl, and out of fear they translated this one disaster to mean that every nuclear power plant had the ability to unleash the same kind of catastrophe without notice. Which a power plant does, but it does not mean that it will. This perceived visibility of radioactivity says much of our reliance on its embodiment but likewise much of how it can be misunderstood. Society has already found the trefoil sign to be the symbol radioactivity, but my thesis proves that this sign is not enough in a visual discourse because many other visual entities once contextualized or guided by linguistic a message can mean radioactivity. Therefore, to establish and coin the term of the radioactive image we would need to gather many more visual signifiers for radioactivity and collect them as an encyclopaedia in order to understand what else they all have in common. In so far, I have opened the discussion and a window of how we could potentially coin the term, and I will end it with the thought that it might not be possible at all without linguistic guidance.

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<sup>129</sup> Tuniz, p. 26.27.

## Conclusion and Further Perspectives

This thesis explored the topic of how visualization of radioactivity affects how we understand and conform to a post-nuclear environment. It aimed to lay the groundwork for understanding the visual language for radioactivity and tried to coin the term of the radioactive image. The thesis suggests that the *Chernobyl* series visualized radioactivity by repeating visual signifiers until they became tropes. The visual signifiers became signs for radioactivity through contextualization guided by the linguistic anchor (dialogue, title). In tourist images, visualization of radioactivity was guided by Geiger counters and linguistic anchors (captions, hashtags). In turn the tourist images with these types of visualizations of radioactivity shaped the image to function as a visual ‘truth seeker’ or ‘confirmation’ of the *Chernobyl* series depiction of the amount’s radioactivity unleashed. The visual language for radioactivity is characterized by a variety of contextualized and anchored tropes in both fiction and reality. In this thesis, the radioactive image can exist only when it is contextualized by linguistic guidance. The visualization of radioactivity affects the way we understand and conform to a post-nuclear environment by constantly challenging our perception of danger through the notion of the sublime. We believe we are ‘safe’ to be fascinated because we conform to rules set up by tour guides, when in fact it may be the very opposite in the post-nuclear environment of Chernobyl. The images of the radioactive or ‘the radioactive image’, is a possible way of discussing a space as radioactive, but only when its components are symbolic and guided by a linguistic message. Subsequently, the tourist images functions as the way in which we try to comprehend the incomprehensible by making a space appear less uncanny little by little. Hereby appealing to the experience of making the atom part of our choice of experience and not the other way around.

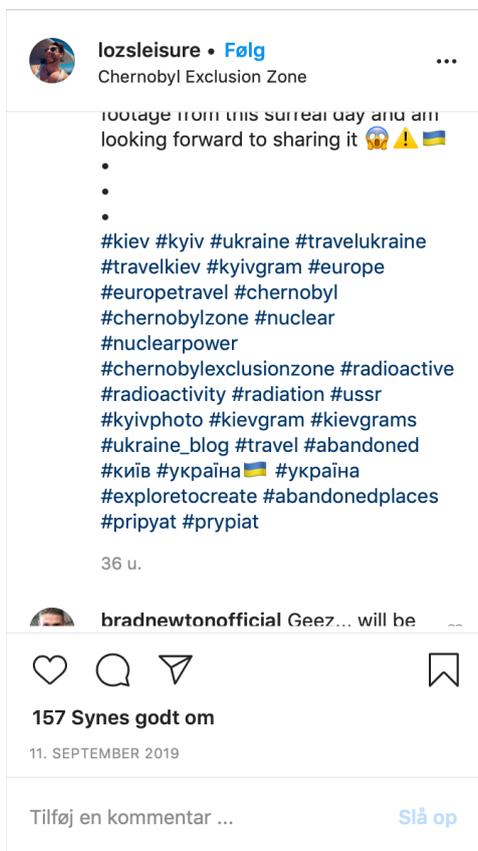
In the finishing stages of writing this thesis, I was contacted by a Chernobyl tour-guide. They had heard about this project from a former tourist and wanted to help. Before I knew, I had received several voice-messages, telling me all about the depths of tourism in the Chernobyl Exclusion Zone. Unfortunately, due to the lateness of this information, I did not have time to include it in this thesis. Still, I wanted to share parts of the conversation seeing as it is an interesting perspective that opens up for a further study into the tourism of the Exclusion Zone and visualization of radioactivity among tourists and guides. The transcript of the voice messages can be found under 4a. in the appendix.

## Appendix

This appendix consists of:

- 1a: Hashtags from @lozleisure Instagram post.
- 2a: Hashtags from @fannyloveink Instagram post.
- 2b: Translation of @fannyloveink's Instagram post.
- 3a: Hashtags from @joshpricevisuals Instagram post.
- 4a: Transcriptions of messages from Chernobyl tour-guide.

### *1a. Hashtags from @lozleisure's Instagram post.*



## 2a. Hashtags from @fannyloveink's Instagram post.

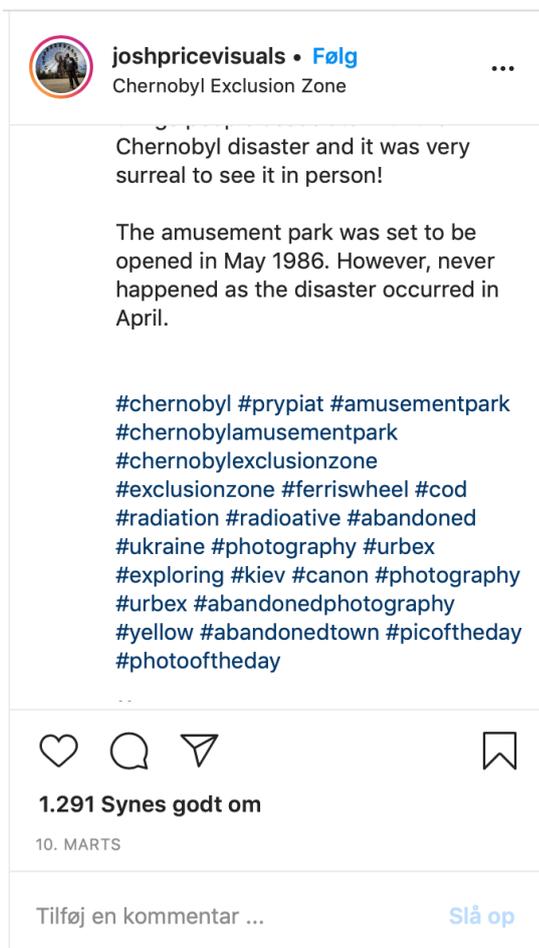


## 2b. Translation from @fannyloveink's Instagram post.

Spanish to English:

We were happy and didn't know it. Or yes, we did know, but we did not value it, because being free (everything the system allows us) was normal, and now that we cannot develop it, we realize how important the small details are. And in my opinion, happiness is in the little things. You don't need big houses or luxury cars; with a "good morning" in the morning, a "how are you" at the right time, a hug when problems overflow you ... is the greatest happiness. We have it inside and the people around us are the way by which it grows and manifests.

3a. Hashtags from @joshpricevisuals Instagram post.



The image shows a screenshot of an Instagram post from the user 'joshpricevisuals'. The post features a profile picture of a person in a field, the name 'joshpricevisuals' with a 'Følg' (Follow) button, and the bio 'Chernobyl Exclusion Zone'. The main text of the post describes a visit to an amusement park in the Chernobyl Exclusion Zone, noting that it was never opened due to the 1986 disaster. Below the text is a list of 15 hashtags. The post has 1,291 likes and was posted on March 10th. At the bottom, there is a comment input field and a 'Slå op' (Open) button.

**joshpricevisuals** • Følg  
Chernobyl Exclusion Zone

Chernobyl disaster and it was very surreal to see it in person!

The amusement park was set to be opened in May 1986. However, never happened as the disaster occurred in April.

#chernobyl #prypiat #amusementpark  
#chernobylamusementpark  
#chernobylexclusionzone  
#exclusionzone #ferriswheel #cod  
#radiation #radioative #abandoned  
#ukraine #photography #urbex  
#exploring #kiev #canon #photography  
#urbex #abandonedphotography  
#yellow #abandonedtown #picoftheday  
#photooftheday

1.291 Syner godt om  
10. MARTS

Tilføj en kommentar ... Slå op

#### **4a. Transcription of messages from Chernobyl tour-guide.**

The transcription from voice messages to text, between the Chernobyl tour-guide and me, on the 18 May 2020.

**Baden:** Can you tell me about how tourists access the hospital basement in Pripyat?

**Tour-guide:** Okay so, first of all the hospital you probably are talking about is located in the village, I'm sorry, *town* of Pripyat which is located let's say 3 kilometres from the Chernobyl nuclear power plant itself. So how do they enter the hospital? Because you know, due to the safety rules, people are usually not allowed to enter the buildings because of their (the buildings) age. The town of Pripyat itself was built in the 1970ies so all these buildings haven't been maintained because the accident happened in 1986, probably you know about it, so people are not allowed to enter the buildings, especially tourists are not allowed, just imagine the situation if something happens inside of the building, right? So normally if someone enter some of the buildings, these people do this illegally.

Hospital, one of the entrances to the hospital has been like closed for the people not to enter but for some reason they found another way how to enter that hospital.

I mean the basement itself, because the hospital is still like okay to enter because I mean 'OK' to enter, like you can enter it but it's better not to (Starts chuckling).

So, the basement of the hospital is still highly contaminated because, uh actually in the HBO tv-series they show the firemen who were struggling with the fire. They were taken to the hospital Clinic that was located in Pripyat. And then they took off their clothes in there and the nurses had to bring the clothes into the basement, so basically this was the truth. So, they had to leave their clothes, and they left the clothes, the gloves, masks and everything they had mainly fire suits they left in the hospital in the basement itself.

And the basement is highly contaminated with alpha particles because normally Pripyat had been decontaminated, because the last attempt of decontaminate Pripyat was in 1996, but the hospital itself because it is located in the micro district number one is not the safest place actually. So better not to go there, but anyway some tourists do. Basically they do this for fun, because they think it is, you know kind of a dark tourism, it's exciting and honestly speaking I don't know even one occasion where my tourists, personally my tourists (the ones she has guided),

entered the basement of the hospital. Because there are a bunch of (other) really cool and interesting places, I mean cool in a very 'positive' sense, so places you can really visit so it is better to avoid the contaminated areas, it is just for your safety, for my safety, of course the buildings themselves are not in the best condition.

**Baden:** How much time does people spend in the basement? Do you think these 'Illegal tour guides' make it seem safe to tourists and do you think they have a limited time in there? How does people get in contact with these tour guides? Have you ever been in the basement?

**Tour-guide:** Well I will tell you. Personally, I have never been to the basement, I can explain you why because again the pollution of the basement. Even despite all the videos, despite all the rumours about this basement. It is dangerous. It is dangerous to go there; I am telling you as a tour guide who has been working in the Chernobyl Exclusion zone for more than three years. I can tell you that it is not safe, it is definitely not safe. It is not because I never do illegal stuff, because year sometimes when we see there is no police we can enter the buildings, we can just, of course if the tourists come for a two day or three day tour anyway, you sneak into some of them.

To be personal, I'm gonna have kids, I don't mean I am pregnant, because pregnant (people) are not allowed to work in the Exclusion Zone, only the 30 kilometre zone, if you understand what I mean, but yeah some people can enter the basement just to show off. But last time when I talked to the guy who worked at the nuclear power plant, it was actually in January, the 13<sup>th</sup> of January I talked to one of the workers of the nuclear power plant who was on the shift that night when the reactor exploded. So, he told me that alpha particles are way more dangerous than everything else. The alpha particles I am talking about are still in the basement, if you breathe alpha particles one day you might have cancer, and he proceeded (to tell) us not to try to enter the basement. Especially without any protective suits. The violation of such an important safety rule can be really very dangerous for the health so even the protective suit is sometimes not very good but at least it's a protection that you, it is somehow, it can guarantee that you don't breathe in the contaminated particles because they are dangerous if they are ingested or inhaled in the body.

So theoretically many people do this for show, which is a really big mistake in my opinion. And you know, sometimes I can tell that I can see different people and tourists and some of them can come to Chernobyl just to see the Ferris wheel, because then they can get at least a couple of photos of the Ferris wheel, and they do this just for a selfie or an Instagram picture or

whatever. But mainly majority comes to learn more about the history of the disaster and so on and so on and so on.

So, returning back to the basement, how do they get in contact? Honestly speaking it is not that difficult to get in contact with the tour guide who will bring you there. Of course not all tour guides would be ready to do this but I believe it is not such a big problem because, the basement in itself is not guarded or protected, so once you enter Pripjat you basically passed the police officers, so they don't really control every action. I mean the tour guides does have GPS-trackers, so they do control, but you know a GPS tracker is not a guarantee that you won't break any rules.

I believe there is a different feeling when you see the normal background is 0.30 mSV, but when you can see 100 mSV or often times higher than the normal amount of radiation yes it is the standard (within Chernobyl), you feel different emotions because I can tell you from my personal experience when I entered the Arch, you know the new shelter object covering the old sarcophagus, so when I entered that building, and I know that this must be the most contaminated part of the Exclusion Zone even despite the fact that it has been decontaminated, probably inside the structure there should be a critical amount of radiation that would be dangerous for the health, so even though I know this fact you feel different emotions, because as I say it is better to see once than to listen one hundred times (better to experience it instead of wondering for a long time), nevertheless, those people who enter the basement those people probably feel a more or less the same. Imagine the feeling, yes, it is illegal. You are in a different country. You are in the restricted area. You enter this kind of a basement which is the most contaminated area. It was described somewhere in the HBO tv-series and then you come there, and you feel like you made such a big way to make such goal. And now you are there, and you understand that you take a risk anyway... Someone does this just for a picture. For Instagram some do it for the feeling. I believe it is mainly for the feeling they get and of course for the picture!

Well I am talking about limited time. If they sneaked into the building and they did this with a tour guide. As a tour guide would notify them on the amount of time they can be there. They could be there. The situation is that you don't, or that the amount of radiation in the basement, why am I talking danger, dangerous is yeah, why am I saying dangerous? Well yeah because if you breathe the particles, but if you have the suit in fact yes let's be realistic if you take a protective suit and you just go there, and you don't approach in the clothes themselves you almost have no risk to breathe the particles, so you understand what I mean right? If you keep the distance you will still be

safe. Probably this can push people to visit. 2 mSV is kind of the maximum you can show. You measure with the Geiger counter you measure a shoe and you see that the 2 mSV. But usually the Geiger meters show per hour. So, if you stay there for an hour. But if you just come there just to take a shot, probably this is very safe, because it is not the same as our usual understanding of being inside the basement.

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