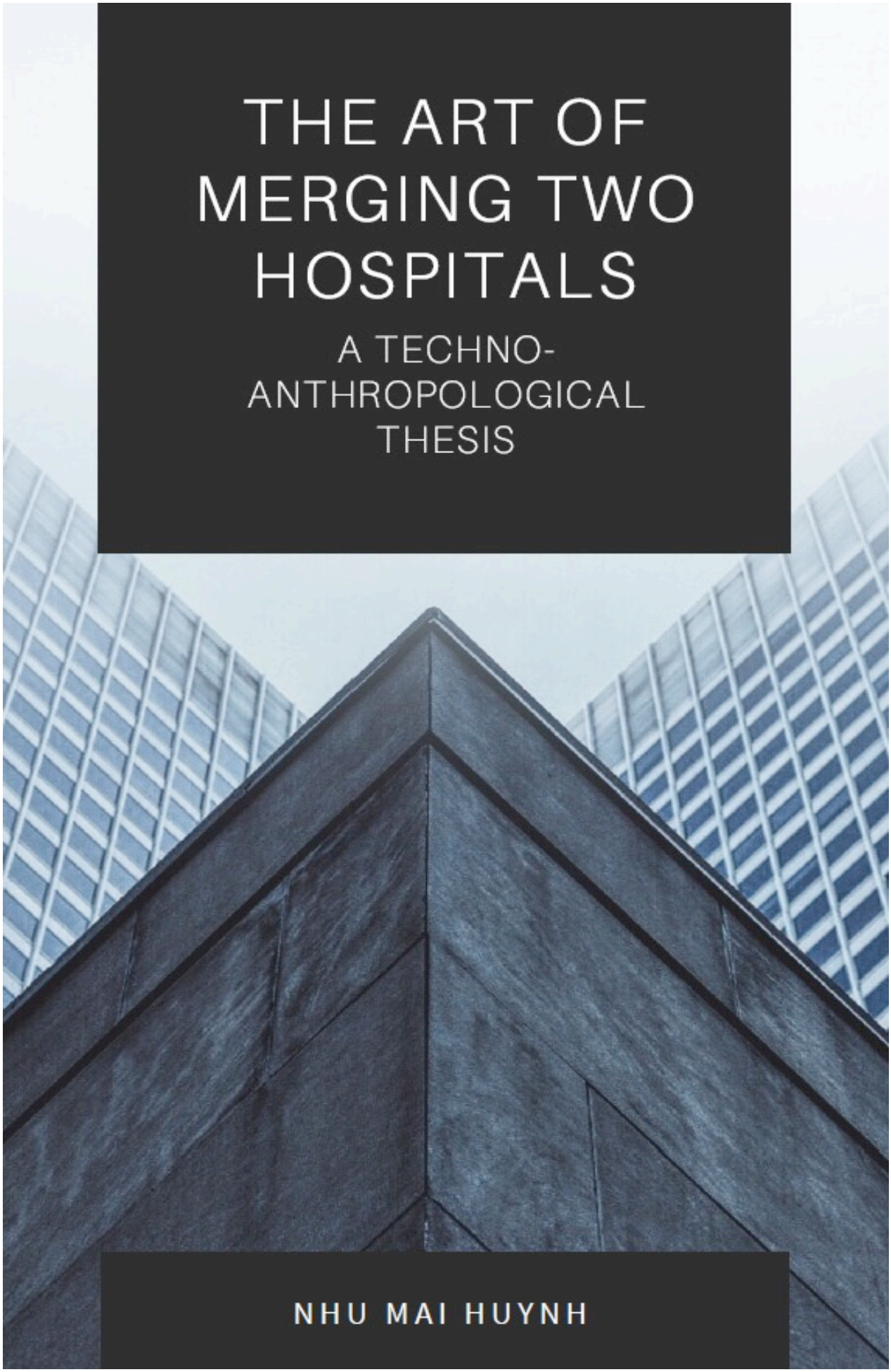
THE ART OF MERGING TWO HOSPITALS

A TECHNO-ANTHROPOLOGICAL THESIS



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RESUMÉ

Dette speciale omhandler de problematikker der kan opstå under sammenlægning af hospitaler. Fra politisk side er det besluttet at sammenlægge specialerne ved at sammenlægge hospitaler i alle fem regioner. Der er tale om en øget centralisering inden for sundhedsvæsnet, hvor man ønsker at samle alle specialer under ét super sygehus. Målet er bl.a. at højne den faglige kvalitet samt skabe sammenhængende patientforløb.

Som et resultat af Region Hovedstadens 2020-plan tager dette studie udgangspunkt i sammenlægningen af radiologisk afdeling på Bispebjerg Hospital og Frederiksberg Hospital, der påbegyndte i januar 2011. Sammenlægning har således været en længerevarende proces og det nye supersygehus, Ny Bispebjerg Hospital, forventes at stå klar i 2022-2023.

Dette studie ønsker at undersøge, hvordan *Action Research* (AR) kan bidrage til en optimering af sammenlægningen af hospitaler, som både er tilfredsstillende og tilgodeseende for radiograferne. Samtidigt bliver Feenberg's kritisk teori af teknologi anvendt som en filosofisk tilgang til studiet, hvor der udformes en model som har til hensigt at transformere fusionen, som undertrykkende for radiograferne til en frigørende/oplysende teknologi.

Dette studie blev udført på radiologisk afdeling, (Bispebjerg og Frederiksberg hospital, København) i perioden primo januar til primo maj 2018. I samarbejde med lederne og radiograferne blev studiet udført ud fra en kvalitativ metode ved brug af AR, deltagende observationer og semi-strukturerede interviews som forskningsmetoder.

Semistruktureret interviews og deltagende observationer danner rammerne for diagnosticering af aktuelle problemer i organisationen. I alt 12 interviews in situ blev gennemført, mens deltagende observationer blev udført igennem flere uger. I samarbejde med ledelsen og radiografer blev der slutteligt gennemført et temamøde, hvor AR blev anvendt aktivt i forhold til fremtidige strategier og handleplaner.

Radiografernes sociale interesser blev identificeret ved brug af AR og dets faser. De aktuelle problematikker på BFH blev fremhævet ud fra empirisk data. Ved temamødet blev løsningsforslag præsenteret ud fra foregående AR data for fremmødte radiografer og ledelsen. Undersøgelsen danner grundlag for aktuelle samt fremtidige rekommandationer, der er nødvendige at overveje for at opnå demokratiske hospitals fusioner.

Jeg konkluderer at ved en realisering af en demokratisk udvikling i en hospitalsfusion, skal medarbejderne involveres og gennemsigtighed ved aktioner under fusionsprocessen være fremtrædende. De negative perceptioner fra medarbejderne kan transformeres såfremt fokus går på at de bliver hørt samt ledelsen involverer dem i beslutningsprocessen ved en fusionering.

ABSTRACT

BACKGROUND

Hospital mergers in Capital Region are an ongoing process decided from the politicians. The overall aim is to centralize specialties to the hospitals and create super hospitals that can serve the inhabitants in the region better. The aim of this study was to see how action research could contribute with redefining the merging process into something more satisfying and beneficial for the radiographers.

METHODS

This research was conducted in the time period of primo January to primo May 2018 at the Medical Imaging Department, Bispebjerg & Frederiksberg hospitals, Copenhagen Denmark. In collaboration with the managers and radiographers the research is based on qualitative methods with use of Action Research (AR) as the overall approach and hereby semi-structured interviews and participant observations serve as a foundation for diagnosing current problems in the organization. 12 in-depth interviews in situ was carried out while participant observations were enacted throughout several weeks. Lastly, I attended a theme-meeting where AR was intended to be used actively by planning actions to be carried out in the organization in collaboration with the radiographers and management.

RESULTS

With use of AR and its phases I identified the radiographers' social interests and with help from my empirical data I diagnosed some current problems at BFH. At a theme-meeting a proposed solution drawn from AR was presented to the manager and radiographers at the meeting. Furthermore, I outline recommendations to hospital mergers that needs to be taken into consideration for a democratic merger process to be enacted.

CONCLUSION

I conclude that a democratic development in hospital mergers requires employee involvement and transparency to the changes related to the merger. The negative perceptions from the employees of the merger can be transformed if their voices are heard and management involve them in the decision-making.

KEYWORDS

MERGING HOSPITALS CRITICAL THEORY OF TECHNOLOGY ACTION RESEARCH QUALITATIVE RESEARCH RADIOGRAPHERS SOCIAL INTERESTS TRANSFORMING TECGHNOLOGY

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Lastly, I would like to thank all participants at Bispebjerg and Frederiksberg Hospitals and the managers for providing me this opportunity to research in a field, so new but yet needed when whole Capital Region are undergoing these massive mergers. For the politically, the socially, anthropologically and cultural aspect.

Dedication

To my dearest daughter, Kenza Nhu Bao Huynh

As I started this thesis in the middle of January, you came into my life the 30th of January 2018.
It has been the hardest, toughest and most fantastic journey to have you in the making of this thesis.
I never thought I would make it to the end - in the hours you slept, I kept my spare energy for the writing.
When times were hard and in the mazes of confusion and losing track of writing when it all seemed too overwhelming - a smile from you made all of it disappear.

"Time is very slow for those who wait
Very fast for those who are scared
Very long for those who lament
Very short for those who celebrate
But for those who love time is eternal"

William Shakespeare

As written words can be eternal, my love for you is not only eternal but nevertheless is it unconditional.

ABBREVIATIONS

BBH	Bispebjerg Hospital
BFH	Bispebjerg & Frederiksberg Hospitaler
Contrast	Radiocontrast is an iodine-based liquid. Useful to highlight blood vessels and other tissues. When contrast is mentioned, it is in relation to CT examinations.
CT	Computed Tomography
DR	Digital Radiography
FRH	Frederiksberg Hospital
MR	Magnetic Resonance

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1. Introduction

It all started with my first job as a radiographer. After graduating back in 2012 I decided to try new adventures. So, I moved to the Capital Region where I began my journey as a radiographer at Hillerød hospital, Northern Zealand. To my surprise, it was politically decided that the hospital should merge with Frederikssund and Helsingør hospitals the same year. What this meant for me was that I had to go through a trial that determined where I should work and how many hospitals I should navigate in between due to the merging. The management decided upon this by looking at the radiographer's skills and competences. Additionally, the radiographers were given the option to write their three wishes in terms of where they wanted to work. One option was working at one main hospital either Hillerød or Frederikssund, second choice was to navigate in between Hillerød and Frederikssund, or have Frederikssund as their main hospital. Helsingør was excluded from options due to political decisions of closing it down in 2013 (Lokalavisen, 2012).

This was my first experience in a merging process. I remember how it affected me the days before opening the letter, that should decide upon my future: where to work in and with whom. Although I was a young and new radiographer, I had already adapted to the surroundings, my colleagues and, importantly, I was used to my professional technological settings within the technological equipment and scanners. After some months, I decided to try out new challenges and limit my transportation time and therefore got a job at Frederiksberg Hospital. I remember one of the reasons for trying out a new place also had played an impact of my experience with the merging. Somehow the uncertain and changing environments, not knowing where and what to do, affected me.

I do not know if it is a coincidence that this thesis has led me to this direction, but maybe this topic is my call and it all started with …

1.1 The merging projects in Capital Region

Capital Region in Denmark has started one of the largest health projects with mergers affecting all hospitals in the area. The process for implementing these mergers was adopted in May 2007 for the development of all the region's hospitals and psychiatric centers (Region Hovedstaden, 2010). The mergers will be divided in pairs and involves the following hospitals; Rigshospitalet, Glostrup Hospital, Herlev Hospital, Gentofte Hospital, Hvidovre Hospital, Amager Hospital, Bispebjerg Hospital, Frederiksberg Hospital, Hillerød Hospital, Frederikssund Hospital and Helsingør Hospital (closed 2013 whereas the employees relocated to Hillerød and Frederikssund). The cost of merging hospitals is estimated to reach about 20 billion kr. and will eventually benefit the citizens with new, effective and more secure frames for treatment and procedures (Region Hovedstaden A 2018).

Changing the whole hospital structure and moving locations and workplaces will result in five major acute hospitals in the Capital Region, a highly specialized hospital (Rigshospitalet), Bornholms Hospital and a hospital for psychiatry. At the same time new hospitals are build or existing hospitals are extended (Region Hovedstaden B, 2015). Figure 1 and table 1 illustrates how the new super hospitals are covering Capital Region.

Figure 1. Future super hospitals covering the Capital Region (Region Hovedstaden B, 2018)

Table 1 – Overview of future hospitals in Capital Region

Planning Area	Hospitals
North	North Zealand Hospital
Middle	Herlev & Gentofte Hospital
South	Amager & Hvidovre Hospital
City	Bispebjerg Hospital & Rigshospital
Bornholm	Bornholms hospital

The intention with merging hospitals into super hospitals is that the majority of patients and employees will meet far better conditions in the future while getting the best possible treatments, which are stated in the Regions 2020plan from 2015 (Region Hovedstaden B, 2015). The new structure additionally imposes other requirements on how treatments and procedures will be organized at its best at the hospitals (Ibid). The overall purpose of merging is to be more efficient, getting faster procedures while centralizing specialties in order to achieve more qualitative orders to and for the citizens. The development of the future hospitals also implies that it will be possible to further optimize operations and achieve a rationalization gain while improving service and quality (Ibid).

Experience from the merger of Rigshospitalet/Glostrup and Herlev/Gentofte in the longer term indicates that about 130 mio. kr. can be released because of actions as reducing administrative functions, reducing management teams, aggregating security functions, rationalization and economies of scale, estimated and stated by the politicians in the Government (Dagens Medicin, 2014).

The head of the region, Sophie Hæstorp Andersen, expresses her view of the major changes the mergers are causing the healthcare area;

"Healthcare is constantly in motion with new treatment methods, new academic requirements and new knowledge about how different specials and functions work best, and we must keep them politically in a way so that we also ensure continuous patient progress, she explains." (Region Hovedstaden A, 2015)

All these mergers expose massive change, but what seems to be a lack of focus on the media is how these mergers are affecting the healthcare employees in the Capital Region when the merging processes were initiated. Who are the ones getting caught and pressed in the restructuring and reorganizing of hospitals?

In a press release from 2nd January 2012 it was stated that Bispebjerg Hospital (BBH) and Frederiksberg Hospital (FRH) would merge as one organization – Bispebjerg & Frederiksbergs Hospitaler (BFH) on two cadasters (Region Hovedstaden A, 2012).

Facts about the merging of BBH & FRH:

- The hospitals' directives merge per. 1 January 2012.
- The administrations merge per. 1 February 2012.
- The medical imaging department, Anesthesia and Service and Properties have already merged.
- The hospitals serve 416,000 citizens in Copenhagen and Frederiksberg municipalities.
- The merger of the directives is a step towards New Hospital and New Psychiatry Bispebjerg, to be completed in 2025 (Region Hovedstaden, 2012).

From the press release it is clearly highlighted that the merger will not affect the patients, but what seems to be a missing aspect is the lack of focus on the employees. What does mergers in hospitals mean to the people working on the floor? The development of the mergers towards the philosophy that things should be more effective and making more value for the money may interfere and cause unintended events if looking at it in an economical perspective. In the light of a cost-benefit analysis, economics focuses on a huge financial reduction, in which citizens get more centralized health care from mergers, but economics has not calculated the dark side of the reallocation of human resources, hence the need for a techno-anthropological perspective.

This is why it is relevance to ask; How the health employees are affected by this, but also how are they are adjusting and coping with the new work surroundings and changes in their professional atmosphere. Do these changes in the merging process lead to conflicts between stakeholders and which perspectives or elements seem to be missing in a merging process?

1.2 Inspiration from fieldwork - Fall 2017

This dissertation evolves around the merging process of the two hospitals in Capital Region, BBH & FRH, medical imaging departments. In fall 2017 I carried out fieldwork with a peer-student at the same organization that ended with a report titled *"The merging of two hospitals"*. Originally our focus was to find out how knowledge was mediated in the medical imaging departments. We directed our focus to the managers at medical imaging departments radiologists, radiographers and the producers for x-ray equipment. At every interview we saw that the radiologists and radiographers repeatedly addressed the merging topic. We saw a redundancy on the merging aspect as something the informants had a need to express their opinions about and how much it affected their work life. For some informants, our interviews became a space for letting out their frustrations and this was the beginning of our new perspective of research.

> *"I want to say I'm really pleased to have a change to let out my frustrations in this situation, because what we need right now is having more structure in our everyday life and because of our heavy production and how we used to work, going back and forth makes it all seem so confusing at times…"* (Huynh and Petersen 2017, appendix 6:209)

We redirected our focus and aimed to highlight the challenges on the merging of the medical imaging departments at BBH and FRH. The empirical dataset primarily consisted of radiographers and radiologists working within MRI to limit the field and get a deeper understanding of the different social groups in the organization. Another aspect being addressed from the fieldwork was the radiographer's mind-set on the merging. Most of the healthcare employees were missing the vision and understanding of the merger and, furthermore, due to the extensive changes caused by the merging, a negative mindset emanated and reluctance from the radiologists, radiographers and secretaries occurred. It took me by surprise to hear the frustrations came continuously within the organization and a need for change was sought.

At the present year 2018, the process of merging the two hospitals has undergone major changes from departments closing at FRH and employee exchange between the two hospitals, are just a few examples. Both hospitals remain as physical hospitals until the merger melts the two hospitals into one new super hospital – Ny Bispebjerg Hospital. Estimated to be built in 2022-2023 where the complete merging is expected to be complete (Region Hovedstaden B, 2012). But until then,

gathering the healthcare employees and making them work as one organization have caused frustrations and uncertainty in regard to the workflow of some individuals which has led to stressed employees and in some cases resignations (Huynh and Petersen, 2017). The management's vision for merging the two departments seems to be transparent and visible; being addressed at various meetings, mails and workshops but reluctance still occurs in some areas between the two departments. The manager at BFH states following to the frustrations of the merger:

"I think the resistance mostly stems from a lack of knowledge, meaning that the professionals do not know what it means for us working together now. Most cannot see it yet."
(Appendix 1: 8)

When asking the management about the biggest challenge in the merger, he expresses following:

"If you ask me and I have to completely honest I would say culture… but this culture is not something you change from day to day… we have discussed it to a great extent" (Appendix 1: 8)

So how do you change cultures and make a new unified culture, one could dare to ask? Is it changeable or should the question be more directed towards; which aspects need to be taken in consideration when conducting mergers in the healthcare system?
It is from this perspective and a need for investigation of this topic, I will address my dissertation.

The radiographers are representing the largest group in the medical imaging department at BBH and FRH hospitals consisting of over 80 personnel, which is why I choose to put my focus on them.
A need for change in the merging process compels me to investigate the aspect of the problems the radiographers are facing more thorough. The stakeholders in this setting, to mention a few but with highest relevance; head of management at the medical imaging department at BFH for the radiographers, head of management at the medical imaging departments at BFH for the radiologists, team-managers for the radiographers, the radiographers. Where is the merger lacking in missing perspectives and how can it be optimized? Who are the opponents in this merger? On the one hand, the government aims for more effective super hospitals and on the other side, the management and the health employees are involved in the political decisions. It is known that in mergers, positions will be replaced and some positions will lead to abdications, which causes stressed and skeptical

employees. Is there a way to bring the two departments together while getting sufficiently support from the radiographers? Is it a matter of time and getting used to the new surroundings and conditions in their work life? How to maintain the radiographers' social interests? And how is it possible to find the way that benefits all stakeholders in this merger?

2. Problem analysis

2.1 Directing the view towards the radiographers

As with all of my research, I go into the field with an open mindset to investigate, seek patterns – maybe even answers – and to navigate in the various types of research being conducted. But most importantly, my passion and aim for conducting this research stems from a curiosity and a drive to change something. Something better, that people can benefit from and will benefit all stakeholders involved. Through curiosity, amplified with dedication and inspiration the final outcome may contribute with a result of enlightenment in an area some people saw as dark and hidden.

From this standpoint, this thesis provides an opportunity to explore this merging process further and aims of understanding and help facilitate changes that benefits the health employees and the organization.

The merging process of the BBH & FRH already started by merging the management into one in 2008 (Huynh & Petersen, 2017). After some shifts and replacements in the management due to retirements, the current management started the initiative to merge the whole department where the healthcare employees physically are exchanging in working between the two hospitals beginning that started summer 2017 (Ibid). The management shared vision stems from a hope that this early merging process will benefit the organization when the new Bispebjerg Hospital is done in year 2022-2024.
Some of the findings from previous fieldwork resulted in; exchanging between working environments and not knowing whether to work at BBH or at FRH was causing stress and uncertainties for some employees, which also lead to a decrease in the quality of their main competencies. The cultural aspect of working in new environments caused the employees to feel less secure and at ease due to being out of their comfort zone. This led to the cultural question I find interesting to investigate further for the radiographers is, now, at this moment, what common values and norms bind the employees together in their work life? How can a common understanding for the radiographers and the

management be created? A shared vision and balancing the involvement of employees may be something worth considering in the aspect to optimize the merging process?

How can the underlying, potential misunderstandings and frustrations of employees that have emerged since the beginning of the merging change? Because of the merger some employees find it difficult to navigate in the different work tasks they previously were used to be confident and secure working in. Insecurity and unfamiliarity lead to instability is certain to claim.

The findings from previous fieldwork from 9th semester unfolded the challenges for different social groups in the medical imaging department at BBH and FRH among the radiologists and radiographers. Most of the results needed exploitation for more concrete and practical working tools for the involved stakeholders. Each group in the organizations became *vulnerable* (the radiologists, the radiographers and secretaries) the moment the management decided to merge the two medical imaging departments, some more affected than other. The management where facing redistribution of work tasks and area, the radiologists were also distributed different and experienced heavier workloads, the radiographer's technological framings were expanded balancing in between the hospitals and the same for the secretaries.

The term *vulnerable* is associated with the critical thinking from Critical Theory of Technology (CTT), which central concepts unfolds and applies to be used, when there is a presence of a vulnerable group. The challenge of this theoretical thinking lies in how to emancipate the oppressed vulnerable group to reach enlightenment. Which settings need to be altered in this constellation? And what can the implications from CTT contribute with? How can I, as a researcher, convey their voices in this merger?

I decide to direct my focus on the biggest vulnerable group in the medical imaging department - the radiographers. I wish to explore their take on the merger in regard to organizational complexity in conjunction with human actions and interactions with the merging.

The need for deeper knowledge, understanding and a communication strategy for supporting the vulnerable group in handling the challenges related with the merging is a necessity the management is aware of. However, what seem to be missing in the merger are more concrete and specific views and wishes from the radiographers instead of general solutions.

> *"If you can help with finding more concrete solutions I would be more open to listen and fulfill their needs."* (Huynh and Petersen 2017, Appendix 1)

The lack of understanding the radiographer's views and frustrations on the merging stems also led to resignations and negative talk around the organization, which designates some sort of oppression. The management is aware of this and wishes to change the merging process for the better to satisfy the radiographers. A call from the management lies within understanding the need for a more visible management, which some radiographers have expressed since the beginning of the merging. How can the management be more visible and what do the radiographers mean when they want a more visible management, is one of the elements that needs to be investigated more thoroughly.
The project will provide insights with findings that can contribute to the developments of the merger and bring forth a more robust and socially responsible solution to the challenges the hospitals are facing at BBH & FRH.

2.2 Problem delimitation

With a background as a radiographer I am highly reflexive of entering the field and the biases that might exist for me. My professional network and experience have provided me with this great opportunity and the access to the field is wide open because of that. I hold a responsibility to investigate this research field as objective as I can with respect for the healthcare employees as well as for the entire organization. My overall approach should be understood as *an orientation to inquiry* in which this research will support collective action and social innovation and eventually produce new knowledge as Reason and Bradbury states (Reason and Bradbury 2008). My awareness as a professional enables me to take on two different roles. I am both a radiographer and a Techno-Anthropologist, and I see this as a major strength.

The strength of being a radiographer studying the radiographers may open doors for access and information most would not obtain, due to a higher degree of trust between me and the employees and the very fact that we are equals. One might even claim such trust and experiences calls for a Malinowski approach (Malinowski 1920); observing, patiently, respectively, timelessly becoming one with the people I am researching about or go in the direction as Geertz *thick description* (Geertz 1994). The opening of doors and access for information most would not obtain as I are considered a native because I as a radiographer creates a fundamental trust between me and the employees that an 'outsider' would not immediately obtain and, furthermore, we are equals."

I acknowledge that my six years of experience as a radiographer has given me a fundamental comprehension and understanding of the radiographer's work life and working conditions - furthermore how their technological world has changed because of the merger.

So far, the Techno-Anthropological education has provided me with knowledge and skills that helps me to navigate in the entangled process since the merger. I especially make use of the socio-technical theories that will constitute the project's theoretical resources explained and excavated in the chapter *Theory.* Technologies are neither purely social nor technical. They are never stable or finished. They are ongoing processes consisting of complex and entangled socio-technical matters (Børsen and Elgaard, 2016), which indicate that technology should be understood in a wider social and cultural perspective. By defining the merger as the technology in this project and investigating how the process of it is unfolded and how it affects the radiographers the socio-technical approach is applied to the field. The merger is thus neither purely social nor technical but entangled with each other in the environment controlled by the management.

"*In a techno-anthropological perspective technology are understood as something that humans collaborate, interact and communicate in relation to"* (Børsen and Botin 2013, 8).
Which leads to questions as how the employees are interacting and collaborating with this merger? How is the merging process communicated and carried out to the employees for them to interact with it? Furthermore, the Techno-Anthropological conception of technology implies that technology is inclined to evoke matters related to ethics, costs, efficiency and future strategies as a few examples. It awakens my interest to understand the reason for merging and what occurring problems affects the humans involved uttermost.

2.3 The dichotomies in the merger

The dichotomy in this merger on the political level is between the Capital Region and interest groups that represents employees as union groups, as an example. It should be understood in the sense that mergers create new big super hospitals, which brings uncertainty and stresses the employees. All these changes can be seen as an oppression for some when decisions are made without their influence.

Another dichotomy can be looked upon on a micro level between the management at the specific departments in the hospitals and the employees working under that environment. Two head managers representing the radiologists and the radiographers run the medical imaging department at BFH. From

there, on the radiographers' side, three team managers are leading the radiographers. All the changes the head managers and team managers decide upon are affecting the radiographers not only in their technological environment, but also in their work life navigating in between the two hospitals.

The whole restructuring of hospitals in Capital Region calls for a focus on hospital mergers and merging of hospital departments. To look at it on a micro level the meaning mergers may have on affected employees and why it is important, is crucial in a hospital that is depending and consisting mostly of human resources, which is why I choose to put my focus on the employees and their interaction with the merger.

What thrives employees and motivates them are essential elements that create the foundation for success in an organization. Hence, the interest on a micro level as to how employees goes into with a positive mindset in a merger is a key potential to success for a hospital as an organization. Hereby the dichotomy expressed in this research is between the managements' position in decision-making and how the radiographers are obliged to adjust to the new environments. The perspective of the employees is therefore a potential key for optimizing the merging process.

Due to the problems, conflicts and frustrations investigated in my previous study from the 9th semester as mentioned in the introduction, my focus is now at understanding what kind of *wicked* and *none wicked* problems they are still facing and how this merging process can be optimized or revised, so that a decrease of frustrations can be turned into enhance of satisfaction and better working conditions.

2.4 "Wicked Problem" and CTT

A *wicked problem* is a term I met one of the first months when studying Techno-Anthropology. At first, I associated the adjective *wicked* with something negative thinking of witchcraft and witches whereas the definition of *wicked* means evil or morally wrong. It requires both words in relation to each other, so *wicked problem,* to get a comprehensive understanding of its use.

When a problem is wicked it is generally used in complex settings where the issues or problems cannot be answered by specific solutions. Wicked problems are the opposite of ordinary problems, which people can solve in a limited time period by applying standard techniques. "*"The criteria are not a set of tests that mechanically determine wickedness; rather, they provide insights that help you judge whether a problem is wicked."* (Camillus 2008).

The question that arises from this term is then; does the merging process create wicked problems and if so what are the wicked problems in this setting?
One might claim that wicked problems are flourishing when the organizations decided on the merger. It is almost to say inevitable when constant changes and unprecedented challenges are at display in the social context of the people affected by it. The bigger the disagreement among the stakeholders, the more wicked the problems are, which encounter different solutions to each stakeholder. The findings in the analysis will sort out some of the wicked problems for the radiographers and also to benefit the organization as a whole.
The problem-solving approach will be led by the use of the theory of CTT where I opt to seek and find out if the use of this theory can help with sorting out some of the problems I have addressed in the introduction and problem analysis.

2.5 Problem Formulation

With this in mind, I choose to address this research with following problem formulation:

"How can the merging process be redirected/transformed in order to accommodate the experiences, perceptions & interests of the radiographers at Bispebjerg & Frederiksberg Hospitals?

To support the problem formulation, I derive some research questions to help me examine the field. The overall purpose of the research questions should be seen as additional investigation into the project to substantiate the findings from the offspring of the problem formulation.

2.6 Research Questions

Following research questions are presented below:

- *How has the management chosen to implement the merging process at Bispebjerg & Frederiksberg Hospitals?*
- *In a retro perspective, which aspects could have been done differently concerning the merging process?*
- *Since the merger is still an ongoing process, how should this be continued in order to accommodate the radiographers' interests?*

- *Where is the understanding and information lacking between the managements' vision of the merger and the perception from the radiographers?*
- *What can a critical theoretical perspective contribute with in this merging process?*
- *How can the management incorporate and engage the radiographers in the merging process to a more democratic development?*

The findings from previous semester, fall 2017, did conclude upon certain aspects that the merger has created, whereas one thing was the radiographers wanted a more visible management. The radiographers also wanted more transparency in the vision of the merger.
The last research question thus stems from a call from head of the management when asking what the most remarkable change has been in his profession as head manager:

"I think that the process that has lasted for many years, for almost 6 years now, is getting FRH and BBH to work together and be a culture. It might be fierce to say culture, but at least collaborate across departments and get people to join in it. It was a huge management task before and was a challenge to get the management between BBH and FRH to side, work and move together. This also applies to doctors, radiographers and secretaries as well. I think we have moved a lot since then... I think there are many radiographers who feel frustrated at the moment, but I think it is a necessary step to move on and I think that has been a huge change." (Huynh and Petersen 2017, appendix 1:8)

Now that I have presented the problem formulation and research questions, it will be interesting to find out if any projects relatable to this has been conducted, which leads to the next chapter consisting of a literature review in the field of interest.

3. Literature Review

This chapter consists of a literature review with the purpose of creating an overview of the current research field being mergers in hospitals related to employees. The presented articles from this review will provide a foundation for further understanding of the area and identify if knowledge gaps occur.

The literature review was conducted in databases such as: AAU library, PubMed, Google Scholar and Science Direct. These databases were specifically chosen to obtain a more multi-disciplinary research due to the relevance of the subject and with focus on science, health, technology and society. Search words were chosen and applied with synonyms to achieve optimal covering of existing articles. Inclusion and exclusion criteria were predefined and used in all chosen databases (see table 2).

Table 2: Inclusion and exclusion criteria

INCLUSION CRITERIA	EXCLUSION CRITERIA
• Primary articles • Humans • Articles involving healthcare, Public Health, Health policies, Health care reform and health services care reform and health services. • Articles with focus on mergers related to hospitals/ healthcare • Articles describing processes that involve mergers and employees • Articles situated in Scandinavia and Europe • Articles involving factors that improve or decrease merger processes. • English and Nordic written articles	• Articles published before 2000 • Articles not describing mergers • Articles not situated in Scandinavia or Europe

3.1 Merging processes for hospitals and employees

The primary search on "merging processes for hospitals AND employees" was conducted with words and synonyms as presented in table 3. To obtain more well-defined articles from Denmark the search words were conducted in Danish, when using Google Scholar.

Table 3: Overview of search words and synonyms

Merger	Process	Hospitals	Employees
Merging	Development	Healthcare system	Staff member
Fusion	Procedures	Healthcare sector	Worker
Mergence	Action	Health	Health professionals
Unification	Progress		

A total of 13 primary articles were selected for further use to the analysis. An overview of these articles is presented in table 3.

Table 4: Overview and summary of selected primary articles*

AUTHOR & YEAR	COUNTRY & DESIGN	AIM	FINDINGS	CONCLUSION
Kjekhus et al., 2014	Norway Quantitative study from 2000-2009 n = 107209 n = 57 hospitals	To analyze the effect of mergers on long-term sickness absence among hospital employees.	A significant but modest effect of mergers on long-term sickness absence in the year of the merger, and in years, 3 and 4.	Mergers do have a significant effect on the health of employees and should be taken into consideration when deciding to merge.
Engström, Rosengren and Hallberg, 2002	Sweden Qualitative study	To describe and broaden the understanding of the employees' experience of being involved in a merger between two health care districts in Sweden.	Key findings in five categories: balancing involvement, trust, respect, challenge and commitment.	The overall findings point to the importance of balancing the employees' involvement to reach goal fulfilment change in a merger process.
Lim, 2014	UK Quantitative study	To assess the impact of NHS hospital mergers between financial years 2009/10 and 2011/12 on staff job satisfaction and to identify factors contributing to satisfaction.	There were nine mergers during the study period. Job satisfaction scores 1 to 2 years before (0.03 to 0.04 point) and 1 year after merger approval (0.06 point) were higher ($P < 0.01$) than baseline. An increase in autonomy, staff support, perceived quality and job clarity ratings would increase job satisfaction scores	Hospital mergers have a small, transient positive impact on staff job satisfaction in the year immediately before and after merger approval. Continuous staff support and management of staff expectations throughout a merger may help to increase staff job satisfaction during the challenging period of merger.

Edwards and Tewes, 2015	Denmark Qualitative study	The balance between empowerment to the people working on the floor and involving them in the management's decision-making.	The project focused on the concepts; quality, co-operation, activity and coordination.	The core of the project has been an employee-driven approach where employees found the solutions and management created frameworks and possibilities for implementation.
Rohde and Torvatn, 2017	Norway Qualitative research approach	"To develop a strategy as a tool as a change agent (in the merging of two big hospitals).	Almost no effects whether positive or negative.	The findings describe how the strategy was developed and addresses why it failed to meet the expectations from the Parliament.
Hasle and Sørensen, 2013	Scandinavia Review	Employees influence on working life. Looking at key contribution the conclusion was that employees not only are workers but should also be looked at as collectives who shares ideas and aspirations.	Key contributions to Nordic working life research have a distinctive emphasis on collective employee voice and autonomy and an extensive use of empirical and action oriented research methods.	The employees are legitimately influencing the management using cooperation as one of the elements.
Schmid and Varkevisser, 2015.	Germany, Netherlands, England. Quantitative study	The article is comparing the hospital markets in Germany, the Netherlands and England with a special focus on merger control and the stringency of its implementation.	Despite similar goals for merging Hospitals the respective agencies apply different approaches and ways when balancing proclaimed benefits of mergers. The most interesting finding with relevance to this research is that all the agencies are still reluctant to implement merger simulation models and econometric methods in their appraisal.	The conclusion is likely the lack of country specific empirical evidence on the topics.

Ingelsrud, 2014	Norway Quantitative study 2005 and 2007 (N = 106,715).	To investigate the effects of reorganization on long-term sickness absence among different levels of hospital staff.	By increasing the degree of organizational change at a hospital from a low to a moderate or high degree leads to an increase in the number of days of long-term sickness absence of respectively 9% (95% CI: 1.03-1.15) and 8% (95% CI: 1.02-1.15).	Increased long-term sickness absence is a risk following reorganization. This risk affects all levels of hospital staff.
Ingebrigtsen et al, 2012	Norway	To find out which elements in mergers contribute with success	The organizational changes were mainly implemented as planned within the specified time frame. One division could not continue operations after a management change occurring 12 months after its establishment, because the span of control and complexity were deemed excessive, and the division was split into two units.	Experience from the University Hospital of North Norway shows that the level of activity and the quality of the core activities can be maintained throughout a complex merger and development process. The financial sustainability of the hospital has been improved such as to allow for investments in new treatment options and construction activities. There is no methodological basis for drawing conclusions on causal correlations between the changes and development of the core activities.

Eriksson et al, 2016	Sweden Case study qualitative and quantitative mixed study	To learn how and why three Swedish hospitals selected and developed their hospital wide lean production strategies.	The three studied hospitals chose different strategies for implementing lean production due to different contextual conditions and for different reasons. The hospital-wide implementation strategies were related to employees' interest and participation in lean production.	Many different actors at different organizational levels need to participate in lean production in order to sustain and diffuse change processes. Broad motives including quality of care seem to be needed for engaging different professional groups.
Carlstrøm and Olsson, 2014	Sweden Quantative study	To explore the different subcultures and the employees 'preparedness for change at an orthopedic clinic in a university hospital in Sweden.	The results suggest a dominance of a human relations culture, i.e. flexibility, cohesion and trust, in the orthopedic clinic. These characteristics seemed to decrease resistance to chance (RTC). Opposite to this, planning, routines and goal setting appeared to increase change-resistant behavior.	Deeply rooted standards and routinized care models, governed by work schedules, could be an obstacle to introducing a care model based on the individual needs of the patient. There was, however, a surprisingly low RTC. The results are contrary to the Accepted understanding of public organizations known to be slow to change.

Mascia, Morandi and Cicchetti, 2013	Italy Quantitative study	To explore how structural characteristics of newly adopted organizational models influence physician's job satisfaction.	More than 300 physicians in 18 clinical directorates in the Italian National Health Service were surveyed regarding their overall job satisfaction. Structural aspects of change significantly influenced overall job satisfaction, and that a physician's openness to experience moderated the adoption and implementation of new clinical directorates.	Physicians with high openness to experience scores were more receptive to the positive impacts of change on overall job satisfaction.
Montgomery, Doulougeri and Panagopoulou, 2014	Greece Systematic review	To conduct a systematic review regarding change in health care organizations and hospitals with focus on action research.	Only 19 studies were identified that fit the inclusion criteria. Results revealed significant heterogeneity with regard to theoretical background, methodology employed, and evaluation methods used.	The field of AR interventions would benefit from a theoretical framework that has the ability to guide the methodology and evaluation processes.

* All articles are cited from the original abstract text cf. each individual reference in the first column.

3.2 Summary of the selected articles

The selected articles provide knowledge about mergers but with different aspects. I wish to use this summary to highlight some of the important findings from the articles that can substantiate the empirical data presented in my analysis and foster an interesting discussion of the findings. By compressing the findings and results from the 13 articles following tendencies appear:

- *Mergers have a significant effect on health employees related to long-term sickness absence and this should be taken into consideration when deciding upon merging.* (Kjekhus et al. 2014)

- *Five categories should be applied in mergers: balancing involvement, trust, respect, challenge and commitment. This will enhance the success in merging processes.* (Engstrom et al. 2002)

- *An increase in autonomy, staff support, perceived quality and job clarity would increase job satisfaction undergoing mergers and continuous staff support and management expectations will help to increase job satisfaction for the employees.* (Lim 2014)

- *Implementing projects with co-operation and employee-driven approaches can be a new way to find solutions and creating frameworks that benefits the whole organization. A balance between empowerment to the employees and involvement in management's decision making.* (Edwards and Tewes 2015)

- *Employees should be seen as a collective voice and their autonomy should be respected.* (Hasle and Sørensen, 2013)

- *Different subcultures affect employees' preparedness for change. Dominance of flexibility, cohesion and trust seems to decrease resistance to change. Planning, routines and goal setting appears to increase change-resistant behavior.* (Carlstrøm and Olsson 2014)

4. Project Design

The research is conducted in close collaboration with the acceptance from the organization BFH's medical imaging department. The overall framing for the project design evolves around Action Research (AR), inspired by Lewin. Hereby an in-depth understanding of the objects of research will be approached with the use of semi-structured interviews and participatory observation. The triangulation of methods will provide a more solid foundation to the empirical data collected for the analysis.

I opted for action research mainly because of its elements regarding participation, reflection and its opportunity to develop and try out new approaches. By morosely contemplating the project design (see figure 2), the fieldwork is divided into two main phases. Phase (1) consists of semi-structured interviews in situ, BFH combined with participatory observations. This will serve as the diagnosing phase based on AR. From the data collected a Techno-Anthropological analysis will be conducted with the exploration of interviews from the radiographers, divided into teams consisting of informants belonging in CT (Computed Tomography), DR (Digital Radiography) and MR (Magnetic Resonance) further divided into equal representation from FRH and BBH. The objective in the diagnosing phase is to define the problems and interpret the on-going struggles the radiographers are facing.

Phase (2) consists of a theme-meeting whereas AR is intended to be applied and its possible solutions carried out in the organization. The purpose of the theme-meeting is to get a more in-depth understanding from the interviews and to see if the radiographers have a common standpoint in terms of the merging and to identify possible solutions to decrease frustrations and problems. Thus, the objective here becomes a problem-solving approach where I in collaboration with the radiographers are proposing possible solutions to the manager that can be conducted within the organization. The use of AR as a research approach will be elaborated in the last section of the *Methodology* chapter. Moreover, AR's phases will serve as the central elements to the analysis.

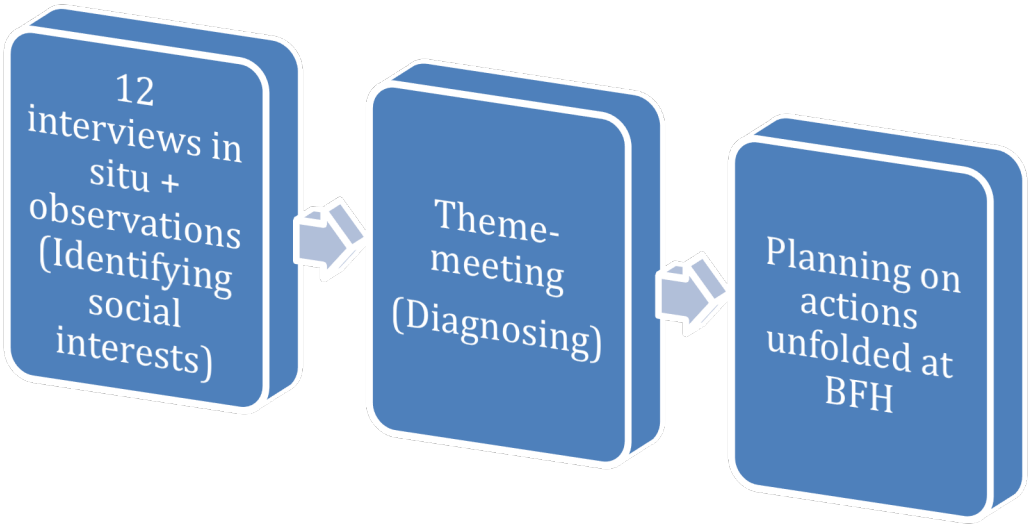

Figure 2. Illustration of the research design

Twelve in depth interviews with the radiographers based on an interview-guide was conducted, see appendix 2. Solely radiographers whom have working experience within the company for more than two years due to the fact that radiographers with less than two years' experience implies they are un-experienced with the changes the merger has brought in their technological surroundings.
I tried to combine my research approaches by being in present, observing and communicating with the radiographers in their technological settings. Situations whereas FRH employees and BFH employees were working in the same room with the same technology, e.g. CT scanners, MR scanners or DR apparatus, was observed to see what kind of impact the mergers had on them. The interviews were collected in situ in at both FRH and BBH, some during dayshift and some during evening shift. My professional background as radiographer gave me the advance to see and accommodate the radiographers when the opportunity for an interview could be at presence. The theme-meeting serve as a platform or workshop to identify the current problems perceived from the radiographers' perspective in collaboration with the manager. From *action planning* and *taking action* it is intended that AR should help with solving some of the problems in the merger.

By combining the above-mentioned, the research design will provide a focused plan to obtain valuable data that will help to answer the problem formulation and its research questions. Lastly, the theoretical framework inspired by Feenberg's Critical Theory of Technology will set the perspective

and philosophical setting by striving for a democratic development taking its stand from the vulnerable groups' perspective.

5. Theory

The following chapter will present the theory Critical Theory of Technology and its concepts that will be applied in this thesis. First, an overall introduction to the theory will be described followed by the concepts; technical code, technical rationality, social rationality and reification which will be applied in an updated model I call Critical Theory of Technology Model of Transforming Oppressing Technology into Emancipating Technology (CCT-OTET), inspired by Børsen (Børsen 2016). I take my critical standpoint in this project to only focus on a socio-technical constellation as the merging process. The employees are a part of this process which implies that the radiographers are a part of the socio-technical configuration; the merging process. These two are entangled and cannot be separated. In this project the humans are the radiographers and the technology is a socio-technical configuration, as the merging process.
The theory will be used as a support for the foundation to the analysis and findings, which contributes with the perspective of the relation between technology and humans. Another angle, which will be described from the theory, is the relation between the management's position related to decision making and power versus how it affects the radiographer's life world.

5.1 Critical Theory of Technology

> *"A "critical" theory may be distinguished from a "traditional" theory according to a specific practical purpose: a theory is critical to the extent that it seeks human "emancipation from slavery", acts as a "liberating ... influence", and works "to create a world which satisfies the needs and powers" of human beings." (Horkheimer 1972, 246)."*
>
> (Bohman 2016)

With this phrase I begin my starting point and the theoretical perspective in this project. My aim is to understand and explore how to re-evaluate technological processes with the intention of emancipating people from the negative impacts of the merger.

Critical theory originates from the Frankfurt School, which includes German philosophers and social theorists that developed it through four generations starting back in the 1930's (Feenberg, 2005). An example of a contemporary critical theorist who focuses on socio-technical change is Andrew Feenberg. He argues, *"technologies are not separate from society but are adapted to specific social and political systems"* (Feenberg 2009, 146).

An interesting notion Feenberg also addresses is that "*the concept of critical theory should hold the primary purpose of enable students of technology to identify commonalities in opposition to the prevailing view and contribute to altering the view."* (Ibid, 147) Contributing to altering the view of the merger for the radiographers may be key in this research because the vulnerable group (the radiographers) needs to be heard. Furthermore, their view on the merger has to change to reach emancipation as the model *CTT-OTET*[1] is constituted by going from an oppressing technology transforming to an emancipated technology (see illustration below). If the premise is that the socio-technical configuration shall be transformed to reach emancipating technology, then this also implies that the technical code and the relation between technical rationality and the social rationality may change or have different constellations. I will elaborate on the different concepts in the model in the next following sections, starting with the socio-technical configuration, then a section addressing technical and social rationality, the technical codes and technical actions ending the theory with social interests of the radiographers and a summary of use.

5.2 The merger as a socio-technical configuration

With the use of the concepts from CTT (technical code, technical actions and social interests) I find a socio-technical configuration at display, where employees have been left out and their voices have not been heard in this merging process carried out by the managers at BFH. The managers at BFH holds a shared vision that it will benefit the radiographers in the sense of creating an easier and better merger when the new hospital is built, and both departments move in there together. Starting the merging process this early will create easier working conditions and environments because the radiographers already are familiar with each other when moving into the new hospital. But what seemed to be a vision with good intentions, resulted in a lot of with frustrations and stressed

[1] CCT-OTET = Critical Theory of Technology from Oppressing Technology to Emancipating Technology

conditions for the employees. The question to ask is; what can CTT contribute with to transform this merging process in a socio-technical configuration?

In CTT, the technology is defined as the socio-technical configuration, which implies that I need to look at the interaction between the radiographers and the merger. Hence, the interaction between the organization's complex infrastructures that the radiographers navigate in intertwined with cultural behavior should additionally be included to scrutinize. For the socio-technical configuration to be transformed, some elements need to be altered for optimizing the radiographers' perception of the merger. I interpreted Børsen's CTT model into following:

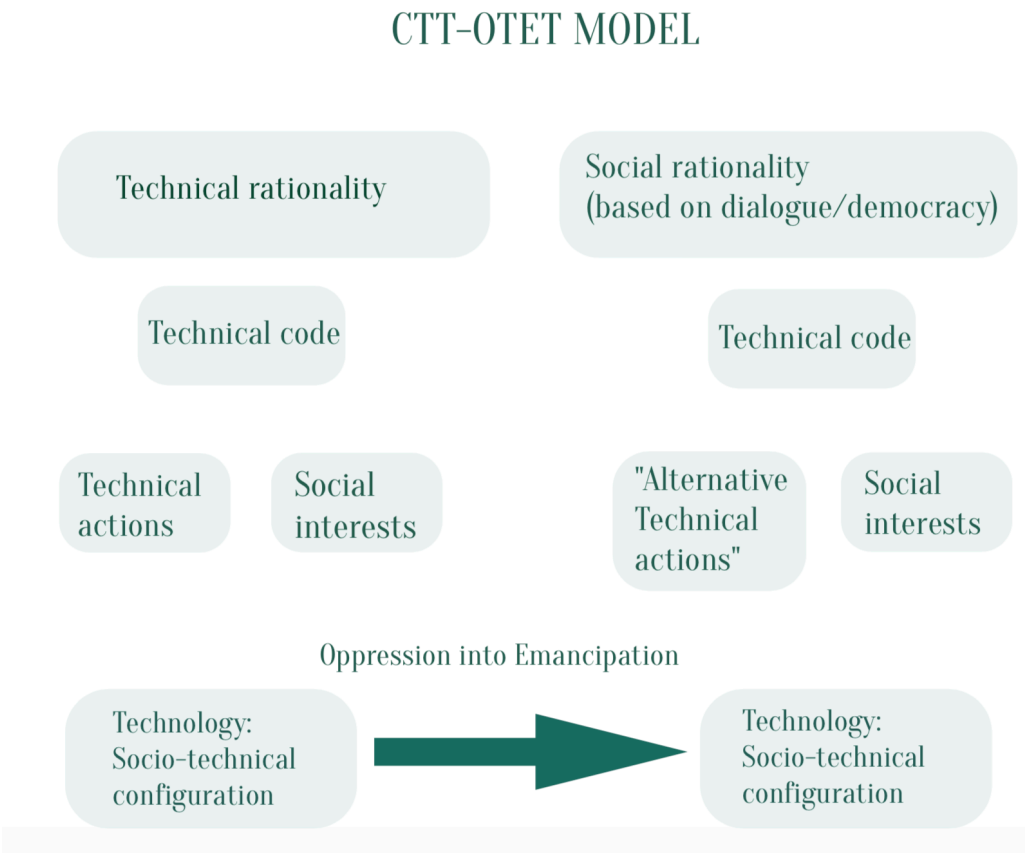

Figure 3. Illustration of the CTT-OTET model

It is of importance that the CTT-OTET model (see figure 3) should be looked upon in the two situations as: one of the left side concerning (1) *the technical rationality* and hereby I will try to describe the technical codes, technical actions and social interests in the oppressing technology. On the right side (2) *the social rationality* the technical code may be different or the same, but the technical actions from the oppressing technology will be transformed into alternative *technical actions* which stems from the social interests based on the participant observations and interviews from the radiographers. The technology then becomes an emancipating technology and for the radiographers' enlightenment is achieved or some sort of emancipation from the structures of the mergers the managers have decided upon. The social rationality based on dialogue and democracy will be unfolded in the analysis of all data and under this configuration is will be intriguing to see what the technical actions consists of and what social interests the radiographers hold. But let me describe the technical and social rationality at first.

5.3 Technical and social rationality

When the technological rationality rules the human's life-world an oppression is at display. In this case the merger is creating new unpredicted, unforeseen life-worlds the radiographers shall navigate in between the two hospitals. The involved, participants' interest, should be aimed to be looked upon to reflect on opportunities to reconfigure the technical codes. The question that arises from this is; which socio-technical configurations need to be transformed in order to reach a revised technology in the socio-technical configurations aka. the transforming oppressive technology, the merging process has on the employees? How can it be redirected and changed into emancipating technology ending with a *reification*?

From Feenberg's article *"Modernity, Technology and the Forms of Rationality"*, he introduces and describes what *social rationality* consists of. To understand what Feenberg means with this term, *social rationality,* the phenomena he groups under this designation is "reification" inspired by Georg Lukács (Feenberg 2011). Before addressing the concept Feenberg believes social rationality exists in every modern societies. *Social* emanates from the believe that technology can be considered social in the sense given its powerful shaping effects on social life. (Feenberg 2011, 865)

Feenberg addresses his term "social rationality" in his article by giving examples of approaches that are philosophical and some sociological. I will try to use his term in relation to the model *CTT-OTET*,

by studying it not only philosophical in terms as values and ethics, sociological in terms of demands from society and the bureaucracy, but more importantly, I will try to study this term techno-anthropologically. I believe in the need for solving this complex socio-technical configuration of the merger techno-anthropologically by studying the humans individually or in groups to define some tendencies or highlight the missing aspects of the technical constellations the merging process has brought.

Social life and technical activity are some of the essential elements of social rationality (Feenberg 2011). It has a meaning in the modern societies in the sense that humans are not supposed to get rid of technical rationality totally, but instead we should learn from the past and find out what is missing. From that baseline, the humans can reconstruct modern society in a more humane pattern (Ibid). The approach of social rationality has its applicability in various discussions when technology in society is at display and interacts with each other. The technology as the merger affects the society in Capital Region, but it also affects the suburban society within the two hospitals. Hence, society and culture are something worth distinguishing and address to this theory. Because it is inevitable to discuss if cultural societies are at stake or is it two cultures that need to blend in together and be unified. The question is not if they can or should, because the merger is determined, but whether how to cultures can blend together and define a new social rationality.

If the premise in the model is based on a change in the technical rationality into social rationality and the constellation in the technical elements shall fulfill the social interests, a need for a reconfiguration in the socio-technical configuration applies. This means that the "technological power" should hold a design that contains a democratic lens so that negative feedback loops can be decreased to obtain a broader spectrum of interests so that the resistance of change in the technology is minimized (Feenberg 2005). In reference to the model, the design of the technology, structure of the merging process, should be reconfigured and decontextualized to achieve a transformation from the oppressive technology into the emancipating technology. And how to get there? May the CTT perspective provide pathways to find a new transformed socio-technical configuration, when I conduct my fieldwork and process the empirical data to the analysis?

In accordance to Feenberg's perspective of CTT we live with and even within technologies that determine our way of life (Feenberg 2009, 148). That is why it is important to find and define the social values and meanings for the radiographers in the technological design of the merging process. Additionally, if the technological rationality should be seen as an environment and technologies shape their inhabitants, it is worth identifying how the technical design shapes their lifeworld and if it should

be altered to ensure better representation of more aspects of humanity of users and in this case the oppressed group of the technology (Ibid). If a decontextualization should take place this also applies for the technical code. The relation between technical rationality and the technical code is that there can be several or more technical codes that reflect the technical rationality. Thus, there can be the same rationality but in different ways between the medical imaging departments. The challenge is to create or recreate a new technical code that holds the essential element of the radiographer's interest. Which directly leads to the question; What substance should the technical actions then hold to reach recontextualization?

5.4 Technical code

"A technical code is the realization of an interest or ideology in a technically coherent solution to a problem." (Feenberg 2005)

Defining the *technical code* under the technical rationality I need to define what the technical code is in relation to the merger and the environment the radiographers are surrounded by. The realization of an interest I interpret as the interest of the radiographers and the technically coherent solution – the conclusion of the projects problem formulation – whereas the problem is the present merging process. The *technical code* can furthermore be defined as principles that foregrounds the general codes or rules within its settings meaning that *the technical code* describes coherence of social demands and technical specifications (Feenberg 2009, 151). It is interesting to look at and see what the *technical codes* are at both FRH and BBH hospitals, because a difference must be at its present since technical codes relates to social demands which relates to interest, values and norms that in this case must be different because culture also plays an important role. If similar technical codes were to exist at both departments the technical actions and social interests will be easier to solve to change the oppressing technology into emancipating technology. Thus, the technical code can change if impacts from relevant groups are challenging it and demanding new designs for the technology to evolve (Feenberg 2005). I foresee that a new design of the merger must be sought based on findings from previous fieldwork that stated the relevant groups; the radiologists and the radiographers are facing a lot of challenges and frustrations in the environment the merger has created. It is worth mentioning that Feenberg also states that technical codes are always biased in the sense that they are value based by the actors (Feenberg 2009, 151). I interpret this as the technical codes being dominated by the managers in the organization BFH and CTT can help with uncovering these biases.

CTT provides essential elements to be looked at in the merger where the technical code needs to be explained and studied in the two settings referring to my CTT-OTET model; from looking at the constellations under *technical rationality* and the constellation *social rationality*. It is difficult to know if the technical code in the social reality based on dialogue or democracy might work for all humans (radiographers). However, the need for change may be that the voice of concern for the radiographers must be heard.

By changing the technical code Feenberg introduces *instrumentalization theory* which claims that technology must be analyzed at two levels. One is the level of original functional relation to reality and the second is the level of design and implementation (Feenberg 2005). It is the second level I find interesting to elaborate on in this constellation with the radiographers affected by the technology as the merger. Implementing the merging process at its original function from the managers visions and demands seems to be an oppressing technology for the radiographers. Therefore, a new design and implementation of the new elements in the new design of the merging process must be recreated. Whereas Feenberg uses the term "de-worlding" which is described in the quote below:

> *"…a process of de-worlding in which objects are torn out of their original contexts and exposed to analysis and manipulation while subjects are positioned for distanced control."* (Ibid)

It is common in modern societies to de-worlding the humans that will give complex technical networks. In addition to the second level a "disclosure" or "revealing" of a world should be achieved where the humans are adapting into a new world but still are surrounded by the same objects and subjects. Feenberg gives an example of "cutting down a tree to build a house" as a metaphor. Referring to the merging process cutting down the process and looking at each part or how the radiographers are affected by this may need cutting the objects and subjects down in groups but more importantly also down as individuals.

The new design of the merger will give the radiographers a new world and hopefully this research can provide a new strategy that can transform the technology into an emancipating one.

As the technical codes could be addressed as simple rules or criteria, it is worth mentioning the fact that the codes are reinforced by each human's perceived self-interest and law whereas their politically import most of the times goes unnoticed (Feenberg 2005).

Will my research and findings lead to a disclosure or revealing of a new world for the radiographers as a group and for each radiographer as an individual and what recipe for design could lead to this?

How can I as a researcher within the thinking of Critical Technology of Technology solve or resolve the technical codes the technology in this research has created? The contemporary technology, mergers of hospitals, favors some and obstructs others in the life world that they exist and acts within. Hence there is a need to identify the technical actions and social interests in this context.

5.5 Technical actions and social interests

Feenberg defines and states that: *"Technical action represents a partial escape from the human condition. We call an action "technical" when the actor's impact on the object is out of all proportion to the return feedback affecting the actor."* (Feenberg 2005).

I interpret the technical actions as hierarchically controlled actions with power to determine the surroundings and circumstances in relation to the merger by the managers. An example is given from Feenberg on how a driver is not affected when sitting in his car, but still he is shaped by the environment and structures of the life environment he mobilizes in. Technical action, in this setting, should be used to see if opening up the merging process to a wider range of interests not only for the managers but including the radiographers could lead to a redesign for greater compatibility. Hence, the technical actions for the radiographers should be defined and reconfigured. Intentionally this should lead to a democratic transformation and guide a radical reform of the technical sphere combined with the social interests of the radiographers. Furthermore, it requires looking at both concepts to find out what social interests and norms that hold the technical elements or actions together. Defining the radiographers' social interests is a complex task, that needs not only fieldwork in the aspect of conducting qualitative research in a certain period of time, but it also requires knowledge concerning the radiographers' technological settings, their lifeworld and knowing the culture they work within.

The social interests of the radiographers can be addressed individually but it is important for technical actions to come through that the interests are found as a social group. If the managers were to follow every single wish from each individual, the found solutions become weak and does not benefit.

5.6 Literature Review of "Critical Theory of Technology and hospital mergers"

I find it interesting to see if any literature exists with the use of CTT within hospital mergers. Therefore, a second literature review is conducted to see if any research in this area of interest is viewed from a Techno-Anthropological theory perspective. Such literature could benefit and provide knowledge about how CTT might benefit in mergers. Lastly, it awakens my interest to find out if this research area is unexplored and undiscovered.

The literature review was applied in the topic "CCT and hospital mergers and employees", with the use of words and synonyms presented in table 5. Inclusion and exclusion criteria (from table 2 in chapter 3 – Literature Review) were supplemented with articles including CCT with articles published from 1990. The reason for this extension of timeframe (the primary search of mergers was from 2010-present) is the time period of the development of CTT's 4th generation from Feenberg.

Table 5: Overview of search words and synonyms

Critical Theory of Technology	Merger	Hospital	Employees
CTT	Mergers	Healthcare system	Staff member
Critical theory	Merging	Healthcare sector	Worker
	Fusion	Health	Health professionals

Result of articles: No articles consisting of both CCT and hospital mergers were found in this literature review.

Literature revolving CTT and hospital mergers directly do not exist when searching in the specific databases. This indicates that my area of interests of investigating merging processes with this techno-anthropological theory at view is the start of something new to the field. It also displays that academic knowledge on this area is limited and a gap in the literature is exposed conducting this literature review. Additionally, the search enlightens the fact that merging of hospitals in Denmark in general is a new area based on Danish history and that the project of merging hospitals in Capital Region is one of the most massive projects in the healthcare area next to the Health Platform aka. *Sundhedsplatformen*.

Drawing on Feenberg's CTT the literature used is: *Critical Theory of Technology: An Overview, Feenberg A., 2005* & the book *Transforming Technology: A Critical Theory Revisited* from the same author, published 2002. The newly revised edition is applicable for this report because it concerns and rethinks the relationship between technology, rationality, and democracy and importantly engages the element of social values, which will be presented, in the theory chapter. Additionally, the article *'Modernity, Technology and the Forms of Rationality'*, 2011, from the same author is used to address the term "social rationality" elaborated in the chapter of theory.

5.7 Summary of use of theory

My overall purpose of this research is with inspiration from CTT based on the concepts of critique and a drive to change and reach emancipation for the radiographers, going in as a researcher as the transformative intellectual. I find CTT applicable for my choice of theory because it displays the relevance factors as describing the technical actions and social interests. More importantly CTT has this philosophical aspect I find natural to pursue, when a vulnerable group is at its presence and a need for change is desired. May a critical reflection over current practices bridge a way to develop a utopian draft of a merger strategy before the future hospital exists.

6. Methodology

This chapter provides an overview of the methodological framework of the project. Firstly, this chapter will describe the application of AR followed by semi-structured interviews, participatory observation, ending it with ethical considerations to the project.

Using different research methods, the aim of it is to enhance and validate the empirical data from the fieldwork. To get to know the radiographer's life-world, it is obvious that the need for observation or participation of their daily work should be one of the research approaches. To get more fulfilling data or to answer questions that observations cannot answer the interview as a research method is preferable. Being in the field, I began to grasp how I could investigate the effect of the merger with most efficient and valuable data to my project. What should be my overall research approach and why? Could a methodology that is both problem-solving, reflective and continuant be applied?

As previously mentioned in the project design the methodological framing is centered on AR. The objective is to explore and understand the process of the merger and how it has affected the radiographers and how this process can be redirected to decrease their negative experiences. Due to the exploratory nature of this thesis, a broad spectrum of methods has been applied with use of triangulation. The aim of using various methods has been to enhance and validate the empirical data. By combining semi-structured interviews and participant observations I have attempted to get a more in-depth understanding of the everyday life of radiographers and to ensure that questions that could not solely be answered by a single method, could be answered by another. Furthermore, the interviews provide deeper understanding and help me to find patterns across radiographers and whether they experience the same or if their opinions differ. Overall the two approaches empirical data can be drawn and analyzed that contribute to my overall approach with its phases from AR.

6.1 Action Research

"It should not be surprising that action research is the ´touchstone of most good organizational development practice´ and ´remains the primary methodology for the practice of organizational development´" (Van Eynde and Bledsoe 1990)

Action research is used in this project after conducting the interviews and analyzing some of the trends and categories within the merger. With collaboration with the head of management from the DR team, a theme day for the radiographers was set with the topic "Trivsel og arbejdsglæde", translated means well-being and job satisfaction. There were important issues to discuss since the merger and the new team structure had brought a lot of changes in the radiographer's work life. I attended the meeting with the role as a Techno-Anthropological researcher with the aim to seek or find out how AR could contribute with a more positive development under the merger. An additional research question can be: "*How can AR in practice be used in the organizational development*"? Which directly leads back to two of the research questions presented earlier in chapter 2, section 2.6. I will list them again:

- *Since the merger is still an ongoing process, how should this be continued in order to accommodate the radiographer's interests?*
- *How can the management incorporate and engage the radiographers in the merging process to a more democratic development?*

To answer the above listed research questions a description and concepts of the methodology in AR will be unfolded in this section.

6.1.1 AR and its phases

AR has its origins from post-positivism and is seen as an interventionist approach in the search for scientific knowledge (Baskerville and Wood-Harper, 1996). AR is furthermore known for its method to make researchers and practitioners work together. This close collaboration produces knowledge that is new to the organization studied that the involved stakeholders might benefit or learn from (Kristiansen and Bloch-Poulsen, 2014).

The founder, Kurt Lewin, developed the method where he studied social psychology in a theoretical perspective. The theory he developed involved around how social change could be facilitated and, in the theory, he developed a model which is based on six phased stages: analysis, factfinding, conceptualizations, planning, implementation of action and evaluation (Baskerville and Wood-Harper, 1996).

From Lewin, other practitioners and researchers has developed the AR model. Gerald I. Susman and Roger D. Evered gives a more prevalent description of the model consisting of five phases instead of Lewin's six: (1) diagnosing (2) action planning (3) action taking (4) evaluating and (5) specifying learning (Susman and Evered, 1978) (See figure 4). The phases move in a continuous cycle illustrated in a figure below (Susman 1983).

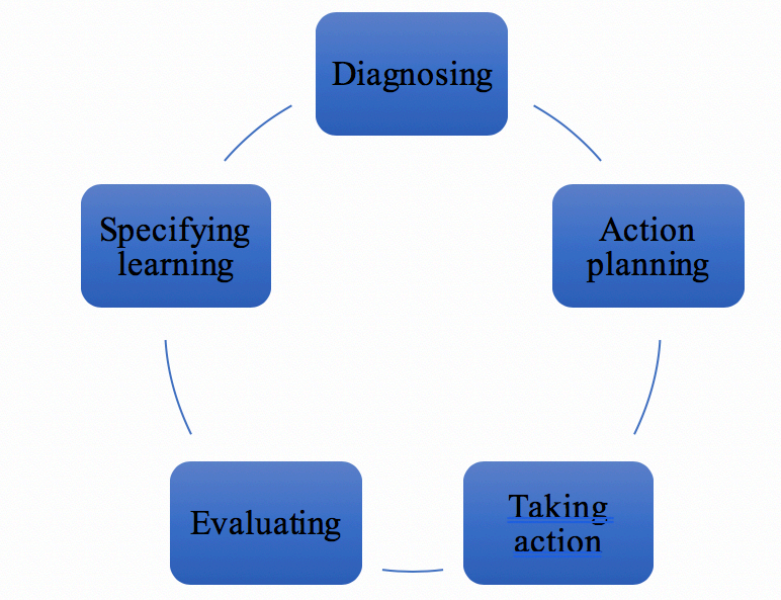

Figure 4. AR phases

First phase is *diagnosing* (ref. to the blue cycle) or identifying a problem in the organization studied in order to understand the problem and seek the various aspects that may cause the problem. From the interviews conducted and the data collection various elements in the merger causes problems for the radiographers. This is where AR leads to the next step of *action planning* and *action taking* to see if the actions planned and practice are of use and make value for the radiographers. On the side-line to *action planning* the interviews subsidized with insights for proposals in the actions that may decrease their negative experiences of the merger. When these phases are practiced the next phase is *evaluating* the actions or studying the actions performed within the organization. Did it work? What was the outcome from these actions? The evaluation may also work as a reflection phase that leads

to the final phase *specifying learning*. Here general findings of the actions are identified and if the outcome brings out new findings to practical changes the cycle starts again. AR is thus repetitive and a continual process connecting theory and practice when undergoing the phases (Baskerville and Wood-Harper, 1996). AR is in its form

> *"empirical, yet interpretive. It is experimental, yet multivariate. It is observational, yet interventionist"* (Ibid).

It is empirical in the sense of observations and experiences and from here the data should be interpreted into solutions that are experimental. I interpret multivariate in relation to AR as a technique where the object is studied from various aspects while taking into considerations the effect of it in the field of interest. The interventional approach in this case is how AR goes in and interfere with the set-up of the merger and challenge it with new actions. I see AR fits suitable as a methodological approach when a vulnerable group is present and democratic solutions are the goal. AR, is in this project, preferably used as a small intervention in the merging process that should contribute with *alternative technical actions* decided in collaboration with the managers and radiographers holding their social interests.

In relation to this project I will illustrate my research model in AR that will serve as the methodological approach (See figure 5).

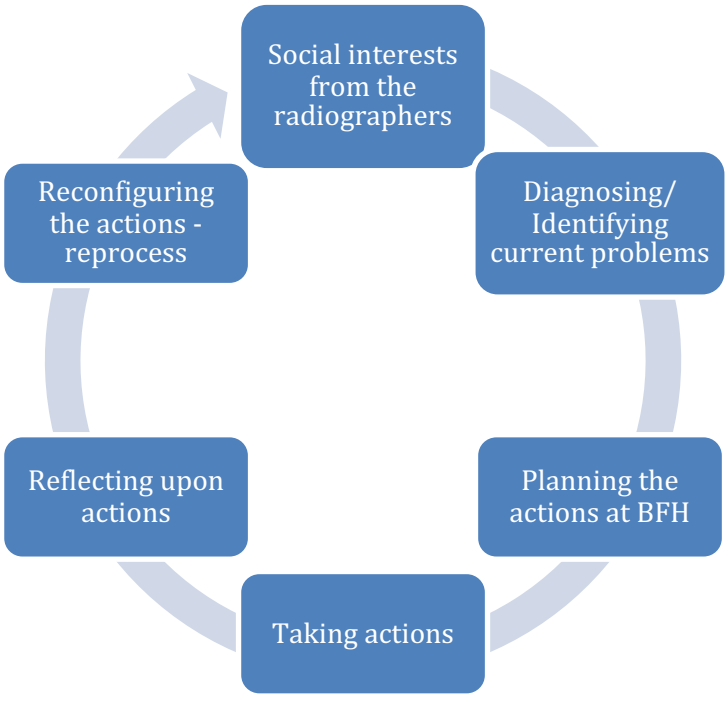

Figure 5. Illustration of the project's AR model with 6 phases

As to Susman's and Evered's five phases, I have added one extra phase: social interest from the radiographers. This phase links to the first phase; *identifying current problems* which is fluid in the sense it should be seen as a continuant process where the *social interests from the radiographers* helps define and identify the current problems. In relation to the theory of use from my model CTT-OTET it is worth mentioning the fact that the social interests in AR is defined under the social rationality to achieve a democratic solution. Though the social interests and technical actions under technical rationality will also be described to see the differences, unfolded in the analysis. After identifying the current problems, *planning the actions* in the organization to be unfolded at both BBH and FRH is required followed by *taking the actions*. Taking the actions or trying out the proposed actions to the problems in the merger is out of my control. It is worth mentioning in this process of AR, I act as a facilitator studying the phenomena with a Techno-Anthropological mindset. The last two phases consisting of reflecting upon the actions and reconfiguring the actions carried out evolves around the aspect of rethinking the AR conducted in the organization and see if it needs adjustments or new research.

It is my intention to collect the data from the interviews and fragmentize it into categories and themes that will provide a foundation for analysis of the theme-meeting "Trivsel og arbejdsglæde". Hereby an opportunity to act on AR can be proposed and carried out to transform the merging process for the radiographers. The knowledge production in AR could also be defined as research based on democratic and inclusive values where the knowledge is created through democracy and contributes with assets as social innovations and collective actions (Brydon-Miller et al. 2003). As the philosophy from Feenberg's CTT also believes in, democratic approaches will benefit the vulnerable and keep their values while creating space for innovating solutions that the organization can profit by collectively.

6.1.2 Considerations in the use of AR

Recoverability means as the words implies, how are the researcher able to recover the studied phenomenon. Or how can results from AR be conveyed to others or transferred to other situations, are questions Checkland and Howell addresses relating to the *recoverability*. They give an example of a researcher whom did not formulate or describe the details of the protocol she was using when presenting her methodology. Had she included adequate material the reader would have been able to recover more of her research and work (Checkland and Holwell 1998, 17). This example indicates how important the criterion of recoverability is to help to justify the results of research and reach the

generalization and transferability to other cases. Thus, creating a process that aims for transparency should be one of the key elements in AR and pursue to enact a process based on a declared-in-advance methodology meaning encompassing a particular framework of ideas (Checkland and Holwell 1998, 18). By careful consideration of the pitfalls in AR and acting upon the suggested phases and guideline a valid method for scientific claims can be achieved in this research.

It is my intention that my research can be transferred or act as inspiration to other hospitals or departments undergoing mergers, if the strategy in merging processes needs a transformation. But more importantly, it awakens my interest to explore if the interconnection of the empirical data from the interviews and AR can be used to answer my problem formulation. AR allows me to gain insight on the radiographer's experiences of the merger and gives the opportunity to intervene with them and affect the merging process in a direction to a more democratic change. To address the difference between ethnography and AR as methods I point to the element of democracy to be a necessity in this project and how I choose to frame it. As I collaborate with both the management and radiographers throughout the theme-meeting, a trust relation is created to support the radiographers' interest and help to navigate their views and opinions into actions in practice. AR is used in this research as the action carried out with support from the empirical data based on the semi-structured interviews. I am aware of the fact of my use of AR, in its core, should be widen not only with the use of participatory methods, but furthermore it should provide a foundation for social experiments and movements that can support changes to the organization (Bilfeldt et al. 2016).
"... allied to the ideals of democracy, and in that spirit, it is proper to call it research of the people, by the people, and for the people" (Reason and Bradbury 2008, 81). The quote intertwines with the concepts of CTT that calls for a transformation of the oppressed technology for the people, solutions constituted by the people and for the benefit of the people.

As actions are supposed to be carried out in the organization, I hope it will hope to improve the merging process for all individuals as well for all the radiographers in all teams. At the same time, I am aware of the choice of methodology and cannot predict if it will be pursued continuously after my fieldwork is done, some might even reject the proposed intervention. Lastly, I wish to emphasize my awareness of my role as a researcher, having one foot in and one foot out in the organization, will affect how the radiographers will follow the proposed interventions. I end this section with following: The question is not if the merger has affected the employees, but whether what seems to be more of

relevance to address is, if something can be adjusted or rectified in this merger to reach a more democratic transformation?
The relation between CTT and AR is the premise of AR to be used as a method or tool for creating change. The change should be hold with a theory to when to conduct the changes as I developed my own version of the model CTT-OTET. It is intended that the change should help with transforming the oppressing technology and the change is at place under the redefinition of the elements in the model; technical codes, technical actions and social interests. Normative liberations will be pursued under democratic action research.

The reflections concerning AR as a method in this research will be discussed in the chapter of discussion to look upon the importance of experiments and learning that acts as a baseline for social creative strategies for changes, in this case on a microlevel. Furthermore, I take the approach as an active researcher in the field of interest with use of a triangulated research approach, I am pursuing the project with inspiration from Flyvbjerg's case-characteristics; information-oriented selection case (Flyvbjerg 2006).

6.2 Semi-structured interview

The main objective for using the semi-structured interview was to create an open atmosphere for the radiographers. It was also of importance that the radiographers felt that they could speak out freely without interruptions and to allow all opinions and views occur in relation to the merger.
When assessing the field, a lot of uncontrolled circumstances or events can occur during the radiographer's work day. For example, one crucial factor for the opportunity to get an interview is based on location and work shift. Is it during day, evening or night shift? The challenge about location is between whether the interviews were conducted at BBH or FRH.

Due to the merger, the radiographers work life required an open and flexible approach, which I tried to accommodate by following the radiographer's wishes and allowed pauses to occur in acute or unforeseen situations where the informants were interrupted.
All interviews were conducted based on the interview theory by Kvale and Brinkmann from the book "Interview - Det kvalitative forskningsinterview som håndværk", 2015.
All informants were informed concerning the projects subject and any participant could withdraw from the interview if needed ref. appendix 2. I found it necessary to structure the interview-guide

based on predetermined themes to create a focused framework that would help to avoid data without relevance for my area of interest. The process has been sought to be as open as possible to new and unexpected perspective and contexts.
Due to my previous professional background and professional network I have obtained privileged access to the organization. Each participant was carefully selected based on working experience, their main working hospital, and team they were in. An even distribution was achieved by these considerations of equal data of representation from BBH and FRH.

All data from the 12 interviews were recorded and afterwards transcribed. Going from spoken to written language provides an opportunity for closer analysis (Kvale and Brinkmann, 2015: 238). With experience from previous fieldwork I was aware of how time-consuming transcribing could be and therefore was clear with a focus of my field of interest, but still allowed opportunities and spontaneity for the informant's opinions and expressions to occur. In average each interview conducted was unfolded in a time range from 15-30 minutes.
The technical and interpretative procedures for transcription are performed whereas following elements are left out:

- Frequent repetitions
- Spoken "pause" words
- Filler words
- Names that expose the persons will be written as profession or as X-person

6.3 Participatory observations

The research question, "*How has the management chosen to implement the merging process at Bispebjerg & Frederiksberg Hospitals? And why?"* cannot only be answered by interviews but needs a further exploitation to observations. What seems to be the art for gaining insights into unknown factors or intimate everyday life behavior that are not easily remembered or articulated by one's informants, is that of participant observation. Participant observations can be performed at different levels (Spradley 1980) going from nonparticipation (meaning that the observer is not in the field), to passive, moderate, active and complete participation (meaning that the observer is native) (Ibid.) Since I am taking on dual roles, as said earlier in the introduction, I will have to shift in between doing the job of a radiographer and engage in activities that a normal employee would, to also be

observing other radiographers and daily activities, routines and spaces they move in (Ibid.) It means that I act as an ordinary participant to some degree, which is the opposite of a participant observer being the ethnographer. I know all the intricate details of the work, and, therefore, I needed a high degree of reflexivity in how I approached the field and affected it as well.
The task, therefore, for me was also to describe the culture from both 'insiders' and 'outsiders' perspective. The very fact, that I have a very intimate understanding of the inner workings of the hospital, will hopefully allow me to capture the details and live up the most intricate job of the ethnographer: describing, interpreting and translating the observations into a story that the reader of this thesis will be able to understand and imagine in the same way as experienced by the people being studied and me.

"From one point of view, that of the textbook, doing ethnography is establishing rapport, selecting informants, transcribing texts, taking genealogies, mapping fields, keeping a diary, and so on. But it is not these things, techniques and received procedures that define the enterprise. What defines it is the kind of intellectual effort it is: an elaborate venture in, to borrow a notion from Gilbert Ryle, "thick description." (Geertz, 1973: 214)

I am doing "thick description" or more correctly my rare position in this project is my ability to do "thick description" which can add as valuable data to the observations I am a part of and studying.
The challenge for me was to find the balance between being an insider and outsider. In both roles, I could obtain information that would be relevant for the study. I had to get the information without the other radiographers feeling pressured or stressed due to my presence. My biggest advantage in this field is the gained trust and understanding of the culture I am studying. It is also my weakness because I might not see and ask things and outsider would have asked if I were not aware of my position and role as a researcher. Spradley calls this explicit awareness, which consists of the complexity of social life, requires that the ordinary participant exclude much from conscious awareness (Spradley 1980).

The participant observer, in contrast, seeks to become explicitly aware of things usually blocked out to avoid overload. Increasing your awareness does not come easily, for you must overcome years of selective inattention, tuning out, not seeing, and not hearing (Spradley 1980).

Which indicates how important it was when conducting my fieldwork to increase my *awareness* with the intention not to neglect possible issues or problems that have an impact from the merger. My degree of involvement was *moderate* in the sense that I balanced in between being an insider and outsider (Ibid). My critical reflections of the chosen methodological approaches will be elaborated in the discussion chapter, especially in my role as a researcher. If ethnography is the work of describing a culture, then the art of interpreting it and translate it into writing must depend on the authors skill to catch details that forms a storytelling the recipient can live into and understand in the same way the author has experienced it. Malinowski frames ethnography as "to grasp the native's point of view". By changing roles and zooming in and out of the field, going back and forth and adding in details, I started to see some pattern and signs of how the merger had affected them from their previous work life.

BBH is known for being the acute big hospital with a higher workload and patient intake demands for care and observation, which mean when two radiographers work in one room, each one is dependent on each other. FRH is a more selective outpatient hospital where the biggest intake of patients does not require a lot of care because most of them are not hospitalized. It required background knowledge about the radiographer's work life and understanding on how the merger had created fluent working bases as to how often and when they were placed in between the two hospitals. The findings by conducting participant observing provided knowledge and insight that added value to my research and gave a fruitful understanding concerning the problems the radiographers were facing under the merger. I ended up talking with radiographer's I had not interviewed whom provided additional insights related to the merger. The observations of the new team structure and how the radiographers are collaborating with each other in the different settings working at FRH and BBH during all kind of shifts will be added with relevant findings to the analysis.

6.4 Ethical considerations

Ethical considerations are an important concern for projects involving people. Especially, in the field of health care with patients and employees, personal information needs to be approached carefully. However, for this project, the ethical considerations being outlined below will focus on the employees.

The concepts of *anonymity, consent* and *confidentiality* is practiced throughout the whole project (Sanjari, M. et al. 2014). All informants were informed before each interview concerning the purpose of the project, protection of anonymity to the extent that is possible and that they can withdraw in

their participation whenever they feel needed. Their anonymity is processed by referring them by; 1) their team and 2) their main hospital where they started their profession. Age and gender are of no relevance to this project.

A mutual agreement was present at each interview before recording likewise is the informant's insight to the transcriptions made. This is offered to allow the informants to decline, erase, add on or fill in gaps if needed after the transcriptions is done. A reason could be what was transcribed is not intentionally what the informants wanted to express.

7. Analysis

Reaching the analysis, this chapter presents all the empirical data from the approached methods used during the research. The analysis is divided into subsections for a clearer overview and understanding of the complex structures of the problems within the merger (see figure 6). It will be elaborated in the following order with the phases from AR as subsections; (1) *Social interests from the radiographers*, (2) *Diagnosing the problems* - combined with analysis with my model CTT-OTET, (3) *Planning the actions* - Analysis of the theme-meeting. The last three phases from the AR model; *taking actions*, *reflecting* and *reconfiguring the actions* will be unfolded in the following chapter, Discussion.

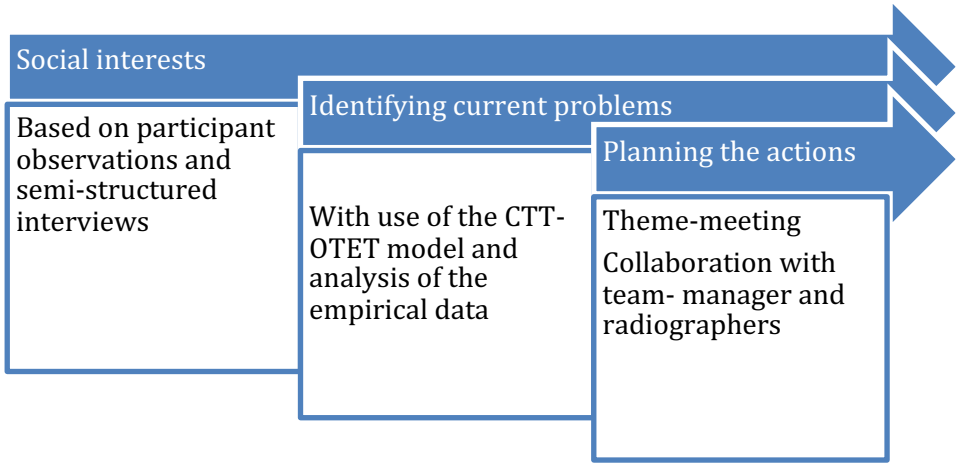

Figure 6. Illustration of the analysis phases from AR

7.1 Social interests from the radiographers

This section will unfold the social interests from the radiographers based on the analysis from the 12 interviews. The participant observations act as data that adds more understanding to the complex and entangled structures in the merger between FRH and BBH.

I will start by presenting the participant observations collected from the field-work and analyze on the radiographers' social interests within the merger. To provide an overview, informants are identified as following:

DR team:	FRH1DR, FRH2DR, BBH1DR, BBH2DR
CT team:	FRH1CT, FRH2CT, BBH1CT, BBH2CT
MR team:	FRH1MR, FRH2MR, BBH1MR, BBH2MR

FH personnel:	FRH1DR, FRH2DR, FRH1CT, FRH2CT, FRH1MR, FRH2MR
BBH personnel:	BBH1DR, BBH2DR, BBH1CT, BBH2CT, BBH1MR, BBH2MR

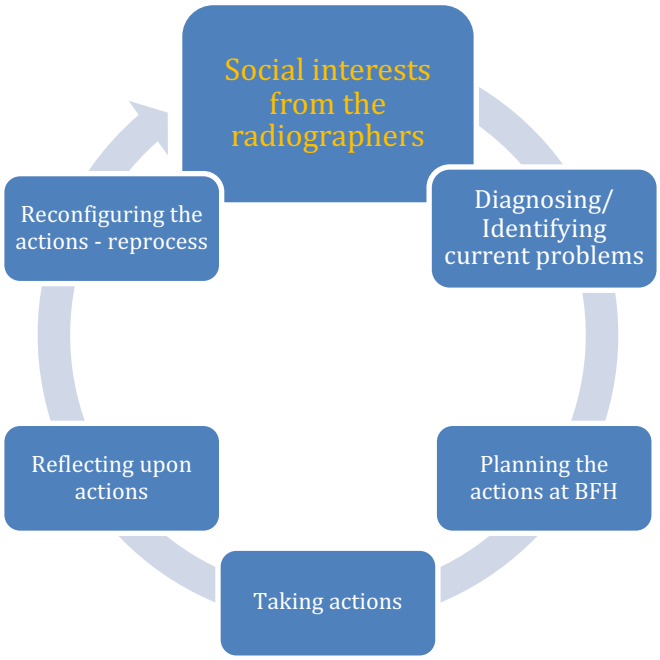

Figure 5. Illustration of the project's AR model with 6 phases

7.1.1 In the field – Observations

By observing and participating in the radiographers' daily work lives, I gained great insight in their work flows and work routines. One of the main research questions I would address by this research method was: *How has the management chosen to implement the merging process at Bispebjerg & Frederiksberg Hospitals?*

The research question is important to address to get an understanding on how the merger has affected the radiographers and which changes or factors have had a negative effect since the implementation. How the management had chosen to implement the merger, may be an element that needs reflections and reconfiguration concerning the implementation strategy, for the merger to have a more positive outcome.

At first it was confusing to know whether whom worked with whom and what kind of health employees belonged to witch main hospital, which is why a clear overview of the departments

structure and the radiographers new team structure should be elaborated in order to answer the aforementioned research question. Field-notes from my participant observations can be seen in appendix 3. Before the management decided to merge and implement the new team-structure consisting of the three teams: DR, CT and MR, all with reference to the modality they are working within, the radiographers were split into two teams. There were basic radiographers working within DR and CT and then the MR team working with MR primarily, but at times were working within DR and CT too, at both FRH and BBH. Before the merger, FRH had a daily manager whom were responsible for the basic radiographers, while the team-manager for MR employees covered BBH and FRH. The manager at FRH resigned in spring 2017 just before the implementation of the merging process. With the new team-structure, the managers from BBH became responsible for each team. Existing team manager at BBH, became responsible for radiographers belonging in DR team with both FRH basic radiographers and BBH basic radiographers. Likewise, existing manager at BBH became responsible for basic radiographers both at FRH and BBH to the CT team. The department structure is shown below to give an overview (see figure 7).

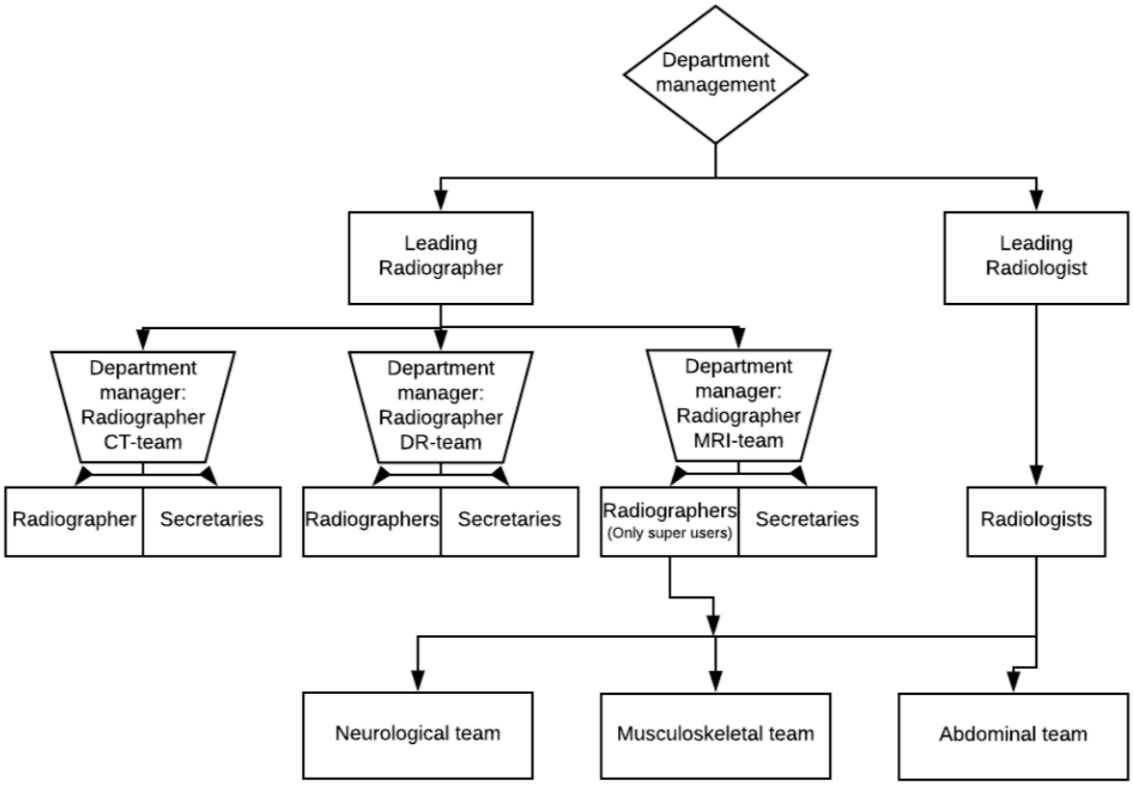

Figure 7. Department structure at BFH (Illustration borrowed from Petersen 2018, 92)

It is worth mentioning that the setting with the merger I am conducting my research about is within the illustration shown below (see figure 8), focusing on the impacts of the merger from a micro level between the managers and the radiographers. Other professions within the organization is left out in this research.

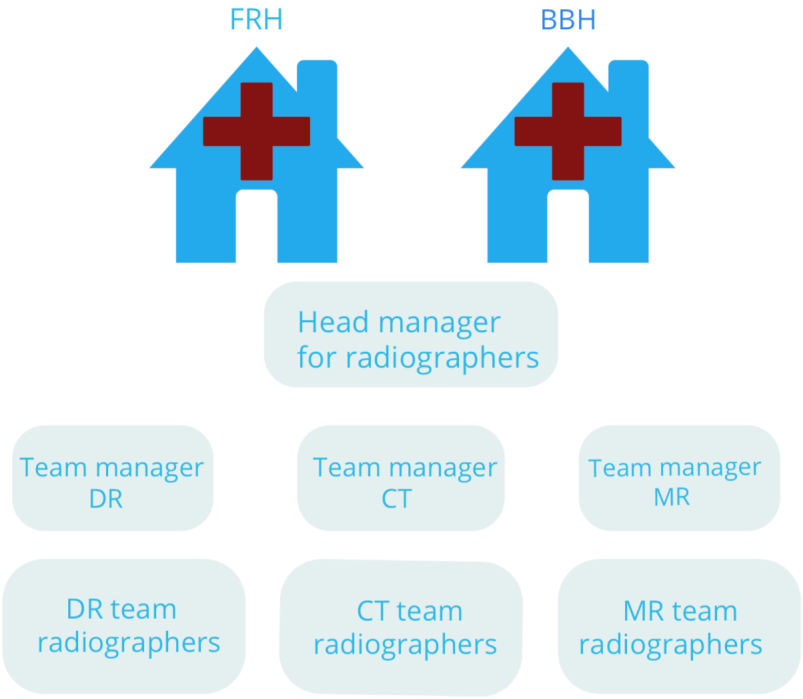

Figure 8. Illustration of the area of research at BFH

From the participant observations I could see how the team-structure had affected the radiographers in their work life. By dividing the radiographers into three teams, each team had a connection to the modality they belonged to. DR team radiographers can specialize and improve in protocols and apparatus concerning DR (digital radiography) and the same goes for CT team radiographers and MR team radiographers. But the division and specializing in one modality decreases competences in the other modalities. One example is MR radiographers that are barely working at the CT scanners since the implementation of the new team-structure. This means their professional skills and competences becomes narrower, when it concerns all the modalities and they become more specialized in the modality of team belonging. DR and CT team exchanges in between both modalities and therefore their loss of competences in the two modalities is not a factor that should be accounted.

Becoming a *super-user* in a specific modality requires deeper knowledge about the apparatus and its technical specifications. The team dividing caused unequal chances for the radiographers to obtain

this level of becoming a *super-user.* When asking a radiographer about the effects of the new team-structure:
M: *Did it have any impact for you to be in the CT team?*

BFH2CT: *Yes, it has. Because it has caused me to not be able to apply for the super-user position in ultrasound that I applied for, but I could not be taken into consideration because I belong in the CT group.*

The issue the radiographers is stating from the quote above, shows how an unequal distribution for qualifying for a higher competences and skills are existing under the team conditions. MR radiographer raises concern about the exclusion from CT.

FRH1MR:*" We are no longer in CT, ultrasound and fluorescence. I think we have lost some competences by being divided into the teams… I think it's sad, for example if I have to seek a new job, it means I have lost some competences. It makes me less fortunate from other applicants."*

The new team-structure has thus created essential changes that benefit the radiographers in some areas and in others it limits them. It creates an impact on the entire organization by dividing the radiographers in three groups instead of two[2], which fosters more distance between them as a social group.
A brief description of the history of the merging process for BFH and the team creations is presented in the following (see figure 9).

[2] Before the new team structure implemented with the merging process in June 2017, the radiographers were divided into two teams; MR and basis radiographers. The basis radiographers worked within the settings of CT, conventional X-ray, ultrasound and flouresence.

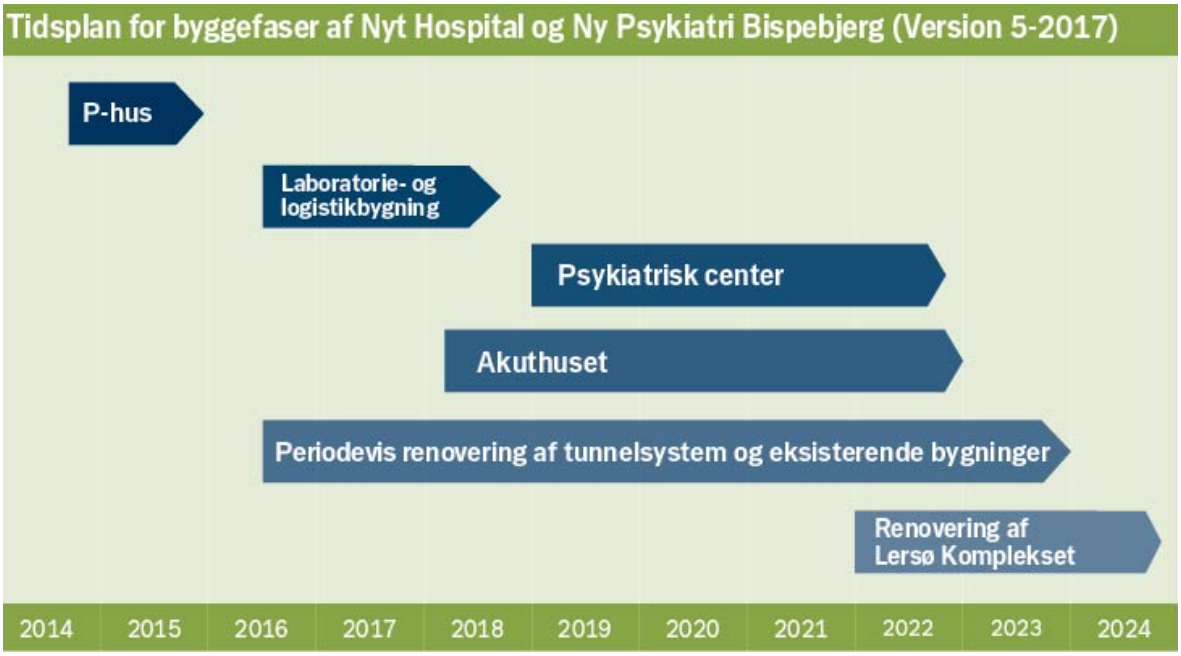

Figure 9. Timeline of the new hospital BFH - "Nyt Hospital Bispebjerg - Akuthuset" (Region Hovedstaden C 2018)

A project organization started back in 2010 when Capital Region decided to centralize the respective hospitals. In 2012 the local plan process was established for BFH which meant that BFH officially merged as one organization with one management.

Based on the previous study, conducted at BFH, in 2017 (Huynh & Petersen, 2017) the management decided to divide the radiographers into three teams, creating a whole new team structure - each with one head of team management responsible for the respective team. The three teams consist of a *CT* (computed tomography) team, *DR* (digital radiography) team and *MR* (magnetic resonance) team (Huynh & Petersen, 2017, p. 67). The purpose with the new team structure was to give the professionals an opportunity to immerse in the specific modality and improve their professional knowledge, skills and competencies within the field. CT professionals would be more experienced and improve their abilities to navigate in the modalities of the scanner between the two organizations as well goes for the DR and MR team. An overview of the teams' interconnections between the organizations is illustrated below.

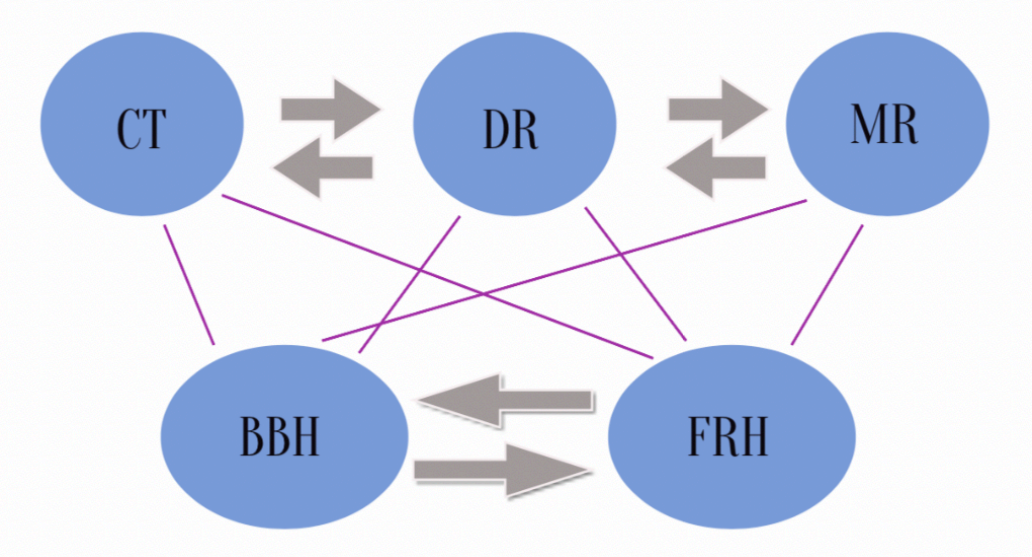

Figure 10. The interconnections between teams and the hospitals

The illustration (see figure 10) shows how the teams collaborate after the new team structure. CT and DR team can interact together in their daily work life whereas the same implies for DR and MR team. What is worth noticing, is that MR and CT team are not connected after the new team structure. The reason for a decrease in competences and lack of collaboration between the CT and MR team is decided from the management. The intention is to create teams that are more specialized in order to achieve more qualitative x-ray examinations. Specializing in the specific modality allows the radiographers to be skilled in the team they are in.

From each team, four radiographers were interviewed subdivided into an equal representation from BBH and FRH. The reason for this breakdown is based on my experiences as a radiographer in the organization knowing that the different teams experience different problems in relation to shifts, working environment and the managers visibility. It is interesting to find out if the different teams face different problems or if some tendencies in the problems of the merger is existing, then an overall solution can be found and enacted in the organization. I have illustrated the number of interviews I have conducted and the radiographers' working conditions in the following page (see figure 11 table 6).

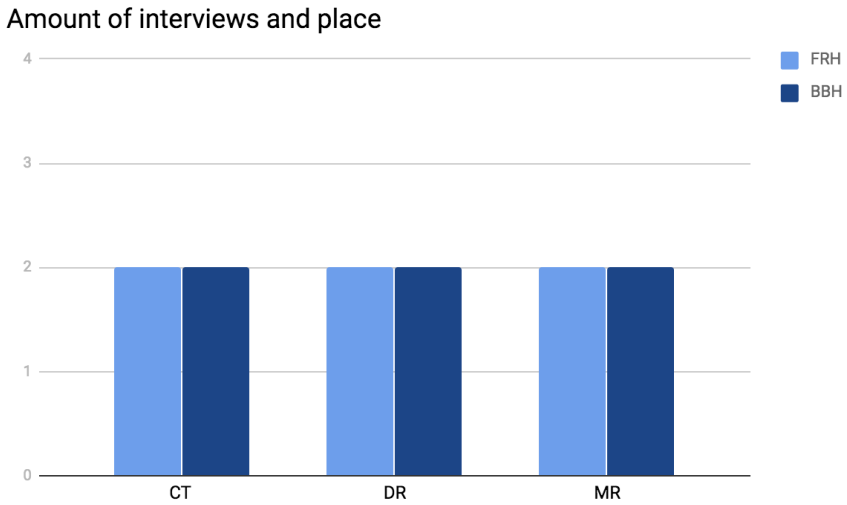

Figure 11. Number of interviews and place

Table 6. Overview of the teams work life conditions

Team	Shifts
DR-team	Day shifts at BBH & FRH Evening shifts at FRH Night shifts BBH
CT-team	Day shifts at BBH & FRH Evening shifts at BBH Night shifts at BBH
MR-team	Day shifts at BBH & FRH Evening shifts at BBH & FRH

Not only did the team-structure create different technological settings for the radiographers, the managers also decided to give them different work life conditions. For example, all teams are exchanging in between FRH and BBH when it comes to day shifts, but DR team only work evening shifts at FRH. CT team covers shifts only at BBH, while MR team covers both cadasters. This distinction creates some frustrations amongst the radiographers when they need to exchange shifts. MR radiographers are vulnerable because only MR personnel can cover their own shifts, while CT and DR can help each other out.

One radiographer expresses their lack of understanding of this team structure when asking about it.

FRH1MR: *"I'm not quite sure I understood the meaning of the distribution of the teams was for…Personally, I think that the conflicts, dissatisfaction and challenges that came from the merger has been more negative in relation to our working conditions. Not only is it confusing for us to know when to work at BBH or FRH, but it is also confusing for the patients. Patients are confused and may appear at FRH even though they are scheduled for examination at BBH."*

Based on the participants observations, I could diagnose some of the problems the radiographers are facing under the merger. In combination with my other qualitative research approach, semi-structured interviews, the collected empirical data will foster more valid and substantial data, that can help me to answer the problem formulation.

7.1.2 The perceptions of the radiographers and interpersonal relations - interviews

In this section of the analysis the empirical data from the semi-structured interview is presented and analyzed into categories and themes. This implies that data analysis is conducted from Kvale & Brinkmann's interpretation of Giorgi's "*meningskondensering"* translated *"opinion condensation"* developed on the basis of phenomenological philosophy (Giorgi, 1997). *Opinion condensation* (OC) signifies that opinions and expressions from the informants are conducted into shorter words, thus condensed to get a clearer overview. Long statements are transformed into fewer words, whereas the essence of the opinions and expressions are kept. The data analysis with use of OC involves *coding*. *Coding* or *categorizing* empirical data is to get an overview of the exposed material. Whereas coding involves linking one or more keywords to a text for later identification of an opinion, categorization is more a systematic approach of conceptualizing statements that allows quantification (Kvale & Brinkmann 2015, 262). *Coding* is furthermore a concept essential in the Grounded Theory (GT) approach which involves analysis, examination, comparison, conceptualizing and categorizing of data (Ibid). The *coding* concept in GT substantiates and includes in a qualitative analysis of relation to other codes and to context and consequences of actions. I choose some form of a GT approach to my analysis in which the semi-structured interviews will be condensed and set into boxes consisting of seven categories; A to I. The interviews transcribed can be seen in appendix 4. While the condensed material into categories is exposed in appendix 5.

Categorizing the empirical material will provide an overview that will help me identify the current problems within the merger and find possible solutions. From all the interviews I endorse seven categories that I find relevant in relation to the research questions.

The seven categories:

A: *Effects of the new team-structure*
B: *Effects of the merger: redistribution of work and navigating between two hospitals*
C: The radiographers wishes - changes to the merger
D: *The radiographers' perceptions of the meaning "a visible management"*
E: The radiographers' perceptions of *transparency in the managements' visions of the merger*
F: *Differences between BBH and FRH*
G: *The radiographers' perceptions of BFH as one unit*

The above listed categories were mainly addressed in every interview. Category A and B concerns the new team-structure and effects of the merger. Although the two categories are similar to each other because A is constituted by category B, and the reason for dividing the two categories is due to the fact that I wish to highlight how each team are affected by the merger. Category C addresses the radiographers' wishes and the changes they want to be enacted in relation to the merger. Category D stems from the findings from the fieldwork carried out in Fall 2017 where the term *"visible management"* was something the radiographers wanted more of since implementation of the merger. The head manager for the radiographers did not get a sufficient understanding of the term "visible management" and asked for more concrete perceptions from the radiographers. This is how category D emerged. In relation to category D, category E links to how the radiographers are perceiving and understanding the managements' intention with the merger, hence the transparency in the managements vision of the merger. Category F evolves around the differences between the two hospitals/cultures by viewing the radiographers' experiences from BBH and FRH. The last category G addresses how the radiographers' perceptions of each other is seen as one organization, one unit. Do they see themselves as one organization, one social group with the same social interests?

I wish to provide an overview as to which categories links to which research questions (see table 7).

Table 7. Overview of categories in relation to research questions

CATEGORIES	RESEARCH QUESTIONS
A & B	- *Since the merger is still an ongoing process, how should this be continued in order to accommodate the radiographer's interests?*
C, D & G	- *How can the management incorporate and engage the radiographers in the merging process to a more democratic development?*
E & F	- *Where is the understanding and information lacking between the management's vision of the merging and the perception from the radiographers?*

The categories will be elaborated and analyzed in the following. Firstly, I will address category A and B together because they deal with the topics of effects of the merger and team-structure. Secondly category C is addressed to analyze upon the radiographers' wishes. Then follows category D and E, looking at the radiographers' perceptions and meaning behind the wish for a "more visible management" and transparency in the merger. Category F is analyzed individually to look for the differences between BBH and FRH and lastly, category G addresses the radiographers' perception of the organization as one organization.

7.1.3 Category A + B - Effects of the merger and the implementation of the new team-structure

The use of OC helped me to identify and analyze upon the radiographers' expressed views related to the merger and implementation of the new team-structure. In this section category A and B are addressed.

When asking about the new team structure more negative expressed views were present than positive. Though one radiographer from the DR team at BBH could see the possibilities with the new team structure.

BBH1DR: *"The more teams and the smaller the teams, the better you can get people sorted by interest and therefore you can also get more out of the individual employee and you feel more responsible. Co-determination, responsibility, interest, greater job satisfaction, better use of the skills and knowledge in terms of better and more knowledge-sharing."*

But the rest of the radiographers felt more negative outcome from the team divisions example increased work load and difficulty in changing work schedules.

FRH1CT: *"It absolutely has to be one in the same team to exchange your shift".*

Before the new team structure, the radiographers could exchange shifts between each radiographer which gave them more opportunities to get a shift taken and replaced with another. By only letting the radiographers exchange shifts in the team they belong in, their chances for exchanging have been decreased by more than 50 %.

Another issue is trying to adjust to the new things the merger and team-structure has given them and not being able to see a manager every day when obstacles occur also resulted in a negative outcome.

BBH1CT: *"There used to be a permanent manager at FRH and the person resigned. Which leaves us with missing a manager now, plus the administrative work tasks have been delegated to the other existing manager now. This means that we see less of them, because they have so much work to do... too much administrative work and this needs to be taken away from them."*

The statement above further links to the categories C in relation to their wishes in the merger and how a lack of visible management affects them in their work life.

A brief summary shows a great resemblance and common agreement that the new team structure creates noise and greater variation in shifting guards. In addition, there are several employees who have expressed the lack of the management's presence and professional sparring.

7.1.4. Category C - The radiographers' wishes and changes to the merger

The research question addressing how the merger should continue in order to accommodate the interests of the radiographers, one radiographer expressed following:

BBH1DR*: "A shorter process, so that half of the employees are present at the opposite hospital and then cut down on the production."*

What the radiographer from BBH wants is a shorter merging process and for this to happen faster the exchange of radiographers working in between the departments should be a 50/50 swift over – for example if 50 % of BBH employees were present at FRH and vice versa.

Another radiographer expresses how the merging process all happened so fast that the time for adjustment were missing.

BBH2DR: *"Overall, I think it all happened very quickly. It felt like a demand of the merger should happen all of a sudden. From the new team-structure, merging and exchanging came so fast. That is where most of my frustrations are. Overall, it happened very quickly. I did not have the time to get used to the one change and find out how it worked because then the next change occurred."*

The factor of the merger happening so sudden, created a lot of changes in the radiographers working conditions and also resulted in a negative outcome. Many factors could have been taken into consideration for example the issue when exchanging in between FRH and BBH.

FRH2CT: *"Exchanging one week at the time would be preferable instead of from day to day."*

Furthermore, the radiographers feeling of not being heard in this process is a continuant expressed view from all the informants.

FRH2CT: *"...the decisions were taken over the head of us and let's say that you cannot get 50 or 80 radiographers or whatever it is to all decide and be part of the decisions carried out in the organization, but I felt like a lot were considered without hearing us out. And because I'm originally from FRH, we felt like the little brother that needed to adjust to the big brother BBH, because they are the big ones."*

Clearly, the decision making when changing their working environment and working conditions could have been different when the managers decided to implement all the changes related with the merger. Being part of the decisions or hearing the radiographers out in terms of wishes and opinions, could have been a factor that would change the negative mindset of the merging process.
In all the frustrations relating to the changes the radiographers are facing, some also follow the managers visions with the merger, but point out that changes lead to insecure environments.

BBH1MR*: "I can see both the pros and cons in the merger. I can see the benefit of starting this so early, so that we are ready when the new hospital is built. That is how I can see that part well. But I can also see that it creates a lot of insecurity. Also, because it's so new and nobody knows what's going to happen. And it's going to be a mess with different cadasters you have to work at - a bit like Bispebjerg - there are many things you should be aware of again."*

Being constantly aware of new things takes the focus out of the radiographer's core task as performing and producing medical images that are diagnostic useable for the radiologists to look at.

BBH1MR: *Because I like to know my settings and that there are boxes, so there aren't many things to take into consideration. I came here to do my job and in all this "where should I be working and chaos and organizing and everything" … it's just secondary, but it becomes our primary concern that fills our work life too much.*

The merging process brought so many changes another radiographer expresses the wish to withdraw in which implies to crucial aspect that the need for change in the structures of the merger should be considered.

FRH1MR*:" I'm not quite sure I understand the management's decision that we should merge so early. There are many frustrations between employees and management. Personally, it was probably too early, and they should have waited. The merger should start in the context of the construction of the new hospital. So that there was only 1 year until we all should move into the new hospital."*

Not everyone sees the merger as a negative thing and follows the management vision in creating an easier movement when the new hospital is done. But what seems to be a factor that are missing to be

taken into consideration, is the radiographers working environment in terms of different workflows. BBH works in a certain way and the same thing applies for FRH.

BBH1MR: *"…one might have waited to merge BBH and FRH. Then it might have been easier. But I can also see the advantage of being able to train everyone to get the better out of the guards. So, from the management I can see the benefit, but as an employee it may be that you need to be a little more focused on workflows.*

The feeling of being left out enhances the presences of a vulnerable group which is clear in the following quote.

BBH2MR: *"… I have felt that no one has been heard throughout this process and in the arguments for the merger and opinions we had."*

A brief summary of this category shows that the merger had been implemented too quickly making it less possible to the radical changes their work life. The employees feel as they are being left out and sometimes stands alone when facing problems in the organization.

By increasing involvement from the radiographers' in both decision-making and coming with solutions in regard to the merger might be an option for the managers to redirect the merger to something positive and turn it in to an emancipating technology.

7.1.5. Category D & E - The radiographers' perceptions of "a more visible management" and transparency in the merger

When addressing the topic of transparency in the managements' vision of the merger the views from the radiographers are almost consistent. There seems to be something missing in this aspect or else the managers aren't visible enough. The need for matching expectations and common understanding is of relevance when addressing the transparency in the merger.

BBH1DR: *"It's a little funny you ask me this question, because I see it as a visionless organization comparing with where I use to work. I do not really see the managers' visions. I'm used to a*

manager being a lot more hands on and more like ""We've got an idea now everybody – and what do you think about this - what do you say?". I do not think it is present here. So maybe they have a vision for this merger, but it is not one they are passionate about so that it contaminates us and opens up for an invitation for us to take part of."

The lack of transparency within the managers' vision of the merger is also an indicator for lack of understanding the intention with the merger. Question as; Why merge now? Is something most of the informants I have interviewed are questioning. Another factor in the merger is the implementation of the teams and dividing the radiographers in three teams instead of unifying them as one. Although it is worth mentioning, that it is normal that MR employees are one team separated from DR and CT because of the technical skills and knowledge it requires when using the MR scanners. But why divide the rest of the employees? CT and DR employees work together most of the times and by creating different working conditions such as shifts, technological environments etc. a gap is created among the radiographers as a group.
One radiographer expresses the issue regarding no vision and lack of involvement in the merging process while being concerned about which team are most affected by the changes the managers are implementing in the organization.

FRH1DR: *The morning meetings we have has been shot down with one's ideas. It is unclear what their vision is. It feels like a lot of things are implemented without them thinking it through. And then they talk about a fixed MR group but those it's going to overload is the CT and MR team.*

Creating unequal working conditions are making some teams in the organization more vulnerable than the others, which is already a sensitive issue when the radiographers as a social group already are affected and vulnerable facing the merging process together.

FRH1CT*: "I do not think there is equal terms for everyone ... I think the DR team is completely ...They have really bad terms. For example, when looking at staffing, it is downsized. MR employees are clearly very well staffed and is very well controlled by itself as a group. CT is also okay staffed, at least at Frederiksberg. We do not need to have more, we're fine, but I think in the DR rooms, you'll only be downgraded. There, you are allowed to drown and be overworked."*

This creates another interesting aspect to look at, if the division of teams amongst the radiographers thus implies they also are facing different obstacles and problems within the merger. The next section will elaborate on this by looking at the teams separately. The intention for this analysis is to look for tendencies in the teams and see if the solutions proposed are the same of different.

7.1.6. Cat F Differences between BBH and FRH

From appendix 6, I found some tendencies in category F, addressing the differences between BBH and FRH.

Not surprising the two departments hold different workflows. As mentioned earlier, BBH is a big acute hospital whereas FRH takes in elective patients that in common are mobile and requires less time in each examination.

BBH1CT: "*Workflow is different which creates uncertainty and not knowing all rooms' technology a 100 %...More critical atmosphere when you are working the "new/other" place. "*

Most of the radiographers wants a more standardized or stream lined directions when dealing with working at two places. Here a radiographer from FRH expresses:

FRH2DR: "*If you think of the workflow, they say that the bone-book should be standardized. But it is not. They say it will be standardized all the time and adjust it more and more, but no shit is getting done. I feel like you can do whatever you want,"*

In the quote above, *they,* refers to the managers. They hold the responsibility and have the power to change the bone-book[3]. The radiographer clearly wants this bone-book to be standardized to limit some of the struggles in the merger. By standardizing work procedures and work routines, for example taking an x-ray of the foot, the radiographers at both hospitals feel more confident working at opposite hospitals.

A MR radiographer expresses same issue concerning the standardization.

[3] The bone-book (knoglebogen) is a protocol book consisting of all DR x-ray examinations. The radiographers use these protocols for all examinations in digital radiography. Each department at FRH and BBH holds one to follow.

BBH2MR: *"…It would be easier to standardize all protocols now that we have to work at so many different places. It would be nice with 100 % alignments. In MR this is not the case. In MR, there are a number of protocols that are different if you are at BBH and FRH and we are working on getting this standardized. Because this is where the mistakes happen. Because one is used to work at one place."*

This shows that DR radiographers and MR radiographers faces different problems, but the overall tendency is a need for more standardization. For example, when to call a radiologist for which procedure etc. is still something the radiographers in CT team when working with DR are uncertain about.

BBH2CT: *"I feel like you are more alone at Frederiksberg. It is not always clear which doctor I can call and they are not near me, if the patients get ill. Sometimes I call a number and hope that there is someone that answer… And I feel like you are alone when it comes to drop-in patients. It is a problem that a lot of patients comes in with the wrong indication and if it is a fracture it is a huge problem to get them described to move on."*

This is clearly a big problem for the BBH radiographer working in the opposite hospital FRH. The feeling of being left alone creates higher uncertainty and a negative working environment. Not knowing whom to call if the patients get ill, must be something the manager needs to act upon to limit the problems. Drop-in patients are patients coming in from their general practitioner that gets a directly referring to an x-ray examination. Usually these drop-in patients need to be diagnosed for a fracture or severe acute pain. The service FRH has with drop-in patients, consists of a radiologist will see the images instantly and tell the patient if he/she needs to be treated right away or sent home. If a fracture is present, the radiographer will send the patient to the emergency department to get it treated. Lastly, the difference between BBH and FRH is also a matter of cultural aspect. So, the question is not whether to change culture, but what is of importance and relevant to address is, how to get the two cultures to cooperate and work together. The art of blending the two cultures into one organization is addressed in the next section.

7.1.7 Category G - The radiographers' perception of BFH as one organization

The last category addresses the important factor for a merger to be complete. If radiographers from FRH and radiographers from BBH sees each other as opponents instead of a unified organization, one crucial factor for the merger to be transformed cannot be completed. Here I have listed some of the radiographers' perceptions of the organization BFH as one unit.

BBH2DR: *"Only when we are gathered at the new hospital -the feeling of "them" and "us" will disappear."*

BBH1MR: *"Them" and "us" is disappearing in time when working more together."*

BBH1MR: *"I do still think that there is a grey-zone. It was not so bad as in the beginning of the merger, but there is still a long way for us to be one unit. I would say that we are 60-70 % along in the process…"*

The majority of the radiographers have a common view on the unification and claiming they will not feel as one whole organization before the new hospital is build.

From the exploitation of the seven categories, the next phase in AR is diagnosing or identifying the current problems.

7.2 Diagnosing/ Identifying current problems

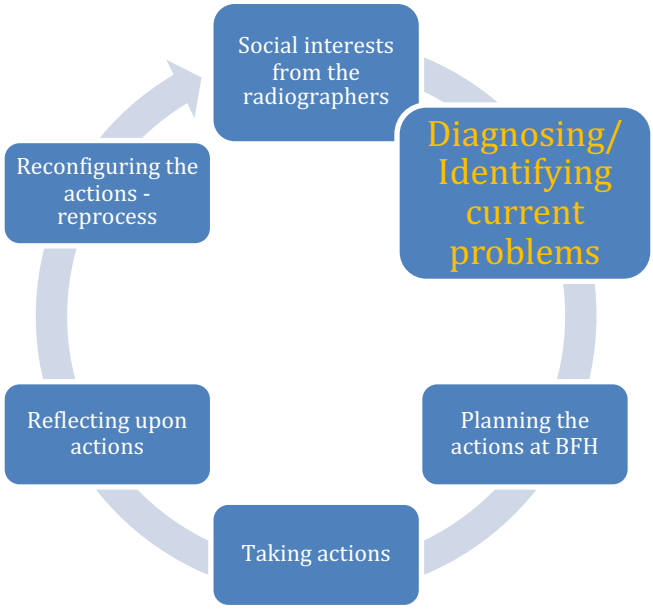

Figure 5. Illustration of the project's AR model with 6 phases

In order to obtain a deeper understanding of the social interests of the radiographers in relation to the merger, it requires looking at changes in the specific teams. Is it based on teams, or individual needs? Is a team more vulnerable than the rest and by dividing the radiographers in three teams, does it create more division than necessary?

DR team

"More workload than MR team, complicated patients requiring more time."

DR team perceives themselves as the most vulnerable group in the merger caused by the amount of workload and examinations in the organization. Since the new team structure DR team covers all patients on the 2nd floor consisting of small and big injuries. The share of patients at BBH are mainly hospitalized or come in with fractures that makes them immobilized. This requires heavy lifting and transportation of the patient in the examination room. The list of patients can vary a lot because of the intake of acute and hospitalized patients, whereas FRH mainly cover patients that are outpatients who can mobilize themselves. The difference in workload and work routines between DR team and MR team besides working with different modalities may be the patient intake and workflow.

"Difficulty in changing work schedules (it must be one from the same team)"

The new team structure has created new settings in terms of shift structure and covering in the organization. Combined with data from participant observations, the new team structure makes it difficult changing work shifts - in the essence of DR team can only exchange shifts between DR team. Though CT and DR team can exchange shift between each other, the management needs to be informed, involved and confirm the exchange. As for the MR team they can only exchange shift in the team belonging.

"No feeling of transparency from the management. No employee involvement in their visions for the merger."

It is interesting to notice that the aspect of transparency and the management's visions for the merger is lacking. This is a tendency most of the radiographers are expressing are missing. Redundancy is shown from phrases as "more transparency", "more specified information" and "more engaging the radiographers".

BBH1CT *"I think they are competent, but they should listen more to their employees. We have a lot of knowledge about the workflow and the problems in everyday life. Especially the head manager for the radiographers must listen a little more to us. I do not think we are heard enough."*

Elements as employee involvement, engagement and empowerment could be factors that provide a solution for the negative process in the merger and may help transform it into an emancipating technology. Although the red codes symbolize the problems and issues within the merger, the radiographers also have ideas about which solutions may solve the current obstacles and problems.

Wishes from DR team:

- More consistency in work place and schedule.
- More consistency in the same technological framings.
- More presence from the manager in the department and clear information about relevant changes in the merger
- More employee involvement in decision-making regarding projects/visions

In summary, the DR team needs more consistency in the work places and the technological settings. An example of this is working in the same modalities in between CT and DR. As for navigating in between the two hospitals from BBH and FRH, consistency from week to week instead of daily exchanges are preferable. Another solution to optimize the merging process is a more visible and present manager, so that problems that arise during the day can be addressed and solved at the moment. The radiographers also preferred face-to-face communication with the managers instead of mail correspondence. Especially present manager issue is directed towards FRH. Lastly more employee involvement is directed towards empowerment, meaning the radiographers wish for more autonomy in decision-making also related to projects and most importantly in the changes the merger is bringing. Involvement in their working conditions, working hours and how this merging process can be pursued would be applicable to transform the merger.

CT team

"Stressful conditions navigating between 2 hospitals"

Tendencies from CT team states that the merger causes stressful conditions by navigating in between the two hospitals. For example, one week, a radiographer could work two days at FRH followed by two days at BBH and end the week by going back at FRH referred to 2-2-1 working week. When asking the management for this configuration of working condition the reason is when they have to fulfill the work competences, knowledge and skills among the radiographers and distribute them equally in the organization. It requires a CT-superuser (one who is theoretical qualified and has certain competences in the specific modality) to be present in the CT scanners, and if other CT-superusers are on holidays, sick or absent, the CT-superuser can have a working week as 2-2-1. For more consistency at each workplace to happen the presence of the required competent radiographers should also be fulfilled at the two departments.

"Listen more to the employees – let our voices be heard"

The CT team clearly wants more empowerment and feels a strong need to be heard in this process. All the changes relating to the merger has impacted on them with the effect in a decrease in job satisfaction.

"It has meant that I do not think it's fun to be here anymore. I'm more frustrated than happy to go to work. I do not think it's a lot of fun to be on a day shift more. And it fills a lot, because I use to be happy at my workplace and my colleagues, but now everything is turned upside down. What seemed to work fine previously aren't allowed to be preserved. FRH1CT

It might seem that FRH personnel are feeling left out or more oppressed under the merger, but the tendency reflects at BBH personnel when asking if they had a saying in this matter.

"No, and I think they could have done some more. E.g. they could have heard us during our weekly meetings and take it up as a subject to discuss. Hearing us out and ask, "What do you think"? What kind of inputs do you have? More involvement for us." BBH1CT

All the frustrations the radiographers are facing under the merger calls for a transformation and redirection of strategies within the merger. When asking for solution-oriented problem solving from the radiographers in terms of more concrete hands-on solutions the answer was:

"They just need to listen more to us. They must prioritize and address the problems of FRH. They cannot just say it's the same apparatus, so you can just jump into a room at BBH. The room is not the same, the patients are not the same and the apparatus is not 100% alike. There is a lot of drop-in patients on FRH and an outsider cannot just go in and work a 100 % because there will be things you do not know how to address or solve." FRH1CT

Wishes from the CT team:

- More empowerment/involvement to the employees
- More present management in the team belonging
- More transparency in the merging process

In summary the CT team wishes more employee involvement and empowerment. They wish to have a saying in the changes of the merger. Change in their technological settings and working conditions might have been more efficient if considerate actions and more clear information had been provided. The issue of navigating in between the hospitals can be decreased by adding more consistency in the

workplaces, as the DR team also are presenting. Instead of 2-2-1 working week they want weekly workplaces. A more visible management at FRH is strongly recommended due to the most problems the radiographers are facing could be solved by the authority of the team managers. Face-to-face communication is preferred instead of mail correspondence, which makes it possible to address the problem right away.

MR team

"Loss of relevant competences on future work in radiology due to the lack of my usual work with CT, ultrasound and fluorescence"

With the merger the new team structure separated the MR team to the extent that they were taken out of night shifts completely. During day shift MR personnel can be set in rooms with DR technology, but not in CT rooms anymore. This restructuring has an impact on their competences, where an increase in competences within MR is preferred whereas elimination of competences of CT will be a fact over time. Furthermore, MR team is affected by losing competences and getting more isolated from the other teams, because DR and CT can interconnect and substitute each other.

"Decrease in primary work tasks"

Due to the merger MR radiographers experience a decrease in their primary work tasks. Instead of focusing on scanning the patients and producing medical images, some feel a lot of noise and insecurity are at display. When working on the opposite hospitals the radiographers need to adjust to new environments which also emphasizes the different culture aspects. For example, the difference in "coffee break" is scheduled earlier at BBH due to the difference in meeting time at day shift and workflow than at FRH.

"There are many common practical things that makes it more difficult… And then I have also felt that no one has been heard throughout this process and hearing out our arguments." FRH2MR

The tendency where the radiographers are feeling left out in the changes with the merger also affects their satisfaction in their work life.

Wishes from the MR team:

- Wait to merge until protocols and work routines are standardized.
- Wish to withdraw the merging process.
- More present management at FRH.
- What is said should be acted upon. More transparent and concrete information.
- More transparency in the merging process
- Complete standardization in protocols.

In summary the MR team is the group facing a lot of changes and it seems that the changes of the merger are so overwhelming that some also wishes for the merging process to be withdrawn. The different workflow and work routines creates uncertainty and there is a need for standardization in terms of protocols. MR examinations are complicated and requires skills and competencies in producing diagnostic useable images, which brings focus to the professional challenges and unsatisfying working conditions.

7.2.1 Tendencies of categories and color coding the teams' data

From the fieldwork I noticed that all the three teams had different working conditions. Not only did the merger divide the radiographers further from their technological settings and distribution of workplaces, it also brought some differences in the social interests. The reason for some differences must be worth noticing is due to the fact that the technical actions for the radiographers in each team are different. If the technical actions were the same, it might signify that I could address the social interests under the same setting. In order to do this, I must look for some tendencies amongst the three teams.
Color coding emphasizes the important aspects to optimize the merging process for the radiographers (see table 8).

Red	Problems and issues
Green	Possible solutions

Table 8: Team tendencies

TEAM	TENDENCIES
DR team	- More workload than MR team, complicated patients requiring more time. (A) - Difficulty in changing work schedules (it must be one from the same team) (A) - Stressful with two workplaces. (B) - Consistency in work place and schedule. (C) - Consistency in the same technological framings. (C) - More presence manager in the department and clear information about relevant changes in the merger (D) - More employee involvement in decision-making regarding projects/visions (C) - No feeling of transparency from the management. No employee involvement in their visions for the merger. (E) - The differences in the work routines have been emphasized - it is important to obtain knowledge/competences from both places **(F)**
CT team	- More shifts at BBH (A) - Adjusting to new things and no visible manager every day (B) - Stressful conditions navigating between 2 hospitals. (B) - More empowerment/involvement to the employees (C) - More present management in the team belonging (D) - Listen more to the employees (C) - More transparency (E) - FRH needs to adjust to BBH. 90 % of the time BBH wins over FRH work routines. (F)
MR team	- No more night shifts. (A) - Loss of relevant competences on future work in radiology due to the lack of my usual work with CT, ultrasound and fluorescence. (A) - Decrease in primary core work tasks. (B) - Wait to merge until protocols and work routines are standardized. (C) - Wish to withdraw the merger. (C) - More present management at FRH. (D) - What is said should be acted upon. More transparency and concreteness. (E) - More transparency in the merging process (F) - Needs more standardization. (C)

7.2.2 Summary of the findings from the team tendencies

The findings in the team tendencies makes it possible to diagnose the problems in the merger. For example, the DR team perceives themselves having more workload than the MR team which creates a negative impact on the radiographers as a social group. Furthermore, the different working conditions provides challenges in the exchanging of shifts between radiographers. Mainly it requires an exchange within the same team; e.g. DR should exchange shifts with DR, MR with MR etc. Though CT and DR can exchange with each other the same does not imply for the MR team. They are excluded in this matter making them more vulnerable in terms of shift exchange than for the other teams. The reason for this exclusion is a decision made from the managers at BFH. The intention is that MR employees becomes more specialized in highly complex MR technology. In relation to the Managements' vision for the merger the radiographers cannot understand the reason for initiating the merger so soon. The overall struggles for the CT team are the factor of having to navigate in between two hospitals. MR team are not able to maintain their competencies in CT which can affect their possibilities for other work areas. The changes relating to the merger and team structure means the radiographers in MR has to deal with a lot of administrative work instead of performing their primary work tasks.

7.3 CTT-OTET model of use to the empirical data

From categorizing the empirical data from the semi-structured interviews, I will use the theory CTT and the model CTT-OTET to describe the radiographers' social interest and the concepts belonging in the model. I listed some overall perceptions from the radiographers in each category to provide an overview of the most essential factors related to the merger, see appendix 6.

7.3.1 The radiographers' social interests in relation to the CTT-OTET model

What can a critical theoretical perspective contribute with in this merging process?

The model CTT-OTET (see figure 3) contributes with highlighting the important factors that are relevant or must be addressed in order to transform the oppressing technology into an emancipating technology. Firstly, I need to define the technical code under the technical rationality. What are the technical codes in this setting?

7.3.2 Technical rationality in the merger

To define the technical code, the technical actions must also be described. Since the implementation of the merger following technical actions were applied by the management. I must add that these implementations are having a negative output looking at it from the radiographer's perspective.

- *MR team excluded from night shifts*
- *Unequal distribution for obtaining competencies in specific modalities → DR team gets more super-user positions than CT team*
- *MR having more shifts to cover since the new structures in the merger*
- *Lack of coherence in work distribution when working in between hospitals*
- *Working at two different places – stress factor*

It seems to be consistent that the radiographers are seeing the technical action as having to work in between two physical workplaces as a stressful condition. In relation to my model CTT-OTET, figure 12 illustrates the technical rationality and hereby from the analysis the construction of the technical code under the oppressing technology of merger.

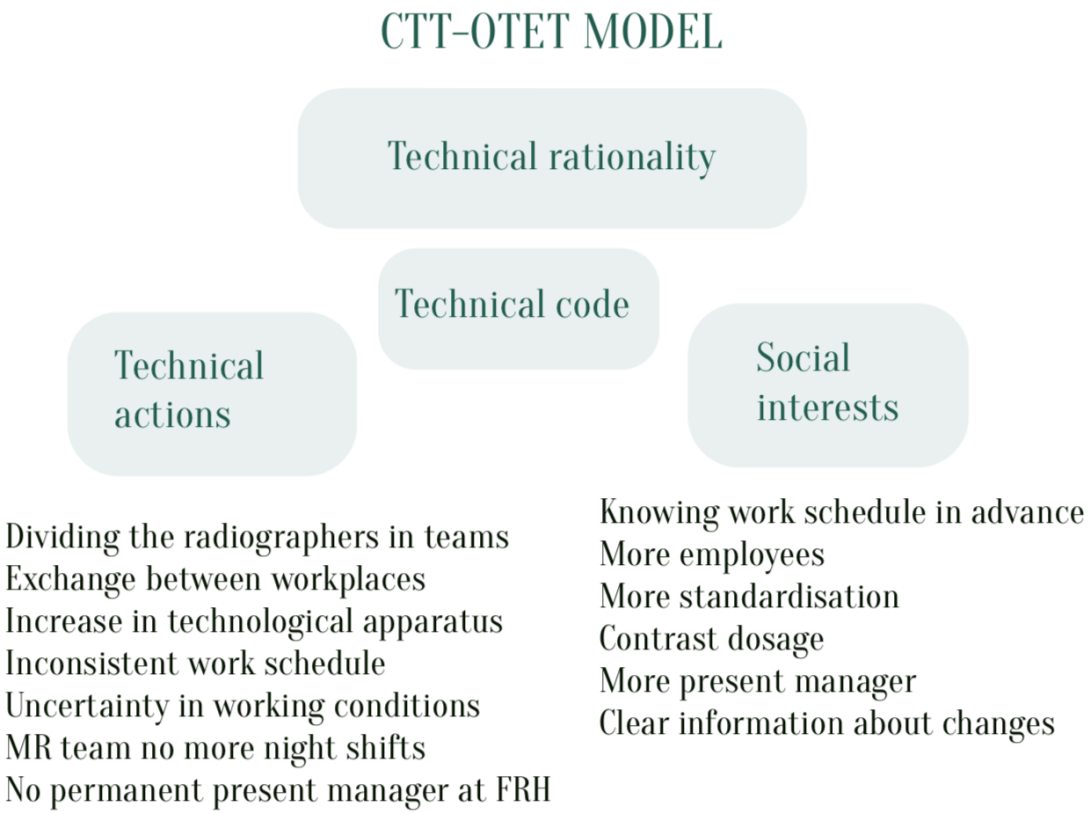

Figure 12. CTT-OTET model under technical rationality

FRH2DR:" I *must say it is stressful to have two working places. The fact of driving to work in the morning and need to figure out where to work. It also feels a lot more stressful to work at the other hospital because they have a different workflow and I think people from BBH feels the same. There are other procedures and projections. I feel a lot more secure here at FRH… maybe it is because I'm an old man, but my stress level rises when I am at BBH and I get heart arches."*

Furthermore, the unequal distribution for obtaining competencies in specific modalities to become super-user has a negative impact looking at the radiographers' interest collectively. It creates a division amongst the radiographers as a social group that already are divided between employees from BBH and FRH, and now technical action creates a threefold division looking at it from the teams' perspective. DR, CT and MR team are facing both similar and different technical actions since the implementation of the merger which also indicates the technical codes under the technical rationality is harder to define and describe.

M: *"Did it have any impact for you to be in the CT team?"*

BBH2CT: *"Yes, it meant that I couldn't apply for a super-user position in ultrasound. They would not accept my application because I was in the wrong team. It has had the effect that there actually were some money at stake that I couldn't be a part of."*

The working conditions in the specific teams has a huge impact on how the radiographers are facing and dealing with the changes and struggles in the merger. Some changes could be less hard if consistent exchange in work in between the hospitals were applied.

BBH2CT: '*I have experienced to meet up at the wrong hospital. It's more because you do not quite know when they are changing your work schedule, which meant that I showed up at the wrong cadaster where I wasn't supposed to be."*

The issue concerning working at two places affects the radiographers in all the teams. For example, a radiographer from the MR team are expressing following:

FRH1MR: *"Personally, I think it has been very difficult to be working at two places. A huge challenge for me. Overall, it feels like there are changes all the time. Sometimes it feels like there is no control over things when going back and forth between the two places. There is a lot of logistics as and it is difficult for the employees and management. From the management perspective, it feels like the team managers aren't quite aware of what is going on at the two cadasters. I understand the difficulty from the management side, it is a big task… It has been a big challenge and unsatisfying."*

This also shows that the radiographer is aware of the fact that the structures within the merger is a big task and challenge to fulfill everybody's needs. The three team managers may need to be more aware of the radiographers' struggles within each team to solve some of the current problems. By placing the radiographers in settings, they are not familiar with, more struggles occur than expected. One thing is to know how to use the x-ray apparatus, which seems to be the same at both hospitals, another thing is to know the projections and procedures required at the respective hospitals. Drawing on the model CTT-OTET the technical rationality needs to undergo to social rationality to meet the

different views from the radiographers and it is required for the managers to communicate and listen to the radiographers wishes and frustrations. Some arguments from the radiographers may not be accommodated, but if some issues can be solved within the social interest, the technical actions under the technical rationality can be transformed into an "alternative technical actions".

The interests of the radiographers and from each team the alternative technical actions could be as following:

DR:

- More consistency in work place and schedule.
- More consistency in the same technological framings.
- More presence from the manager in the department and clear information about relevant changes in the merger
- More employee involvement in decision-making regarding projects/visions

CT:

- More empowerment/involvement to the employees
- More present management in the team belonging
- More transparency in the merger. More information in relation changes.

MR:

- More present management at FRH.
- What is said should be acted upon. More concrete and clear information.
- More transparency in the merging process
- Needs more standardization in protocols.

7.3.3 Social Rationality in the merger

From the analysis, I have found the most essential factors for the alternative technical actions to be presented in the model with the radiographers' social interest for the technology as a technical configuration to be transformed into an emancipating one (see figure 13).

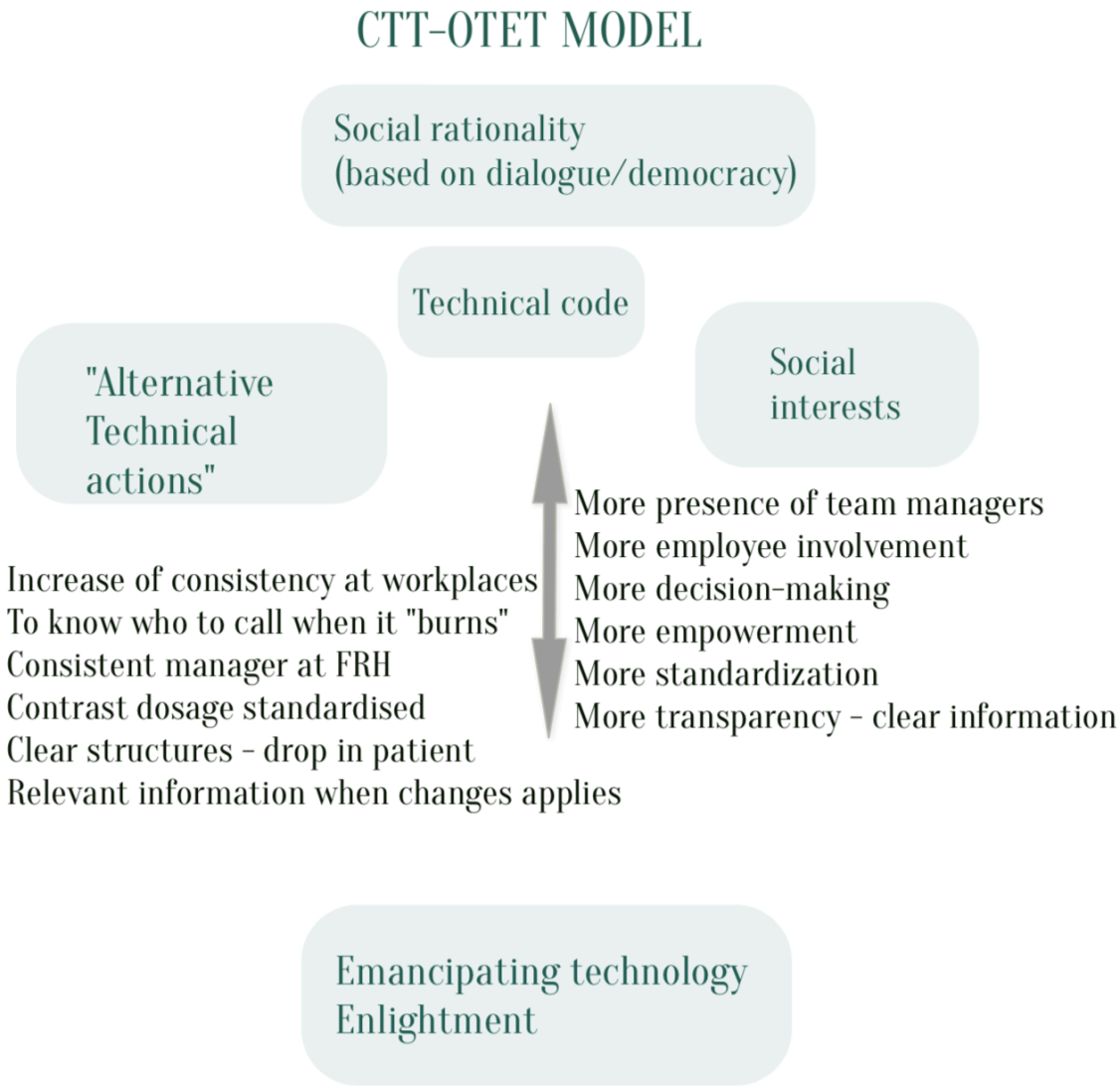

Figure 13. CTT-OTET model under social rationality

By defining the technical actions and social interests in relation to the model the phase concerning identifying current problems in AR is unfolded. From here, the next phase is diagnosing the problems expressed by the radiographers.

7.4 Planning the actions

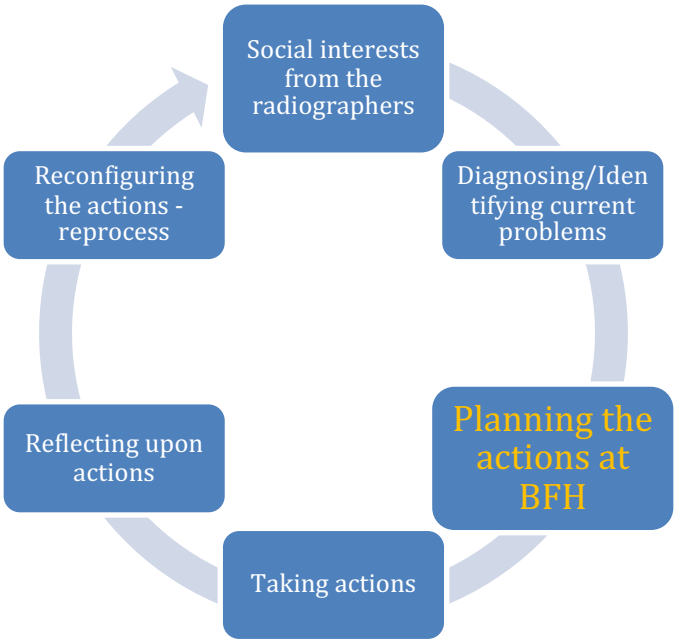

Figure 5. Illustration of the project's AR model with 6 phases

From the first two phases in AR I reach the third phase *planning the actions*. The data collected from the theme-meeting combined with the data from phase one and two will provide actions the organization BFH can use to help optimize the merger to a more democratic development. Furthermore, it will be interesting to see if the merging process can be re-conceptualized to optimize the process to benefit the radiographers and obtain their social interests. I attended the meeting as a moderate participant observer, while taking notes of importance for the relevance of research. Sixteen radiographers were present that day with their team-manager.

7.4.1 Theme-meeting

Theme-meetings are held in the organization in the different teams consisting of 3-4 per year. Theme-meetings are as it's called centralized around the theme chosen for each meeting. Hospital based surveys is also conducted every year. However, the chosen themes can be anything thing evolving engaging employees and managers to benefit the organization. This year's theme-meeting was

focusing on the well-being and job satisfaction "Trivsel og arbejdsglæde" of the employees and to address important issues of relevance within their working conditions.

While conducting my fieldwork based on the interviews and participant observations, I saw the first two phases as an opportunity to get an in-depth understanding of the effects of the merger on the employees. By defining the social interests for the radiographers and identifying current problems the next step in AR is planning the actions. With my dual role as a researcher, I used my knowledge, skills and competencies to add possible solutions to the problems the radiographers expressed. I contacted the DR team-manager whom instantly agreed to allow me access the meeting.

The themes that were discussed stems from a survey Capital Region carried out as a quantitative research based on questionnaires sent out in the organization (Region Hovedstaden 2017). From the collected data based on the questionnaires the manager in collaboration with the radiographers from each team used the meeting to understand the current issues within the organization. A lot of issues were addressed and jottings from the theme-meeting is presented in appendix 7.

The issues and subjects that were addressed at the theme-meeting will be used to support the data from the interviews. I hope to find some tendencies and concrete solutions for optimizing the radiographer's perspective of the merger. Furthermore, it will be interesting to see if both FRH employees and BBH employees share some common social interests in the merger leading.

With relevance to the merger, the following data was collected from the theme-meeting (see table 9):

Table 9. Overview of data from theme-day

DATA FROM THEME DAY	" TRIVSEL OG ARBEJDSGLÆDE" MARCH 2018 "
Keywords:	Involvement, participation, development
Buzzwords:	- Work pressure - Feeling alone - Drop-in patients take a lot of time of the core work tasks - Management's visibility (ref. to FRH) - Change in meeting time at day shift – feeling of oppression. "We were not asked"

	- Inter-relations among the employees – "do we communicate and help each other out?"
Current problems:	- Lack of visible management at FRH - The inadequate numbers of radiographers present to fill in all room – it varies from day to day - Lack of transparency. Enhances stress and unnecessary hypotheses to the lack of radiographers at work. - No presence of originally employees from FRH at FRH and same for BBH. Needs someone who are familiar in the department. - Obtainable competences should be present at both departments – obligation and responsibility for all (ref. to the management)
Possible solution for current problems	- One from the DR team gets admin rights to share their knowledge concerning competences and skills about the radiographers for delegation of technological rooms in the organization - A collaboration between the manager and radiographer - More employee involvement in decision-making
Why this solution:	- To see and listen to each other – transparency in work and delegation of work coming from competent radiographers who know the technological settings and the competences it requires for radiographer's skill and competences
Planning for AR	- Trying the actions out for a period of time

7.5 FRH & BBH – Tendencies and differences

The area of interest by looking at each hospital's social interests will provide answers to see if shared interests are existing or is it a matter of work culture. From the exposed categories A-G, I have highlighted the most common expressed views from the radiographers dividing it by FRH and BBH employees. This distinguish will help me create an overview to see if any categories differ from the opinions of the majority and if this is the case, is it a matter of individual interest or as mentioned above a matter of cultural behavioral aspect.

Table 10 shows how FRH and BBH are expression their views in the seven categories.

Table 10. FRH and BBH views in relation to categories

CATEGORIES	FRH	BBH
A. Effects by the new team-structure	• More workload than MR team. • Difficulty in changing shifts (same team exchange) • Shift exchange going from • FRH to BBH • Loss in competences – more specialized.	• Decrease in possibility for being super-user (Cone-beam) • No real effect • Smaller groups create more involvement in the teams • More specialized.
B. Effects of the merger: redistribution of work and navigating between two hospitals	• Confusing, messy and unstructured conditions • Different procedures to learn • Stressful with two workplaces and their respective work routines • Socially affected by unsatisfied work environments • Inadequate staffing and of lack of responsibility. • Missing main/usual colleagues. • Need of continuity in work schedule. • Feeling having two jobs: from new examinations to new colleagues	• No real changes except night shift • Uneven distribution of workplace can change from day to day sometimes. • Not knowing the technological settings 100 % • Stressful conditions • Awareness to work schedule due to physical exchange between the hospitals • Decrease in primary work tasks
C. The radiographers wishes – changes to the merger	• Too early start and too many changes at the same time – loss of personnel. • More time to get to know the other personnel. • Consistency in work place and schedule. • Consistency in the same technological framings. • Not considerate actions and clarity. • No feeling of autonomy from the radiographers. • More employee involvement	• Too early a merger • More empowerment/involving employees • A mistake to force BBH & FRH personnel to share the Christmas event – keep separately • Shortening the process by taking 50 % employees from each workplace and shift • The timeframe for the team division could have been pushed 6 months so the personnel with have time for adjustment.

	• Lack of transparency and vision. • Merger process starting one year before the new hospital is build. • Consistency in work schedule and place. • Wish to withdraw the merging. So that FRH covers FRH and BBH covers BBH. Wait until 1 year and get back to it again. • Important to have a joint work ethic in order to obtain cohesiveness. • More consistent work schedule for each place.	• Important with a good period/time to learn and adjust to new workplace and routines • More consistency in work schedule and place. • Wait to merge until all protocols and work routines were standardized. • Merger process starting one year before the new hospital is build.
D. The radiographers' perceptions of the meaning "a visible management"	• More visibility and presence of management at FRH. • Responsibility and actions when problems and issues occur. • Consistent manager at FRH and more presence • Problem by navigating at two places – lack of presence • The lack of visible management creates uncertainties when problems occurs and makes the employee take charge that are unnecessary • To many meetings for the managers. Often you have no clue of where they are. • Difficulty getting in contact by email. • Redistribution of workload and work tasks for employees due to lack of management • More clear information from the leaders of relevant changes in the future.	• More present management in the team belonging. • More visibility and presence of management at FRH. • Face-to-face manager-employee relation • Be more present in solving the actual problems. More presence in the organization to obtain a realistic view on the problems and where the employees are. • No need for them to be more present if they are reachable e.g. by phone or e-mail. • Need for clear information through emails, morning meetings or minutes of meeting/reports. • Important to write which employees that can elaborate on different projects/initiatives. A contact person. • More employee involvement in decision-making regarding projects/visions.

	• No wishes. It is too late. The management didn't allow the employees to express their opinions regarding the merger. • No wishes or suggestions for optimizing the merger. • Better announcement from the managers. • Getting to know all managers and not only in teams. • More employees so the adequate staffing maintains – more resources. • More structure in the organization • Physical appearance. • Take more responsibility. • Wait to merge until 6 months before the new hospital is build.	• A permanent manager belonging to the FRH cadaster. • Empowerment and autonomy for the employees • What is said should be acted upon • More concrete meetings and transparency
E. The radiographers' perceptions of transparency in the managements' visions of the merger	• Not really. Morning meeting doesn't really allow opinions to be heard. Unclear visions from the management. No employee involvement. • More transparency – more concrete visions • Lack of transparency. A lot of conflicts, unsatisfied employees and challenges were unnecessary – the negative outcome stems from lack of transparency • More information and autonomy for the employees • The radiologists and management could have collaborated more efficiently to create a unified work routine.	• No employee involvement in their visions for the merger. • Lack of transparency. Changes happen suddenly. No warning. Changes need to be informed clearer. • The building information's is too far in the future to comprehend.

F. Differences between BBH and FRH	• More critical atmosphere when you are working the "new/other" place. No standardized or lined streamed directions for both places. • Lack of competences because of different work routines and projections that are new to me. • Need of more streamed lined and standardized directions work routines to avoid compromises in core work tasks. • Lack of communication amongst radiologists creates different work routines for protocols that lead to uncertainties. • Culture aspect. BBH is more sttrict whereas FRH is looser in following guidelines and work routines. • Personnel are too regular and principal at BBH. Not so flexible which can compromise the workflow	• Workflow is different. Creates uncertainty. Not knowing all rooms' technology, a 100 %. • "Them" and "us" is disappearing in time when working more together. • The differences in the work routines have been emphasized - it is important to obtain knowledge/competences from both places • Needs more standardization. E.g. protocols for errors not to occur. • Needs to know all examinations. Self-learning aspect due to lack of training. E.g. room 22 I am self-taught. • Difference in contrast at work routines. Need of more standardization • Work routines – how to treat patients and when to call a doctor. FRH drop-in patient issue. Not clear. • More standardization in work routines, projections, and culture.
G. The radiographers' perceptions of BFH as one unit	• We are not one unit yet. • Not before the new hospital is build. • People need to accept the merger and get used to it.	• Not before the new hospital is build. • Still a grey zone. But we are getting there. The process is maybe 60-70 % achieved. • More exchange between the two places to get to know each other and work routines.

7.6 Different perceptions of the vulnerable groups

The division of teams has changed the technical codes in the organization. One example is how a radiographer belonging to the CT team sees which group is most affected by the new-team structure caused by the merger.

BBH2CT: *"I think the MR group is vulnerable in this merger. They are facing a lot of struggles on several levels. I also think that this is a problem when they are trying to get new personnel into the group. People are thinking now that MR team is something they don't want to be involved in anymore."*

Another radiographer mentioned the DR team as the team being most affected by the changes and working conditions since the merger, it is certain to state that the radiographers also hold different perceptions amongst each other's opportunities and working conditions in the teams they belong in. This gives an example on how the technical code should change if impacts from the teams are challenging it with new designs because of the merger. If the technical code is the realization of interests from the radiographers in relation to the structures within the merger it also means that the social interests needs to be found and described.

When unfolding the opinions and expressions from the categories drawn by each hospital, redundancy occurs in specific categories. I will list the redundancies below for the sake of an overview (see table 11):

Table 11. Overview of categories in relation to views for BBH and FRH

CATEGORIES	GENERALIZED VIEWS FOR BOTH BBH AND FRH
A	*More specialization in the specific teams*
B	*Unstructured conditions, stressful conditions, uncertainties*
C	*Too early a merger, needs consistency in workplace and schedule* *More employee involvement and empowerment* *Merger process should start < 1 year until the new hospital is build*
D	*More visibility and presence of management at FRH* *Consistent manager at FRH* *Management should act upon problem solving at its presence* *Need for clear communication, information of relevant changes*
E	*More structure concerning the merger* *More physical appearance* *More employee involvement in decision-making* *Empowerment and autonomy for the employees* *More information and autonomy for the radiographers.* *The visons are unclear. More concrete and grounded information.* *More employee involvement.*
F	*More critical atmosphere when working at the" other" hospital.* *Different work routines.* *Need of more standardization.* *Culture aspect.* *Contrast dosage. (Should be standardized)* *The "drop-in" patient issue (unclear working guidelines).* *"BBH too regular, FRH more loose"*
G	*Not before the hospital is build and we move in as one.* *Need for adjustment and acceptance of the merger.*

7.7 The concepts from AR to this project

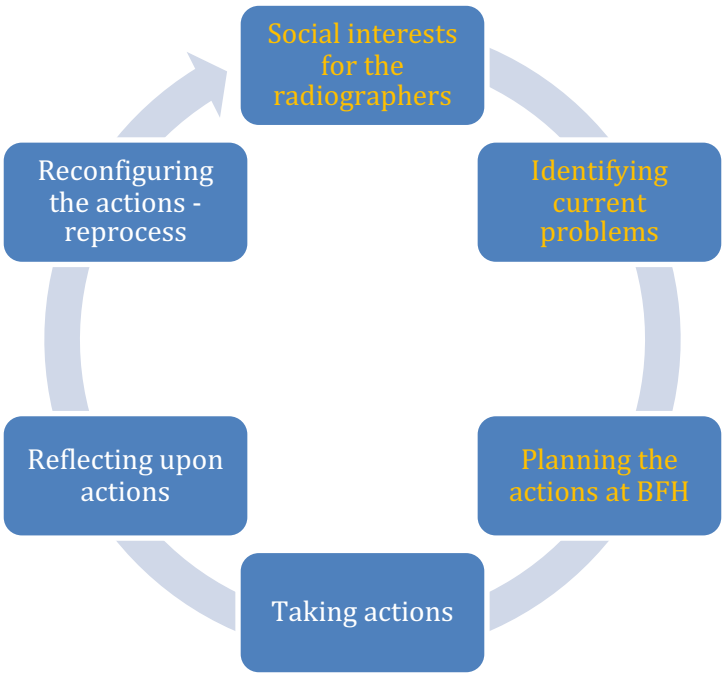

Figure 5. Illustration of the project's AR model with 6 phases

I tried to illustrate my use of AR within the organization and how I proposed a solution that the radiographers could benefit from by identifying the current problems. With use of my model CTT-OTET description of social interests under the social rationality, I found the factors such as; empowerment, employee involvement and decision-making with high relevance in order for the radiographers to experience a more democratic development in the merging process.

The action proposed was a radiographer in the specific team will be provided admin rights in the technological software program, Hosinfo[4], that is used in the organization. Usually it is the team managers combined with the technological skills of Hosinfo that plans out where the radiographers are working and in with technological rooms (Healthcare Denmark, 2018). For example, the it-system can automatically and systematically place each radiographers' in the technological room he/her have competencies in and place the radiographer in another if the same radiographer has been in the same room for weeks. The team managers can add and edit if the settings Hosinfo has planned interferes with the daily production and unequal distributions. Most of the struggles in terms of distributing

[4] Hosinfo, Automated Resource Planning, is a software program used for planning and holds a lot of abilities to provide overview of employees and work schedules in the organization.

enough employees in the different rooms with the right competencies might occur when a team manager puts a radiographer in a room they don't have competencies or ability to use. When exchanging in between the two hospitals the learning outcome for every radiographer is very different and can be a long process. Some needs more time to learn than others. By proposing an action that gives the radiographers empowerment in decision-making in terms of planning their own work schedule and distributing their working rooms a solution to a problem might be possible.

From the analysis I identify following social interests for the radiographers:

- *Consistency in work place and schedule*
- *Consistency in the same technological framings*
- *More employee involvement in decision-making*
- *Stressful conditions navigating between 2 hospitals*
- *More empowerment/involvement to the employees in relation to working conditions*
- *More transparency. Concrete information concerning changes in the merger in reasonable time.*

By proposing the action that a radiographer gets admin rights for planning and distributing the radiographers work schedule in collaboration with the team manager a more democratic development in the merger can be unfolded. Because of the radiographers' knowledge about his/her colleagues and knowing the requirements for the technological rooms, a more suitable planning for the radiographers can be obtained while maintaining their wishes for more consistency in work place/ schedule and technological framings. Furthermore, the radiographers get more involvement in decision-making in this merger and reduces the stressful factor by navigating to often between the two hospitals. It is worth mentioning the stress factor by having to work at two places only affects some radiographers and are not a crucial negative factor for everyone. In my fieldwork I only got to reach the first three phases: Social interests for the radiographers, identifying current problems and planning the actions at BFH. It will be interesting to find out if the proposed actions helped the radiographers in the above listed interests.
Further discussions based on the findings from the analysis will be elaborated in the next chapter.

8. Discussion

In this merger, with constant changes, it is a complex and challenging task to find a solution that benefits all stakeholders. Some changes may seem preferable and applicable for some, while other changes benefit one social group, or in this case one team, better than other teams. The entangled construction of the radiographers' working conditions needs to be discussed in different perspectives in order to come to a well-founded conclusion.

I will emphasize that this project underpins the description of lower units at the hospitals, on the local levels, and the findings are largely independent of higher levels to some extent. Thus, if a new strategy, redirection or transformation of the merger to proceed, I must reach out to this part of the hospital and translate it into local settings making it relevant for the radiographers. The overall aim is thus to convey my scientific results and their implications to society and to serve the ordinary people in Danish lingo "the people on the floor".

I must also add that this chapter will provide a critical review on the found data and how the interpretations and expressed views from the radiographers are an outtake from the merger based on the events and changes happening since the implementations of the merger to Spring 2018. A lot of changes, restructuring and other implementations has been organized in the organization in the time period from that I ended my fieldwork to present while writing this dissertation. Hence, the time aspects effect of my empirical data is something I am aware of, if this were to be presented to the organization.
Lastly, I will brief discuss the use of CTT as choice of theory and touch upon if other theories could be of service to address the obstacles with the merger at BFH, medical imaging department.

8.1 The three E's; Empowerment, Enlightenment & Emancipation (inspired from existing literature)

From the literature review on chapter 3 (see table 4), I will draw on the existing research to discuss the various findings and conclusion. Engstrøm et al. addresses the structural changes employees are facing in a merger and how they are experiencing it. The overall findings were that by balancing involvement from the employees helped with reaching fulfillment in a merger process (Engstrøm et

al, 2002). The challenges when healthcare sectors today face demands of centralization and reducing costs while still having to maintain the criteria to obtain qualitative procedures and examinations require strategies that are innovative and that contribute with a positive outcome for the involved stakeholders. If employees had a high degree of commitment, involvement and responsibility related to their work, the research by Engstrøm et al. shows that the process with a merger will have a positive impact on the employees' experience. In relation to my project it is clear that the radiographers experience lack of involvement and empowerment for not being heard in the merging process. It could be interesting to see, if a new merger strategy consisting of increasing involvement or implementing collaboration with the radiographers in decision-making in the changes the merger brings can help with redirecting the merger.
As another article from the literature review states:

"An increase in autonomy, staff support, perceived quality and job clarity would increase job satisfaction undergoing mergers and continuous staff support and management expectations will help to increase job satisfaction for the employees." (Lim 2014)

The aspect of job clarity is also an important factor that concerns the radiographers in the merger when expressing these a lot of energy figuring out whom to call if they face some obstacles, what to do with the produced images if a drop-in patient is present at FRH or what kind of radiologist should be looking at these procedures and when, are just few examples that brings out a lot of noise in their main task, as a radiographer has expressed.

BBH1MR: "*Yes, the core work task is hard to focus about, because there is so much noise beyond which one must also take into consideration. "*

Thus, I propose that the three E's; empowerment, enlightenment and emancipation can guide or redirect the merger into a more positive process for the radiographers and their relation to the managers. By empowerment, involvement needs to be present. Adding clear information about changes through time and not all at once will help with enlightenment for the radiographers. For them to reach awareness of the changes and understanding the intention and purpose of that will or can provide some sort of emancipation from what might have been seen as a feeling of oppression of the oppressing technology, hence the merger, that affected them. As Hasle & Sørensen also states:

"*Employees should be seen as a collective voice and their autonomy should be respected."* (Hasle & Sørensen, 2013). On the contrary, where is the line or balance between how much involvement employees should have in structural changes in an organization and is it more a matter of looking at the managers' assets on how to lead? The article from Hasle & Sørensen *"Employees as individually and collectively acting subjects – Key contributions from Nordic Working Life Research"* points out how one should look at the voice of the employees while seeing them as both individuals and a group who share ideas and aspirations that influences the management with the use of cooperation and pressure (Hasle & Sørensen, 2013, 10). The benefits by conducting a socio-technical design approach to the merger, combined with social interests and alternative technical actions, the technical code under social rationality can provide a merger with more employee satisfaction.

The proposed wishes from each team, DR, CT and MR all have in common that they want a more democratic approach to the changes with the merger. The feeling of being left out and have no saying in the structural changes they are facing can be eliminated if they take part of the planning and work conditions. As their influence increases, they also gain more control over their work which leads to more empowerment. Maybe a fine line of employee involvement and decision-making from the employees and the power from the management can be outlived to see if the results will help to get an easier and better merging process.

It is also worth mentioning the finding from the analysis where employees from FRH are feeling more as a "little brother" to the "big brother" hospital BBH. Some form of oppression is felt by the radiographers from FRH due to the fact that FRH always needs to adjust to the work routines from BBH. Finding a middle way in the future with whom needs to adjust to whom may help in this problematic aspect.

8.2 Bias – my role as a researcher acting as a native and Techno-Anthropologist

"Let's talk native" is an article I saw on LinkedIN while processing and reflecting upon my findings in this project. The article woke my interest by discussing how talking or being a native gives you an access and information to something one would not achieve by for example being an outsider or consultant. I am humbled and thankful for the thoughts and expressed views from the radiographers I have interviewed. Their insights and shared meanings to this project provided me with data I would not have obtained without their trust and seeing me as one of them.

When conducting the fieldwork, I was not aware of what kind of impact it had on the collected data for my informants both seeing me as a native and Techno-Anthropologist. I was too focused pursuing my role as a researcher with a Techno-Anthropological mindset; searching the field with, trying out ethnographic methods.

The education Techno-Anthropology allows people with various professional background from bachelor level to access the master, hence my unique role as a researcher in this project acting as both a native – radiographer and an outsider – Techno-Anthropologist. The questions of concern that arise with my position with a dual role, is how the collected data is affected by this? The advantage of my role is the information given from the participants when the mutual feeling of trust, respect and understanding is already at place under each interview. The interview as a creation for space to let out opinions may be wider and more fruitful than if my role as a researcher was as an outside consultant. The disadvantage could be the same elements from my advantages. By being one with the radiographers I might not see or ask things an outsider would ask. With experience from previous research, fall 2017, I was aware of this factor and was trying my best to structure the interviews with openness, hence the approach with semi-structured interviews. From this, a new form of research has been enacted in this dissertation. Acting as a native-techno-anthropologist investigating the object with a dual-mindset.

8.3 The effect of AR as a research approach for problem-solving

I ended my research with AR missing the last three phases; taking actions, reflecting upon actions implemented and reconfiguring the actions. What is of relevance to point out is the aspect of AR as a research method studying social phenomena with the fact that it is not homogenous through time. What this implies, is that the actions proposed at the time of research may act as a solution at that period of time. As the research situation evolves through time it requires critical reflections from me as a researcher to judge if the chosen methodology works and find out if adjustments needs to be considered in order for AR to be of use as a problem-solving method.

AR could be seen as an option to achieve a more democratic development of the merger. This form of research could be a guidance of how to avoid frustrations amongst employees and contribute with more autonomy and empowerment to the vulnerable group. By balancing involvement and give the radiographers some sort of empowerment in terms of decision-making in the merger, a more positive process will take place. Additionally, it can be problematic to pursue a satisfying action research

process in the framings of a formal organization if it cannot be of reach on both a local level and to higher instances.

As Bilfedt et al. states: *"The challenge is to avoid 'the trap of localism', where successful social innovations end up as single local activities."* (Bilfeldt et al., 2016:10). Which leads to the question if the AR I pursued was successful or not and did it help the radiographers in the merging process? To answer the aforementioned question, the fourth phase of taking actions of the proposed solutions should be carried out in the organization. It will be interesting to find out if the solutions proposed, and acted out, made the radiographers or managers take it up again, reflect on it and reconfigure it as the merging process evolves. As for my research approach in AR from phase one, two and three, I used the first two phases; *identifying the social interests for the radiographers* and *diagnosing the current problems*, as fundamental in-depth research to understand, comprehend and provide findings that are valuable to the organization. Identifying the social interests for the radiographers requires in-depth knowledge that the timeframe giving for this dissertation could not have been achieved, but because of my existing background knowledge about the organization and my previous profession as a radiographer, knowing what and whom to observe, an adequate empirical data was collected to the analysis. The thorough research in the first two phases fostered sufficient data to the third phase of planning the actions at the theme-meeting. Taking the action and pursuing it at both BBH and FRH were out of my power and should be led and carried out by the team managers. It will be interesting to find out if the proposed solutions did get into action and if so, how did it go. From here the last two phases in AR concerning reflection and reconfiguring the actions would be preferable phases to undergo if the proposed solutions did not go as expected. If the merger created new structures and conditions, new problems occurs which implies new solutions is needed. From my literature review (see table 4) the article *"Implementing action research in hospital settings, a systematic review"*, Montgomery & Doulougeri finds that AR can be used in settings as wanting to; enhance staff knowledge and skills, improve formal processes of care, improve staff work satisfaction and well-being and improve staff collaboration and collaboration (Montgomery & Doulougeri, 2014: 732). I see AR as a preferable method because following objective are at stake at the organization:

- *Need for bringing changes in the organization*
- *Need for improving employee satisfaction and well-being*
- *Need for employee collaboration between BBH and FRH and improve communication with each other*

Drawing similar elements from Montgomery and Doulougeri, my aim with AR was to bring some meaningful and valuable findings and solutions to the organization. The fact that the radiographers are suggesting possible action themselves is essential because it increases the likehood of solutions. Edwards and Tewes has conducted a qualitative study in Denmark where they pursued an employee-driven approach to solutions in collaboration with the managers (Edwards & Tewes, 2015). It was with inspiration from this article that I suggested that by giving the radiographers empowerment and autonomy in decision-making in their work schedule and daily planning in collaboration with the team managers, small errors that previously caused frustrations could be eliminated.
Furthermore, when I proposed a possible solution to some of the problems within the merger, I could see that the radiographers saw me as a spokesperson, speaking for their interest and understanding their struggles.
CTT enhanced the perspective to look for a vulnerable group and see if an oppression could be transformed to emancipation where AR was intended to be used as a tool to reach democracy. Could another theory bring something else to this project and what could have been more suitable?

8.4 Critical view of the critical theory

Maybe it has something to do with how I am as a person. I always felt the need to "fight for justice" "help the weak" and "save the vulnerable". It was obvious that CTT by Andrew Feenberg seems natural for me to apply to this project and furthermore I held a personal interest to be the voice for the radiographers due to my professional background. A change in the socio-technical configuration grants the opportunity to conduct this study to look at how the design and structures of the merger could be redesigned into a technology that seemed as oppressing. The merger in itself, can be addressed in various ways and if another techno-anthropological theory was applied it may contribute with additional insights that could benefit the whole organization but also to other hospitals in Denmark that are facing and undergoing mergers. Capital region may be the first to merge all the hospitals, but Central Denmark region are in fact as the present moment facing some of the same obstacles and challenges. ANT could provide maps and overview of different processes in between different settings. SCOT could look at different social groups and include more than just the radiographers. Further research could include radiologist, secretaries and porters. Other frameworks or approaches could have been interesting to investigate further, but I do believe the perspective of hearing the biggest vulnerable group out and describing the struggles, defining the structures and

identifying the current problems is a start to transform the merger in a more positive direction. Other values cherished and administered by CTT is also security of employment and equity. To avoid more employees, resign these values should also be addressed and maybe then CTT can bridge the gap existing between FRH and BBH as two separate hospitals but more importantly between the managers and the radiographers.

9. Conclusion

Reaching the conclusion, I will reference the problem formulation again.

> *"How can the merging process be redirected/transformed in order to accommodate the experiences, perceptions & interests of the radiographers at Bispebjerg & Frederiksberg Hospitals?"*

For the merging process to be redirected or transformed to accommodate the interest of the radiographers at BFH, I conclude that following factors must be considered and taken into actions:

- *More employee involvement in decision-making relating to the structures in the merger*
- *More clear and concrete information regarding changes in the merger*
- *The vision of the merger as to understanding why and how must be clear to the employees*
- *Both hospitals departments must be seen equally in the merger*
- *Balance in between whom adjusts to whom*
- *More consistency exchanging in between the hospitals*
- *Visible managers – whom to address when it "burns"*
- *Present consistent manager at FRH*
- *Increase in standardization for protocols and contrast dosage*

Though some actions are easier to implement and enact than others, it must be of relevance for the organization to take some into actions for a more democratic development of the merger to transpire. For the oppressing technology to transform into an emancipating one as my CTT-OTET model display, it necessary to look at both the technical actions and social interests of the radiographers. AR contributed with diagnosing the current problems at the organization that fostered possible solutions to be enacted at both hospitals at FRH and BBH. By increasing the radiographer's empowerment and providing them some portion of autonomy related to their working conditions the merging process can be transformed into a more democratic merger for all stakeholders.

In conclusion, considering a merger strategy based on employee involvement and transparency will have a positive effect in the long-term. Furthermore, creating a solid and thorough foundation for identifying the problems can ease the process of findings possible solutions to the current problems. AR seems compatible as a problem-solving approach adding on concepts as reflecting and redefining the proposed solutions as for the ongoing process mergers are.

10. Perspective

After researching about the topic during my dissertation, I do think it is utopian to pursue the perfect merging process, when the conditions and new constructions of super hospitals in the Capital Region is still undergoing the process of building the physical hospitals. Denmark is still inexperienced in this matter and striving for solutions must be to find a golden middle way driven by open dialogue between the management and "the people on the floor" also called "folket på gulvet" in Danish terms. Future research should attempt to channel AR interventions to CTT because it highlights elements to be aware of as presence of a vulnerable group and aim for a democratic development. As mergers are a long ongoing process, AR fits suitable because of its continuous process, going back and forth, rethinking its phases, adjusting, implementing new things, reversing etc. It requires analytical skills and competencies for the researcher investigating the problem area.

I would like to point out that further research to this project should be continuing the three phases in my AR model. Thus, AR qualifies for hospital research and can be applied as an interventional approach at different levels, as in this case in the micro level.

11. Recommendations

Other hospitals in Capital Region or Denmark undergoing mergers on department level, smaller or higher can use this project as a guideline to what factors to take into consideration. Standardized guidelines on how hospitals should design their merging strategies are not preferable, but instead should be used as inspiration. I recommend that each hospital must make individually strategic decisions to fit its needs and align the implementation with its context and time period. The time aspect does matter, because as human are creatures of habit, changes and adjustments take time. When conducting my research in winter/spring 2018 the merger had been implemented since summer 2017. The early stage of merging created more frustrations for the radiographers than expected, but as time goes by, the radiographers will get used to the changes and new habits and working conditions become familiar. I do think if I were to conduct my research again with AR and CTT, other social interests will be found while the technical actions under the technical rationality may not have such a negative impact as the ones describe in this analysis.

My research additionally emphasizes the importance of balancing employee involvement in decision-making relating to changes in a merger. I also believe that a vulnerable group can reach emancipation if a democratic development is present. This can be achieved by collaborating with the involved stakeholders affected by the merger on department level. In the medical imaging department at BFH the involved stakeholders are: the head managers, team managers, the radiologists, the radiographers and the secretaries. Further studies could include these groups.

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