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UNDERSTANDING CITIZEN ACTION IN INFRASTRUCTURE DEVELOPMENT PROCESSES

**BY
SARA BJØRN AAEN**

DISSERTATION SUBMITTED 2017



AALBORG UNIVERSITY
DENMARK

UNDERSTANDING CITIZEN ACTION IN INFRASTRUCTURE DEVELOPMENT PROCESSES

by

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I hope you will enjoy.

Sara Bjørn Aaen, Vadum, May 2017

ENGLISH SUMMARY

This dissertation seeks to provide a better understanding of citizens' actions related to infrastructure development processes. The aim is to understand the dynamics that form the actions of the citizens who are drawn into the planning of potentially lifechanging infrastructure projects. A better understanding of citizens' action in infrastructure development processes will provide insight into what it means to live in a society that constantly changes and that causes changes to citizens' lives in the process. Furthermore, it provides a basis for improving the way citizens are involved in infrastructure development process and to develop public participation processes that are better adapted to the needs of the citizens.

Existing literature on citizen action in planning processes tends to assume an instrumental approach to citizen action which conceptualizes citizens primarily as actors in planning processes rather than actors in their own lives. Finding this approach too narrow to capture the dynamics of citizens' actions, the dissertation takes the citizen perspective on infrastructure development and views infrastructure development as one part of the citizen's everyday life - a life that is filled with myriads of other things. The citizens are situated in their everyday lives, and to understand citizen action from a citizen perspective, the approach must be situated as well.

Taking a constructivist and situated approach to action, the dissertation focuses on the interactional processes that go into forming the citizens' actions in infrastructure development processes. The dissertation furthermore attempts to study the factors that play a role in the action formation process but are not manifested in a state that can be detected in situated spaces. This means that the dissertation investigates two aspects of citizen action – The factors that come into play when citizens form actions and the mechanisms that govern the action formation process. The dissertation investigates the two aspects of action by studying citizen action in four cases of energy infrastructure planning processes in Denmark. The planning of an electrical underground cable, a nuclear waste repository, a gas storage facility, and a test center for wind turbines. In the planning processes the dissertation specifically focuses on the public participation process.

Regarding the factors that come into play when citizens form actions, the dissertation finds that citizens are especially influenced by actors originating from their own life-world. These factors can be human, immaterial as well as material and do not necessarily originate from the specific situation which the citizens act in. Hence, actors from the citizen's past, present and future everyday life are important actors in the citizens' action formation process. An additional finding is that the factors are linked in network that come to influence the citizen's actions collectively which suggests

that a narrow focus on singular influencing factors is not the best way of understanding citizen action.

The primary contribution of the dissertation is the development of a novel framework for understanding the process of citizens' action formation in infrastructure development processes that takes into consideration the situated and constructivist nature of action. It finds that citizen action is governed by two supplementing processes: 1) An enactment process where citizens translate the myriads of homogenous influencing factors into a network in order to make sense of the infrastructure development process and enacts the network as a way of acting order into the situation and 2) an interaction process where human actors, in the effort to make sense of the process they are a part of, enact a situated order in the interactions between them which come to define what is meaningful actions for the citizens to take. Citizen action is therefore, according the dissertation's results, best understood as a continuous process of translation, sensemaking, enactment, and interaction rather than a result of the influence from various independent factors.

The dissertation's findings are especially relevant to the practice of public participation as it provides insights into how participatory processes could better adapt to the citizens' action formation process. Among other things, the results suggest that more effort should be put into understanding the context of the participatory process and the community it takes place in and furthermore suggest that participatory process should not be fully controlled, as citizens need the opportunity to act their own meaning into the space.

DANSK RESUMÉ

Målet med denne afhandling er at bidrage til en øget forståelse for borgernes handlinger i infrastruktur planlægningsprocesser. Mere præcist er formålet at forstå de dynamikker, der former handlingerne hos de borgere, der bliver draget ind i planlægningen af infrastruktur projekter, der potentielt kan have store konsekvenser for deres hverdag. En øget forståelse for borgernes handlinger vil bidrage til at forstå konsekvensen af at leve i et samfund, der er i konstant forandring. Derudover giver den en basis for at forbedre den måde, borgerne bliver inddraget på i forbindelse med infrastruktur planlægning og et udgangspunkt for at skabe borgerinddragelsesprocesser, der er bedre tilpasset borgernes behov.

Borgerinddragelseslitteraturen på infrastrukturuområdet har en tendens til at antage en instrumentel tilgang til at forstå borgernes handlinger. Det betyder, at borgerne primært forstås som aktører i planlægningsprocesser fremfor aktører i deres eget liv. Med udgangspunkt i at denne tilgang er for snæver til at kunne forklare de dynamiske aspekter i borgernes handlinger, forsøger afhandlingen i stedet at forstå infrastruktur planlægning fra et borgerperspektiv, og anskuer derfor infrastrukturprojekter som værende en del af borgernes hverdagsliv – et liv der i forvejen er fyldt med en myriade af andre ting. Der tages udgangspunkt i, at borgerne er situeret i deres hverdagsliv, og at man for at kunne forstå deres handlinger fra et borgerperspektiv må antage en situeret tilgang.

Med udgangspunkt i en situeret og konstruktivistisk tilgang til borgernes handlinger, fokuserer afhandlingen derfor på de interaktionelle processer, der bidrager til at forme borgernes handlinger i infrastruktur planlægningsprocesser. Afhandlingen undersøger desuden de faktorer, der bliver bragt i spil i handlingsskabelses processen, men som ikke nødvendigvis er manifesteret i en form, der kan observeres i det situerede rum. Det betyder, at afhandlingen undersøger to aspekter af handling – de faktorer der bliver bragt i spil, når borgerne skaber deres handlinger og de mekanismer, der former handlingsskabelsesprocessen. Afhandlingen undersøger de to aspekter af borgernes handlinger ved at analysere borgernes handlinger i borgerinddragelses processer, der fandt sted i forbindelse med fire forskellige energi infrastruktur projekter: Et kabelprojekt, et atomaffaldslager, et naturgas lager og et vindmølle testcenter.

Hvad angår de faktorer, der kommer i spil, når borgerne skaber handlinger, viser afhandlingens resultater, at borgere er særligt påvirkede af faktorer, der stammer fra deres hverdagsliv. Disse faktorer kan være menneskelige, materielle såvel som immaterielle, og de udspringer ikke nødvendigvis af den specifikke situation, borgeren handler i. Således er aktører fra både borgerens fortidige, nutidige og fremtidige hverdagsliv betydende for borgerens handlinger. Derudover viser afhandlingens resultater,

at disse betydende faktorer er kædet sammen i netværk, som spiller en rolle i borgernes handlingsskabelsesproces som en helhed. Det antyder, at et snævert fokus på enkelte betydende faktorer er ikke den bedste måde at forstå borgernes handlinger på.

Afhandlingen primære bidrag til området er udviklingen af en ny teoretisk tilgang til at forstå den proces, hvorved borgerne skaber deres handlinger i infrastruktur planlægningsprocesser. Det er en tilgang, som tager hensyn til handlingers konstruktivistiske og situerede natur. Afhandlingen afdækker to supplerende processer, der begge indgår i handlingsskabelsen: 1) En *enactment*-proces, hvor borgere fortolker de myriader af heterogene betydende faktorer, der er til stede i infrastruktur planlægningsprocesser, ind i aktør-netværk med det formål at skabe mening i planlægningsprocessen, og derpå handler på baggrund af den mening, der skabes i netværket og 2) En interaktionsproces, hvor menneskelige aktører, med det formål at skabe mening i den proces de deltager i, skaber en samhandlingsorden imellem dem, som definerer hvilke handlinger, der er meningsfulde at foretage i situationen. Borgerhandling kan derfor, ifølge denne afhandlings resultater, bedst forstås som en vedvarende proces af fortolkning, meningsskabelse og interaktion fremfor for et resultat af indflydelsen fra forskellige uafhængige faktorer.

Afhandlingens resultater er særligt relevante for, hvordan borgerinddragelse praktiseres, fordi den kommer med input til, hvordan borgerinddragelsesprocesser bedre kan tilpasses borgernes handlingsskabelsesproces. Den peger blandt andet på det fordelagtige i at gøre en større indsats for at forstå den kontekst, som borgerinddragelsesprocessen finder sted i, og særligt det lokalsamfund, der danner rammen for et infrastrukturprojekt er vigtigt at have et større kendskab til for at kunne forstå borgernes meningsskabende aktør-netværk. Derudover peger afhandlingen på det afgørende i, at man som planlægger af borgerinddragelsesprocesser ikke forsøger at kontrollere borgerinddragelsesprocessen fuldt ud, men derimod skaber plads til, at borgerne kan fortolke deres egen mening ind i situationen.

CHAPTER 1: INTRODUCTION TO THE RESEARCH AREA

Driven by a variety of forces in an everchanging environment, the infrastructure of society is constantly changing. A particular influential force at the moment are the changes to the climate. Climate change has e.g. forces us to climate-proof our cities by expanding drains and establishing wetlands (McGuinn et al. 2012; The Danish Government 2012b) and has triggered the transition of the Danish energy production resulting in the establishment of renewable energy sources such as wind turbines, biogas facilities etc. (Commission of the European Communities 2009; The Danish Government 2012b). These are all significant changes to the infrastructure of the society.

Infrastructure sustains the way we conduct our everyday lives (Strum and Latour 1987). The way we transport ourselves to work in the morning, do our jobs, and keep warm in the winter all depend on supporting infrastructure and co-existing with infrastructure facilities can have significant impacts on local communities (Cotton and Devine-Wright 2013; Larsen et al. 2015). Infrastructure development is therefore something citizens are forced to relate to (Weick 1995). Deciding how to act in relation to infrastructure development is not straight forward for the individual citizen and matters are further complicated by the fact that citizens are often drawn into the decision-making process regarding these potential changes to their lives. The planning tradition of involving the public in the decision-making process means that citizens are informed about planning initiatives before they start and to varying degrees given the opportunity to influence the development of projects and plans e.g. as part of environmental impact assessment procedures (Agger et al. 2006).

Citizens not only have to consider how to act in relation to the expected changes they are facing, but also need to consider how to engage in planning these changes. Furthermore, public participation processes do not always offer the citizens clarification on how to act. Rather, they often complicate things. Large uncertainties are connected to the information that is offered in the process because the impacts from proposed projects are complex (Newig, Pahl-Wostl and Sigel 2005; Chilvers 2008) and in some situations neither the solution nor the problem is clearly defined (Fischer 2000; Roberts 2000). The planning system that the citizens interact with is governed by multiple rationalities, planning cultures and decision-making structures (Fox-Rogers and Murphy 2016) and multiple stakeholders and interests are at play (Brownill and Carpenter 2007).

Faced with this Pandora's Box of uncertain impacts and complex information that can possibly be life-changing, power struggles between multiple stakeholders with multiple interests, and institutional rationalities that govern the process, how do you imagine you would act? A common response for citizens is not to get involved at all. This response is so widespread that the phenomenon of non-participation has gained special attention in literature on citizen action in a planning context (See e.g. Cleaver 2001; Buchecker, Hunziker and Kienast 2003; Læssøe 2012; Clausen 2016). Another common response is to fight the possible risks connected to projects and plans by opposing them. This often happens by getting involved in the public participation process or by trying to influence decision-making in other ways. Citizens form opposition groups, mobilise other citizens, ally themselves with politicians, use formal channels to complain, demonstrate, and generally do whatever is possible to stop projects. In Denmark, where infrastructure planning traditionally has been characterised by collaboration (Böhme 2002; OECD 2007), large infrastructure projects are more often being opposed by citizens. Projects such as the planning of a nuclear waste repository, the planning of a shale gas plant, and many of the local wind farms have met heavy protests from citizens (Ritzau 2011; Holm 2012; Ladekarl 2015). Between non-participation and opposition lies a range of different ways of relating to developing projects, and this range of actions is equally important to understand despite the prominent focus on opposition and non-participation in the literature (Læssøe 2012; Cain and Nelson 2013; Devine-Wright 2013).

There is a need to understand why and how citizens act in relation to infrastructure development processes in order to create more constructive participation processes that better adapt to the needs of citizens in relation to infrastructure planning. Current practices of public participation are not always constructive in the sense that they have been seen to inspire frustration, concern, and distrust despite ambition to do the opposite (Ibitayo and Pijawka 1999; Eckerd 2017). This creates barriers that discourage citizens from influencing infrastructure development and thereby utilising the democratic potential in the public participation process. It furthermore prevents the utilisation of their knowledge and values in solving wicked problems such as climate change where neither the problem nor the solutions are clear (Fischer 2000). Furthermore, it can have a spill-over effect that causes the citizens to become disconnected from the development of society, causing changes to happen *to* them instead of *with* them. Hence, more constructive processes are needed not only to help developers create a smoother process and assist authorities with avoiding conflict but to genuinely involve the public in the infrastructure development of society.

Besides the instrumental aim of creating a more constructive participation process, it is equally important to better understand how changes to the infrastructure surrounding citizens affect the way they act in the world and the way they act in relation to the process of planning infrastructure development. It has value in itself to understand the

implication of living in a society that constantly changes. Both objectives require a better understanding of citizens' actions in relation to infrastructure development and the related participatory processes.

The citizen perspective on infrastructure development processes has gained some attention in the public participation literature, but typically a planning practitioner approach has been more dominant (Michels and De Graaf 2010; Hafer and Ran 2016). When the citizen perspective is taken, the literature tends to assume an instrumental approach to citizen action by focussing on the barriers that hinder citizens from participating in public participation processes (Cooper, Bryer and Meek 2006; Lowndes et al. 2006; Irwin, Edwards and Tamburello 2015) or what causes them to oppose projects and plans (Cain and Nelson 2013; Devine-Wright 2013). These approaches tend to focus on concepts such as citizens' responses or social acceptance of projects (Bell, Gray and Haggett 2005; Wüstenhagen, Wolsink and Bürer 2007; Zoellner, Schweizer-Ries and Wemheuer 2008).

This dissertation does not distinguish between non-participation and opposition, which are typical ways of approaching citizen action from an instrumental approach. Instead, a broader approach to citizens' actions is assumed. One that focuses on how citizens make sense of infrastructure development and how this sensemaking informs their actions. The dissertation takes a constructivist approach to citizen action by focussing on the processes that contribute to forming actions. The dissertation claims that to understand citizen action in relation to infrastructure development, it is essential to change the instrumental perspective and start viewing the planning process as a part of citizens' lives instead of perceiving citizens solely as actors in planning processes. What citizens react to when they act in relation to infrastructure development is the perceived disturbance to their lives and the expected changes that the project might cause to it (Weick 1995). In other words, citizens are situated in their everyday lives, and to understand citizen action from a citizen perspective, the approach must be situated.

CHAPTER 2: THE RESEARCH PROCESS AND THE PROPERTIES OF ACTION

As stated in the introduction, the dissertation assumes a specific conceptualization of action that comes to define how citizen action is investigated. This conceptualization is inspired by the applied theoretical framework, but mostly it is empirically inspired by what I learned in the course of the research process during my involvement with the infrastructure cases I investigated.

This chapter is inspired by the following quote by Karl Weick (1979) asking the question: “*How can I know what I think until I see what I say?*” (Weick 1979: 5) or adapted to this context: How can I know what I know about action until I describe what I learned? The following chapter is a description of what I learned in the processes of coming to know what I know. The account focuses on the interventions I undertook in cooperation with my main case study Energinet.dk and other cases, the insights into citizen action it inspired, the theoretical and methodological perspectives it caused me to apply, and the articles that came out of it.

During the research process, I gained insight into many aspects of the infrastructure development process: Institutional barriers for public influence on the planning, the resources that goes into the planning of public participation processes, the impact the infrastructure has on people’s lives. However, the main purpose of the chapter is to provide an empirical reason for the conceptualization of action that is assumed in the dissertation which came to define how it is investigated.

2.1 THE CORRUPTION OF AN IDEALIST (AUGUST 2013 - JANUARY 2014)

This PhD project is the result of an ongoing cooperation between Aalborg University and the Danish transmission system operator Energinet.dk, who, I believe, had been thoroughly provoked by my supervisor Ivar Lyhne to develop their public participation practices further. This had led them to offer to act as the main case study for the PhD project. The stated aim of the research project that the PhD project is a part of, is to develop a better understanding of citizen action in public participatory spaces in order to provide a scientific basis for more constructive participatory processes. Hence, there is a clear action research objective that aims at contributing with practical application of the research results.

The first intervention we initiated in cooperation with the transmissions system operator (TSO) was the planning of new methods for public participation in a cable planning project located in the north-western part of Denmark in the areas of Thy, Mors, and Salling. We took as theoretical point of departure prevailing procedural justice criteria such as early involvement, real influence on the decision-making, and transparency (Webler and Tuler 2000; Smith and Mcdonough 2001; Conrad et al. 2011). We began, I would say today, with rather idealistic aims. As a consequence, the planning process was an interesting clash between normative ideals for public participation and a rational planning approach represented by the TSO planners. As the planning process proceeded, trust was gained and mutual understanding was reached during a string of meetings between the TSO planning group and my colleague and I. We succeeded in demystifying the principles for public participation that we introduced to the planning process, and in return, we gained an understanding for the institutional setting we operated in, and the limitations it put on public participation. Conditions such as budgets, time, technical requirements, and lack of experience among planners are substantial barriers when introducing public participation methods in infrastructure planning.

Besides developing new methods for public participation, we conducted a survey of Danish infrastructure planners with the aim of uncovering their experience with public participation in the Danish infrastructure sector. The data inspired the article: *What determines the substantive influence of public participation? An investigation of planners' views on conditions for participatory practices in Denmark*, that investigates the effect of institutional framing conditions for public participation effects (See *Section 6.1: Summaries of articles* for further elaboration).

The methodological approach employed in this period was primarily quantitative, and the empirical focus was on institutional barriers and practitioners of public participation due to the action research approach and the focus on developing novel participatory methods. This can seem misguided and, to some extent, it was. Involving myself in the planning of participation processes provided a rather useful and, I would argue, necessary attentiveness towards the rationalities and barriers that dominate the planning side of public participation practices, but it did not improve my understanding of citizen action from a citizen perspective. Repeatedly, my supervisors asked me where the citizen perspective was in the writings I produced and I generally had difficulty separating the citizen perspective from the planning perspective. The offer from the TSO to let me take primary responsibility for a planned open house event connected to the cable project is an example of how involved in the planning process I was at the time (I declined the offer) and it is a fine example of the challenges I encountered in maintaining the research focus on the citizens' perspective whilst being a part of a project that focused on developing public participation methods.

Despite the challenges, my involvement gradually provided me access to the citizens that participated in the participatory processes initiated by the TSO, which meant that in the last month of this period I could observe one-to-one meetings between land-owners and a TSO representative and public meetings on the planning of a proposed coastal wind farm project and interview citizens. This was the first tentative beginning of getting to know what I now know about citizens' actions in participatory processes.

2.2 IT'S ABOUT THE LITTLE THINGS (FEBRUARY 2014 - JULY 2014)

In the period from February to July 2014, we implemented the participatory method we had developed in cooperation with the planning group in Energinet.dk. It consisted of two open house events that took place in the towns of Sindbjerg and Struer. It took place prior to the submission of the preliminary environmental impact assessment screening, which made it easier to implement changes based on inputs from the public.

For the TSO, the aims of the events were to inform the local community about the cable project and process, to collect local knowledge about e.g. the condition of the soil and future building plans that could be useful for the planning of the cable trajectory, and to give the public an opportunity to influence the trajectory of the cable. Hence, the limits for what was considered relevant and legitimate knowledge were rather set by the TSO. My aims were to gain access to the participating citizens, investigate what they thought about the project, and their reactions to the participatory process. The events had been announced widely in local newspapers and attendance was good with 40-50 participants in Struer and 60-70 participants in Sindbjerg.

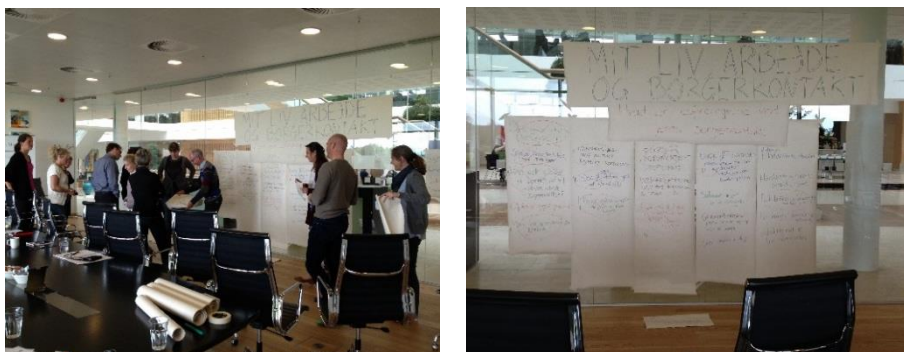


Picture 2.1: Top: The setup at the open house event in Sindbjerg. Bottom-right: Citizens and TSO representative talking at the Sindbjerg open house event. Bottom-left: The setup at Struer open house event.

During the two open house events, we conducted approximately 25 short interviews with the participating citizens to get an idea of why they had chosen to participate and whether they experienced any concerns or expected any grievances caused by the cable project. The interviews gave an impression of the rich variety of concerns and factors that influence the attitudes and actions of the citizens affected by an infrastructure project. In the participants talked about impacts from the materiality of the cable project but also the impact from immaterial factors such as being treated and compensated fairly in the process. An interesting conclusion to the interviews was that it can be rather difficult to predict exactly what factors concern the individual citizen and they are not always the things you would expect. It indicated that being too focused on universal factors is not necessarily helpful. To many of the interviewed citizens it was very individual concerns they held about the project which emanated from their everyday lives.

A second intervention was initiated internally in the TSO in May-June 2014. Here we initiated two future workshops (Jungk and Müllert 1987) with planners from the TSO working with public participation. The aim of the first workshop was to get the planners to reflect on the challenges they met when practicing public participation. The

discussions produced a long list of challenges. From the list, the planners chose the three they found to be the most pressing, challenging, or interesting to work with. They were: 1) We never know what we will meet, 2) The difficulty of identifying the relevant stakeholders, and 3) The internal coordination of communication in public participation processes.



Picture 2.2: Left: Setup for the first future workshop. Right: Results from the first future workshop

At the second workshop, the participants worked on finding solutions to the three challenges that were selected. Among the solutions suggested were: More systematic and professional approach to participatory processes, e.g. by using standardized checklists, better exchange of experience within the organization and competence development in regard to public participation, and generally earlier involvement of the public to minimize conflicts. The workshop gave an invaluable insight into the challenges on the planning side of public participation processes.

The final intervention in this period was a focus group interview I conducted on the Thyholm peninsular that is located in the cable project area. Under the headline: “*Your everyday life, infrastructure, and project involvement*”, I invited local citizens to share their views on how they expected to be affected in their everyday life by the cable project, and what opportunities they saw for them to be involved in the cable project in a constructive way. The process was an interesting talk about the potential synergies that could arise in cooperation between the TSO and the local community. To name a few, the participants suggested that the TSO invited local schools to observe the cable laying as a part of teaching them about infrastructure, or allowed for the opportunity to use dismantled power poles for recreation purposes such as zip wires or observation towers. Regarding the participation process, they stressed the importance of letting the participants talk about the things that concerned them. Otherwise, participatory processes tend to be show trials of involvement rather than real involvement of the

public. They furthermore suggested that neighbors were given the opportunity to negotiate the trajectory for the cable between themselves, because changes made on one property inevitably affect the neighboring properties.

The inputs from the focus group questioned the assumption I had come to hold, that infrastructure projects are primarily a nuisance for the local community and therefore must be mitigated or compensated. This group saw the potential synergies in infrastructure projects and pointed out that positive things can come from the process, if planners and local communities are attentive to the opportunities and allow them to evolve.

The methodological approach employed in this period was primarily qualitative and, except for the workshops, my primary focus had shifted to the citizen side of the infrastructure development process. What I learned in this period was that there are many factors that influence the citizens' actions - material as well as immaterial. The factors are situated in the everyday lives of the citizens and are diverse. Examples are: The effects on horses in a riding school, the impact from magnetic radiation, and disturbance to harvesting routines, which all emerged from the open house events. The results from the workshops suggested that it is this multitude of factors that makes it difficult for planners to predict what will happen in participatory spaces and processes and to act constructively.

The insight into the variety of factors that motivated the citizens' attitudes and actions related to the cable project inspired me to apply a theoretical framework that could explain how individuals handle the multitude of possible meaningful factors. The sensemaking perspective inspired by Karl Weick (1995) proved helpful due to its focus on how the individual enacts different cues and makes sense of events by creating plausible stories of what is going on (See *Section 6.3.1: Theoretical frame applied in the articles* for an elaboration on the sensemaking perspective). The sensemaking-perspective inspired me to view actions as a process of *action formation* rather than a reaction to influential factors.

The observations and interviews I had conducted in the one-to-one meetings between TSO representatives and landowners in the previous period furthermore showed that many of the meaningful factors influenced each other. This made necessary a theoretical perspective that could explain the interrelationship between actors. The Actor-Network theory (ANT) introduced by Bruno Latour (2005) and Michel Callon (1986) proved helpful as it focuses on how actors are recruited to a network in a process of translation and thus come to influence other actors in the network (See *Section 6.3.1: Theoretical framework applied in the articles* for further elaboration on the ANT perspective). An additional contribution of the ANT perspective is that it has a unique

way of combining the impact from human and material actors in one collective network (Latour 2005). This gave me a way to understand the influence of the materiality of the infrastructure project that was indicated by the interviews from the open house events.

The insights into the interconnectedness of actors in the individual's sensemaking process and the effect it had on citizens' actions inspired the article: "*Beyond public acceptance of energy infrastructure: How citizens make sense and form reactions by enacting networks of entities in infrastructure development*". The article investigates how citizens in infrastructure planning processes combine actors into meaningful networks, which helps them make sense of events such as infrastructure planning processes and form actions in relation to them.

2.3 NO MAN IS AN ISLAND (AUGUST 2014 - MARCH 2015)

The final intervention in the cable project was conducted in March 2015. It was partly inspired by a suggestion that originated from the focus group interviews on Thyholm to let neighbors negotiate the position of the cable trajectory together. Allowing the citizens to exercise a greater influence had been a theme in our cooperation with the planning team from the beginning, but substantial doubts had been expressed by the planning team in relation to letting citizens assume more responsibility and decision-making authority. They worried that the most resourceful participants would be allowed to dominate the decision-making process, thereby making the process undemocratic, and that the participants would not be able to look past their own interest, which would make it difficult to reach agreement and make interactions very conflictual. The fact that they agreed to let me conduct an experiment where substantial decision-making authority was transferred to the citizens is a testimony of the process we had gone through together and the trust that had been built in the process.

We named the experiment "Cable planning by means of neighbor dialogue" – nicknamed the "Draw a line-experiment." The setup was to let neighbors decide among themselves where the cable trajectory should be placed. Sixteen landowners who lived along the proposed cable trajectory on Thyholm participated in the collective meeting. They were divided into four groups who, on the basis of a proposed trajectory from the TSO, negotiated where to place the cable on their properties. Following that, the TSO representatives discussed the solutions with the groups. The groups worked within the limits that their proposal could not be significantly longer than the TSO's proposal, the trajectory of the cable could not be curved too much due to technical limitations, and they had to respect the boundaries of a 200-meter broad planning zone that had been preapproved by the Danish Ministry of Environment.



Picture 2.3: Bottom and top-right: Neighbour groups discussing the cable trajectory. Top-left: the result from the discussion in one of the neighbour groups.

The experiment went well in the sense that the conflict level was very low, agreements were reached in all groups, and the participants that I interviewed afterwards were all satisfied with the opportunity to influence the cable trajectory. This was despite the fact that solutions seemed to favor the status quo and very few changes were actually made.

In the same period, I was presented with the opportunity to observe another round of one-to-one negotiations between landowners and a TSO representative, also related to the cable project, and it was evident that the interactions were quite different compared to the “draw a line”-experiment. Something appeared to make the collective meeting considerably less confrontational than the one-to-one meetings. This prompted me to consider the effect of the interactions taking place in the participatory spaces and the effect it had on the citizen’s actions. The significance of interactions had already been hinted at in the Sensemaking-article where the effect of the interaction with the negotiator in the one-to-one meetings seemed to influence the citizens’ actions.

In order to better understand the significance of interactions for citizens' actions, I applied an ethnomethodological approach that focused on the conversational interactions taking place in the collective meeting and in one-to-one negotiations, I had observed earlier. I approached it by use of Garfinkel's (1967; 2006) and Goffman's (1967; 1983) perspectives on situated orders in interactions. The analysis inspired the article: *Exploring the significance of situated orders for citizen action in spaces of public participation*, which investigates how situated orders are enacted by citizens in spaces of public participation and the effect they have on the participants' actions. (The article can be found in Appendix A).

In addition to the cable planning case, I observed other infrastructure cases in this period as a way of broadening my insight into citizen action. One of the cases was the planning of a nuclear waste repository conducted by the Danish Ministry of Health and Prevention. The planning process was rather conflictual and opposing citizen groups had been formed in the five locations that had been appointed as possible locations for the nuclear waste repository. To investigate what motivated the citizens who participated in these citizen groups, we conducted a survey among the members of the groups in August 2014. The results from the survey inspired the article: *Citizen self-mobilisation, motivational factors and the group of most engaged citizens: The case of a radioactive waste repository in Denmark*, an article that quantitatively investigates the factors that motivate the most engaged citizens, who tend to engage far more in the planning process compared to the average citizen (Blomqvist 2004). The nuclear waste case was also included in the article: *Social impact assessment in Europe: A study of social impacts in three Danish cases* along with two other conflictual infrastructure cases: The planning of a wind turbine test center at Østerild in Western Jutland and a gas storage facility at Lille Thorup in Central Jutland. This article reviews how social impacts and public concerns are handled in the three cases and discusses the effects it has on citizens' actions. (The article can be found in Appendix A).

The survey results were presented to the Ministry of Health and Prevention as an input in the debate regarding the Strategic Environmental Assessment (SEA) that was under preparation. It resulted in a meeting between the research group and representatives from the ministry, where we were granted an opportunity to give inputs to improve the participatory process that had at the time been derailed by conflict. It resulted in the report: *Potential repository for nuclear waste – Survey of citizens in the affected areas. Recommendations and results* (Aaen et al. 2014). Inter alia, the report made the following recommendations: To increase the use of non-technical language in communications with the public; to re-establish trust in national authorities, e.g. by using international experts; to seriously consider the citizens' concerns regarding social and economic impacts from the project; and to respect that the citizens' risk assessments are different from that of the experts.

Compared to the cable case, it was obvious that there was more at stake for the citizens in these cases. The conflict level was higher, the impacts more intrusive, and the rhetoric far more confrontational. The nuclear waste case, especially, was a politicized process and it demanded that we as researchers were very clear about the objective of our involvement and our premises for conducting research in the process. For me, it was a valuable lesson in how to act when the line between science and politics become blurry.

At the end of this period, I withdrew from the cases and focused on writing up my results. Because I had focused a great deal on developing participatory methods and allowed myself to get involved in the events that arose in connection to the cable case, my focus on systematic data collection and a rigorous research design had been sporadic. The consequence of this hit me when I looked through my data. Though wide-ranging, it lacked consistency. This meant that data from the majority of the public participation processes I had observed could not be utilized in the articles. There were interviews from a string of public meetings regarding a proposed coastal wind farm, a public meeting relating to the gas storage facility, the public meetings held in connection to the cable, the two open house events, and the focus group interview at Thyholm. This sporadic data collection is something I would do differently next time around. However, it was not all wasted as it did provide me with a deeper understanding of the citizen perspective on infrastructure planning and the nature of citizen action in planning processes.

The nature of the process also meant that I decided to abandon my ambition of analyzing a full process of public participation from early project development to implementation in the cable case as the data was too fragmented. I realized that I had no idea what happened between the participation events that I had taken part in. This caused me to focus more on the participatory spaces, for which my data was more comprehensive.

2.4 WHAT'S THE USE OF IT ALL? (MARCH 2015 - APRIL 2017)

The aim of the PhD fellowship has been twofold. The primary aim has been to provide scientific knowledge that will further the understanding of citizens' actions in infrastructure development processes. The secondary aim has been to apply this knowledge in developing more constructive participatory processes. The remainder of the dissertation will focus on the primary aim and discuss the motivation and dynamics of citizen action. The results we achieved in the process of developing constructive methods for public participation will be discussed in this section. During my PhD fellowship, my primary involvement was in two planning cases: The cable project and the nuclear waste repository.

The involvement in the planning of the nuclear waste repository had different impacts. The survey of the social impacts and public concerns related to the potential nuclear waste repository had the immediate effect that the citizens' concerns to a greater extent were considered in the strategic impact assessment (SEA). In 2015, the results from the SEA on a final repository (Ministry of Health and Prevention 2014) and a "basis for decision" regarding an intermediate storage were published (GEUS and Danish Decommissioning 2015). The following political discussion had two implications: Further investigation of the intermediate storage solution was initiated and the responsibility for the process was moved from the Ministry of Health and Prevention to the Ministry of Education and Research. This marked a switch in the planning and public participation process, that up until then had been criticized for being closed and undemocratic (Morads 2017). New inclusive initiatives were adopted: A contact forum between the Ministry and participants from citizen groups was established, a panel of neutral experts was formed, and DCEA (my research group) was asked to give inputs on how social and economic impacts could be investigated in regard to an intermediate storage (Hansen and Kørnøv 2016). Pressure had been put on the Ministry from many sides, so the changes to the public involvement in the planning process were not caused by our involvement alone. However, I believe the survey did have the effect of putting citizens' concerns regarding the social impacts from the waste repository on the agenda. A perspective that up until August 2014 had been neglected.

The changes that occurred to the public participation practices in Energinet.dk can, to a greater extent, be traced directly back to our involvement. Prior to our cooperation, the TSO already focused a great deal on public participation and they had a great will to further improve their practices. Therefore, the precondition for change was good.

In November 2015, I conducted an interview with the planning group that we had been cooperating with since 2013 to evaluate the process. They pointed to several changes to their public participation practices that had been inspired by our cooperation. The open house method had become an integrated part of the public participation practices in the organization, and descriptions of the method had been made to support dissemination beyond the small group of planners whom I had worked with. Based on the workshops, a forum to exchange experiences concerning public participation was formed across project groups and sections in the organization to support the development of competences in the area of public participation among the planners. The initiative that suffered the hardest fate was the experiment of letting the neighbors negotiate the trajectory. Even though the advantages such as participant satisfaction, access to local knowledge and conflict prevention were obvious, the TSO focused primarily on the potential for saving time and resources in the planning process by replacing previous one-to-one meetings with a collective meeting. Finding that the time saving would be limited, they chose not to implement the method. Perhaps a little surprising

considering that the TSO chose not to implement the method, they nevertheless entered the event in the running for “Best Practice Award 2016” granted by the European network for TSOs and won. The TSO’s decision not to implement a method that was positively evaluated by the citizens (and the European TSO network) based on resource considerations only serves to illustrate the significant differences that exist between the rationality of citizens, scientists, and planning authorities.

However, the most substantial change in my view was not the procedural changes, but the changes to how citizens were perceived in the planning group. In the beginning of our cooperation, the planners were positive towards improving the participation process as a way to avoid conflict and delays, but they had great difficulties picturing a space for public involvement in the planning process. The unpredictability of the public space was difficult for them to combine with the constraints of a rational planning regime. Furthermore, they had difficulty translating input from local citizens to usable information in the planning. However, a noticeable change appeared during our cooperation. Constraints considered self-evident could eventually be discussed and ideas, which were deemed impossible in the beginning, were at a later point considered realistic. The public changed from being an actor that the planners offered information too, to being an actor that they could benefit from getting information from. I believe the most important change brought about by the research project was to start this process of demystifying the public.

The action research process has shown that an important element in the change process was sharing a practical case with the planners where I had the opportunity to suggest specific ways of changing their participatory practices and testing new methods of involving the public. Furthermore, it provided us with a forum where we could develop mutual trust, which proved to be an important prerequisite for change. As it might transpire from the description, I ended up being rather involved in the field of my study. Kjørnø et al. (2011) identify three modes for engaging with one’s research field: Mode 1) Conducting research independently from the field. Mode 2) Conducting research that is driven by societal partners and 3) Conducting research in cooperation with the field, taking as point of departure problems as they are experienced in the practice field. Realizing that it would be impossible to facilitate change in an organization without involving myself in it, I assumed Kjørnø et al.’s (2011) mode 3 and the classical value of neutrality in research was quickly abandoned. Nielsen and Nielsen (2006) frame the problem of neutrality rather precisely, claiming that a neutral research position is impossible, as the researcher would end up constructing a reality of depicted neutrality and studying that instead of the reality. This ontological trap is avoided by accepting the subjective role of the researcher. Furthermore, the advantage of conducting mode 3 research is not only the generation of knowledge in cooperation with the field, but the ability to make this knowledge actionable through dialogically

structured processes (Gustavsen 2007). This made the action research inspired/mode 3 approach a suitable and valid method for conducting research in this context.

Having discussed what I achieved and learned during my fellowship as well as my role in the process, the attention now turns to discussing the primary aim of the PhD project – understanding the actions of citizens in infrastructure development processes. To that end, it is helpful to recap the insights into the properties of action that were gained in the research process as they have informed the theoretical framework for the dissertation and influenced how action is investigated in the specific articles. The research process indicated that action is:

- Meaningful for the citizen
- Situated in the everyday lives of the citizens
- A process of action formation not merely a reaction to influential factors
- Social and influenced by interactions between humans and
- Influenced by actors that can be human, material, or immaterial

As a first step in the remaining dissertation, the aim and research object will be defined and the relevant actors and space will be delimited.

CHAPTER 3: RESEARCH QUESTIONS AND DEFINITION OF ACTION

The aim of the dissertation is to contribute to the understanding of citizen action in relation to infrastructure development processes. A better understanding of citizens' actions can help facilitate more constructive participatory processes that will allow for the utilisation of latent resources in civic society in solving wicked problems and for the public to utilise the democratic potential in public participation processes. In a slightly broader perspective, it will also contribute to understanding how the ongoing changes to the infrastructure of society come to influence actions of citizens living their lives in this ever-changing process. The overall research question that is guiding the dissertation is:

How can citizens' actions in relation to infrastructure development be understood?

The focus on action is motivated by several conditions: It is by acting that citizens constitute themselves as relevant in a social situation or process; it is by acting that citizens can affect the course of processes and change plans and projects; and it is through citizens' actions that we get a glimpse of citizens' underlying motivations, thoughts, feelings, and values related to infrastructure development.

To approach the research question, it is necessary to have a clear definition of action. The definition assumed here is based on the empirical insights that were gained during the research process. Nominally, action is defined as:

“The performance of some activity or deed, typically to achieve an objective.” (Oxford English Dictionary).

Different approaches to action focus on different elements of this definition. Some approaches in the public participation literature within infrastructure planning tend to define action as the result of a process and to focus on the activity or deed e.g. opposition to a project (Upham and Shackley 2006; Cain and Nelson 2013; Hartmann et al. 2013; Walter 2014). In this dissertation, the focus is on the performance part of the action - the process of action formation, rather than the result of the process. Furthermore, based on the theoretical framework of the dissertation and the empirical insights, it is assumed that action is formed in relation to human, material, and immaterial stimuli, but the relationship is mutual. Hence, citizens do not passively react to stimuli but actively form actions by relating to stimuli (Garfinkel 1967; Goffman 1967; Weick 1995; Latour 2005).

Two different conceptualisations of action are applied in the dissertation: action as enactment and action as interaction. Enactment is a concept inspired by the sensemaking theory and is defined by Weick (1995) as a reciprocal process where individuals act to make sense of unexpected situations and by acting they contribute to forming the environment they are interpreting. These interpretations of the situation again inform what actions the individual takes. Hence, enactment is the process of acting order into the world (Weick 1995). Interaction is a more generic sociologic term that is defined in a number of ways in the literature. One of the most basic approaches defines interaction as; “*activity of actors towards each other*” (Timasheff 1952: 177). Wilson and Kolb (1949) add to the definition that a modification of behaviour takes place in interactions between actors; finally, Cuber (1947) and Goffman (1983) add that this process of modification is reciprocal between individuals. This dissertation builds heavily on the conceptual framework of Garfinkel (1967; 2006) who, besides the properties already mentioned, adds to the definition of interaction by stating that it is an activity between committed individuals with the aim of creating intelligibility which is a condition for achieving personal projects. Hence, according to him, meaning is a central aspect of interaction and action is situated. This means that action makes sense primarily in the situation in which it occurs.

Both enactment and interaction are essentially social phenomena in the sense that they take place in relation to and with other human, material, and immaterial actors. The definition of action employed in the dissertation thus resembles Weber’s (1922/1962) concept of social action or social behaviour which he defines as action that first of all is meaningful to the individual and second of all takes into consideration the actions and reactions of others and relates to those (Weber 1922/1962).

A consequence of the employed definition of action is that to understand action, it is necessary to understand both the stimuli that come to influence action and the process of action formation, since there is a reciprocal relationship between the two. The dissertation therefore asks three sub-questions:

- 1) What factors come into play when citizens form action in relation to infrastructure planning processes?
- 2) How does the association of human, material, and immaterial actors influence the formation of citizen action in relation to infrastructure planning processes?
- 3) How does the process of human interaction influence the formation of citizen action in relation to infrastructure planning processes?

The first research question relates directly to the research field on social acceptability and citizen response to infrastructure developments that tend to focus on the factors

that influence citizen action (Bell et al. 2005; Wüstenhagen et al. 2007; Zoellner et al. 2008). The influencing factors are thus important to study in order to contribute to the field of public participation in planning. However, the primary focus of the dissertation is on the second and third research questions, which are more directly aimed at understanding the action formation process.

3.1 SPECIFYING ACTORS AND SPACES

Having defined the dissertation's study object – action, a remaining task is to narrow the scope of the research questions by specifying who the relevant actors are and what the relevant spaces are to study action in.

The relevant actors are presumably easy to identify, since the focus is on citizen action. However, not every citizen is relevant to consider. In the public participation literature, a consensus has generally emerged that the relevant citizens to involve in public participation processes are those who are affected by a proposed project or plan (Burton 2004; Dietz and Stern 2008). Yet, assessing who is affected is no easy task and vary according to who makes the assessment. In practice, public participation processes are often advertised broadly to offer anybody with a self-defined interest an opportunity to participate (Glucker et al. 2013). Hence, the citizens themselves contribute to defining who the relevant public is by showing interest and acting. The dissertation follows this practical approach that also aligns with insight from the actor-network theory (Latour 2005), and assumes that the relevant actors are the ones who act in a situation and thereby constitute themselves as being part of and relevant to the situation. The same point is stated by Goffman (1967), who defines a social situation as constituted by the actors who act in it. This specification also explains why it is action and not *attitude* or *meaning* that is the study object in this dissertation. Because it is by acting that citizens become relevant actors in the planning and participation process.

The space in which action is studied is broadly defined in the research questions as infrastructure planning. This is narrowed further by focusing on cases of energy infrastructure planning. Energy planning is chosen as a case partly because it is an area where wicket problems exist which makes the involvement of the public an important part of the planning and partly because the infrastructure of the energy sector is undergoing significant changes. The Danish government's energy strategy dictates that the Danish energy supply must be 50% covered by RE-technology in 2020 and be fossil-free by 2050 (The Danish Government 2012a). This entails extensive changes to the energy production in Denmark by implementing primarily wind energy, solar energy and biogas in the energy production (The Danish Government 2011). For the population of Denmark, this means an increase in RE-facilities - especially wind turbines and supporting power grids.

The energy sector is characterized by the fact that the benefits from establishing wind turbines and supporting power grid for example, are mostly national or international. These could be a more reliable energy supply or reduction of CO₂. In contrast, the disadvantages are often locally placed as it is the nearest neighbours who must endure the impact from noise, light, and so on. This means that it can be difficult to gain support in local communities for energy projects, which makes constructive involvement of the public challenging. Furthermore, the importance of a reliable energy system means that consideration for the common good is dominates decision-making related to these projects. Therefore, local considerations are difficult to include in the planning, creating yet another challenging condition for the involvement of local citizens. Consequently, the planning context constitutes a significant barrier for constructive public participation. These challenges do not differ significantly from other cases of infrastructure planning, which suggests that generalisation to citizen action in other infrastructure development processes based on the chosen energy cases is possible.

The space is further delimited to the formal public participation process and the interactions that take place in these processes. Formal spaces of public participation are understood as spaces that are designed by the planning authority with the specific aim of involving the public.

The concept of space is defined using Doreen Masseys (2005; 2009) definition of space as a situated dynamic entity. In her approach, space is continuously changing and will always be in an on-going process of construction and change because it ultimately consists of relationships between actors. Hence, space or at least meaningful space only exists because actors relate to it and form relationships on the basis of space (Massey 2009). For Massey, space is not only a physical locality but rather a relational space between human actors. This also means that a space can have multiple meanings for different actors at the same time. Or, as Massey terms it, space has multiplicity (Massey 2005). Following Masseys definition, spaces form in all parts of society and informal spaces formed between citizens would therefore be equally relevant to consider when understanding citizens' actions related to infrastructure planning processes.

The choice to delimit the scope to formal participation processes in the energy planning processes is partly a methodological consideration and partly a theoretical consideration. The methodological argument is that citizens' actions are most visible and accessible in these formal and public spaces of interaction. The theoretical argument is based on the assumption that action is situated. This means that action is influenced by the situation in which it occurs and that action thus should be studies in a situated context. This is the reason, specific spaces in the participation process are chosen for

analysis – to capture the situated context. Apart from that, the dissertation aims to contribute to the scientific field of public participation which often only consider the formal spaces in the process.

After having defined the aim and research object of the dissertation and delimited the relevant space and actors to study, the following chapter will proceed to review the literature on citizen action in infrastructure development processes in order to learn from the existing body of work and get an idea of where the dissertation might be able to contribute to the field.

CHAPTER 4: THE STATE-OF-THE-ART

- APPROACHES TO UNDERSTANDING CITIZEN ACTION

The effort to understand citizens' actions has been approached from a range of different scientific disciplines and theoretical perspectives. This means that even though the scope is narrowed considerably by focussing on citizen action in public participation processes, the theoretical perspectives that feed the approaches in this area of research are still very versatile. Consequently, the studies included here have been delimited to the research fields: Public participation in infrastructure processes, social movements, and environmental behaviour.

Different scholars have attempted the task of categorizing approaches to citizens' actions. Six reviews are included in this chapter, and they all have slightly different scopes. Pinard (2011) as well as Bate, Bevan, and Robert (2004) focus on motivational factors for collective action towards various policies, plans, and projects; Læssøe (2012) aims at understanding what motivates non-participation in sustainable development projects; and finally, Devine-Wright (2006; 2013) and Burningham, Barnett, and Thrush (2006) aim at understanding individual action in relation to energy infrastructure. The reviews by Devine-Wright (2006; 2013) and Burningham et al. (2006) are perhaps the ones that are most directly related to the dissertation since they treat citizen action in energy planning. They are, however, limited when it comes to interactional approaches to citizen action, since not much research in interactions has been conducted in the area of energy planning (Nothdurft 1995; Perold 2005). For this reason, studies are included from adjacent research areas such as social movements (Bate et al. 2004), environmental behavior (Læssøe 2012), and environmental justice (Walker 2009), as well as research in citizen action in infrastructure planning more generally speaking. In these areas, interactional approaches to citizen action have played a greater role.

The categorizations applied in the six reviews have inspired the structuring the literature review. They are illustrated in Table 4.1.

Burningham et al. (2006)	Devine-Wright (2006)	Devine-Wright (2013)	Bate et al. (2004)	Pinard (2011)	Læssøe (2012)
Individual	Social-Psychological	Place related	Rational	Grievance and deprivation	Individual psychological
Social/structural	Contextual	Person related	Emotional	Achievements	Cultural/collective
		Project related	Social/normative	Collective behavior	Structure and societal actors
			Behavioral	Moral obligation	Process
			Organisational		
			Leadership		

Table 4.1: Categorisation of approaches to citizens' action in spatial planning processes

The structuring of the literature review, took as the point of departure the studies of Devine-Wright (2006; 2013) and Burningham et al. (2006), who separate individual and contextual approaches. In addition, Devine-Wright introduces the category “project related factors” which include many of the studies that focus on infrastructure projects. Lastly, the framework includes interactional approaches, which are sparsely covered in the energy infrastructure literature, but are more carefully considered in the social movement and environmental behavior literature. In summary, the four overarching approaches to understanding citizens' actions in participatory spaces that will be reviewed in this chapter are: An individual approach; a project and process approach; a contextual approach; and an interactional approach. The six reviews were supplemented by literature searches on concepts that are widespread in the literature on citizen action in an infrastructure development context. The search was done on words such as: “citizen response,” “social acceptance,” “citizen opposition,” and “public participation.” The search has primarily been conducted by use of the search engine Web of Science and the local library at Aalborg University. Studies found by use of this method were categorized according to the constructed framework. The four approaches will be discussed further in the following sections.

4.1 THE INDIVIDUAL APPROACH

The individual approach can be divided into three subcategories that concern the influence of socio-demographic characteristics, socio-psychological characteristics, and cognitive characteristics of the individual.

The socio-demographic approach focuses on factors such as gender, age, education, and income when explaining citizens' actions in participatory spaces. The central assumption is that citizens' actions are influenced by socio-demographic characteristics

of the citizens. Studies have e.g. found that high income leads to support for renewable energy projects, which means that high income groups more rarely oppose these kinds of projects (ICM Research 2005; MORI Social Research Institute 2004). However, studies focusing on socio-demographic explanations have generally had a hard time finding consistent results. For example, age has been found to affect the public acceptance of infrastructure projects both negatively (MORI Social Research Institute 2003; ICM Research 2005; Firestone and Kempton 2007) and positively (Vorkinn and Riese 2001), and gender only occasionally shows significant correlation with acceptance (Vorkinn and Riese 2001; Devine-Wright 2006). Devine-Wright (2011), in his study of a tidal energy case, finds no effect of socio-demographic factors on acceptance at all, which leads him in a later study to conclude that the effect of socio-demographic factors is best understood as context dependent factors. He points to project related factors such as type and scale of the technology proposed as intervening factors (Devine-Wright 2013).

The socio-psychological explanations of citizen action take as point of departure that citizens' actions are shaped by the citizens' basic psychological or social needs. Scholars in this group have two different understandings of citizens. The rational choice approach assumes that citizens engage in infrastructure development processes out of self-interest as a way of maximizing goals and aspirations (Bate et al. 2004; Pinard 2011) or as a way of minimizing objective or felt grievance and deprivation (Pinard 2011). Other scholars such as Flam (1990) suggest that emotions are equally important when understanding citizens' actions since they not only trigger engagement in a participatory process, but also foster loyalty to likeminded citizens which maintain engagement in the process (Adams 2003). Emotions can, however, also prevent citizens from participating and scholar such as Moser (2007) and Læssøe (2012) argue that feelings of powerlessness can lead people to block out grievances caused by a planned project because they see no way of changing it.

A specific branch of socio-psychological explanations is the place attachment approach. The place attachment perspective focuses on the citizens' attachment to the place they inhabit, how they use the place, how their identity is tied to it, and how a proposed project agrees with these perceptions of place and identity (Venables et al. 2012; Michaylov and Perkins 2014). The general claim is that if a proposed project threatens citizens' perception of their place and subsequently their identity, they will react in terms of opposition to the project (Bonaiuto, Breakwell and Cano 1996; Stedman 2002). Devine-Wright (2009) finds that proposed projects trigger a process of becoming aware of the project, interpreting the change to place, evaluating the change, and initiating coping responses, which can be acts of opposition or acceptance. This can be both an individual process but also a collective one. Hence,

whether people react with opposition or acceptance is influenced by their interpretation of the threat. Bailey et al. (2016) among others, furthermore find that citizens' initial attachment to the place is an influential factor in shaping their responses to place-threats. Some scholars point to the strength of the place bond (the stronger the attachment the stronger the opposition to threats) (Vorkinn and Riese 2001), while others point to the nature of the attachment (the more active the citizen who is involved with the place, the more they will engage in opposition) (Devine-Wright 2013). Common to these approaches are that citizens' actions are shaped by their attachment to the place where a project is proposed, and their perception of whether the project threatens the place and the identity they have tied to it.

Finally, the cognitive approach focuses on explanatory factors that influence the way individuals perceive the world and the project development process, they are subjected to. The focus is on factors such as awareness and understanding of the issue at stake (Kemp and Nielsen 2009), processing of information (Dunwood 2007; Hulme 2009), perception of risk in connection to the project (Upreti 2004), prior experience (Devine-Wright, 2006; Aaen, Kerndrup and Lyhne 2016) and values and beliefs (Kempton et al. 2005). Poortinga et al. (2006) find that especially beliefs regarding the environment are decisive for citizens' response to the siting of renewable energy infrastructure (RE-technology). Hence, if individuals are concerned about the environment, they are more likely to support the siting of RE-technology in their local area. Warren et al. (2005) object to this conclusion stating that environmentally concerned individuals can be found amongst both supporters and opponents. What differs is what level their concern is oriented toward. Individuals concerned about the local environment will oppose whilst individuals oriented towards the national or global environment are more likely to support a project.

The citizens' awareness towards information and their ability to process and understand it has especially been discussed within the early NIMBY approach (Burningham et al. 2006). Parts of the discussion build on the general assumption that citizens were opposed to projects because they lacked information or could not grasp the technical information (Burningham et al. 2006). This has since been contradicted by various scholars, e.g. Barnett et al. (2008) and Fisher (2000) who find that citizens who involve themselves in opposition to a project become very knowledgeable about the project they oppose. Likewise, Petts (1997) argues that citizens are actually rather active in finding and assessing available information.

Perspectives focusing on one singular explanatory factor related to the individual can have difficulty in consistently explaining citizen responses in spaces of public participation. More often it is an interplay of factors that explain behavior. This is the argument of Ladenburg (2010) who calls for a more holistic approach to citizen responses by focusing on a variety of factors influencing citizens' responses such as experience, everyday practices, and perception of identity. Passy and Guigni (2000) suggest that

these factors originate from different “life-spheres” in the individual’s life such as family, work, and leisure and that they are given different prioritization according to the stage of life the individual is at. According to them, individual explanations of action should therefore not only focus on personal traits of the person such as gender, age, experiences, values, and so on, but focus more on where the person is in his or her life and which actors are present in the life-sphere that are dominant at this stage. Common to these individual explanations of citizen action in participatory spaces is that action is motivated by individual characteristics, be they socio-demographic, socio-psychological, or cognitive.

4.2 THE PROJECT APPROACH

The project approach is commonly used to explain opposition to energy infrastructure development, and studies point to factors such as distributive- and procedural justice in the participatory process in connection to the development of the project as determinants of citizen action (Bell et al. 2005; Gross 2007; Haggett 2011). Distributive justice concerns the citizens’ perceptions of the distribution of advantages and disadvantages in connection to a project (Wüstenhagen et al. 2007), and procedural justice concerns the perception of fairness in the decision-making process. It regards factors such as trust, influence, access to information, and many others (Beierle and Konisky 2000; Rowe and Frewer 2000; Smith and McDonough 2001). The lack of distributive- or procedural justice is generally found to cause citizens to oppose a project (Cotton and Devine-Wright 2011; Aas et al. 2014; Knudsen et al. 2015). Upham and Shackley (2006) find that lack of procedural justice not only affects the citizens’ opinion of the proposed project, but also makes them distrust the actors involved and the information they gain from these actors. Hence, lack of procedural justice in one project can have repercussions for subsequent projects because these experiences of distrust influence perceptions of projects later on.

Another project related factor that has been a dominant explanatory factor of citizen action since the 1980s is the term NIMBY (Not-in-my-back-yard). NIMBY is defined as:

“...the protectionist attitudes of and oppositional tactics adopted by community groups facing an unwelcome development in their neighbourhood (...) Residents usually concede that these “noxious” facilities are necessary, but not near their homes” (Dear, 1992: 288).

NIMBY is thus a paradoxical term in the sense that it describes both feelings of support and opposition towards a project at the same time. A common way of investigating the significance of NIMBY attitudes for citizen action has been to measure the

proximity to the project. The claim is that the closer the citizens are living to a proposed development project, the stronger they will oppose it. Some have found it to be explanatory of citizen opposition (Freudenburg and Pastor 1992; Swofford and Slattery 2010), but results are not conclusive as opposite results have also been found (Warren et al. 2005; Devine-Wright 2006). The NIMBY approach has suffered critique from scholars who argue that the term is unhelpful in understanding opposition, because it assumes that the motives behind NIMBY attitudes are either selfishness or ignorance (Burningham et al. 2006; Aitken 2010). It therefore ends up discrediting the motives behind the citizens' objections instead of helping to understand them (Burningham 2000; Gibson 2005; Burningham, Barnett and Walker 2015). Moreover, it has been difficult to empirically prove the existence of NIMBY attitudes, as the combination of opposition to a project and general support for renewable energy is rare or at least it is seldom the only motivation behind citizens' opposition (Wolsink 2000; Bell et al. 2013). Dismissing the use of the NIMBY concept as an explanation for citizen action, scholars have instead turned their attention to the discursive and strategic role of the term in siting conflicts. They argue that NIMBY is often used to discredit opponents in siting conflicts indicating they are ignorant or selfish in their efforts to oppose a project. Therefore, citizen groups will go to great lengths to avoid the label by carefully formulating their opposing arguments in ways that they are not construed as NIMBY-arguments (Heiman 1990; Walsh, Warland and Smith 1993).

The final project and process related approach that will be discussed here is the framing approach. In this perspective, citizens' actions are influenced by the way the project and the relating participatory process are framed. Futrell (2003) shows in his study of an incineration plant in the United States that the way the opposing citizen group argued against the project was affected by the available solutions known to them. Hence, in this perspective solutions will sometimes create the problem and only when it is established that alternative solutions exist, will the public oppose the proposed solution (Burningham 1998). It should, however, be noted that the status quo is often the most preferable alternative for opposing citizen groups, which is enough to prompt opposition.

Common to the project and process explanations is that traits of the proposed project or the participation process motivate citizens' actions.

4.3 THE CONTEXTUAL APPROACH

The contextual approach assumes that explanations for citizen action or perhaps more accurately constraints on citizen action derive from the societal context in which the infrastructure development process is embedded. The context of infrastructure development processes in all its diversity cannot be captured in one review and this review

is therefore not an exhaustive list of every contextual factor that might influence citizen action. Instead the review focus on two kinds of structures that have been found to influence individual behavior in participatory spaces: Power structures and discursive structures or social norms.

The power perspective assumes that participants will act within the boundaries set by external structures of power (Brownill and Carpenter 2007). The claim is that participatory spaces can never fulfill the Habermasian requirements of “ideal speech situations” where every participant must have equal capabilities and conversations must be void of any economic dependencies (Habermas 1989), because participatory spaces are never equal (Pollock and Sharp 2012). Some scholars point to the inequalities between citizens and planners due to unequal distribution of knowledge and capabilities (McGuirk 1995; Dargan 2009), while others point to the inequalities between members of the public as determining for citizens’ actions (Flyvbjerg 1998; Fox-Rogers, Murphy and Grist 2011). The power structures in the participatory space seem to affect the decisions taken on the basis of the participatory process. Pløger (2001), for instance, shows how decisions taken on the basis of collective participatory processes often seem to reflect the objectives of the most powerful actors in the process.

Johansen and Chandler (2015) identify three specific mechanisms of power that are used to control the actions of the less powerful: Structuring of criticism, e.g. into legitimate and illegitimate criticism, institutionalization of knowledge where individuals frame themselves inside different institutional contexts to back their arguments, and the strategic undermining of others’ objectives. Common to the power perspectives are that even though power is a societal structure, it becomes relational because it is transported and enacted by participants into the participatory spaces.

The power perspective has caused scholars to critique public participation methods, because they tend to neglect the power inequalities in participatory spaces or assume that the power relations can be “bracketed” by appropriate participatory methods (Young 1996; Healey 1996; Fox-Rogers and Murphy 2014). This, some argue, only results in the power relations being hidden and thus more difficult to counteract (MacLaran and McGuirk 2003), which makes stakeholders burn out, resorting to reactions of indifference or anger (Fainstein 2000).

Power not only plays a role between individuals but also in the relation between societal groups. Marginalisation of certain groups in regard to influence in planning processes or segmentation between groups is found to be conducive to citizens taking action outside designed spaces of participation, since they are given no formal way of influencing decisions (Oberschall 1973). Walker (2009) finds that groups that are not recognized and granted what he terms “justice of recognition” are more likely to take

action against projects (See also Schlosberg 2003). This lack of recognition can take many forms. Scholars within environmental justice research point to the problem that risk assessments related to risk facilities do not take into consideration the different social and material contexts that different social groups live in, which can make them biased against socially disadvantaged groups (Bickerstaff and Walker 2003; Gee and Payne-Sturges 2004). Others point to inequalities in the siting of risk facilities due to a lack of recognition of the symbolic importance of places to certain groups (Walker 2009). Typical examples are places of spiritual importance to native peoples (Stoffle et al. 2004).

The second kind of structure that has been found to influence citizen action in participatory spaces is social constructs such as discourses and societal norms (D'anjou and Male 1998). This approach takes into consideration the reaction towards opposing citizen groups by the surrounding society. Societal hostility towards citizen opposition groups, for example, will discourage acts of opposition (Zald and Garner 1987), and oppositional movements are found to have the best chance of success if their cause is supported by societal norms and narratives (D'anjou and Male 1998). Hence, citizens' actions seem to be influenced by the way citizen groups are perceived in the broad society.

Discourses are not only found to influence actions on a group level, but they influence individual actions directly as well. Læssøe (2012) in his study of non-participation in sustainable development projects, argues that the way the individual sees his own role in society will influence whether citizens choose to get involved. He argues that professionalization of environmental issues has created discourses where the citizen is defined as a passive consumer as opposed to an active citizen. This discursive definition contributes to the citizen acting passively and refraining from getting involved.

Common to the contextual approaches is that structures in the broader society, not only in the context of the project or participatory process, influence the actions of the citizen.

4.4 THE INTERACTIONAL APPROACH

The interactional approach follows the reasoning of Clayton and Brook (2005) who state that:

“Most people drastically overestimate the impact of individual motivations and dispositions on behavior, discounting the effect of the situational con-

text (...) People's behavior is heavily influenced by the behavior and expectations of other people, especially important others" (Clayton and Brook 2005: 90).

According to this approach, citizens' actions cannot be understood independently of the situation they take place in and the interactions they are a part of. The interactional approach has not been given much attention within the field of energy infrastructure planning or in relation to infrastructure in general (Nothdurft 1995; Perold 2005). An exception is Walker et al. (2011) who in their study of the development of RE-projects consider the importance of interactions between a number of actors in the process including the media, financial institutions, consultant companies and many others who normally do not participate in spaces of participation. However, scholars working in related fields such as collective action and social movement have focused more on the significance of interactional factors for individual action.

Scholars point to the importance of social networks for the formation and persistence of citizen groups. Often citizen groups grow out of an already existing social network (Passy 2001; Crossley 2002; Diani 2004) making existing social networks important mobilization structures for new participants in oppositional groups (McAdam, McCarthy and Zald 1996; Klandermans 2004). Social networks are important if citizens are to invest time and effort involving themselves in participatory processes, because individual motives for involvement are not always enough to sustain continued involvement. To continually involve themselves, people need the experience to be socially rewarding (Læssøe 2012). An important element in creating a socially rewarding experience for the individual citizen is to align the many individual framings of the situation, so that people feel a sense of shared identity and purpose with the citizen group they are a part of (Kitts 2000; Passy 2001). This is an achievement of group leaders (Oliver and Johnston 2000) and fire souls (Læssøe 2012), who play a crucial role in defining the identity and goals of a citizen group and subsequently the actions of the individual, but it is also very much an interactional achievement of the participants. Fendrich (2003) points out that enacting a membership of a group plays an important role in maintaining the membership, since it is the actions themselves that create the feeling of commitment. Therefore, the practices that are conducted within the frame of citizen groups play an important role in deciding whether an individual will stay involved. Cohn et al. (2003) have specifically pointed to the importance of cultural practices such as rituals and ceremonies as being important for creating feelings of solidarity with a group because it resonates with deeper cultural narratives (D'anjou and Male 1998). Others have pointed to the role of language as a practice that influences individuals' attachment to groups. Barnes et al. (2004) specifically investigate the role of discursive practices such as greetings, rhetoric, and narrative storytelling, arguing that these practices can have considerable inclusive and

exclusive effects in participatory spaces, e.g. greeting can be a way of recognizing participants' right to be present and to contribute to the debate taking place. This is supported by Nothdurft (1995), who in a study of mediation in environmental conflicts finds that reality is a verbal accomplishment and that concepts often used in public participation literature such as risk, danger, fairness, and influence all have situated meanings. Furthermore, he questions participants' ability to control the meaning making in participatory spaces, arguing that participants often create meaning unintentionally and unknowingly.

Common to the interactional approaches is that citizen action is influenced by the situated reality that is enacted by the participants in the interactions between them.

4.5 THE POSITION OF THE DISSERTATION IN RELATION TO THE STATE-OF-THE-ART

The review of the literature on citizen action in energy infrastructure planning and adjacent fields makes it possible to identify where the expected contribution of the dissertation lies. The approach taken in the dissertation is inspired by insights from the reviewed literature as well as insight that developed empirically during the research process.

The dissertation is positioned within in the interactional approach to citizen action. As it is evident from the state-of-the-art review, an interactional approach to citizen action in public participation does exist, but studies are less frequent and prominent than studies positioned within the project approaches or individual approaches where most of the literature on citizen action in infrastructure development processes is found. Furthermore, studies tend to be somewhat scattered with no common theoretical or empirical reference frame. Most of the work cited here is conducted on interactions in social movements and less has been made on the effect of interaction between individuals that are not a part of any social movement or interest group. On all these accounts, the dissertation is expected to be able to further the interactional approach within the field of infrastructure development research.

The dissertation is furthermore positioned in contrast to an approach in the infrastructure development literature that tends to identify universal factors that influence citizens' actions in public participation processes. Examples are studies especially within the project approach which focus on identifying objective criteria for "good citizen involvement" (See e.g. Webler and Tuler 2000; Smith and McDonough 2001; Hourdequin et al. 2012). These are often factors related to the participation process such as fairness (Lauber and Knuth 1997), early involvement (Beierle and Cayford 2002), responsiveness (Yang and Callahan 2007), and trust (Beierle and Konisky 2000) among others. As described, the dissertation will investigate the inputs to the

action formation process (research question one), but makes no assumption of universality. Rather the dissertation positions itself in opposition to this stance and assumes a more situated approach, claiming that action and the factors that play a role in forming it are situated in the spaces in which they occur and in the life of the individual citizen. Therefore, the dissertation will assume an explorative approach to the investigation of influential factors for the individual citizen without ignoring the most common factors such as fairness and trust that are repeatedly found to be influential on citizen action.

Inspired by the actor-network theory (Callon 1986; Strum and Latour 1987; Latour 2005), the dissertation will furthermore be sensitive to the significance of non-human actors such as materiality. This is a position that according to the reviewed literature is rarely used in infrastructure development studies which besides considering the effects from impacts form the materiality such as visual impacts (Wolsink, 2000; Devine-Wright 2005), noise (Wolsink 2000; Pedersen et al. 2009) and, smell (De Feo, De Gisi and Williams 2013) primarily focus on human actors or immaterial human constructs or in some cases the symbolic meaning of materiality (See e.g. Brittan 2001, McLachlan 2009).

Finally, the dissertation is as stated in the introduction firmly positioned within a citizen perspective on public participation.

CHAPTER 5: METHODOLOGY

This chapter will discuss the ontological assumptions that lie behind the theoretical framework applied to the dissertation, as well as the epistemological assumptions that inform the methodological choices taken in the process and the impact they have for the applied research design. The specific data collection methods will be discussed in connection to the articles they are applied to in *Chapter 6: Synthesis and discussion of findings*. As will the quality, validity, and generalisability of the data. The ontological approach and theoretical framework takes point of departure in a constructivist approach, the epistemological approach is primarily inspired by an ethnomethodological approach and the research design is a combination of a mixed methods design and a case design.

5.1 ONTOLOGICAL APPROACH: THE NATURE OF ACTION AND THE THEORETICAL FRAMEWORK

Ontology can be defined as the ‘(...) *presuppositions or innate conceptions about the nature of the world.*’ (Chatterjee 2011: 74). In the dissertation, the relevant presuppositions to consider concern the nature of citizens’ actions. The ontological approach applied in the dissertation is relevant to discuss because it guides the selection of theoretical lenses.

The three research questions share the assumption that action is a process of construction and thus assume a constructivist ontological approach. It builds on the assumption that one singular reality cannot be identified and described. The assumed approach is not idealistic in the sense that no objective reality exists beyond a constructed one. Hence, constructing yourself as a bird will not give you the ability to fly. On the contrary, it is assumed that an objective reality does exist but can only be accessed through the perceptions and interpretations of the observer (Chiari and Nuzzo 1996). Therefore, multiple realities can exist and are situated relative to the context in which they occur (Sexton 1997). This makes the social world a dynamic and unstable entity to study (Johnson and Onwuegbuzie 2004). The ontological approach has the consequence in the dissertation that action is conceptualised as being situated in the context in which it occurs. Therefore, generalising the factors that come to play a role for citizens’ actions outside of the space in which it takes place is not necessarily meaningful. It is hypothesised, however, that there must exist certain universal mechanisms and processes of action formation that can be generalised. Research questions two and three aim to uncover these processes. The following theoretical framework builds on this version of the constructivist approach.

5.1.1 THEORETICAL FRAMEWORK

In the following section, a brief description of the major theoretical approaches applied in the study of citizen action in public participation processes will be presented (See Doak 2009). This will help understand from where the theoretical framework draws its inspiration and how it is positioned theoretically.

The theoretical approach to citizen action in public participation processes originally took its departure in a structuralist approach proposed by writers such as Sherry Arnstein (1969) and David Harvey (2009/1973), who emphasise the power distribution properties of spatial planning, arguing that public participation processes are primarily legitimising processes where already established power inequalities in society are enacted. According to this approach, citizen action in planning processes is mainly determined by economic and political structures (Doak 2009). This approach was challenged by the introduction of citizen agency - a concept that was introduced to the field of public participation by scholars such as Healey et al. (1988) and Harloe et al. (1990). Despite acknowledging the importance of societal structures, these scholars emphasise that citizen action is a result of encounters between individuals. They argued that citizens have some influence on the outcome of public participation processes and their actions in them. The importance of individual agency has been further developed by scholars such as Giddens (1984), who reconceptualises the concept of structure by renaming it structuration. Giddens conceptualises structure as an interactional accomplishment, arguing that structure does not exist unless it is continuously enacted and reproduced. This constructivist approach was further elaborated by Habermas' (1984) work on communicative action that describes how discourses that are negotiated in public spaces create affordances for action. In addition to granting the citizen agency in the production of actions and structure, these approaches also emphasise the constructive properties of interaction between individuals. The interactional aspect is emphasised by Healey (1997) in her 'new institutionalist' approach, where she argues that individual perceptions and actions in a situation are key to understanding it, and furthermore that meaning is an interactional accomplishment.

A final addition to this theoretical landscape is the network approach to understanding citizen action. This approach has played a role within political science in understanding the making and implementation of policy (Doak 2009) but has also been applied in an infrastructure context (Jolivet and Heiskanen 2010). The approach argues that the actors that influence the planning process are linked in networks. This adds an additional dimension to the interactional approach, since citizens thus can be influenced by linked actors that are not necessarily present in the situation and are not necessarily human (Callon 1986).

The dissertation draws on several of the described theoretical ideas in this theoretical landscape. The citizen agency introduced by Healey et. al (1988), the interactional aspects stressed by Habermas (1984), the constructional approach applied by Giddens (1984), and the network approach taken by Callon (1986) are central aspects of the theoretical framework in the dissertation. This theoretical inspiration is combined with empirical insights gained in the research process, and the following properties of action in infrastructure development processes will inform the choice of theory:

1. It is a process of construction not a result;
2. It is formed via interaction or enactment and is thus social;
3. It must be meaningful for the citizen;
4. The citizen has agency in the action formation process, but other actors contribute;
5. Actors are situated;
6. Actors can be human, material, or immaterial; and
7. Actors are linked in networks.

To investigate these seven properties of action, five different theories are applied. The decision to apply five different theoretical lenses is inspired by the work of Nicolini (2009), who in his effort to understand social practices argues that practices are best understood by zooming in on the situated dynamics of the phenomena and then zooming out again to grasp the trans-locality of the phenomena. Nicolini's method is applied here by zooming in on the action formation processes and zooming out on the factors that are drawn into these processes. Zooming in on the situated spaces of participation enables the identification of the situated actors, but the actors that are not manifested in a state that can be observed are hidden from sight even though they might be influential on the citizens' actions. Furthermore, many of the actors that have implication for how action is formed originate outside the participatory spaces and interactions and therefore cannot be understood without zooming out.

Zooming in and out requires different theoretical lenses. Therefore, the theoretical framework is multi-faceted and is most helpfully understood as a theoretical patchwork where no single theory is given a prominent position. Every theory contributes by illuminating different aspects of the citizen's action formation and the factors that are drawn into the process and, some offer overlapping perspectives. To investigate the factors that come into play in the citizen's action formation, Maurice Pinard's (2011) theoretical framework for understanding motivational dimensions in social movements is applied and combined with empirical insight from the literature on citizen action in planning processes. To investigate the action formation process, the following four theories are applied: the actor-network theory inspired by Bruno Latour (2005) and Michel Callon (1986; 1991); the sensemaking theory formulated by Karl Weick (1995); Harold Gafinkel's (2006) theory on situated orders; and Ervin

Goffman's theory on face work (1967; 1983). All four theories are positioned within the constructivist ontology which in some respects makes them rather similar.

Detailed descriptions of the theories are provided in *Chapter 6: Synthesis and discussion of findings*. Therefore, the theories will not be described in detail here. Instead, it will be discussed to what extent the four theories that are applied to understand the action formation process are in accordance with the defined properties of action and how they contribute to exposing different aspects of action. The four theories all assume that action is a process of construction in which the citizen has the primary agency, and that the action formation process is social in the sense that citizens do not form action in a social vacuum and therefore cannot ignore the influence of other actors. In regard to the remaining four properties, the theories differ slightly, which also accounts for their contribution to the framework.

Sensemaking theory

In Karl Weick's (1995) sensemaking theory, the role of meaning is central - hence, the word *sensemaking*. The reason for acting is for the individual to create meaning in a situation and this meaning informs what actions are meaningful for the citizen to make. Hence, the relationship between meaning and action is reciprocal. This is one of the main contributions of the theory. An additional contribution to the framework is that action is seen not only as constructing actions in social situations but also as constructing the environment that the citizen is making sense of. Action creates the environment and stimulus, which inspires meaning and again causes action in a reciprocal process (Weick, Sutcliffe and Obstfeld 2005). This process of circular response is termed enactment and is central to the process of sensemaking and to how action is conceptualised in the dissertation (Weick 1988).

Face work

The contribution of Ervin Goffman's (1983) concept; face work is to describe how individuals negotiate their own identity and how these negotiations come to influence their actions. According to the theory, individuals are morally obligated to protect their own and others' projections of who they are. These projections therefore structure the actions taking place in the interaction between participants. It is thus useful in understanding the interactions taking place between human actors and furthermore adds to the theoretical framework that action is situated in the context in which it occurs.

Ethnomethodology and situated order

The ethnomethodological approach framed by Harold Garfinkel (1967) further elaborates the significance of the situated space by focussing on how participants act in order to make sense of the specific situation they are in. It aligns with the sensemaking and face work theories in assuming that the construction of meaning is inherently a

social matter. It does however only consider the influence of human actors. It furthermore agrees with the sensemaking theory that the individual participates in constructing the environment that come to affect his actions. His approach is just limited to considering the construction of immaterial social actors – what he terms situated orders.

Actors-network theory

The actor-network theory formulated by Bruno Latour (1999; 2005) and Michel Callon (1986; 1991) shares with the remaining theories the assumption that action is situated, but adds that action cannot be viewed as isolated from a wider context; instead it is connected to a network of actors that come to influence action in the situation. It thus closes a blind spot in the remaining theories that only consider the actors that are manifested in the interactions between participants in the situation. The actor-network approach enables the inclusion of actors that are influential for the action formation process but are not necessarily manifested in a state that can be detected by the observer (Nicolini 2009). The theory furthermore contributes to the theoretical framework by elaborating on citizen agency. It states that individuals have agency in the sense that they actively translate other actors into the network of meaning, but adds that other actors in the network such as other individuals, material objects, and even immaterial concepts, can change constellations of networks as well and through that play a role in the action formation process of individuals. This is a significantly different way of viewing actors than the other three theories.

5.2 EPISTEMOLOGICAL APPROACH: PRODUCTION OF KNOWLEDGE AND RELATION TO REALITY

Epistemology concerns itself with two elements: a) what separates belief from knowledge, and b) the nature of the relationship between the researcher and reality (Landesman 1997). Knowledge can be defined as justified true beliefs, and epistemology provides the arguments for stating that the beliefs presented in this dissertation are in fact justified (Landesman 1997). The following will briefly present the epistemological approach assumed in the dissertation. The epistemological approach implies some assumptions of what I can and cannot do as research in my interactions with reality to ensure the production of valid knowledge. Consequently, it has had implications for how the research has been conducted. This will be discussed in the following section.

The epistemological approach assumed in the dissertation is based on a constructivist approach. It argues that the researcher is embedded in the same context as the study object and therefore is not objective. As Raskin (2002) puts it, no God's-eye-view of the world exists, and all meaning reflects a point of view –including the researcher's

(Smith and Heshusius 1986). A consequence of abandoning objectivity is that the research process should be perceived as an interaction between interdependent actors in situated contexts and the process of acquiring knowledge a social one (Sexton 1997). The overall constructivist approach to the production of knowledge has been concretised in two epistemological approaches that have guided the research process: ethnomethodology and the actor-network theory.

5.2.1 ETHNOMETHODOLOGY

The ethnomethodological approach assumed in this dissertation is heavily inspired by the works of Garfinkel (1967; 2006), who is attributed with founding the ethnomethodological position (Vom Lehn 2014). Ethnomethodology is based on the idea that the social world should be understood through the individual's perception of it. Social situations are constructed by participants' interactions, which means that a social situation is both a product of the interactions and the process that goes into constructing it. Actions are understood as interactions between individuals, and meaning is created by these interactions. Hence, to study social phenomenon, one must study how the individuals who are involved in the phenomenon perceive it and enact it (Schutz 1932/1967). In the effort to construct order in the world, individuals apply certain strategies and methodological practices. These are called ethno-methods and are the study object of ethnomethodology, hence the name (Garfinkel 1967; Lynch 1993; Llewellyn and Hindmarsh 2011).

Ethnomethodology provides the conceptual apparatus to study the ongoing construction of social reality and gives the researcher a method for describing how citizens perform the practices of seeing, understanding, explaining, and enacting order in the world they inhabit (Zimmerman and Weider 1971) in other words, how they make sense of and construct their world. Hence, applying a ethnomethodological epistemology in this dissertation specifically means that

- Citizens' perceptions of reality are the key to understanding their actions;
- Their perceptions are also enacted in the interaction between them, which makes interactions relevant to study;
- The researcher cannot avoid interacting with the study field and thereby influencing it; and
- Actions are situated, which means that once citizens are removed from the situation in which the interactions occurred, the perceptions are changed. This makes the interview method problematic (Garfinkel 2006).

5.2.2 ACTOR-NETWORK THEORY AS A METHOD

Actor-network theory (ANT) is one of the four theories that make up the theoretical framework of the dissertation, but it is also applied as an epistemological approach. Latour (2005) originally named the approach the actor-network theory and has since been criticised by scholars who argue that ANT is not a theory at all since it fails to handle the causality of social phenomena and is most often applied as a method (Law 2004; Kaghan and Bowker 2001). Latour concedes to the critique, calling ANT;

“(...) a very crude method to learn from the actors without imposing on them an a priori definition of their world-building capacities.” (Latour 1999: 20).

ANT as an epistemological approach builds on three assumptions formulated by Callon (1986): generalised agnosticism, generalized symmetry, and free association.

- *Generalised agnosticism* suggests that the researcher should allow the studied actors to state their own interpretations of their social context and that these interpretations should be taken seriously. The interpretations of the actors, Callon (1986) argues, are often undermined by the interpretations made by researchers in their presentation of a situation.
- *Generalised symmetry* suggests that the natural and technical world should be described by the use of the same concepts as when describing the social aspects of a situation, indicating that the two are of equal impact.
- Lastly, *free association* suggests that the researcher shall not force the studied actors to make distinctions between theoretical categories such as technical and social actors that they do not make themselves.

The ANT epistemology thus follows the constructivist approach assumed in the ethnomethodological approach but adds the dimension of material actors. It is furthermore very applicable in capturing the situatedness of action, because it avoids switching conceptual repertoires (Farías 2011).

The epistemological guidelines have the specific methodological consequence that observation has been favoured compared to interviews. I do however follow the approach argued by Brewer and Hunter (2005) among others, that methods are not only determined by the ontology and epistemology of a study, but that the research question is the main concern when choosing a research design. Therefore, multiple methods are applied in the dissertation.

5.3 RESEARCH DESIGN: MIXED METHODS RESEARCH AND CASE DESIGN

The ontological and epistemological approaches assumed in the dissertation influence what methods make sense to apply in the effort to answer the proposed research questions. The assumptions regarding the ontology of action guide which knowledge is accessible for the researcher - and the citizens for that matter. The epistemological assumptions have implications for how this knowledge is best attained in a valid fashion. The constructivist approach underscores the importance of citizens' perceptions of the situation when trying to understand their actions, and this suggests a qualitative design. However, research question one investigates the factors that go into the action formation process, and these can be identified through the use of quantitative methods. The dissertation therefore employs a mixed methods design combined with a case approach. In the following section, it will be discussed what the design contributes in the analysis of the research questions, why it is appropriate, and what it means for how the data is collected and analysed.

5.3.1 CASE DESIGN

The dissertation builds on four primary cases of energy infrastructure planning. The case design is chosen to enable the investigation of situated citizen action as it allows for the in-depth study of the situated actors that are present in the case and how the citizens enact them. I thus follow the argument made by Garfinkel (2006) to study actors in their situated context.

Whether generalising of the results based on four cases is possible is a matter of approach. A pure positivistic stance would argue that case studies are only fit for generating theory as they cannot be generalised due to their contextual nature (Abercrombie, Hill and Turner 1984). Contrary to that, scholars such as Flyvbjerg (2006) argues that strategically selecting critical cases on the basis of central theoretical factors – what he calls critical cases, make generalisation possible. E.g. will choosing a case that is favourable for proving a causal relationship between factors and showing the lack of connection be enough to disprove a hypothesis, according to Flyvbjerg. Lund (2014), taking a more pragmatic perspective, argues that universal validity of contextualised cases is very difficult to obtain, and that instead the aim of generalising beyond a contextualised case must be to;

“(...) enter into a dialogue where one’s research resonates with other works. The works of others may serve as a basis for a form of triangulation, not in order to establish validity, but to suggest likelihood and probability”
(Lund 2014: 227).

Following this pragmatic perspective, the aim of conducting case studies in this dissertation is therefore to contribute to the saturation of the knowledge regarding citizen action, which is reached bit-by-bit and case-study-by-case-study.

Following Lund's (2014) approach to case design, it is not necessary to argue universal representativeness. Instead, it is important to make clear what one's case is a case *of*, so that other scholars may recognise how it resonates with their case and thus can recognize which results are relevant for them to consider. Hence, the following will account for what my four cases are cases *of* in addition to discussing how they were chosen.

The selection of cases took a point of departure in the three research questions. They posed certain requirements:

- 1) The study is delimited to energy infrastructure projects; hence, it had to be cases of energy project planning.
- 2) Citizens had to have defined themselves as relevant to the cases by acting in them.

In addition to that, availability also played a role. The four cases that were analyzed satisfy the two requirements posed by the research questions and were available to me in the research process. The cases are:

- A case of underground electricity cable planning;
- A wind turbine test centre;
- A nuclear waste repository; and
- A gas storage facility.

The cases are examples of Danish infrastructure planning that has typically been characterised by collaborative planning where the citizens have been involved when the project, to a large extent, was defined (Böhme 2002; OECD 2007). Citizens' opportunity to influence the projects is therefore limited. The four projects are all placed in the immediate vicinity of citizens and they have an impact on the citizens' everyday lives.

The four cases do however vary as to how citizens acted in relation to them. The first case – the electricity cable project, is an example of a low-conflict case, where the planning process proceeded in relative peacefulness. The impacts from the underground cable are limited and the negotiations primarily took place directly between the citizen and the planning authority. In contrast to that, the three remaining cases have been characterised by conflict between authorities and the public. They have been complex and long, drawn-out processes that have involved a large number of

actors including scientific experts, NGO's, media, and multiple authorities in addition to the local citizens. They are all three examples of wicked problems where risk and impact assessments in particular have given rise to disputes.

Knowing the substance of the individual case will allow others to judge the relevance of the cases in other contexts and in addition be beneficial for the reader. Therefore, the four cases will be briefly introduced in the following section.

The underground electricity cable, Thy, Mors, and Salling

In 2009, the Danish Parliament adopted a plan of action for the expansion and embellishment of the Danish electrical 132-150 kV grid and 400 kV grid. The aim was partly to ensure future energy security and partly to accommodate the planned growth in RE-production decided by the Energy Settlement of 2008 (Energinet.dk 2013). The Cable Action Plan entailed the dismantling of 3,200 kilometres of electrical grids that were to be replaced by 29,00 kilometres of underground cable throughout the country (Energinet.dk 2009). The initial timeframe for the project was 20 years. The legal owner of the Danish 132-150 kV and 400 kV grid - Energinet.dk, was entrusted to perform the detailed planning and implementation of the Cable Action Plan. The case selected for the dissertation constitutes a small part of the Cable Action Plan. The project entailed the dismantling of 47 kilometres of power lines and the construction of a 109-kilometre stretch of underground cable from Thy, over the island Mors, to Salling in the north-western part of Denmark. Figure 5.1 shows the timeline of events in the project.

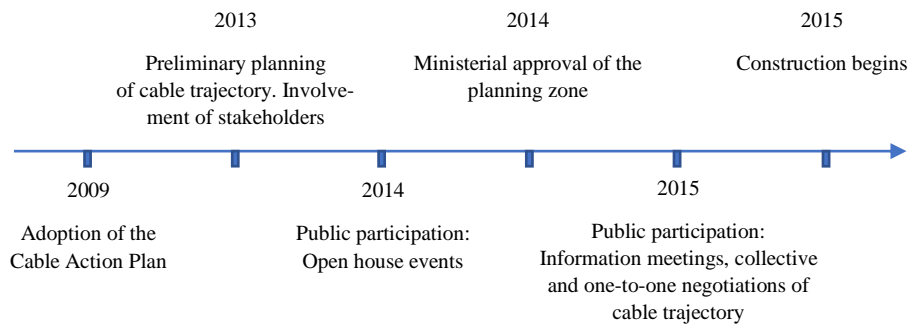


Figure 5.1: Overview of the events in the cable case.

The preliminary planning of the cable trajectory started in 2013. Between 2013 and 2014, when an Environmental impact assessment-report (EIA) was filed, the transmissions system operator (TSO) attempted to involve a large portion of stakeholders. Relevant municipalities, Farmers' associations, and local citizens were therefore all given the opportunity to comment on the planning zone for the electricity cable before the plans were sent for ministerial approval. This occurred in 2014, and the Nature Agency decided that an environmental assessment was unnecessary. Even so, the TSO

held a series of information meetings in the local area followed by a range of one-to-one meetings where the affected citizens were given the opportunity to influence the cable trajectory. The cable trajectory was finalised in 2015, and a final series of one-to-one meetings were held to discuss compensation with the affected landowners. The construction of the cable began in 2015. There were occurrences of conflict during the project with individual landowners, but the conflict level was generally low.

The nuclear waste repository, Risø

The need for a repository for nuclear waste arose as a consequence of the decision to decommission the nuclear research centre, Risø in 2001. During a period of 60 years, the research centre had produced a considerable amount of nuclear waste that had to be placed in a special repository as it could not be destroyed during the decaying process, which can take up to 30 years for short-lived waste and several thousand years for long-lived waste. The nuclear waste consists of 5,000-10,000 m³ of building material from the nuclear facilities, discarded radioactive sources, and technical equipment - primarily short-lived waste. In addition to that, the waste also included 233 kg of special radioactive fuel which is long-lived (GEUS and Danish Decommissioning 2015). Figure 5.2 presents an overview of the events in the planning process of the nuclear waste repository.

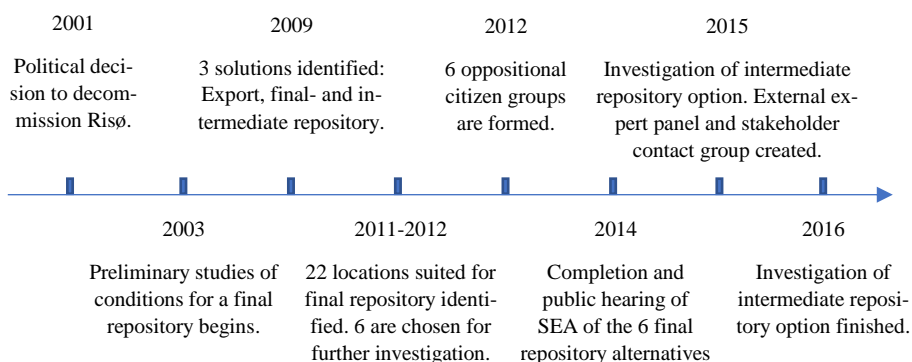


Figure 5.2: Overview of events in the nuclear waste repository case.

The planning of the nuclear waste repository started in 2003 with the Danish Parliament approving the decision taken by the government to start the preliminary studies of a final underground repository solution for the short-lived radioactive waste (GEUS and Danish Decommissioning 2015). At the same time, Danish Decommissioning (DD) was established to handle the process. The decommissioning of Risø started in 2004 before any decision regarding the storage of the waste was taken. In 2009, the Danish government presented three options for storing the nuclear waste. Establishing the final repository that was already being investigated by DD was one of them. The

two others were exporting the waste and establishing an intermediate repository on the ground.

The results from the preliminary studies of the final underground repository were presented in 2011. It identified 22 locations in Denmark that were deemed suitable for underground storage. Six of these were recommended, and a strategic environmental assessment was initiated for the six locations. This was the first time the plans to establish a nuclear waste repository were made public, and the reactions from the public were immediately negative. All five selected municipalities refused to host the repository, citizen opposition groups were formed in each of the affected municipalities (one municipality contained two locations), independent hearings were conducted by the municipalities, and meetings were held with politicians and the Ministry. The opposition got considerable attention in the media. In 2014, a strategic environmental assessment was conducted that considered the six locations, and public hearings were held as a part of the process (Ministry of Health and Prevention 2014). The process shifted somewhat in 2015 when the Danish Parliament took the decision to commence the investigation of the remaining two options identified back in 2009: the intermediate repository and the export solution (primarily for the 233 kg of long-lived waste). The responsibility was transferred from the Ministry of Health and Prevention to the Ministry of Higher Education and Science. At the same time, a panel of external experts were attached to the process, and a stakeholder contact group was established. The Ministry thus attempted a do-over in the planning and participation process. Additional studies have now been completed regarding the intermediate repository solution, but as of yet no decision has been made concerning the location or design of the nuclear waste repository.

The gas storage facility, Lille Thorup

In 2007, the need for natural gas storage caused Energinet.dk to start the process of planning an expansion of the natural gas storage facility at Lille Thorup in Central Jutland (Danish Ministry of Environment 2010). Natural gas is stored in underground domes excavated in ground layers of salt. The expansion entailed the maintenance of the seven existing domes and the establishment of nine new ones. The domes would be expanded by flushing them with water, causing the salt to dissolve. Afterwards, the salt water would be discharged into Limfjorden, a nearby fjord. A procedure that would take approximately 25 years (Danish Ministry of Environment 2010). An overview of the events in the planning process is presented in figure 5.3

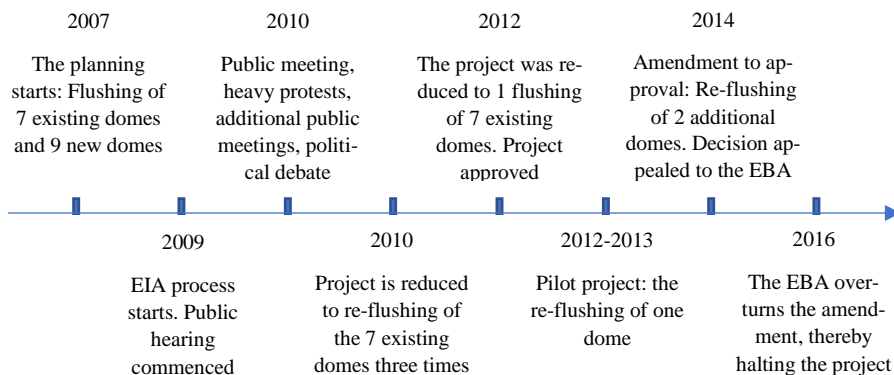


Figure 5.3: Overview of the events in the gas storage facility case.

An environmental impact assessment (EIA) was conducted during 2009, and the public hearing started in 2010 with a public meeting. The project was met with heavy public protests. One of the main concerns was the impact of the salt discharge in the Limfjord. The affected municipalities opposed the project and demanded a prolonged hearing period that was granted, leading to additional public meetings. A citizen group was founded that was rather successful in involving national politicians and this led to political debate in the Parliament (Kjær 2012). In autumn 2010, the original plan was reduced to entail three re-flushings of the seven existing domes, and again in 2012, the project was reduced to one re-flushing of the seven domes. This diminished project was granted environmental approval on the condition that a pilot project of one re-flushing of one dome was successful (Kjær 2012). The decision was appealed by the citizen group to the Environmental Board of Appeal (EBA) but was dismissed. The re-flushing of the first dome proceeded throughout 2012 and 2013. In 2014, the TSO was allowed to re-flush two additional domes, which they started doing in 2014. This decision was also appealed and this time the board ruled in favour of the citizen group. This meant that the project was brought to a halt in 2016 (Energinet.dk 2016).

The wind turbine test centre, Østerild

In 2009, the Danish government started the process of establishing a test centre for large wind turbines in Denmark. The aim was to provide the Danish wind industry with a facility where they could test prototypes of offshore windmills up to 250-metres high and thus keep a leading role in the market for RE-technology development. The initial requirements were an area that could contain 10 wind turbines and support facilities. Figure 5.4 presents an overview of the events in the planning process of the project.

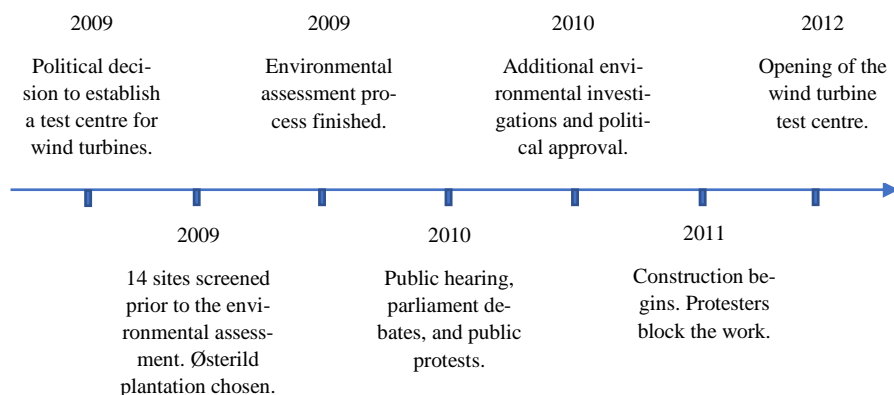


Figure 5.4: Overview of the events in the wind turbine test centre case.

The EIA screening process started in 2009 with the screening of 14 different sites. Two of these fulfilled the technical requirement, but as one of the sites was both a nature conservation area protected under the EU Birds Directive (2009/147/EC) and a training area for the Danish army, this site was discarded. This left the plantation area in Østerild in the north-western part of Denmark. An EIA was conducted in autumn 2009 and sent to a public hearing in the beginning of 2010 (Danish Ministry of Environment 2009). The public hearing process triggered a nationwide protest against the project: Demonstrations were held in Østerild and Copenhagen, the Danish Society for Nature Conservation filed a complaint with the EU Commission stating that the project violated the Birds- and Habitat Directives (92/43/EEC), protesters camped at the sight, and scientist disputed the EIA. This eventually led to considerable parliament debates, and based on complaints of inadequacies in the EIA report, a new environmental analysis was conducted in 2010 (Lyhne 2011).

Based on the new EIA-report, the test centre was reduced to contain only seven wind turbines and despite heavy protests, the Danish Parliament approved the test centre in 2010. Construction was set to start in the summer of 2011 but was delayed by protesters blocking access to the site. However, with the aid of the police, the construction eventually started and the test centre was opened in October 2011.

The citizens' actions in the four cases will be studied using a mixed methods design that will be discussed in the following.

5.3.2 MIXED METHODS DESIGN

No dominant definition of mixed methods design has yet emerged at the field of mixed methods design is still under consolidation, but different options are abundant (Johnson, Onwuegbuzie and Turner 2007). The dissertation adopts the following and defines mixed methods research as:

“(…) *Research in which the investigator collects and analyzes data, integrates the findings, and draws inferences using both qualitative and quantitative approaches or methods in a single study or a program of inquiry*” (Tashakkori and Creswell 2007: 4).

The kind of methods that are integrated and how and when in the research process it happens is primarily dictated by the nature of the research object and the research questions.

What is mixed methods? and why is it applicable here?

The pragmatist approach is often called upon to defend crossing the qualitative/quantitative divide and ignoring the incompatibility thesis (Howe 1988) that has been dominating in the paradigm war between qualitative and quantitative methods. The incompatibility thesis argues that qualitative and quantitative methods cannot be combined because they are based on different epistemological and ontological assumptions. Contrary to that, the pragmatist approach argues that ideas should be judged by their consequences and if the difference between ideas, like qualitative and quantitative methods, do not have any practical consequence it does not make sense to differentiate them (Johnson and Onwuegbuzie 2004). Hence, if the research questions are better answered by combining qualitative and quantitative methods, they should be mixed.

The question is then how using both qualitative and quantitative methods contributes to answering the three research questions. Brewer and Hunter (2005) argue that mixing methods makes particularly good sense if the methods do not have overlapping weaknesses and strengths and thus complement each other. According to Greene et al. (1989), five reasons can be identified for applying mixed methods designs: 1) *mixing methods to develop* another method e.g. by building surveys on results from interviews in a sequential mix. 2) *validation* by obtaining consistent results using both qualitative and quantitative methods – called *triangulation*. 3) *initiation*, where different methods are used to investigate contradictions in results e.g. in triangulations by reconceptualising the research object or research questions. 4) *expansion*, where different methods are used to investigate different but related study objects, and finally 5) *complementarity*, where the aim is to elaborate on the findings from one method using another and thus expanding the knowledge about one single research object.

Development of methods occurs in two instances in the dissertation, but the primary motivation for applying mixed methods in this dissertation is to obtain complementarity. A mixed methods design is applied in order to accommodate the approach inspired by Nicolini (2009) of zooming in on the action formation processes and zooming out on the factors that are drawn into these processes. Zooming in on the situated spaces of participation enables the identification of the situated actors and the processes of action formation, which qualitative methods such as observation and interview are particularly good at revealing (Johnson and Onwuegbuzie 2004); however, the actors that are not manifested in a state that can be observed are hidden from sight even though they might be influential on citizen action. Therefore, it is necessary to also zoom out, and for this, quantitative methods are applicable. This means that quantitative methods are primarily used in the investigation of research question one.

Fundamental decision to make – how will the methods be integrated?

In the process of constructing an appropriate research design, the following aspects of the research process are crucial to consider: The timing of the methods, the weighting between qualitative and quantitative methods and when and how the methods are integrated (Greene 2007; Teddlie and Tashakkori 2009; Creswell and Plano Clark 2011).

Two distinctions are typically made in regards to the timing of the methods: It can be sequential or concurrent (Greene 2007). In sequential designs, the data that is collected by use on one method, informs the design of the next method. An example can be that qualitative interviews are used in designing quantitative questionnaires. In concurrent designs, the methods are independent of each other and can stand alone. Due to the relatively different character of research question one and research questions two and three, separate concurrent data collection is applied and this is the overall character of the research design. However, in two separate instances methods are used sequentially for method development.

The weighing of qualitative and quantitative methods is not necessarily an issue as the two methodological approaches can easily have equal weight in a study (Tashakkori and Teddlie 1998). However, in the dissertation, the weight is put on qualitative methods. The reason for this is that the main focus of the study is to investigate the process of action formation, which qualitative methods are best suited for. The prioritisation of qualitative approaches also means that despite the use of quantitative methods for data collection and analysis such as survey and regression, the dissertation is not post-positivistic, as the analysis still approaches the data from a constructivist position. This means that even though the analysis of research question one identifies a range of factors that play a role in the citizen's action formation, it is not presumed that every citizen in every situation will be influenced by these factors and not in the same way.

The final aspect to consider is the mixing stage (Creswell 2009) – when and how the methods are integrated. The integration of methods can happen at any stage in the research process. For example, if the design is sequential, the integration of methods happens already at the data collection stage. This happens in two separate instances in relation to research question two and three. Mixing also takes place at the analytical stage, as both qualitative and quantitative methods are applied to analysing research question one. However, because research question one and research questions two and three investigate different aspects of the action formation process, the primary mixing of methods happens in the meta-inference stage – in the discussion of the overall research question: How can citizens' actions in relation to infrastructure development be understood?

The research design

The choices made in the above section inform which research design is the most appropriate to apply in the investigation of the three research questions. Different attempts have been made to account for the many different mixed methods designs that exist (Greene 2007; Creswell and Plano Clark 2011), but reality rarely resembles the ideal models. Often, the research design will be inspired by certain model designs but adapted to the reality of the research object and the research questions. This is also the case in this dissertation. The aspects discussed above suggest that a parallel mixed design (Teddle and Tashakkori 2009) or a convergent parallel design (Creswell 2014) are the most obvious design choices for the dissertation. Both are examples of designs where data collection and analyses are done concurrently but separately and not integrated until the meta-inference in the end. A parallel design allows for qualitative and quantitative methods to answer related aspects of the same question. As described earlier, the different methods are not completely separated until the meta-inference stage in this design, which means that the design is not a 100 % parallel mixed design, but inspired by the ideal model.

The primary difference between the research design applied in the dissertation and the parallel mixed methods design is first, that the quantitative research strand (research question one) is not only quantitative, as the surveys are supplemented by interviews. Second, there are occurrences of sequential development of methods where the conducted observations inform the subsequent interviews. This happens in the analysis of both research questions two and three. Finally, the research strands are not completely separated. The study of research question two is explorative, which means that even though the data primarily is collected with the aim of analysing the enactment and combination of actors in the action formation process, results are also obtained regarding the factors that go into the process and the interactions that takes place between the human actors in the participatory space. Therefore, this data is applied in the analysis of research question one and three.

A final note on the research design concerns the logic of inference. As the analyses of the three research questions are quite separated until the meta-inference stage, it is possible to apply the logic of inference that is best suited to investigate the individual research questions. A deductive approach is applied to the investigation of research question one. Deduction is appropriate because extensive literature already exists on influential factors for citizen action. Hence, an abundance of hypotheses already exists, ready for testing. However, in order to add to the field, new exploration is also necessary. Therefore, the Sensemaking-article takes an explorative approach to the influential factors. However, in the investigation of research question two, the approach in the analysis, that is also based on the Sensemaking-article, is abduction. The negotiations between the citizen and TSO representative were observed without any conceptualisation of what to expect from the interactions and the theoretical framework was applied later in order to understand the observed action. An abductive approach was also applied in the third research question where the research process was initiated by observing a difference between the collective and one-to-one meetings related to the cable planning case. Understanding this difference inspired the application of the ethnomethodological approach.

The research design for the dissertation looks as follows:

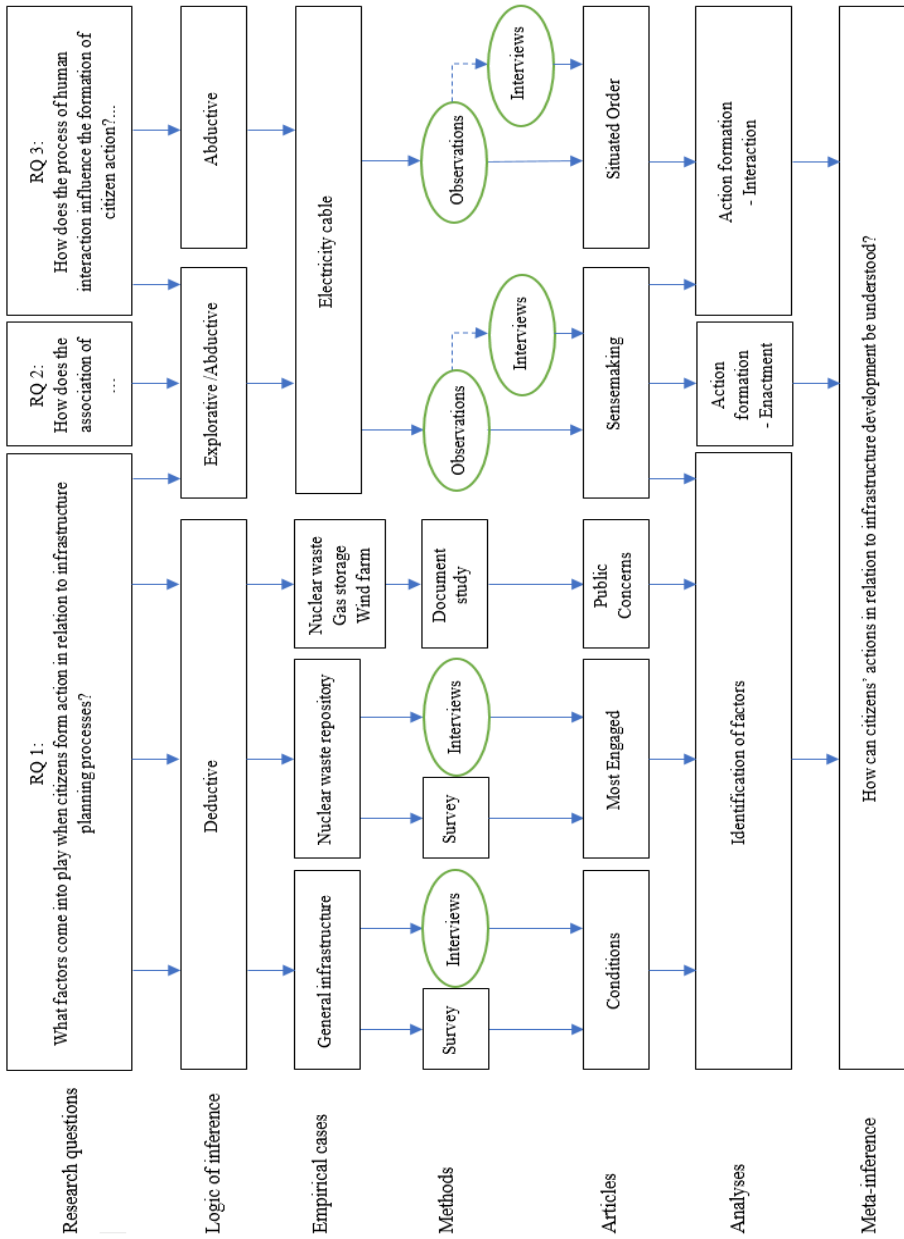


Figure 5.5: Research design. The left column indicates the stages of the research process. Circles indicate qualitative methods, and squares quantitative methods. Broken lines indicate sequential method development.

CHAPTER 6: SYNTHESIS AND DISCUSSION OF FINDINGS

The PhD fellowship resulted in the production of five scientific articles. The following synthesis and discussion of the findings will be based on these five articles. The synthesis will attempt to answer the guiding research question: *How can citizens' actions in relation to infrastructure development be understood?* By investigating this question, the dissertation will contribute to a better understanding of how changes to the infrastructure surrounding citizens affect the way they act in society and the way they act in relation to the process of planning infrastructure development. This will shed light on the implication of living in a society that constantly changes. Understanding how citizens act in infrastructure planning processes will also aid the development of more constructive public participation processes that are better adapted to the sense-making, action formation processes, and interactional dynamics of participating citizens. The practical contributions will be further discussed in *Chapter 8: Discussions of practical and theoretical contributions*. The research question will be investigated by focussing on the three sub-research questions one at a time:

- 1) What factors come into play when citizens form action in relation to infrastructure planning processes?
- 2) How does the association of human, material, and immaterial actors influence the formation of citizen action in relation to infrastructure planning processes?
- 3) How does the process of human interaction influence the formation of citizen action in relation to infrastructure planning processes?

The three sub-questions investigate different elements of the action formation process: The actors that are brought into play in the action formation process and the action formation process itself.

The three sub-research questions furthermore represent different stages in Nicolini's (2009) method of zooming in and out. Research question one zooms out to capture the actors that are brought into the action formation process. It thus relates most directly to the literature on public participation in infrastructure planning that tends to focus on influential factors for citizen action. Research questions two and three then zooms in on the situated action formation process which is where the most novel contributions of the dissertation lie.

Before attempting to synthesise and discuss the results, brief summaries of the articles are presented. This is shown in table 6.1. Here, the initial research questions, theory,

methods, and findings of the articles are presented. The synthesis does not include all five articles in their entirety, since some of them, which is evident in Table 6.1, have different primary aims other than understanding citizen action. However, all five articles have elements that contribute to answering the research questions of the dissertation. The results from the articles that are used in the synthesis will be specified in Table 6.2.

6.1 SUMMARIES OF ARTICLES

Table 6.1 shows the title, original research question, theory, methods, and findings from the five articles

Title	Research question	Theory	Methods	Findings from the article
Beyond public participation of energy infrastructure: How citizens make sense and form reactions by enacting networks of entities in infrastructure development (Referred to as the Sensemaking-article)	How do citizens make sense of infrastructure developments and how does this influence their actions?	Sensemaking theory (Weick 1995) Actor-network theory (Latour 2005)	Qualitative observations and interviews	The findings provide an insight into how citizens actively translate social and material actors in the act of making sense, when they are introduced to infrastructure projects. It shows how a multitude of heterogeneous actors influence the actions taken by citizens, and thus contributes to explaining why citizens' actions can be so varied and thus difficult to explain if the focus is solely on singular factors.
Exploring the significance of situated orders for citizen action in spaces of public participation (Referred to as the Situated Order-article)	How do participants enact order in participatory spaces? And "What affordance does the situated order make for citizens' actions in the process?"	Situated order theory (Garfinkel 2006) Face work theory (Goffman 1967)	Qualitative observations interviews, and audio recordings	The findings suggest that situated orders enacted by participants in participatory spaces have considerable influence on how citizens act, and that better understanding of the situated order in participatory spaces can hold the key to less conflictual participation processes.
What determines the substantive influence of public participation? An investigation of planners' views on conditions for participatory practices in Denmark (Referred to as the Conditions-article)	What determines the substantive influence of public participation? And "What affords substantive influence of public participation?"	Empirically informed framework	Quantitative survey of planning practitioners	The findings critique the widespread notion that the choice of method is a fundamental determinant of the public influence on planning. Instead, they point to the importance of conditional factors for the public participation process such as: Political support, engagement from the public, public understanding, and the type of issue under deliberation.
Social impact assessment in Europe: A study of social impacts in three Danish cases (Referred to as the Public Concerns-article)	How and to what extent are social impacts addressed in EA practise?	Empirically informed framework	Quantitative document studies of EIA and SEA reports	The findings suggest that social impacts of projects are treated in EA statements, but that the practice has flaws. It is argued that inadequate treatment of the public's concerns can be a contributing factor to public opposition against infrastructure projects.
Citizen self-mobilisation, motivational factors and the group of most engaged citizens: The case of a radioactive waste repository in Denmark (Referred to as the Most Engaged-article)	What are the motivational factors for action amongst the most engaged citizens?	Pinard's motivational model (Pinard 2011)	Quantitative survey of citizens	The findings point to factors such as collective identities and moral obligation measured by trust in information from authorities and satisfaction with the participatory process as motivating factors for engagement for the citizens that engage the most in planning processes.

Table 6.1: Summary of articles in the dissertation. Articles can be found in Appendix A.

The five articles have different scopes that are not all directly aimed at understanding citizen action. However, all five articles contribute with findings that each uncover a part of the research questions. Hence, the synthesis is a process of illuminating the parts of the articles' results that contribute directly to understanding citizen action. Table 6.2 describes the elements in the individual articles that are included in the synthesis and identifies which research question they respond to.

Articles	Research question one	Research question two	Research question three
Most Engaged-Article	Motivational factors for engagement the most engaged citizens	n/a	n/a
Conditions-Article	Framing conditions for the public participation process and effect on public influence in the planning process	n/a	n/a
Public Concerns-Article	Framing conditions for the public participation process and influence on feelings of being heard	n/a	n/a
Sensemaking-Article	Identifying actors that are drawn into the sensemaking-process	How actors are assembled in sensemaking actor-networks and the effect on action	Significance of interactions between TSO representatives and citizens for citizens' actions
Situated Order-Article	n/a	n/a	How situated orders are formed and their effect on action

Table 6.2: Overview of the contribution from the five articles to the study of the three research questions.

Research questions two and three are consistent with the research questions that guide the Sensemaking-article and the Situated Order-article which means that the results from these two articles are used in their entirety. In addition, because the Sensemaking-article is explorative, unintended results also emerge that identify influential factors (research question one) and touch on the interactional dynamics in participatory spaces (research question three). Research question one is most directly studied in the Most Engaged-article, but the study object is narrowed to only the most engaged citi-

zens which is not a delimitation that is made in the dissertation in general. Furthermore, results from the Conditions-article and Public Concerns-article contribute to the discussion of research question one with insight regarding the framing conditions for the public participation process and what it means for citizen action.

6.2 A MULTITUDE OF UNDERLYING INFLUENTIAL FACTORS

The first research question asks: What factors come into play when citizens form actions in relation to infrastructure planning processes? According to *Chapter 4: The state-of-the-art: Approaches to understanding citizen action*. Factors fall into four overarching categories that concern: a) The surrounding context, b) the specific planning project and process, c) the individual characteristics, and d) the interactions between participants. This means that *influencing factors* is a broad concept. Consequently, many of the articles touch upon the issue of influencing factors. Four of the articles contribute to the results:

- The Most Engaged-article;
- The Conditions-article;
- The Public Concerns-article; and
- The Sensemaking-article.

The approaches taken in the four articles differ in the sense that the Situated Order-article, the Conditions-article, and the Most Engaged-article all assume a deductive approach that investigates the influence of factors that have been suggested in the public participation literature. As a supplement to that, the Sensemaking-article assumes an explorative approach inspired by ANT (Callon 1986) in search for influencing factors that are not yet known in the literature.

The Most Engaged-article is the article that most directly addresses the factors that come into play in the citizens' action formation. It investigates the motivational factors for action amongst the most engaged citizens - a group that is often termed 'fire souls' in North European literature (Blomqvist 2004).

The Conditions-article and the Public Concerns-article are based on research questions that do not directly aim at studying factors that influence citizen action. The Conditions-article asks: "What determines the substantive influence of public participation?" The Public Concerns-article investigates the problem: "How and to what extent social impacts are addressed in EA practise." Both studies aim at understanding the outcomes of public participation processes but in doing so, they also touch upon the framing conditions for public participation that fall into the category of specific

planning project and process. Lessons on how the framing conditions for public participation processes come to play a role in the citizens' action formation can be drawn from these two articles.

Lastly, the Sensemaking-article also contributes with insight into influencing factors for action. The article investigates how citizens make sense of infrastructure development and how it influences their actions. The aim of the article was not to identify influencing factors *per se*, but to investigate the process that governs the sensemaking. However, the study revealed different factors than the remaining articles included here especially in the category of individual factors.

6.2.1 THEORETICAL FRAME APPLIED IN THE ARTICLES

The four articles not only address different research questions, they also apply different theoretical perspectives to aid the investigation. The Sensemaking-article applies an explorative approach to identifying influential factors and thus has no predefined assumptions regarding which factors are expected to be a part of the uncovered network of meaning. The actor-network approach that is guiding the analysis emphasises the value of describing the assemblage of actors in networks of meaning and suppress the urge to explain connections by switching conceptual repertoires (Callon 1986). The theoretical assumptions concern only the process by which the factors are connected to let the citizen make sense of the participatory situation.

Contrary to the Sensemaking-article, the remaining three studies take deductive approaches. The theoretical framework applied in the Most Engaged-article is based on Pinard's (2011) framework for understanding motivations for citizens' participation in social movements. Pinard identifies five dimensions that motivate citizens to engage: Three individual factors, and two collective factors that influence the level of motivation. The individual factors are:

- 1) Grievance and deprivation concern situations where individuals are put in a disadvantageous situation by changes that are inflicted on them, or when individuals experience a process when they are unfairly treated. Grievance and deprivation are often assessed relatively to earlier conditions or other groups.
- 2) Aspirations for change and achievement motivation are two factors that are tightly connected. They concern the goals the individuals hope to achieve by participating and the expectancy of success in attaining change and fulfilling their aspirations. Aspirations can be directed at either individual goods such as prestige or status or collective goods such as better material conditions, equal rights, etc.

- 3) Moral obligation describes internal feelings of obligation to contribute to a cause. Feeling that are motivated by altruism or by a feeling of responsibility to values, principles, or ideologies.

The two collective factors that can bring about changes in the individual's motivation are:

- 1) Framing that is conceptualised as a collective process of interpreting a situation. The framing process has three components: a) Identifying the problem and attributing blame (diagnostic framing); b) identifying solutions to the problem (prognostic framing); and 3) creating the realisation that solutions will not come about without action (motivational framing). Frames influence individuals' perceptions of a situation in regard to grievances and aspirations and consequently the way they see fit to act.
- 2) Collective identity which is the; “(...) *sentiments among members of a group that they share much with one another regarding their values, goals, interests, and fate, thus giving rise to “we”-feelings.*” (Pinard 2011: 115). The ‘we’-feeling is generally found to enhance the likelihood that people will engage themselves in social movement activities (Klandermans 2004; van Stekelenburg and Klandermans 2007).

These dimensions must be present to some extent to motivate an individual to take part in collective actions. In addition to motivation, Pinard argues that structural factors such as resources, organisation, power, and opportunity strongly influence what actions are taken (Pinard 2011).

The Conditions-article focuses on uncovering conditions that influence the substantive effectiveness of public participation. Substantive effectiveness is defined as

“(...) the extent to which public participation has led to qualification of planning or genuine changes in planning” (Lyhne, Nielsen and Aaen 2016: 314).

Hence, it aims at uncovering the influence of public participation processes and the framing conditions that shape the influence. The framework focuses on three main condition types:

- 1) Practice conditions that relate to the way the public participation is performed. It concerns factors such as the methods that are applied in public participation processes and the competences that lie behind it.

- 2) Issue type and public interest; two contextual factors that concern how the public perceives the issue at stake. They cover factors such as how conflictual and complex the planning issue is.
- 3) Organisational and societal conditions concern the broader framing conditions for substantial effectiveness. This includes factors such as the decision-making context which the public participation process is a part of (Lane 2005) and power and knowledge distribution in the process (Brownill and Parker 2010).

Lastly, the Public Concerns-article focuses on how social impacts of projects and plans and public concerns are treated in the Environmental Impact Assessment (EIA) or Strategic Environmental Assessment (SEA) process. The study considers: what kind of social impacts are handled, how and when they are handled in the EIA, how social impacts are mitigated, and lastly, the geographical distribution of impacts that are considered in the EIA's. The results from the study play a peripheral role in the analysis of research question one and will not be further elaborate here.

6.2.2 APPLIED METHODS FOR DATA COLLECTION

The methods applied in research question one complement each other in the sense that they have different strengths and weaknesses. The Conditions-article and the Most Engaged-article both apply a quantitative survey method. They rely on predetermined categories based on the literature and theory. Consequently, they primarily test the influence of already determined factors. The data collected for the two articles are rather suited for theory testing since the datasets consist of 775 responding citizens and 80 responding planners working with public participation and planning in Denmark. This creates good conditions for generalising the findings, but it puts restrictions on the variety of factors that are uncovered. Contrary to that, the data collected for the Sensemaking-article consists of only four informants, which makes it unsuitable for generalisation, but the qualitative method of observation followed by explorative interviews make it possible for the informant to freely assemble factors in the conversation and far less restrictions are thus put on the variety of factors that are discovered using these methods. In addition to the discussed methods, the Public Concerns-article contributes with a document study of two EIA's and one SEA. Figure 6.1 presents an overview of the research design for research question one.

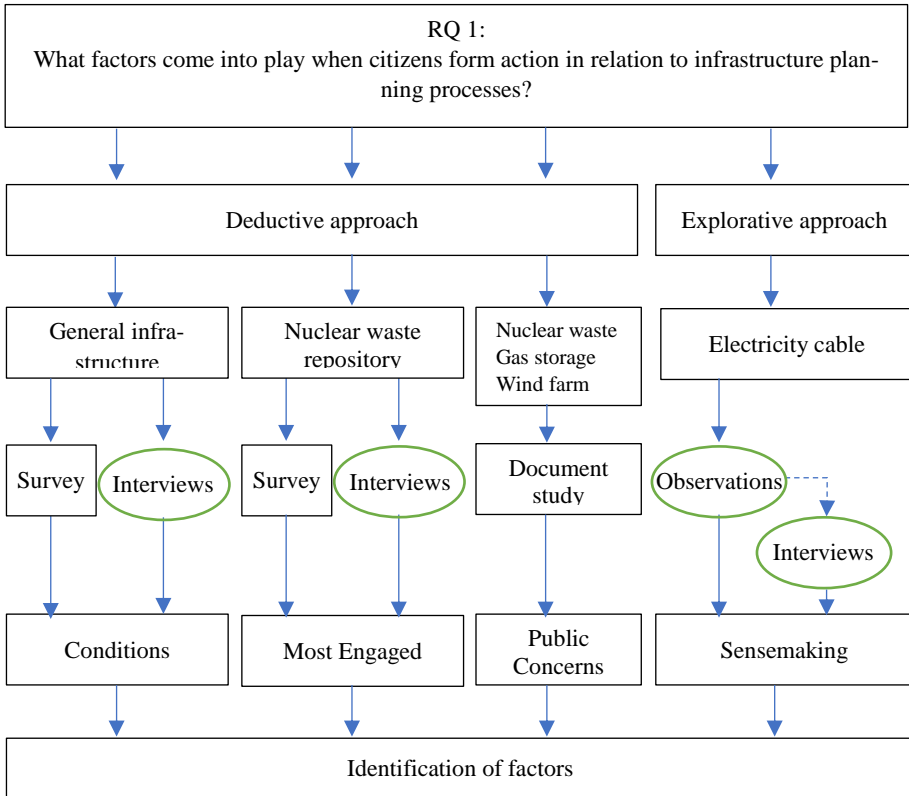


Figure 6.1: Research design for research question one.

Some methodological concerns can be raised concerning the methods applied in the individual articles. However, this has already been done in the individual articles and can be explored in Appendix A. Instead, the following section will discuss the methodological concerns related to combining the findings from the four different articles.

One of the main methodological concerns is related to internal validity. The study object in research question one is action and the factors that are drawn into the process of forming it. The four articles apply rather different approaches to measuring action which is not necessarily a problem as long as the study object is defined in the same way or the approaches measure different aspects of the same study object (Monrad 2013). This however is not the case. The problem is most evident between the Most Engaged-article and the Sensemaking-article. The Most Engaged-article measures action as engagement in terms of how much time citizens believe to have spent engaging themselves in the process, and the Sensemaking-article measures action in terms of speech – what the citizens say. These are different approaches to measuring action -

perception versus utterances, but the broad concept of action that includes both bodily actions and speech does in fact contain both approaches (Weick 1995; Garfinkel 2006).

Another methodological inconsistency between the articles that could present an internal validity problem is the choice of respondents. The aim of research question one is to investigate the factors that play a role in citizens' action formation. This is done by asking the citizens themselves but also by asking the infrastructure planning professionals that interact with the citizens in the public participation processes (this is done in the Conditions-article). This raises the question of who is best suited to assess what factors are influential in citizens' action formation processes. The methodological approaches applied in the dissertation dictate that the citizen is knowledgeable about their actions, making perceptions a key data source (Schutz 1932/1967); However, inspired by Nicolini's (2009) method of zooming in and out (See section 5.1.1 for detailed description), adding the planners' perceptions is an act of zooming out that then becomes an additional perspective on the research question that strengthens the conclusions rather than a validity problem.

A final methodological inconsistency between the articles is the cases that are included. The cases that are investigated in the Conditions-article, the Most Engaged-article and the Public Concerns-article are all high-conflict cases, where the citizens took actions of opposition against the project and put great effort into influencing the decision-making process. The case investigated in the Sensemaking-article is low-conflict. This means that the factors that are included in the following analysis originate from quite different contexts. The reason why the contexts of the cases are not given higher attention in the analysis is that the theoretical framework conceptualise action as situated rather than contextualised. This distinction means that the level of conflict in the cases is not necessarily a decisive actor for citizens' actions, as many different actors play a role in the process. Therefore, the level of conflict has not been given any preferential treatment compared to other influential factors. This is the reason findings from high- and low-conflict cases are mixed in the analysis.

A final issue is how the findings from the four articles are prioritised in the analysis of research question one. The Most Engaged-article is based on the answers from 775 respondents. This intuitively makes it more valid than the Public Concerns-article (based on 3 EIA/SEA reports), the Conditions-article (based on a survey with 80 respondents and a handful interviews), and the Sensemaking-article (based on 4 respondents). However, rather than prioritising the articles' findings according to number of respondents, prioritisation has been made according to theoretical and methodological concerns. This means that priority is given to the explorative Sensemaking-article, since it best follows the epistemological approach assumed in the dissertation by following the actors and giving preference to qualitative methods.

Another reason to prioritise the Sensemaking-article is that, even though the Most Engaged-article is rather extensive in regards to the number of respondents, the range of influential factors that are uncovered is limited by the deductive approach taken in the article. Given that the aim of research question one is exploring the situated actors that come into play in the citizen action formation, the explorative approach of the Sensemaking-article is better suited because the scope of investigation is not limited.

6.2.3 RESULTS

The four articles collectively identify a substantial number of factors that play a role in citizens' action formation in infrastructure development processes. Using the review of the state-of-the-art as a guiding structure, the results section will discuss factors that fall into the categories of process- and project-related factors and individual factors. Contextual factors were not given any attention in the deductive articles and did not emerge in the Sensemaking-article and interactional factors will be discussed in the analyses of research questions two and three. Figure 6.2 illustrates the relationship between influencing factors and the citizen that is uncovered in the analysis. In this version, the model corresponds to a rather basic relationship between influential factors and citizen action in relation to infrastructure development. The aim of the dissertation is to develop on this basic relationship by analysing the significance of enactment and interactions. As interactions and enactments are analysed in the following analyses, the model will be developed further.

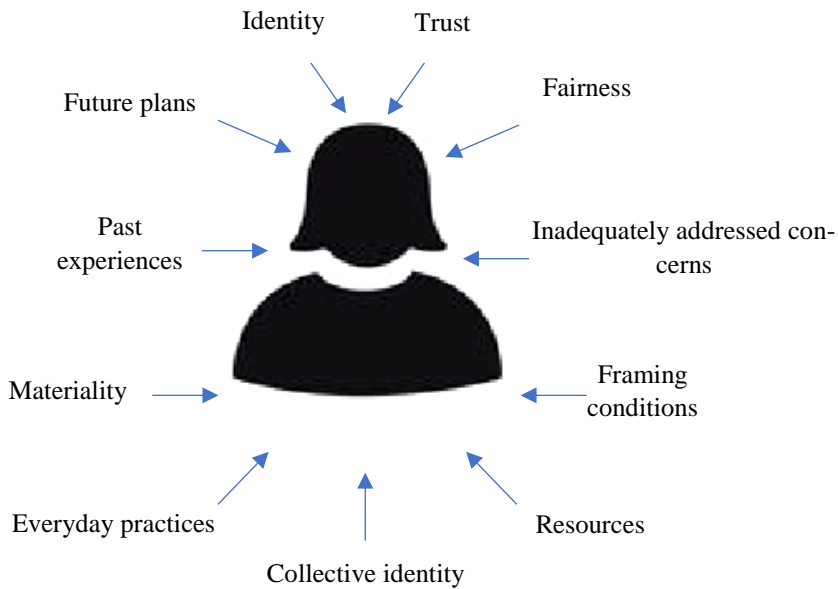


Figure 6.2: Illustration of identified factors that are influencing citizen action.

Project- and process-related factors

The Most Engaged-article, investigated what makes some of the most engaged citizens - the fire souls (Blomqvist 2004) spend so much time involving themselves in a planning process. It was discovered that factors such as fairness and trust in the participation process play a role in how much time the citizens spent engaging in the process. The analysis found that dissatisfaction with the involvement process and distrust in authorities' conduct in the participation process contributed to them spending more time engaging in the process. Distrust in the information provided by authorities is also found to motivate citizens to spend time engaging in the process. It is suggested by the accompanying qualitative interviews that the lack of information and distrust in the information provided by the authorities causes citizens to spend more time specifically on finding trustworthy information. According to Pinard's (2011) motivational framework, the factors are connected to moral obligations, in the sense that feelings of unfairness and distrust can be seen as violations to citizens' values and principles for fair planning.

Citizens' feelings of distrust and unfairness in the planning process are in some cases reinforced by the fact that environmental impact assessments (EIA) and strategic environmental assessments (SEA), two planning tools that have the aim of uncovering

the potential impact of projects (Sheate et al. 2001), have difficulty in properly addressing the concerns expressed by the public. This is a result originating from the Public Concerns-article. Table 6.3 is a cut-out from the Public Concerns-article.

Categories	Impacts	Radioactive waste deposit		Categories	Impacts	Radioactive waste deposit	
		SEA statements	Public			SEA statements	Public
Cultural heritage	Ancient monuments	X	X	Settlement and property	Emigration	X	X
	Cultural environments	X	X		Immigration	X	X
	Protected artefacts		X		Property prices	X	X
	Archaeological findings				Expropriation		
	Protected structures				Restrictions on land use		
Recreational values	Recreational values	X		Commercial development	Agriculture	X	X
	Camp sites	X	X		Tourism	X	X
	National park	X			Sales and export of food	X	X
	Game and hunting				Amusements	X	X
	New landscape and forest				Summer cottages	X	
	Shooting range				Food production		X
	Bathing				Jobs at the facility		X
	Angling				Fishery		X
	Sailing				Forestry		
Security of supply	Drinking water		X	Extraction of raw materials			
	Game			Subsidies			
	Natural gas			Health	Radiation	X	X
Brand and identity	Green image	X	X	Psychological wellbeing	X		
	Sales and export of food	X	X	Pollution of groundwater	X	X	
Sense of security	Risk of accidents at facility	X		Noise			
	Risk of traffic accidents			Air pollution			
	Risk of surface caving in			Light, shadow and reflexions			

Table 6.3: Concerns raised by the public versus issues included in the SEA in the nuclear waste facility case. Adjusted from Larsen et. al (2015).

Table 6.3 refers to the nuclear waste repository case, and shows that concerns expressed by the public regarding impacts on drinking water, protected artefacts, food production, and fishery are not considered in the SEA. The example only shows the discrepancies found in the nuclear waste facility case, but discrepancies between what is investigated in the EIA and SEA and the citizens' concerns are found in all three cases that were investigated in the Public Concerns-article. Because the public concerns are based on summaries made by the authorities, bias can be expected because planners interpret comments into the categories they are accustomed to using in the EIA or SEA reports (Eckerd 2017). Further bias can be produced because citizens adjust their language and choice of topics to fit the context and discourse used in the EIA/SEA process. Examples of this mechanism are seen in cases of wind farm disputes (See e.g. Larsson and Emmelin 2015), as well as other siting conflicts (Futrell 2003; Takao 2015). Considering the biases, there is reason to assume that the discrepancy between what is investigated in the EIA/SEA and citizens' concerns is larger than what transpires from Table 6.3. This tendency becomes problematic in public participation processes that take place in connection to SEAs and EIAs because it creates a feeling of not being heard. A feeling which in other studies been found to be one of the contributors to conflict (Upreti 2004; Kahn 2004).

The Public Concerns-article studies the framing conditions for the public participation process; in this article, it is the institutional structure constituted by the EIA/SEA reports. The same is the case in the Conditions-article. This article investigates what determines the substantive effectiveness of public participation processes, defined as: *“Qualification of planning or as substantive changes in plans or project.”* (Lyhne et al. 2016: 312). In other words, how the citizens’ influence the planning. The article argues that public participation processes cannot be seen as isolated spaces of action, as they are a part of a larger context constituted by factors such as politics, institutional constraints, and planning practices. Hence, it is not just what goes on within the spaces of public participation that determines citizens’ influence on planning. The results in the Conditions-article suggest that political and organisational support for public participation are decisive for the public’s influence on planning. The interviewees in the article emphasise factors such as political willingness to support public participation in general and organisational conditions such as sufficient time and resources as conditions that are necessary to ensure public influence. The article suggests that the influence of the public might be just as much an effect of political decision as a function of the public participation process. This raises a critique that at least some public participation processes are merely examples of what Arnstein (1969) defines as tokenism – a situation where the public is given the opportunity to have a voice and be heard but; *“(…) lack the power to ensure that their views will be heeded by the powerful”* (Arnstein 1969: 217).

The results from the Conditions-article do, however, also suggest that public influence is not solely determined by political decision and organisational framing conditions. The level of public engagement evidently has some influence as well. It is found that the more engaged the public is in the planning process in general and the better they understand it, the better the chance for achieving influence, according to the planners. The Most Engaged-article suggests that the citizens who know most about the project are also the ones that spend the most time engaged in the process. The connection between engagement, knowledge, and influence found in the Conditions-article therefore suggests that these “fire souls” are also the ones that stand to gain the most influence. Intuitively, it is perhaps not that surprising; yet, it raises the question of whether this might be a motivational factor for the most engaged citizens. They engage because it works. This relationship is investigated in the Most Engaged-article by measuring if whether the citizens’ trust that the authorities will consider their input in the decision-making process influences how much time they spent engaging. The relationship is insignificant, but other scholars have found achievement motivation to be influential (McAdam, McCarthy and Zald 1988; Finkel and Muller 1998; Pinard 2011). The lack of significance in this case might be explained by the point in the process when the survey was conducted. At the time of data collection (2014), the planning process had been proceeding for 13 years and had been known to the public for two years. The

process was at the time heavily critiqued for lack of transparency and insufficient information as well as poor public involvement. Hence, it is possible that citizens' achievement motivation might have given way to other motivational factors such as distrust and collective identity because the process had caused the participants to lose faith in their ability to influence the planning, causing other motivational factors to take over. This suggests that achievement is primarily a motivation starter, not a motivation "sustainer". This however borders on speculation.

Based on the results in the Conditions- and Public Concerns-articles, it is possible to determine framing conditions that influence the outcome of participatory processes represented by substantive influence on decision-making and on the EIA-report; however, the question is to what extent these framing conditions come to influence citizens' actions in the process. The results in the Most Engaged-article indicates that some framing conditions, especially related to fairness and trust in the process, influence the level of engagement for the most engaged citizens. Hence, their perceptions of the framing conditions become decisive for their actions. This suggests a more indirect impact from project- and process-related framing conditions mediated through the citizens' perceptions of trust and fairness in the process. The Most Engaged-article indicates that the most engaged citizens are motivated by fairness and trust in information and participation processes, which merits interest in the framing conditions discussed here. However, the impact of framing conditions on the perceptions of trust and fairness should be investigated further.

Individual factors

In addition to results concerning project- and process-related factors, the results from the Most Engaged-article also provide insight into influencing factors related to the individual. The factors that had the largest impact on the most engaged citizens' engagement were socio-demographic factors. Studies on socio-demographic factors have had difficulty providing consistent results (Vorkinn and Riese 2001; Firestone and Kempton 2007; Devine-Wright 2013). Therefore, the results found here are tentative at most. What is found in the Most Engaged-article is that the socio-demographic factors of *age* and *education* and a related factor of *knowledge* are all positively related to how much time citizens use engaging in the nuclear process. Hence, the older, more educated, and more knowledgeable citizens can be expected to engage more in planning processes. This relates to the category of structural factors in Pinar's (2011) motivation framework, and supports the claim made by Klandermans and Oegema (1987) that motivation might explain the willingness to engage, but that willingness is not sufficient to understanding what actions are taken by individuals, as structural factors such as resources and opportunity play a vital role in determining the actions taken by citizens.

Furthermore, The Most Engaged-article finds that engagement is dependent on Pinard's (2011) motivational factor of *collective identity*. Collective identity is defined as the feeling of belonging to a group and sharing values, goals, and interests with a group. Pinard terms this a 'we'-feeling. This 'we'-feeling is found to have substantial influence on how much time citizens spend engaging themselves. Next to knowledge, it is the factor that is found to explain most of the variance on the dependent variable. Collective identity is measured as membership in one of the opposition groups, and the causal direction in the analysis goes from membership to time spent, but one can speculate that the direction might also go the other way, so that it is the citizens who are already spending a lot of time on an issue that are drawn to engage with like-minded people in the opposition groups. This was not tested in the analysis.

Finding that engagement cannot be explained by one factor only, the Most Engaged-article concludes that to understand citizen action, it is necessary to consider both the motivational factors that urge citizens to enter in to the process (the fire) and the resources that make them able to stay involved and find a role for themselves (the wood). The article thus hints at a result that has proved consistent in the articles, that it is not helpful to emerge oneself in the study of a singular influencing factor when trying to understand citizens' actions in public participation processes. Rather a more holistic approach is needed to grasp the multitude of influencing factors.

The need for a holistic approach to understanding the factors influencing citizen action is supported by the results in the Sensemaking-article. This study gives a comprehensive picture of the multitude of factors that come into play in the citizens' action formation. For the sake of clarity, the factors are here divided into three categories concerning: a) the citizens' situated everyday life, b) the citizens' past experiences and; c) future plans, and identity.

In this study, examples of factors concerning the situated everyday lives of the citizens are the changes imposed by the project on citizens' everyday practices (Shove, Pantzar and Watson 2012), such as how they work in their field and what kind of livestock they keep. Situated everyday life also expands to the practices of neighbours and how the project affects them and their practices, as the study shows that citizens not only consider themselves but also their neighbours when reacting to an energy infrastructure project.

It furthermore transpires from the Sensemaking-article that the impacts are not only evaluated according to the present conditions of the citizen's life. The boundary between past, present, and future is dissolved and factors concerning past experiences with prior planning processes becomes important for some. In this study, the general picture is that citizens who have had bad experiences with unfairness and distrust from prior planning processes are more influenced by these than the current cable planning

process they are engaged in. Likewise, some citizens are influenced by impacts from the project not on their current situated practices but on future plans and expected future practices. Examples from the Sensemaking-study are building plans and tree planting plans which are prevented by restrictions imposed by the cable project. Another point is that citizens' perceptions of impacts caused by the project on their past, present and future lives are not only imagined or symbolic impacts. The Sensemaking-article shows that the impacts are closely connected to the materiality of the project and that the concerns citizens have about their everyday lives and future plans among other things are caused by the concrete physical restrictions of the cable project: the cutting of trees, destruction of drainage, and the inability to build on one's land. These are physical and material consequences of the cable project that impact the practices and everyday lives of the citizens and therefore their actions in the planning process.

Identity is yet another factor found in the Sensemaking-article that influences citizens' actions, or rather, it is the discrepancies between their self-perceived and enacted identity and the identity that is reflected back to them by the opportunities they are provided by the participation process that come to influence their actions. In this case, citizens feel violated by the fact that they are prevented from influencing the planning process because they are drawn into the process rather late, when only the specific trajectory of the cable within a 200-metre broad planning zone can be changed. This violates their self-perception of being active citizens characterised by efficacy and causes them to take a critical stance towards the project.

The description of influencing factors that is presented here is naturally a crude depiction that to some extent has been simplified by my selection of what to focus on in the data. The same happens in the interaction between the TSO representative and the citizens, as the citizens are encouraged by the situation to focus on certain relevant factors. Consequently, the citizens do not bring up factors they believe are inappropriate to the situation, even though their actions might be influenced by them. This is a bias that is difficult to get around. The discussion of research question three concerns the mechanisms that govern what citizens perceive to be appropriate in situations of public participation and can help shed light on citizens' selective introduction of topics and factors; yet, factors that are unacknowledged by the citizen will always be hidden from sight. This indicates that the multitude of factors is actually bigger than depicted in this study that supports the argument for applying multiple theoretical lenses in studies of influencing factors to achieve a more comprehensive picture of the factors that come into play in the citizen's action formation process.

The identified factors in the Sensemaking-article should not be viewed as universal, as they are derived from four citizens in a singular case. Even though one could argue that they are representative for typical landowners in Northern Denmark, they could just as easily be outliers in other contexts. The observations do, however, show that it

is important to consider how different factors are combined as the specific combination can have rather dramatic effects on citizens' actions. In the Sensemaking-study, the four citizens have been subjected to the same electricity cable project, the same process of participation and even share past experiences with bad planning processes. Even so, they react rather differently in the negotiations with the TSO representative. Furthermore, the study shows that the multitude of influencing factors is indeed staggering and highly situated. Therefore, one should be careful not to get lost in the focussing on factors such as fairness and trust that are dominant in the public participation literature (Wuestenhagen, Wolsink and Burer 2007; Wolsink 2007a; Raven et al. 2009a; Devine-Wright 2011; Walter 2014). They are no doubt influential and can also be detected in the Sensemaking-study as well as the Most Engaged-study, but so are numerous other factors and focussing too narrowly on fairness and trust creates the risk of missing the dominating actors in the sensemaking network and thus the key to understanding citizen action.

6.2.4 DISCUSSION OF THE RESULTS AND CONTRIBUTIONS TO THE FIELD

The analysis identifies a range of different factors that are found to be influential on the actions of participating citizens. In the category of project- and process-related factors, the analysis identifies: fairness, trust, and organizational- and political support. In the category of individual factors, the analysis identifies: personal resources; factors related to the citizen's past, present and future everyday life; the materiality of the project; the citizen's concerns; and identity. In the following, the results will be discussed in relation to the literature on citizen actions in a planning context with the aim of identifying the contributions to the field. It will be discussed if any new influential factors are identified, the nature of the identified factors and how influential factors can best be conceptualised when trying to understand citizen action.

The identification of new influential factors?

The main contribution of the analysis to the field of citizen action is the findings related to individual factors. Three results are considered novel contributions to the field of citizen action:

1. Socio-demographic characteristics should be considered resources that support engagement in participation processes rather than direct determinants for action;
2. Citizens' actions are found to be influenced by the materiality of proposed projects and that this impact is mediated through the everyday practices of the citizens; and
3. Factors related to citizens' lifeworld and identity are key to understanding their actions.

In addition to these individual factors, the analysis adds to the project and process approach to influential factors on citizen action mostly by empirical saturation.

Individual factors

Despite the fact that the results suggest that the socio-demographic factors of age and education have an effect on citizens' actions, the literature on citizen action in planning processes urges caution. Studies can be found that support the results found in the dissertation and it can be supported that older citizens are more critical (ICM Research 2005, Firestone and Kempton 2007; MORI Social Research Institute 2003) and that they also engage more (Agger 2005), but there are also conclusions to the contrary (Vorkinn and Riese 2001). The same is the case with education (Agger 2005; Devine-Wright 2011). An obvious explanation might be what Devine-Wright (2013) suggests, that socio-demographic factors are best understood as context-dependent factors that moderate effects from other factors rather than dictate action directly. This will explain the divergent results concerning the effects of socio-demographic factors found in different case studies.

Another approach inspired by the resource mobilisation theory claims that resources and opportunity play a vital role in forming the actions taken by citizens (Klandermans and Oegema 1987; McAdam et al. 1988; Zald and McCarthy 2002). In this perspective, the individual socio-demographic characteristics are resources that enable the individual to take action rather than motivate him. (Verba, Schlozman and Brady 1995). Education and knowledge are thus resources which e.g. aid individuals in comprehending what is happening, understanding technical details of the projects, EIA reports etc. and finding additional information. This approach is supported by the suggestions made in the Most Engaged-article that a distinction should be made between the factors that motivate initial engagement in a planning process and the resources that are necessary for citizens' continuous engagement. This is a more helpful way of understanding the various effects of socio-demographic factors found in the literature.

The importance of resources for citizens' engagement is supported by the Conditions-article that suggests it is the citizens who engage the most and understand the planning better that gain the most influence on the planning, and that this might explain why the most engaged citizens invest so much time in a process -because it works. Pinar (2011) terms this achievement motivation. This result is an expression of the planners' perception of what aids citizens to influence planning. It contrasts to the results of the citizen survey conducted in connection with the Most Engaged-article where no connection is found between achievement motivation and how engaged the citizens are.

As it is suggested in the analysis, there is a risk that it is not the same achievement that is measured in the two studies. The Most Engaged-survey asks: To what extent

do the citizens find that the authorities have carried the input from the citizens with them in the future decision-making process? and the Conditions-survey connects the planners' assessment of the public's influence on the planning to how difficult they find it is to engage the public and their assessments of the public's understanding of the planning issues. Several internal validity problems might exist when combining the two surveys. Planners might find it difficult to engage citizens, even though the citizens are in fact very engaged, and citizens' understanding of planning issues can be difficult for the planners to assess based on their limited contact with individual citizens. Conversely, citizens' assessment of whether the authorities consider their input in the planning process can be influenced by issues related to trust and prior experience, as it is found by the Sensemaking-article, which has little to do with faith in their own chance of obtaining their goals.

Putting the internal validity challenges aside, an interesting perspective to consider is that it is the perceptions of the two different groups of actors of the significance of real influence on the planning that is measured. In this perspective, the analysis shows that whereas the planners believe that it is the engaged and knowledgeable citizens who gain the most influence, this is, according to the most engaged citizens, not what drives them. The discrepancy between the perceptions of the two groups can be interpreted as evidence of the difference between the rational system-world and the more social life-world (Habermas 1984; Rowe and Frewer 2004). The system-world expects rational motives such as achievement motivation from citizens, and evidence of this is found in the literature (Westen 1985; Finkel and Muller 1998; Pinard 2011); but citizens do not inhabit the system-world. They are governed by motives emerging from the life-world, that is inhabited by actors such as culture, tradition, and personality (Habermas 1984). This is supported by the results from the Sensemaking-article that will be discussed in the following sections and in the literature e.g. Flam (1990) and Adams (2003), who point to the importance of emotions for citizen engagement. The results illustrate the rationality gap between planners and citizens. Then again, there are some internal validity problems that make the conclusion somewhat uncertain.

Another factor that is suggested to play a role in forming citizen action is the impact on citizen's past, present, and future everyday life. This approach somewhat ignores the antagonistic relationship between rationality and emotions and simply states that citizens react to the impacts they experience or expect will happen to their lives. Whether the reactions are rationally or emotionally motivated is not decisive. An interesting division lies between the perceived and real impacts of a project. In many instances, citizens are presented with the expected impacts of a project e.g. in the EIA-report. Many energy infrastructure projects are rather technical in nature, which makes the impacts difficult to intuitively understand. Besides, impact assessments are often littered with uncertainty because many risks are difficult to predict (Tennøy, Kværner

and Gjerstad 2006; Larsen, Kjørnøv and Driscoll 2013). Consequently, citizens are to some extent left to assess the impacts on their everyday lives themselves. A consequence of this is that it can be difficult for citizens to figure out what information to rely on in planning processes. As it was observed in the Most Engaged-article, this can cause citizens to spend time on finding information they feel they can trust. Hence, both real impacts, perceived impacts, and uncertainty about the impacts are factors that can have an influence on citizens' actions.

The Sensemaking-article shows that citizens' concerns about the impact on their everyday lives are closely connected to the materiality of the project. The result is supported by studies that find evidence to the effects of materiality on citizens' responses to infrastructure projects. Examples are visual impacts (Wolsink 2000; Devine-Wright 2005), noise (Wolsink 2000; Pedersen et al. 2009), and smell (De Feo et al. 2013). What this dissertation adds to the field is that these impacts from material factors are mediated through the everyday practices of the citizen. The perspective links to the social practice literature, that argues practices consist of different elements. Materiality is one these elements (Shove et al. 2012). Hence, it is not only relevant to consider what the citizen does (the practice) but also what materiality plays a part in the practice (Schatzki, Knorr-Cetina and Savigny 2001). E.g. A man can only take a walk in the woods every evening, if there are woods to walk in. The crucial role of materiality means that changes in materiality caused by an infrastructure project will entail changes to social practices. The social practice perspective has not been explored to its full potential in this dissertation, but the results in the Sensemaking-article certainly merit further investigation informed by this approach.

A final insight from the analysis is that threats to citizens' identity can impact their actions in relation to infrastructure development processes. Evidence is found in the data from the Sensemaking-article that discrepancies between citizens self-perceived and enacted identities and the identity that is reflected back at them by the opportunities for influence that are given in the project can provoke actions of opposition towards the project. Generally, the literature indicates that identity – particularly social identities play an important role in citizens' action formation. Unclear role definition for citizens in public participation processes often leaves the citizens to define their own roles in the process (Estlund 2000). Less is given by stable norms such as tradition and social class because modern society leaves the individual with fewer identity prescriptions than traditional society (Giddens 1991). This forces the individual to continuously define one's identity. According to Hafer and Ran (2016), this is one of the motivating factors for citizens to engage themselves in infrastructure development processes, because it affords them an opportunity to define their identity in comparison to other groups, either as part of the in-group (as a participating citizen) or in contrast to outgroups (such as the planning professionals or project developers). Public participation is thus an opportunity for citizens to reduce feelings of uncertainty

related to their own identity by being a part of group of participating citizens (Cross and Gore 2003; Hogg 2003). This approach explains the results found in the Most Engaged-article that demonstrates how the membership of a citizen protest group causes citizens to spend more time engaging in the planning process. Teske (1997) adds to the explanation by suggesting that citizens not only join groups of participating citizens to reduce uncertainty, but because it provides them with a positive self-image of how they want to be. In this perspective, being a part of a citizen group contributes to constructing an identity that is active, powerful, and social, and this positive self-image is what motivates the engagement.

Project- and process-related factors

The analysis furthermore finds that two distinct features of fairness and trust are influencing citizen's actions. Fairness in this context relates to how the public participation process is conducted and trust relates to the trustworthiness of the information supplied by the authorities. Both factors inspire actions of opposition. As commented on throughout the dissertation, fairness and trust are factors that are prevalent in studies on citizen action in infrastructure development processes (Wüstenhagen et al. 2007; Wolsink 2007b; Raven et al. 2009b; Walter 2014). In fact, they are so prevalent that conducting a study on citizens' actions in public participation processes without considering the perspective would border on neglect. The findings in the dissertation generally support findings in the literature (Cotton and Devine-Wright 2011; Aas et al. 2014; Knudsen et al. 2015).

A variety of factors are found to influence citizens' perception of fairness and trust. The analysis suggests that lack of responsiveness in the EIA/SEA process and final reports are two influential factors that can contribute to citizens' feelings of unfairness which can contribute to them taking actions of opposition towards a project.

Based on the results in the Conditions- and Public Concerns-articles, it is possible to determine project- and process-related factors that influence the outcome of participatory processes represented by substantive influence on the decision-making and the EIA/SEA-report. The analysis primarily considers the factors that frame the conditions for the public participation process such as organisational and political support. Both factors can be identified in the public participation literature. Examples are McCool and Guthrie (2001) who find that public participation processes are influenced by political support; Beierle and Crayford (2002) who points to the influence of the lead agency's responsiveness; and Dietz and Stern (2008) who find that institutional and legal frameworks influence the way public participation is practiced. However, the relevant question is how these framing conditions for the public participation process come to influence the citizens' actions in the process? The results in the Most

Engaged-article indicate that some project- and process-related factors especially related to fairness and trust in the process, influence the level of engagement for the most engaged citizens. Hence, an interpretation of the results is that it is the citizen's perception of the effects of framing conditions particularly on fairness and trust that is decisive for action. This suggests an indirect impact from project- and process-related factors mediated through citizens' perceptions of trust and fairness in the process.

Having discussed the identified factors in relation to the literature on what influences citizens' actions in public participation processes, it is clear that the main contribution of the dissertation to the identification of influential factors on citizen action lies in the area of individual factors. This is perhaps not surprising given the citizen perspective that frames the dissertation. Many of the findings presented here are tentative results that need further investigation because they were primarily identified via the explorative study in the Sensemaking-article. However, an explorative approach to the investigation of influential factors has proved rather effective. This is a methodological contribution to a field that otherwise has been rather dominated by deductive research approaches.

The nature of influential factors: human, material, and immaterial factors

The analysis identifies a range of different factors that impact the action formation process in different ways. These factors can be categorised into three groups: human, material, and immaterial factors:

- Human factors are primarily the other participants in the specific participatory space or others who the citizen has interacted with before or after the participation process that come to influence the citizen's actions. This can also include properties of the participants such as resources or identities.
- Immaterial factors cover ideas of fairness and influence, trust in the planning authorities, everyday practices, experience, future plans, framing conditions, and concerns.
- Material factors cover both symbolic and concrete impacts from material objects on citizens' everyday practices. In this study, it is primarily the material impacts from the infrastructure project.

Despite the fact that the three groups of actors are differentiated by a number of attributes, the interesting thing when it comes to how they affect the citizens' action formation is that the results, especially from the Sensemaking-article, suggest that their impacts cannot be differentiated. Hence, the citizens rely equally on human, material, and immaterial actors when forming their actions. This supports the assumption of *free association* asserted by the ANT approach that argues the value in not forcing

the actors to distinguish between theoretically based categories of actors such as human, material, and immaterial (Callon 1986).

Conceptualisation of influential factors in relation to citizen action

After having investigated the factors that contribute to citizens' action formation in infrastructure planning processes, it will be discussed how influential factors are best conceptualised in order to understand their role in the action formation process.

The studies synthesised here primarily focus on investigating whether different factors related to the project and participation process or the individual's life can influence how citizens act. The quantitative nature of the methods means that it is not possible to say much about why the factors influence the citizens' actions and the mechanism that governs the connection between factor and citizen action. Furthermore, limited attention has been given to the internal connections between the factors and how they influence each other. This is black boxed on the basis of the first analysis. The first part of the dissertation's results therefore portrays a more static relationship between actors than what is evident from the following analyses.

However, it also shows that focussing on singular influential factors is not the best approach to understand citizen action. The Sensemaking-article shows that four citizens who are influenced by many of the same factors do not act in the same way in a participation process. This suggests that focussing on singular influencing factors is not enough to capture the complexity of what makes citizens act the way they do. Blakely and Evans (2009) argue precisely this point by stating that because citizens' motivations for participation are generally inconsistent and highly complex, focussing on any single explanatory factor is not a valid approach. This is supported by Wolsink (2000), who finds that the factors that influence citizens' reactions to wind turbines are also dynamic in the sense that their individual influence will change over time. What is needed is therefore a more dynamic and holistic conceptualisation of the factors influencing citizen action.

One way of obtaining a more holistic approach is to avoid the categorisation and division of factors that is prevalent in the literature and was also used in the review of the field in this dissertation and instead follow the categorizations used by the citizens. Categorizations are helpful in the communication of results, but perhaps less helpful when it drifts into the empirical understanding of citizen action. However, accepting that it is impossible to uncover every influential factor in infrastructure development processes, a more viable approach might be, as it is done in this dissertation, to apply an array of different but overlapping theoretical lenses to ensure that important influential factors do not disappear in the blind spots of specific theories.

A further insight into the nature of influencing factors suggested by the findings is that the factors seem to influence each other and not just the citizen. An example is that the effect of the project's materiality seems to be mediated through the citizens' everyday practices, which means that if the citizens' practices change, so will the impact from the project's materiality. This example of a connection between actors indicates that factors should perhaps not be viewed as independent actors but rather a linked network of actors as suggested by the ANT approach.

The findings also question a dominant practice in the literature on public participation of portraying the influence from factors on citizen action as being universal. For example, that lack of fairness and trust will lead to citizen opposition (Wuestenhagen et al. 2007; Raven et al. 2009a; Walter 2014), that proximity to a project will lead to opposition (Freudenburg and Pastor 1992; Swofford and Slattery 2010), and that ample information will ensure a constructive participation process (Smith and McDonough 2001), etc. The findings suggest, contrary to this approach, that the influence from factors is dependent on the situation the citizen is in both in terms of time and space. The Most Engaged-article suggests that citizens are affected differently according to where in the process of participation they are and argues that some factors such as distrust act as triggers for engagement while others such as personal resources sustain the engagement.

The tentative results suggest that it is unhelpful to focus too narrowly on influential factors such as fairness and trust since they do not have the same effect on citizens and are also influenced by other actors in the space. The interactional nature of influential factors will be investigated further in the analyses of research questions two and three.

6.3 ACTION AS ENACTMENT

The second research question asks: How does the association of human, material, and immaterial actors influence the formation of citizen action in relation to infrastructure planning processes? Having studied the factors that come into play in the action formation process in research question one, the focus now turns to the relationship between the factors and the process through which they influence action. The results from the first analysis suggest that the understanding of citizen action will benefit from applying a more holistic and interactional approach to the factors that play a role in citizen action formation. This is done by focussing on the process of sensemaking and enactment in the analysis of research question two.

The analysis builds primarily on the results from the Sensemaking-article that investigates how citizens make sense of infrastructure developments and how this sense-making process influences their actions.

6.3.1 THEORETICAL FRAME APPLIED IN THE ARTICLE

The theoretical framework applied in the Sensemaking-article builds on a novel combination of Weick's (1995) sensemaking theory and the actor-network theory (ANT) inspired by Latour (1999; 2005) and Callon (1986; 1991). The two theories originate from rather different traditions. Sensemaking plays a prominent role in the organisational literature, and ANT has especially made its mark within science and technology studies and socio-technical literature, but has also been applied to studying processes of policy implementation and decision-making (Doak 2009). Despite their different fields, they share the perspective that meaning is created in an interactive process between the individual and surrounding actors. Meaning making, or sensemaking, according to Weick's terminology, is thus a social endeavour. Furthermore, and contrary to the approaches described in the previous section, the individual has an active role in the making of sense by *enacting* actors rather than *reacting* to them. The two theoretical approaches and the reasons for combining them will be elaborated further in the following sections.

The sensemaking theory

Weick (1995) points to seven properties that describe the sensemaking process. It is; a) grounded in identity construction; b) retrospective; c) enacting sensible environments; d) social; e) ongoing; f) focussed on and by extracted cues; and g) driven by plausibility rather than accuracy. These seven properties can be connected in a sequence that crudely describes the process of sensemaking:

“People concerned with identity in the context of others engage ongoing events from which they extract cues and make plausible sense retrospectively, all the while enacting more or less order into those ongoing events.”
(Weick 1995: 18).

Elsewhere, Weick et al. (2005) describe sensemaking as a process that;

“(...) involves the ongoing retrospective development of plausible images that rationalize what people are doing” (Weick et al. 2005: 409).

People hold plausible stories about what constitutes their world, how it works, and who they are. These plausible stories are based on prior sensemaking processes. When the environment changes and incongruities arise between what is expected according to the plausible stories and what is actually happening, people need to revise their stories to make sense and reduce ambiguity (Weick 1995). This is done retrospectively by re-designing what is held to be true about the world and themselves (Louis 1980).

Realising that incongruities have arisen requires that people notice and bracket specific cues in the ongoing flow of stimuli that constitutes the environment. This process

of noticing and bracketing is guided by people's experiences. Hence, stimuli are found in the environment, but stimuli are just as much created by people's actions (Weick 1995). Follett (1924) argues that:

“(...) the activity of the individual is only in a certain sense caused by the stimulus of the situation because that activity is itself helping to produce the situation which causes the activity of the individual.” (Follett 1924: 60).

This means that action creates the environment and stimuli, which inspires meaning, which again causes action in a reciprocal process. This process of circular response is termed enactment and is central to the process of sensemaking.

The last property of the sensemaking process that has yet to be discussed is the social character of the process. In the process of acting out plausible stories, people encounter other people who have other plausible stories, and the interaction between people thus becomes a negotiation and alignment of plausible stories about the situation, they are in. The question posed by Weick et al. (2005) as the starting point of sensemaking: ‘What is going on?’ must to some extent be answered socially.

Actor-network theory (ANT)

In a sensemaking perspective, the introduction of an infrastructure development process represents a disturbance to citizens' flux of information, which inspires sensemaking. In an ANT perspective, it would be a simplification to perceive this disturbance as being only one homogenous actor. Instead it should be regarded as an actor-network consisting of many actors, not only the material artefacts, but also immaterial actors such as the statutory demands for the planning and participation process, the planning authority's perception of the risk, and the role of the public, the budget and timeframe, and so on. One of the important contributions from the ANT approach is the principle of *generalised symmetry* that suggests the natural and technical world should be described through use of the same concepts as when describing the social aspects of a situation, indicating that the two are of equal impact (Callon 1986).

The actors are linked in a network by the planners before the participation process starts. The citizens are drawn into this network when they are informed and involved in the infrastructure development process, but they are not passive actors being translated. They themselves are active, and they therefore begin to create their own network of meaningful actors in order to make sense of the situation. Within an ANT perspective, this can be viewed as a process of translation, which is a process where actors are associated to define a situation or an actor (Callon 1991). Nicolini (2009) describes this process rather eloquently by describing ANT as:

“(...) approaches [that] draw attention to the constitutive power of associations. They argue that social agency (both individual and collective) is constituted through assembling, aligning and stabilizing patterns of relationships so that any form of social order is in fact the outcome of observable instances of ordering.” (Nicolini 2009: 1394)

Following the ANT approach, the sensemaking process becomes an interactive process between actors (Latour 2005), and the citizen is not alone in creating meaning. Rather it is created in an interactive process between heterogeneous actors connected by networks. A network and the meaning of a situation can therefore be changed by the appearance of new actors. Human actors are thus not given a privileged role of assigning meaning to actors in the network. Callon (1986) does state that there is usually one dominant actor in the network – the obligatory passage point that defines the network in the sense that all actors have to relate to this specific actor, making it, as the term indicates, an obligatory passage point into the network. However, the obligatory passage point can be any one actor in the network.

All actors can change the meaning of a network (Latour 2005) and networks are therefore not a static entity, but one that must be continuously networked in order to hold the actors together. If the citizen stops connecting the actors, the network disappears and actors are translated into new networks. Actors thus hold no predetermined meaning but are ascribed one by the network they are translated into. If sensemaking is combined with the ANT approach, sensemaking thus becomes an ongoing process of constructing and reconstructing a network of actors to make sense of events, situations, or actors.

According to the sensemaking theory, people act order into the world based on plausible stories and thus create the environment that comes to restrain their actions. However, combining the approach with the ANT approach means that the environment or actor-network also has agency. This means that changes that happen to other actors in the network make changes to the environment that feed back into the citizens' sensemaking. Hence, citizens cannot control the sensemaking process that becomes a dynamic reciprocal process between actors and their environment/actor-network, based on actions of translation and enactment (Aaen et al. 2016).

6.3.2 APPLIED METHODS FOR DATA COLLECTION

The analysis of research question two builds only on the results from the Sensemaking-article. Therefore, the research design is somewhat simpler than the previous one. The design is abductive and the methods for data collection are qualitative. The data consists of four observations of one-to-one meetings between a TSO representative and local landowners, followed by subsequent exploratory interviews with the landowners.

Because the aim of the study is exploration, specification, and concretisation of the mechanisms that govern action formation, limited attention is given to finding representative samples. The informants are therefore chosen by convenience sampling (Given 2008) by following a planner from the TSO during one of the days he conducted one-to-one meetings and observing and interviewing the landowners he met with. Figure 6.3 depicts the research design for research question two.

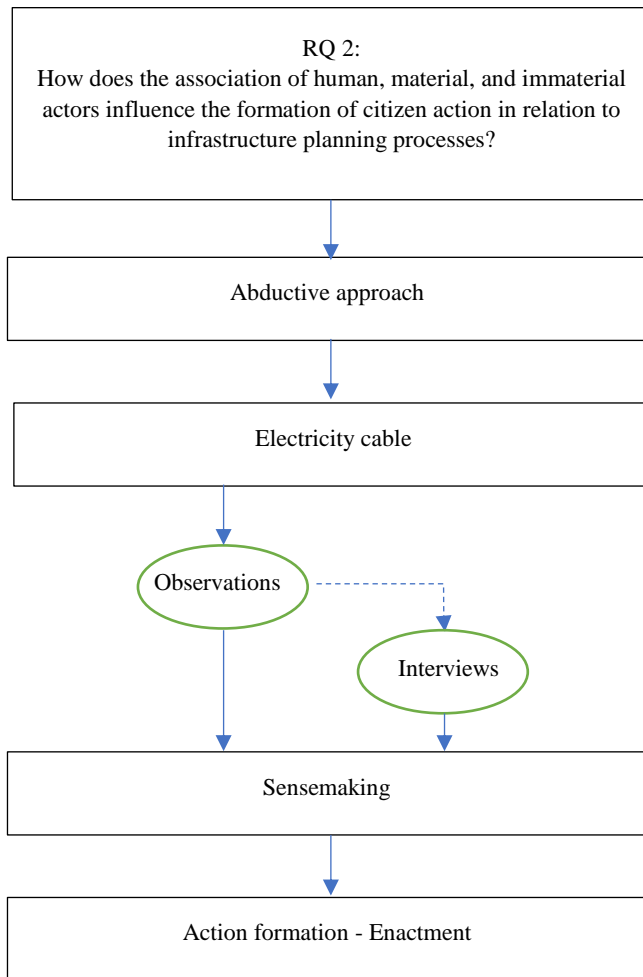


Figure 6.3: Research design for research question two.

The methodological approach is inspired by insights from ANT that emphasise the importance of staying in the description and resisting the temptation to explain or disregard the connections made by the citizen by switching conceptual repertoires (Callon 1986; Farías 2011). The principle of *generalised agnosticism* suggests that the researcher should allow the studied actors to state their own interpretations of their social context, and that these interpretations should be taken seriously. The interpretations made by the actors, Callon (1986) argues, are often undermined by the interpretations made by the researcher in the researcher's presentation of a situation. To accommodate the generalised agnosticism principle, the interviews are unstructured but loosely based on the observations in the sense that the citizens were asked to explain what happened at the meeting in their own words and comment on the actors they had drawn into the conversation at the one-to-one meeting.

The research design described above can give rise to methodological concerns especially related to the external validity of the study, as the study is based on only four citizens. In the Sensemaking-article, it is argued that the landowners are representative of the kind of citizens who are drawn into infrastructure planning processes, but they can just as easily be outliers in other contexts. Therefore, no claim can be made about representative respondents. However, the design of the study is appropriate for the purpose, which is an in-depth analysis of citizens' sensemaking processes and action formation. In this kind of study, it is perhaps more suitable to discuss transferability instead of external validity. Transferability is an alternative to the prevalent external validity concept and was introduced by Guba (1981). He argues that the process of transferring results from a study to other contexts is not the responsibility of the researcher. Hence, it is not necessary to account for opportunities to make general inference. The responsibility of the researcher is then to make sure that the context and assumptions in the study are clear so that others might assess the appropriateness in transferring the results to their context of study (Lincoln and Guba 1985). In this perspective, basing a study on four respondents is not problematic as long as the context of the four respondents are described. This approach is adopted in the analysis of research question two, but at the same time it must be emphasised that further studies are needed to explore the findings.

Another methodological concern is related to the internal validity of the study. The unravelling of the networks is conducted by following the citizens' assembling processes in the interactions with the TSO representative. There is a risk that the interaction does not reveal all the important actors in the citizens' actor-network as the citizens could have refrained from introducing them in the interaction for a variety of reasons (e.g. concerns for the TSO representative, or because he was unaware of them at the time of interaction.) As a way of responding to the concern, the subsequent interviews acted as a way of filling the hole in the network and letting the citizen add

important actors to the network that he refrained from introducing at the time of observation.

Additional elaboration of the methodological concerns can be found in the Sensemaking-article in Appendix A.

6.3.3 RESULTS

The results from the Sensemaking-article contribute to understanding how heterogeneous factors are assembled into networks that play an important role in the citizen's sensemaking and action formation. Figure 6.4 illustrates the action formation process that is uncovered in the analysis. It shows how the assembled network of heterogeneous actors comes to define the action formation process. Compared to the first model illustrated in the analysis of research question one, this model shows a more reciprocal and interactional relationship between actors and citizens and between different actors in the network.

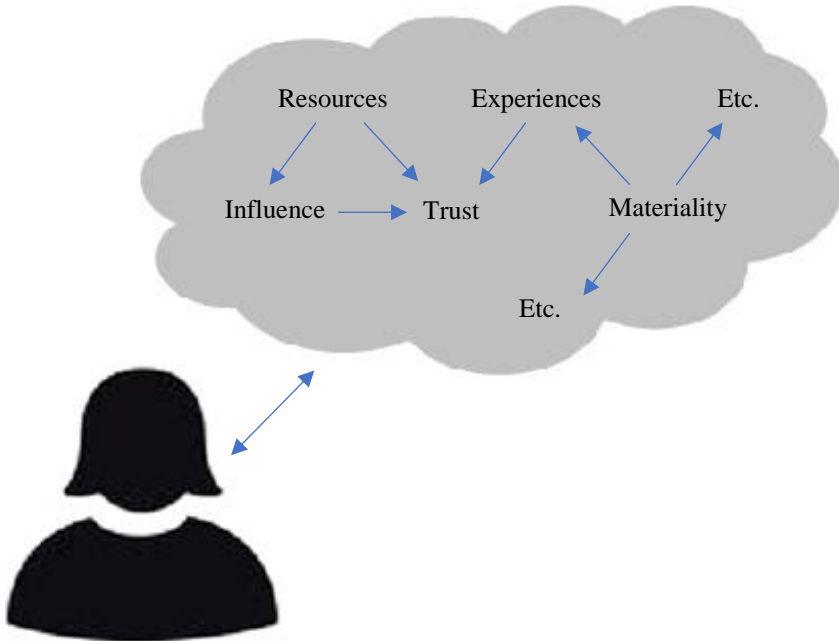


Figure 6.4: Illustration of how the enactment of a network of actors influences citizen action.

The result of the analysis is four properties that describe the reciprocal relationship between the actor-network and the citizen and how it affects the action formation process:

- 1) Influencing actors are linked in an actor-network by the citizen and actors interact with each other as well as the citizen. The obligatory passage point in the actor-network plays an important role in determining the nature of the actor-network.
- 2) The arena from which the influencing actors originate is not limited to the participatory space either in time or space.
- 3) The citizen is not alone in enacting the environment; other actors in the network do the same, thus changing the actor-network and environment. This makes the margins of manoeuvre a subject of negotiation between actors.
- 4) The process of assembling actors in a network is dialectical, dynamic, and ongoing. Action is not a result of a translated and enacted network, but a vital part of the translation and enactment process that comes to define what Callon (1986) terms “the margins of manoeuvre”. The term corresponds to Weick’s (1995) notion of enacting structure into the environment that then comes to form action.

The four properties will be discussed further in the following section. As mentioned, the analysis is based on the Sensemaking-article but certain aspects of the findings in the article are highlighted and discussed more thoroughly in the analysis. ANT is given a more prominent role, and the findings on the obligatory passage points have been elaborated. This is a result from the findings being interpreted into the context of the dissertation that has slightly different focus areas than the article.

Actors are linked in an actor-network by the citizen and interact with each other and the citizen

One of the main findings from the Sensemaking-article is that influencing factors should be understood as a network of actors that the citizen is a part of and that is enacted in the process of making sense of the cable project and the participation process. Therefore, the analyses of research questions two and three will treat the influence of *actors*, not *factors* that was investigated in research question one. The Sensemaking-article investigates the sensemaking processes of four different citizens, who assemble four rather different actor-networks. Figure 6.5 shows one of the actor-networks.

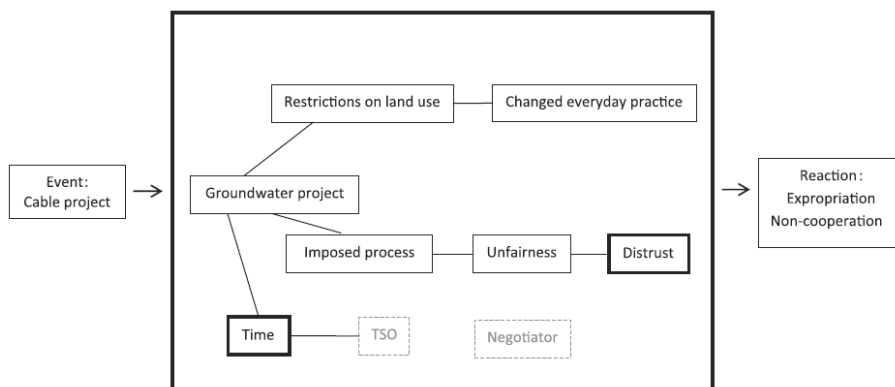


Figure 6.5: The actors in one of the citizens' sensemaking process. Lines indicate links made by the citizen between actors. Grey text indicates actors that are excluded, and bold text the most dominant actors in the sensemaking process (Aaen et al. 2016, 580).

As illustrated in Figure 6.5, the cable project prompted the citizen to activate his experiences with a planning project, he has previously participated in (the groundwater project); this actor then activates new actors that are all translated into the actor-network in order to make sense of the disruption to the environment caused by the cable project. In this way, every influencing factor is granted agency, as it has the power to translate the whole actor-network by introducing actors or re-interpreting existing actors in the network, and thereby possibly changing the whole constellation and subsequent meaning and action of the citizen.

Figure 6.5 illustrates an example where the citizen has had a bad experience with the groundwater project, and because the process connected to this previous project was a negative experience of distrust and unfairness, the citizen makes the groundwater project the obligatory passage point of his actor-network. Thus, the experience comes to define the remaining actors that are translated into the actor-network in the sensemaking process. The obligatory passage point is vital to the formation of an actor-network. It is, as the concept suggests, a passage point for other actors in the network in the sense that it mediates the interactions taking place between the actors in the network. Hence, the obligatory passage point becomes vital in determining how other actors in the network contribute to the sensemaking process and also play an important role in delimiting what actions make sense, because as a point of departure, it defines the network (Callon 1986). Relating back to the analysis of research question one, the obligatory passage point corresponds to a key influencing factor.

In the Sensemaking-article, different obligatory passage points are identified in the four citizens' actor-networks. From the outset, and taking the literature on public participation as a point of departure, it would be expected that the participation methods and perceptions of fairness and justice in the current process would be obligatory passage points, as they are generally recognised as being important for citizens' actions related to energy infrastructure planning (Wüstenhagen et al. 2007; Raven et al. 2009a; Walter 2014). However, this is not the case in the four sensemaking-processes that are analysed. In these cases, the obligatory passage points are: a) an earlier planning project, as illustrated in Figure 6.5; b) the compensation granted in an earlier project; c) earlier conduct by the TSO; and d) citizens' self-perception. These are to some extent linked to fairness, but not in the cable project. Instead, earlier experiences are very influential in the translation and sensemaking process. The analysis thus shows that the obligatory passage points (and as a consequence, the constellation of the actor-network) are highly individual and situated, but in the interest of understanding citizens' actions in infrastructure development processes, unravelling the actor-network and identifying the obligatory passage point provides a tool for better understanding citizens' sensemaking process and actions, as it provides a method for understanding the combined and dynamic influence of the many heterogeneous actors that play a role in action formation processes.

The arena from which the influencing actors in the network originate is not limited to the participatory space either in time nor space.

Another result from the Sensemaking-article is that citizens are not constrained by the time and space of the participatory process in their sensemaking process. They freely assemble actors from the past, present, and future in the same actor-network, and actors in the present are not given preferential treatment. In the state-of-the-art review as well as the previous analysis, the influencing factors were divided into the following categories for the sake of structure: individual, project, context and interaction. What now becomes clear is that these divides are not relevant to the individual in the sensemaking process. The citizen assembles meaningful networks out of actors originating from various arenas, categories, and points in time. A contribution from this article is then to suggest that rigid structures such as the ones I have employed earlier are abandoned in the attempt to follow the actors, as suggested by the ANT approach (Callon 1986).

Even though the four citizens assemble four different actor-networks, reoccurring actors such as the groundwater project are seen as well. The groundwater project is translated differently by the citizens, but some commonalities between citizens living in the same local area are likely to occur. Therefore, the effort to understand citizens' actions in infrastructure development processes must include awareness of relevant events in the local community's past, present, and future as they are likely to be included in the sensemaking actor-networks of citizens in the area.

At the same time, the sensemaking process is still situated in the specific participatory spaces, and the constellation of the actor-network is highly susceptible to dynamics in the participatory space. The significance of the interactions taking place in the situated spaces will be discussed further in the analysis of research question three.

The citizen is not alone in enacting the environment, other actors in the network do the same by which they change the environment.

Because it is the citizen's sensemaking process that is being analysed in the article, the citizen holds primary agency in the process of assembling and translating actors. The contribution of the ANT approach is that it can explain how other actors in the network assume agency and participate actively in enacting the environment by taking part in the translation of actors (Geels 2004; Latour 2005). This mechanism is identified in the Sensemaking-article.

The four enactment processes in the article are all instances where actors actively interact with each other in ways that change the constellation of the actor-networks. This happens when new actors that are introduced to the network make some actors more influential or undermine the importance of others. Two processes are suggested by the article's results through which actors alter the composition of citizens' actor-networks in the sensemaking process: inclusive processes and exclusive processes.

Inclusive processes are defined in the article as:

“(...) enactment processes which make sense by creating, combining and including entities in new compositions of entities in the sensemaking process, thereby creating a new meaning” (Aaen et al. 2016: 584).

An example of inclusive processes is the materiality of the cable project that contributes to activating the citizens' experiences with other projects with similar materiality. In the article, the cable project activates experiences with a groundwater project, a road project, and a cable project. There are projects that are in some way linked to the current cable project by their materiality or process. In a sensemaking perspective, activating experiences with similar processes and materiality provides the citizen with the relevant plausible stories to initiate the sensemaking process.

Examples of exclusive processes are also found. Exclusive processes are defined in the Sensemaking-article as:

“(...) processes of enactment that make sense by excluding or de-combining entities from existing compositions of entities in the sensemaking process, thereby creating a new meaning.” (Aaen et al. 2016: 584).

One example of an exclusive process is illustrated in Figure 6.5. This citizen's bad experiences with a previous planning process causes him to exclude both the current cable project and the negotiator from his actor-network. He pays limited attention to the negotiator's arguments and the materiality and impacts from the current cable project. Instead he equates the previous and the current project which then guides his actions of non-cooperation. This is a process where powerful actors such as the citizen's past experiences excludes actors in the present situation.

Another example given in the Sensemaking-article involves a couple, who is concerned about the impact off the cable on their underground soakaway facility. They fear that the process of laying the cable can damage the soakaway facility. In this case, the TSO representative actively excludes the soakaway facility from the citizens' actor-network by reassuring them that the TSO will reimburse any damages. A more ANT-inspired way of saying the same thing is that the soakaway facility changes the constellation of the actor-network by refusing to be translated into a problem. Exclusive processes can therefore also occur when actors refuse to be translated in certain ways. The fact that actors can refuse translation supports the epistemological approach in the dissertation that assumes reality does exist beyond what is perceived by the citizens. The refusal of translation by non-human actors can be seen as constructed reality colliding with reality.

The inclusive and exclusive processes are instances where actors - apart from the citizen, re-assemble the actor-network and thereby change the environment and potentially the actions taken by citizen. It shows that action formation processes are highly dynamic and that actor-networks are temporary and volatile constellations that can be changed at any time.

The results furthermore suggest that it is not only human actors that have agency. Material and immaterial actors have the same attributes as human actors in the sense that they can also change the composition of actor-networks, and through that the citizens' sensemaking-processes and actions. This differs from traditional sociological approaches such as symbolic interactionism, where socio-material and immaterial actors are conceptualised as entities that are ascribed meaning by the human actors (Blumer 1969). This addition to the conceptualisation of action opens up for a more holistic approach to understanding citizen actions in participation processes, which was called for in the analysis of research question one.

Action is a part of the translation and enactment process which come to define the margins of manoeuvre for action.

Having described the nature of the actor-network, the analysis turns to how the associations of different actors come to influence citizens' action.

An insight from the Sensemaking-article is that the process of sensemaking is a dialectical, dynamic, and ongoing activity. Action is therefore not a result of a translated network but a vital part of the translation and enactment process that comes to define what Callon (1986) terms the margins of manoeuvre for action. The term corresponds to Weick's (1995) notion of enacting structure into the environment that then forms action. This means that citizens enact their own reality by assembling actor-networks that allow them to make sense of the situation, project, and process and this reality comes to form their actions in the process. However, in order to make sense, they act first. In the Sensemaking-article, the actions take the form of speech. Action in the form of speech in this instance is thus a part of the sensemaking process as much as a result of it. In the example described in Figure 6.5, the citizen starts the conversation with the TSO negotiator by stating the reasons he will not allow the TSO to establish a cable on his property. By doing this, the citizen enacts a reality where he is in opposition to the negotiator and the project, thereby making it difficult for himself to enter into an agreement with the negotiator later in the interaction. He thus creates his own margins of manoeuvre by enacting his actor-network.

6.3.4 DISCUSSION OF THE RESULTS AND CONTRIBUTIONS TO THE FIELD

In order to outline the contributions of the results, they are discussed in the following section in relation to the existing literature on citizen action in infrastructure planning processes.

The primary contribution of the findings to the understanding of citizen action lies in the uncovering of the dynamic and situated nature of citizen's actions and sensemaking. The literature, especially that focussing on citizen attitudes towards energy infrastructure, tends to treat citizens' attitudes as stable entities (Webler, Tuler and Krueger 2001; Walker, Wiersma and Bailey 2014; Walter 2014). This approach has sparked scholars to discuss and study the seemingly paradoxical contradiction between citizens' general attitudes to renewable energy, which is generally supported, and opposition to renewable energy infrastructure projects in their own 'backyards' (Bell et al. 2005; Batel and Devine-Wright 2015b). This attitude-behaviour discrepancy is conceptualised by the well-known term NIMBY (Not-in-my-backyard). The NIMBY-concept has been heavily critiqued for portraying a simplistic picture of selfish and ignorant citizens (Burningham et al. 2006; Aitken 2010), for failing to understand the socio-psychological motives behind NIMBY-responses (Batel and Devine-Wright 2015a), and for claiming the existence of an attitude-behaviour gap that is difficult to prove empirically on an individual level (Wolsink 2000; Bell et al. 2013). The NIMBY-concept has been critiqued to the point that it can almost be laid to rest as an explanation of citizen action. The findings in the dissertation join the choir in stating that NIMBY does not catch the complexity of actors that contribute to forming the

attitudes and actions of citizens, and most importantly does not take into consideration the dynamic and situated nature of action formation that is suggested by the findings in the dissertation. This is a critique that can be extended to many of the critics of the NIMBY approach as well. According to the findings, both attitudes and actions are temporary and situated entities that reflect the composition of the actor-network they are a part of in the particular situation in which the attitudes or actions are investigated. This makes attitude-behaviour gaps natural, because actions taken by citizens e.g. in relation to a local energy development projects, happen in a different context than the situation in which they stated their attitude towards renewable energy in general. The findings in the dissertation therefore contribute to reformulating the discussion of the attitude-behaviour gap, claiming that it is not actually a paradox. The findings thus contribute with a conceptual framework for understanding the situated-ness of actions, why attitudes and actions change according to the situation the citizens are in, and the actor-networks the citizens join or create.

Another related contribution is towards the understanding of how actions taken by seemingly similar citizens, who participate in the same infrastructure development process differ. The four citizens that comprise the empirical basis for the analysis are in many aspects similar. They live in the same area, are subjected to similar impacts from the same project, and participate in the same participation process, and yet their actions in relation to the project differ significantly ranging from cooperation to opposition. The analysis explains this difference between citizens by considering the differences in the composition of their individual actor-network. Considering the significance of individual characteristics of the citizens is widespread in various approaches to understanding citizen responses to infrastructure planning including socio-economic (Vorkinn and Riese 2001; Firestone and Kempton 2007), socio-psychological (Stedman 2002; Venables et al. 2012; Pinard 2011; Læssøe 2012), and cognitive approaches (Upreti 2004; Dunwood 2007; Kemp and Nielsen 2009). The findings in the dissertation contribute to this individual approach citizen action with a more holistic approach to the actors that are drawn in to the action formation process by the individual citizen. This is an approach that enables the explanation of why certain citizens choose to oppose a project while other seemingly similar citizens do not.

The findings add yet another dynamic aspect to the action formation process in suggesting that not only are the actor-networks that are uncovered in the analysis very different, they also change during the interaction with the TSO representative. The analysis suggests that processes that include or exclude actors from the network come to change the network and thereby potentially the actions of the individual. These processes are not only initiated by the citizens, but other actors have the same ability

to include or exclude actors from the network. Past experiences exclude present actors; the materiality of the proposed cable project includes experience with similar infrastructure projects and human actors, such as the TSO representative, exclude concerns regarding the impact of the cable project. These are dynamic processes where the introduction of new actors to the actor-network changed the composition of the network. An insight that can be drawn from this is that the effect from important actors cannot be universal, and even though the effects from factors such as trust, justice, and fairness are considered universal in the public participation literature (Wuestenhagen et al. 2007; Wolsink 2007a; Raven et al. 2009a; Devine-Wright 2011; Walter 2014), they can easily be changed in the translation process as other actors might undermine their importance. This means that the relationship between the actors that enter into the action formation process is temporary and that the actor-network must be perceived as a highly volatile structure which underscores the appropriateness of understanding citizen actions as situated both in time and space.

The importance of networks is considered in the social mobilisation literature that points to the importance of social networks in creating meaning and a sense of shared identity for citizens (Kitts 2000; Passy 2001); this becomes important for their engagement in planning processes. These networks, however, only include human actors. The dissertation broadens the scope by pointing out that material and immaterial actors are also a part of the network and thus contribute to providing meaning and identity to the citizen and most importantly come to influence the actions of the individual.

The dynamic nature of action that is suggested by the findings furthermore points to the importance of widening the temporal and spatial aspects when understanding the formation of citizen action. Studies of citizen action tend to include rather narrowly defined spaces of public participation in terms of time and space. The participatory process is often considered a primary predictor of citizen action (Bell et al. 2005; Upham and Shackley 2006; Haggett 2011; Knudsen et al. 2015), and studies neglect the process that goes before and after this particular point in a planning process. This means that events that are not a part of the process for instance events in the local community or other concurrent planning processes are ignored. The findings in the Sensemaking-article show that events that goes before and come after the participation process can be vital actors in the action formation process because they are important to the citizen. In the Sensemaking-article, earlier infrastructure projects become obligatory passage points for the whole actor-network and come to play a major role in defining the sensemaking and action formation and future actors such as building and garden plans come to play a role as well.

Some studies in the infrastructure development field have taken a wider process-oriented approach to citizen action. One example is Futrell (2003), who in the course of a public participation process follows how the citizens' focus shifts according to the available planning option that is brought into the process. The focus, however, is still rather narrowly on the participation process. The study by Walker et al. (2011) is another example where the scope is broadened to include actors that are not directly involved in the participation process, such as the media. They also argue that relationships between a variety of actors should be studied over time as they are dynamic and changing. The findings in both the Sensemaking-article and Conditions-article support Walker et al.'s (2011) point that it is necessary to look beyond the boundaries of the participatory space to understand citizen action; the findings thus call for a reconsideration of the focus that is directed towards the formal participation process when trying to understand citizen action, and instead employ an approach that has a broader temporal and spatial view on citizens' action formation process.

A final contribution of the findings relates to how the role of citizen is conceptualised in the infrastructure development literature. The approach taken in the dissertation is that citizens play an active role in forming their actions towards infrastructure projects introduced into their lives. The actor-networks that are analysed in the Sensemaking-article are not imposed on passive citizens to react to. On the contrary, they are actively assembled and enacted by the four citizens. By enacting certain actors such as earlier planning projects or everyday practices, the citizens form the reality they are acting in. For example, one of the citizens chooses to enact an earlier groundwater project where he was badly treated. This causes him to create a conflictual situation in which it is more difficult to act moderately both for the citizen and the negotiator. His enactment of certain actors thus comes to define and create certain affordances (Gibson 1986) or margins of manoeuvre (Callon 1986) for his actions. The enactment concept is therefore important when understanding citizen action both in individual sensemaking situations, but also in social spaces where a social aspect is added to the action formation process, but where the enactment of networks is still an important mechanism to consider.

The findings thus attribute an active role to the citizen, and furthermore argue that infrastructure projects are more fruitfully understood as actors that participate in citizens' everyday lives and are drawn into the citizens' actor-networks by the citizens. In this perspective, non-participation by citizens in participatory processes should not be understood as the result of lack of resources such as time, competences, and the like (Cooper et al. 2006; Lowndes et al. 2006; Irwin et al. 2015), but as instances where citizens choose not to make the infrastructure project a part of their actor-network in their everyday lives. This citizen perspective, I would argue, is lacking from the literature investigating citizen action in infrastructure planning.

6.4 SIGNIFICANCE OF INTERACTIONS IN SITUATED SPACES

The third research question asks: How does the process of human interaction influence the formation of citizen action in relation to infrastructure planning processes? In the analysis of research question two, citizens' actions were found to be a part of the process of enacting order into situations. The analysis focussed primarily on the actors that already existed independently from the situation and were translated into the situation and only briefly touched on the importance of interaction between the human actors that were present in the situated space. This research question therefore focuses on the actors that are created by the interactions in the situation. In addition, the analysis focusses more narrowly on interactions between human actors, which differs from the broader perspectives taken in research questions one and two that include both human, material, and immaterial actors.

The analysis of research question three includes some insights from the Sensemaking-article, but primarily builds on the results from the Situated Order-article. The Situated Order-article investigates the questions: "*How do participants enact order in participatory spaces?*" and "*What affordance does the situated order make for citizens' actions in the process?*" The article focusses on the order that is enacted by citizens in interactions with other participants in participatory spaces.

6.4.1 THEORETICAL FRAME APPLIED IN THE ARTICLE

The theoretical framework applied in the Situated Order-article is based on the works of Garfinkel (1967; 2006), who conceptualises how individuals commit themselves to creating intelligibility in interactions by enacting a situated order. This approach is combined with insights from Goffman (1967; 1983) on how the identities of citizens are constructed and upheld in face-to-face encounters. The two approaches share a focus on the importance of the situated order that is enacted between individuals participating in a social situation, but they differ rather significantly on the nature of the situated order and the participating actors.

Goffman's concept of face work is applicable in understanding how citizens manage their identity by managing the impressions or lines they give out in a situation, but Goffman's approach to social interaction assumes that individuals have full knowledge about the situated order in a situation and therefore can willfully manipulate the rules in order to obtain specific goals (Maynard 1991). Furthermore, Goffman does not conceptualise language as being contingent on the interaction but as an institution that is applied with the aim of constructing a situated self (Rawls 1989). Hence, Goffman assumes a more rational-natured actor than Garfinkel (1967; 2006). On the contrary, Garfinkel conceptualises the situated order as something that the individual must learn whilst enacting it, and pressing pause to plan strategic actions that can

manipulate a situation is not possible (Maynard 1991). The actor is thus more embedded in the enactment of the situation than in Goffman's approach.

The aim of the third article is to capture the constructed and volatile nature of the interaction, and the theoretical framework applied in the analysis of research question three therefore relies primarily on the ontological assumptions of Garfinkel (1967). However, Goffman's conceptual framework on face work is still applicable in understanding how situated identities are enacted and negotiated in interactions even though the face work is not viewed as a deliberate strategy for manipulating a situation. The two theoretical approaches will be discussed in more detail in the following section.

The enactment of a situated order by situated actors

According to Garfinkel (2006), participants in social situations will have as their primary aim to establish a common agreement of what they are doing in the situation, who they are, and what can be perceived as meaningful actions in the situation. This is done through their interactions, practical actions, and talk. Establishing intelligibility is a social endeavour, but to obtain it individuals apply individual strategies for creating meaning. They are based on the individual's interpretation of the situation and what the individual perceives to be the appropriate actions in the situation. Consequently, different strategies are applied in different situations according to the specific situation. The individual's interpretation of a situation causes him to take actions that he believes contribute to creating intelligibility and enacting a situated order. The situated order is thus a result of the individual's interpretations of the situation and his strategies for enacting this order.

Creating a situated order is a social endeavour in the sense that the actions of one individual cause responses from the remaining participants in a social situation. They react to the individual's enacted interpretations of the situated order by confirming, changing, or rejecting them. Reactions to the individual's interpretations will cause his perception of the situation to change, and thus his actions taken in it. The situated order is therefore an ongoing accomplishment of participating citizens (Garfinkel 1967).

In addition to actions, the individual's identity is also situated. Garfinkel (2006) uses the term 'situated identities' which indicates the individual can have different identities according to the specific situation acted in. Identity is therefore not at stable entity, and the individual takes on the identity that makes sense in the situation acted in. This is not to say that the individual's identity is completely contingent on the situation the individual is in, but it is adjusted to it. The individual's situated identity is also an aid for the remaining participants in the situation to understand the individual's actions, and it is necessary for the individual to make sense in order to communicate

with the remaining participants. Therefore, to make sense and communicate, the actions must be in accordance with both the situated order and the individual's situated identity.

The face work of situated actors

Goffman's (1967) concept of face work focusses specifically on how situated identities are enacted and negotiated in interactions. According to Goffman, individuals define themselves through social interactions. In order to do this an individual will enact a;

“...pattern of verbal and nonverbal acts by which he expresses his view of the situation and through this his evaluation of the participants, especially himself.” (Goffman 1967: 306).

The patterns enacted by the individual participants in a situation come to restrain the actions taken in the situation and thus define it, because participants will commit themselves to protect not only their own face (Goffman's term for the enacted patterns) but also the faces enacted by the remaining participants. Hence, actions that threaten the face of the individual or others will cause participants to act in order to protect the face of themselves or others. Individuals are not in Goffman's terminology motivated by creating intelligibility in a situation but by moral duty to protect the faces of others and themselves. The result, however, is the same: a situated order is enacted that delimits the margins of manoeuvre for individual action in situated contexts.

The two theoretical approaches described here provide a framework for understanding how interactions come to influence the individual actions of citizens in participatory spaces through the situated order. Goffman's framework plays a minor role in the synthesis analysis compared to the article primarily because most of the actors knew each other before interacting in the analysed spaces. This means that the most relevant findings can be found in the enactment of the situated order and consequently have been given priority in the synthesis.

6.4.2 APPLIED METHODS FOR DATA COLLECTION

The results used in analysing research question three are derived from the Sensemaking-article and the Situated Order-article. The applied approach is abductive, which means that the objective is to understand the cause of the observed actions. In the investigation of social mechanisms, qualitative methods are very suited. Therefore, the investigation of research question three is conducted using only qualitative data collection methods.

The data collection methods applied in the Sensemaking-article have been accounted for in *Section 6.3.2: Applied methods for data collection*. This section therefore only describes the data collection methods used in the Situated Order-article. The data consists of two parts: a) observations of seven one-to-one meetings between a TSO representative and different landowners discussing the cable trajectory, and subsequent interviews with participating citizens and b) observations as well as preceding and subsequent interviews with participants at a collective meeting that was held by the TSO to let citizens partake in the placement of a cable in cooperation with their neighbours.

The first part of the data collection follows the methods used in the Sensemaking-article. The same data from the Sensemaking-article is also used in the Situated Order-article, but supplemented by three additional observations of one-to-one meetings and subsequent interviews.

The second part of the data collected for the Situated order-article consists of an observation of the collective meeting. At the meeting, the participants were divided into four groups of 3-4 citizens. The primary data from the collective meeting consists of audio recordings of the conversations in these groups. The audio recordings were supplemented by observations and preceding and subsequent interviews with the participating citizens. The data from the observations and interviews is treated as supplementing data that supports the conclusions made on the basis of the audio recordings. Further descriptions and argumentation for the methods applied can be seen in the Situated Order-article in Appendix A. Figure 6.6 depicts the research design for research question three.

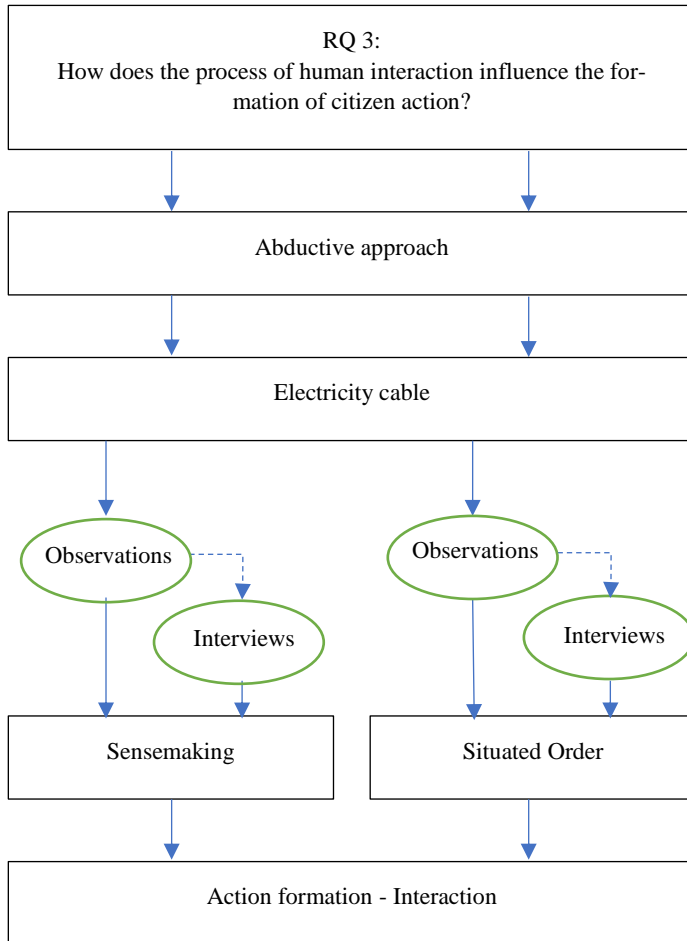


Figure 6.6: Research design for research question three.

Three methodological concerns can be raised in connection to the research design. The first regards the reliability of the data. According to Garfinkel (2006), there is a latent reliability problem in using interviews as a basis for analysis of interactions because the respondents are asked to interpret their doings in a situation they are no longer in. Hence, their frame of mind has shifted, causing them to interpret the situation in a different context. This presents a reliability problem in the sense that such interviews are difficult to reproduce, which makes the data unreliable. This concern is dealt with by giving priority to the observations and recordings of the interactions and primarily using the interviews to check the interpretations made by the author.

The second concern relates to the internal validity of the data and questions whether the data fully captures the negotiations of the situated order. The data collection is limited to two participatory spaces embedded in a wider planning process. This means that there are interactions between citizens and planners and especially among the local citizens that are not recorded. Given the insight from the previous analysis, it is expectable that the interactions taking place outside the recorded spaces also play a role in the interactions in the chosen spaces; these are not captured in the analysis. However, building on ethnomethodology and ANT, it is assumed that the actors that are enacted and translated in the situated space are the ones found relevant by the citizens in the interactions. Hence, even though the whole planning process is not recorded, the analysis will still capture the actors that are relevant to citizens' action formation, as they are selected by the citizens.

The final methodological concern is related to external validity and whether it is prudent to make general inferences on the basis of the findings. The concern relates to the fact that only two cases of interactions are analysed in a specific case – electricity cable planning, which is generally depicted as a low-impact case. This questions whether it is possible to infer the results from the analysis to e.g. high-impact and conflictual cases. The discussion is related to the one raised in *Section 5.3.1: Case design*, where it is argued that external validity of an analysis depends on the aim of the study. Here, the aim is of course to add insight into citizen action in general, but the ambition is more in line with Lund (2014) than Flyvbjerg (2006) in assuming that one case study will not exhaust the subject of citizen action. Rather, this study contributes to saturating the subject case-by-case by case in cooperation with the rest of the literature on citizen action in planning contexts. Therefore, it is necessary to ensure that the methodological premise is clear so that cooperation with other studies is possible. Therefore, the concern regarding internal validity is more pressing than this one regarding the external validity.

Additional elaboration of the methodological concerns can be found in the Situated Order-article in Appendix A.

6.4.3 RESULTS

The Situated Order-article contributes to the understanding of how situated actors are enacted collectively by processes of interaction in situated spaces. Figure 6.7 illustrates how interactions between human actors affect the action formation process. It illustrates that an interacted situated order is not exclusive of the existence of individual actor-networks and thus follows the point made in the ANT approach; that situated spaces are not limited to face-to-face encounters. The results suggest that the mechanisms can be supplementary in the action formation process. Therefore, the model depicted in Figure 6.7 does not negate the model constructed in the analysis of research question two but adds an interactional dimension to it. The following analysis

will primarily focus on human interaction in situated spaces in order to investigate the specific influences of actors that originate from the situated space.

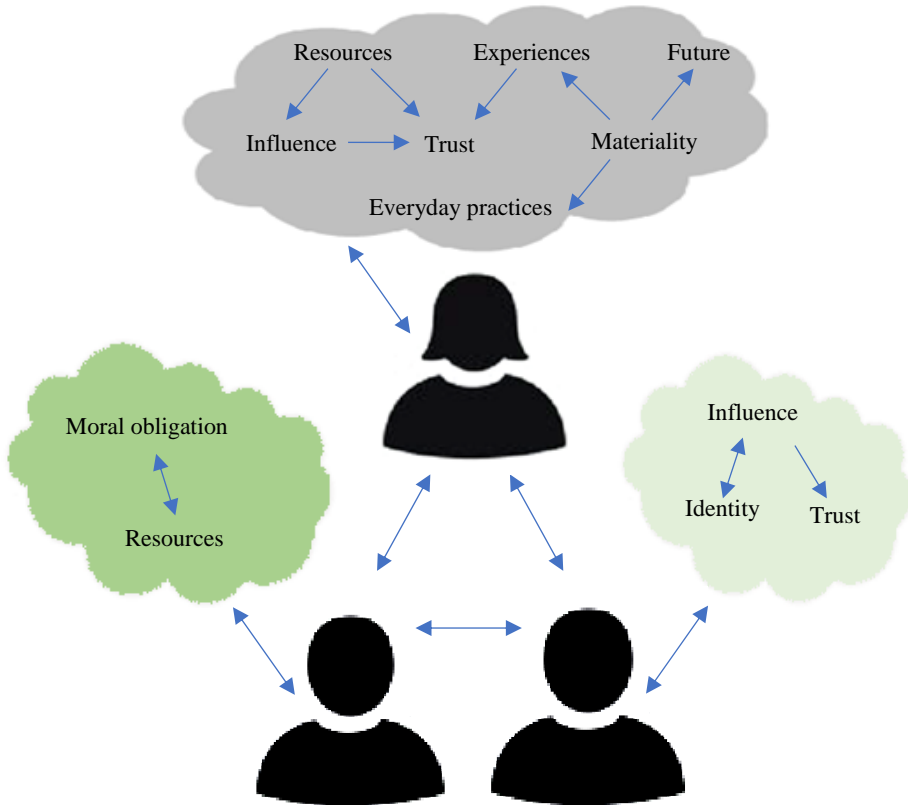


Figure 6.7: Illustration of how interactions between participants and their respective network of actors influence the action formation process.

The article presents three insights into citizen action:

- 1) Actors that are created in situated spaces influence citizen action;
- 2) Situated actors can transform the effect on action from external factors; and
- 3) Interactions enact order that comes to form action; hence, enactment can be a social endeavour.

The last point is also supported by the Sensemaking-article.

Actors that are created in situated spaces influence citizen action

The Situated Order-article analyses two spaces where citizens and planning professionals interact with the aim of agreeing on a trajectory of an underground electricity cable: a collective meeting where the trajectory of the cable is negotiated between neighbours, and instances of one-to-one meetings where negotiations take place between one citizen and a planning professional. The article finds that a specific situated order arises from the interactions between the participants, and that this comes to influence what are deemed acceptable and meaningful actions in the situations. Even though the situated order might be influenced by external actors that are enacted by the citizens, the situated order is indeed situated in the sense that it is primarily enacted in the interaction that takes place between participants in the space and only applies to the specific situation from which it arises.

Three interpretations of the situation are enacted by the participants which come to define the situated order in the collective meeting:

- 1) The citizens assume that the TSO has made sensible decisions when planning the cable trajectory;
- 2) The citizens professionalise their arguments in the sense that they primarily focus on topics that are of interest to the TSO. These include impact caused by the cable project on field drains, wind breaking trees, or future plans that might conflict with the cable; and
- 3) The citizens aim at making amicable decisions in cooperation with their neighbors.

The participants in the one-to-one meetings enact rather different interpretations of the situation. The professionalisation of arguments also happens in these spaces, but to a lesser extent, as personal topics are also introduced in the negotiations, and the citizens' arguments for changes to the trajectory builds more on personal issues. The sensibility of the TSO is to a larger extent questioned and the effort to make amicable decisions are not as dominant in the one-to-one meetings. This means that the interactions are more conflictual compared to the collective meeting and that the citizens are more prepared to focus on their own preferences rather than actively considering the preferences of their neighbours. The interactions in the two different spaces thus produce and enact different situated orders that come to influence the actions of the participating citizens. Where the interactions in the collective meeting produced actors such as amicable decision-making, a sensible TSO, and a professionalised discourse, the interactions in the one-to-one meetings produced situated actors such as: conflictual decision-making, personalized discourse, and personal preferences.

One of the actors created through the interactions is citizens' identity. There is no suggestion in the Situated Order-article that citizens' identities are completely dependent on the interactions taking place in the space, but part of their identities are negotiated by the participants. In this regard, the dynamics are more similar in the collective meeting and the one-to-one meetings. In both spaces, the citizens enact themselves as knowledgeable about the local community, environment, and their own lives, and the TSO representatives accept this enacted identity. This has the effect that the TSO representatives primarily use technical and institutional arguments to support their proposal for the trajectory of the cable rather than risking offending the citizens' enacted identity by using arguments anchored in local knowledge. This is an example of how enacted situated identities produced in the interactions impact the action in the participatory space.

Situated actors can transform the effect on action from external actors

The Situated Order-article also indicates that the situated order can have a transformative effect on actors originating from the citizens' actor-networks that are enacted by citizens. One example that is presented in the article is the amount of influence allocated to citizens in the planning process. Usual reactions to limited influence found in the literature are anger (Fainstein 2000) or polarization of the discussion (Innes and Booher 2004). Evidence of these kinds of reactions are seen in the one-to-one meetings, but this is not the case in the collective meeting. Here, the participants accept the limited influence as a fair condition. Given that the two spaces of public participation have the same framing conditions; the same infrastructure project, similar impacts, and similar opportunity for influence, the difference must be caused by something else. This suggests that the citizens' actions connected to their influence are affected by the situated order that is specific to the space they participate in. Hence, the impact from the influence-actor is changed by the situated order that is enacted by the participants in the space.

Another example that occur with the data but is not reported in the article is the participants' interests and preferences regarding the cable trajectory. Rational approaches and NIMBY-inspired studies find participants in participatory processes to be motivated by promoting their own interests (Brion 1991; Freudenburg and Pastor 1992). The results from the one-to-one meetings support this approach, showing that the landowners are willing to disregard the interests of neighbours to move the cable outside their own property. However, the results from the collective meeting challenge the rational approach, as participants in the collective meeting are willing to disregard their own interests to reach amicable decisions. The main difference between the two instances is the situated order of the interaction, and the results indicate that it can explain the difference in the citizens' actions. Hence, the interests of the participants

in the collective meeting changed from specific preferences regarding the trajectory to social goals, such as enacting the situated order and making amicable decisions.

The results in the Sensemaking-article suggest that citizens' actor-networks can be re-assembled by inclusive and exclusive processes initiated by other actors. The contribution of the Situated Order-article is to suggest that actors not only are included and excluded from actor-networks but also transformed. In the vocabulary of ANT, the actors are 'translated' by the situated order which has become an obligatory passage point in the actor-network (Callon 1986).

A finding from the Situated Order-article is that, while not denying that actors in the citizens' actor-network have an influence on the citizens' actions in situated spaces of public participation, it is necessary to be alert to the transformative potential of the situated order to fully understand their influence on citizens' actions.

Interactions enact order that comes to form action; hence, enactment can be a social endeavour.

To answer the third research question, it remains to be investigated how the situated actors that are enacted in the interactions, come to influence citizens' action formation. A conclusion from both the Sensemaking-article and Situated Order-article is that the situated orders influence action through interactions between human actors.

The Sensemaking-article investigates the dynamic process of translation and enactment between heterogeneous human and non-human actors and primarily focusses on the influence actors have on citizens' actions through the citizens' actor-networks. Tentative results in the Sensemaking-article do nevertheless suggest that human interaction is significant as well. These are based on the interactions taking place between the citizen and the TSO representative in the one-to-one meetings. What transpires from the article is that exclusive and inclusive processes can also be initiated by human actors as well as non-human actors, and that human actors also have the ability to re-assemble other citizens' actor-networks. Following the ANT approach, no priority is given to human actors compared to non-human actors, and in some instances non-human actors are more dominant than human actors in the sensemaking-process. An example given in the Sensemaking-article is of past experiences excluding the arguments given by the TSO representative in the situated space. However, the article nevertheless suggests that interactions between human actors are also significant.

The results emerging from the Situated Order-article elaborate somewhat on this conclusion by analysing how order is produced in the interactions between human actors and the influence it comes to have on citizens' actions. The Situated Order-article finds that influence from actors in the citizens' network is mitigated by the situated

order that is created in the interactions between human actors in the public participatory space and furthermore that the situated order influences action by creating certain affordances for action. In other words, it delimits what is considered meaningful action in the situation.

The article shows how shared interpretations of the situation come to define what is considered meaningful for the participants. In the collective meeting, interpretations such as amicability, professionalisation, and familiarity between the citizens contribute to narrowing the affordance for action and creating a situated order that favours status quo, whereas in the one-to-one meeting, affordance for action is widened by a combination of factors such as personalised arguments and focus on personal preference. The actors create a situated order that is more conflictual. The two different situated orders are mainly created by the interactions of the human actors in the situated space.

6.4.4 DISCUSSION OF THE RESULTS AND CONTRIBUTIONS TO THE FIELD

In the following section, the findings from the analysis of the third research question will be related to the existing literature on citizen action in infrastructure planning processes in order to identify the contributions made to the field.

The primary contribution of the findings is that the actors that are produced in situated interactions come to play a role in citizens' action formation. The situated order is an actor that is produced by the interactions between participants in participatory space. It influences action by creating certain affordances for action, thereby delimiting what is considered meaningful action in the situation. Analysing the influence of actors in the participatory space on citizen action is a widespread approach taken e.g., in the process-oriented approaches described in the state-of-the art review (Beierle and Konisky 2000; Rowe and Frewer 2000; Smith and McDonough 2001). These scholars focus on how the properties of the public participation process such as fairness, influence, information, and so on come to influence citizens' actions in the participatory space. However, despite the variety of factors that are considered to influence citizens' actions in the participatory space, they are mainly actors that are brought into the space by the participants. Hence, actors such as place-attachment issues (Devine-Wright 2009; Bailey et al. 2016), power relations (Pollock and Sharp 2012; Fox-Rogers and Murphy 2014), and socio-psychological attributes of individuals (Flam 1990; Pinard 2011) are all issues carried and enacted by the participants into the participatory space. The findings suggested by the analysis differ from these approaches by focussing on an actor - the enacted situated order, that does not exist prior to the interactions, but is produced in the situated interactions by the citizens and planners. The findings furthermore show that these interactionally produced actors have the ability to change the influence of the actors that are brought into the space. This is a new approach to

understanding citizen action, and it has repercussion as to how dynamic citizens' actions should be understood. It introduces an actor in the process that cannot be predicted before it emerges and thus underscores the value of applying micro-sociological methods such as ethnomethodology to understanding citizen action.

A second contribution of the findings is the further development of the interactional approach to citizen action. This approach is underdeveloped compared to the potential it has for creating insights into citizens' action formation. Contributions have been made regarding the significance of rituals (Barnes et al. 2004), discourses (Nothdurft 1995), and power relations (Pollock and Sharp 2012; Fox-Rogers and Murphy 2014), which are all interactional phenomena. The dissertation adds to this field by investigating the link between interactions and actions mediated through the situated order as an interactional accomplishment. Studies of situated orders that take an ethnomethodological approach are found in the sociology field but have not yet found their way into the infrastructure planning literature. One of the major potentials of the ethnomethodological approach is understanding the variations in action between citizens and situations that can be difficult to understand when relying on universal explanatory factors such as fairness, socio-demographic aspects and so on. This can be done either by focussing on interacted orders or by illuminating how external actors are transformed in the situation.

The interpretations of citizens' roles in participatory spaces that are described in the results are enacted by the participants in only two specific situations analysed in the Situated Order-article. Therefore, it is entirely possible that the interpretations of citizens' roles only exist in the two specific situations that were analysed. However, to investigate how widespread the interpretations are, the findings are related to the literature on public participation.

The analysis unveiled situated orders within participatory spaces that encouraged actions such as working towards amicable decisions and professionalizing arguments. It showed the connection between trust and participants' support for the TSO arguments and the citizens' enactment of themselves as experts of local concerns. The significance of trust is well-documented in the literature, and trust is generally found to be a prerequisite for constructive participatory processes (Beierle and Konisky 2000; Wüstenhagen et al. 2007; Firestone et al. 2012). Scholars have pointed to different procedural factors that build trust in participatory spaces. These are factors such as influence (Firestone et al. 2012), objective information (Neville and Weinthal 2016) and competent planners (Beierle and Cayford 2002). In the two cases investigated here, the procedural factors are similar, but the level of trust is rather different. The results therefore suggest that widespread trust in the TSO that is detected in the collective meeting might be caused by the opportunity to negotiate the situated order in

the participatory space given in the collective meeting but not the one-to-one meetings.

The citizens' role as experts of the local and the professionalisation of the rhetoric in participatory spaces have also been discussed in the literature. Scholars argue that local citizens in planning processes should be recognised as experts of the local or experts of territorial management as Cloutier et. al. (2014) term it. In doing so, the local knowledge they have, which in its nature is more historical and relational than that of planning experts (Fischer 1993), can contribute to better and more legitimate planning decisions (Depoe, Delicath and Eisenbeer 2004; Renn 2006; Hall et al. 2016). However, it is also pointed out that considerable barriers exist for local knowledge to become influential in planning decisions. Certain discourses can be excluded from influencing decisions due to the institutionalised nature of central documents such as EIA reports that are central to many infrastructure planning processes (Depoe et al. 2004). Other barriers have been found to be citizens' lack of experience with the process (Alberts 2007) or strategic framing efforts by powerful groups (Chilvers and Burgess 2008).

When met with these barriers, research shows that some citizens adapt their input to fit the rhetoric that is dominant in the space they participate in (Futrell 2003). Larsson et al. (2015) show how citizens in judicial disputes over wind power permits adapt their inputs to a 'calculating rationality' that is used in court when handling disputes to achieve influence. Takao (2015) shows how citizens who have learned to master the discourses and knowledge of environmental science experts play a role as mediators between experts and laypeople in local environmental policy processes. In light of this research, the actions taken by the participants in the two cases investigated in this study are not surprising. What they do is to adapt their input to the situated order by adopting the professionalized rhetoric dominating the space they are participating in, as this will allow them a better chance to gain influence. Enacting themselves as local experts has the same effect. However, whether or not this behaviour is strategic cannot be determined, and the research design also cannot support that the findings reveal generic citizen roles. However, the study does indicate that looking to the situated order that is enacted by the participants in participatory spaces is important when trying to understand citizen action and should be investigated further.

CHAPTER 7: CONCLUSIONS

– HOW CITIZEN ACTION IN INFRASTRUCTURE DEVELOPMENT PROCESSES CAN BE UNDERSTOOD

The dissertation has aimed at providing a better understanding of citizens' actions related to infrastructure development processes. The dissertation sought to understand the dynamics that form the actions of citizens who are drawn into the planning of potentially life-changing infrastructure projects. The dissertation chose to focus on action and not e.g. attitudes or values, because it is by acting that citizens constitute themselves as relevant in a process. It was argued that existing literature on citizen action in planning processes tends to assume an instrumental approach to citizen action that conceptualises citizens primarily as actors in planning processes rather than actors in their own lives. Finding this approach too narrow to capture the dynamics of citizens' actions, the dissertation opted to take the citizen's perspective on infrastructure development and view infrastructure development as one part of citizen's everyday life - A life that is filled with a myriad of other things.

Taking a constructivist approach to action, the dissertation focussed on the interactional processes that go into forming citizens' actions in infrastructure development processes. However, inspired by Nicolini's (2009) method of zooming in and out of an empirical field, the dissertation also zoomed out to capture the factors that play a role in the action formation process but are not manifested in a state that can be detected in situated spaces. This approach resulted in a sub-research question that investigated the factors that play a role in the action formation process, and two sub-research questions which focussed on the sensemaking and enactment process and the interactional dynamics of the action formation process.

The conclusions of the dissertation's findings must be read with some methodological considerations. Apart from the analyses of the influential factors, the studies have been either explorative or generally based on rather few observations. This means that general inference should be made cautiously and on the basis of a firm understanding of the context of the citizen's actions one is trying to understand. With this in mind, the following section will present the conclusions to the dissertation's findings.

7.1 CONCLUSIONS TO THE FIRST ANALYSIS: A MULTITUDE OF UNDERLYING INFLUENTIAL FACTORS

The first analysis investigated the factors that come to play a role in citizens' action formation in infrastructure planning processes. The analysis identified a range of different factors. In the category of project- and process-related factors, the analysis identified: fairness, trust, and organisational- and political support and in the category of individual factors, it identified: personal resources, identity, factors related to the citizen's past, present, and future everyday life, materiality of the project, and the citizen's concerns.

The main contribution of the dissertation lies in investigating the influence of the individual factors, since so much research has already been conducted on the impact of project- and process-related factors. The findings on fairness and trust are generally in accordance with existing literature and the primary contribution of the analysis is in pointing out that the framing conditions for the public participation process, such as organisational and political support, have an impact on citizens' actions -not directly, but mediated through their perceptions of fairness in the process.

The most original findings of the analysis were related to individual factors. Evidence was found that many of the factors that come to influence citizens' actions are related to citizens' everyday lives and identity. The materiality of the proposed infrastructure project has thus been found to play a role in citizens' actions, but the impact is mediated through citizens' everyday practices. Hence, it is not so much the specific material constitution of infrastructure projects that forms citizens' actions as it is the effect it has on citizens' ability to conduct their regular every day practices.

The same is the case for citizens' identity. The evidence suggests that citizens use the participation process as a way of confirming their individual identities, and it is when the identity is not confirmed that they are forced to act in manner of opposition. In the analysis, it happens when the citizens' identity and the identity that is reflected back at them by the opportunities for influence that is given in the project do not align that the citizens act. The analysis furthermore suggests that social identities can play an important role in motivating citizens to engage in infrastructure development processes and stay engaged, because it offers them an opportunity of being a part of an in-group that is clearly defined in opposition to an out-group – the planners.

Socio-demographic factors are found to play a similar supportive role for engagement rather than a motivating one. Factors like age, education, and knowledge are thus found to enable citizens to better understand and engage in an infrastructure development process and could thus be understood as supporting engagement rather than motivating it.

The need for a better understanding of the factors that play a role in citizens' action formation is underlined by the suggestion in the analysis that planners and citizens have different perceptions of what influences citizens' action in infrastructure development processes. Tentative results suggest that planners assume that citizens are driven by rational achievement motives, but the analysis points to the importance of more emotional factors originating from their lifeworld.

Besides identifying influential factors, the analysis suggests two insights into how the factors should be conceptualized. A) The identified factors can be divided into the categories; human, material, and immaterial factors and these categories have different properties, but it can be concluded that, despite the number of attributes that differentiate the groups, the way they influence citizens' actions cannot be differentiated. Citizens rely equally on human, material, and immaterial factors when forming actions. B) It can be concluded that focussing on singular factors is not the best approach to understanding citizen action, as this approach fails to capture the complexity of what makes citizens act the way they do. Rather, the approach should be holistic and dynamic.

7.2 CONCLUSIONS TO THE SECOND ANALYSIS: ACTION AS ENACTMENT

The second analysis takes this holistic and dynamic approach and investigates how the association of human, material, and immaterial actors in citizens' sensemaking processes influence the citizens' actions. The analysis finds that citizens' actions should be understood as a dialectical, dynamic, and ongoing process rather than a result. - More precisely, action can be understood as a process where citizens actively assemble actors in networks in order to make sense of infrastructure development processes. They enact this structure of meaning into the space they are in and thereby create a reality that they have to act according to. In other words, citizens create their own margins of manoeuvre by acting.

This means that the influential factors that are identified in the first analysis do not have an isolated effect on citizens' actions. Rather the findings suggest that influential factors are linked in actors-networks by the citizen in a process of sensemaking and that they interact with each other, making the influence on citizen action a dynamic and dialectical process. The actor-network analysed in the analysis are very different despite citizens being in similar situations, and they cause citizens to take rather different actions ranging from co-operation to opposition. This suggests that actor-networks are highly individual, but also that understanding citizens' actor-networks is the key to understanding the diversity of citizen actions that occur in infrastructure development processes. The analysis identifies the obligatory passage point as a key to understanding the composition and meaning of citizens' actor-networks because

this one particular actor defines the composition of the actor-network and connects to all other actors in the network. Two kinds of obligatory passage points were identified in the analysis: earlier experiences and self-perception - but nothing in the findings suggests that obligatory passage points should be limited to these kinds of actors.

The analysis of the citizens' actor-networks furthermore revealed that the origins of actors in the networks are not limited to the participatory process neither in time nor in space. Citizens thus include actors from their past, present, and future as well as actors that to others may seem unrelated to the infrastructure project and process. Furthermore, it is suggested that actors that are physically and temporally present in the participatory space are not necessarily given preference in the action formation process. These findings call for a change to the predominant focus on the formal participation process when trying to understand citizen action and instead suggest an approach that has a broader temporal and spatial approach to citizens' action formation processes. It furthermore suggests that infrastructure projects are better understood as actors that participate in citizens' everyday lives and are drawn into citizens' actor-networks by the citizens.

The dynamic and dialectical aspects of the action formation process are contributed to by yet another finding in the analysis which suggests that citizens are not alone in assembling the actor-network and enacting it. Other actors in the network have agency too. A particularly novel finding of the analysis is that material actors also have agency in this process and thus have the ability to change the composition of the actor-network and through that influence the actions of the citizen. This happens through inclusive or exclusive processes where the sensemaking process creates, combines, or includes new actors in the network, or excludes and de-combines actors from the network. An implication from this finding is that the attitude-behaviour paradox – termed NIMBY is actually not a paradox, since citizens' general attitudes towards energy production and their behaviour in specific planning situations do not necessarily have to align. According to the findings, they both depend on the composition of the actor-network in each specific space.

7.3 CONCLUSIONS TO THE THIRD ANALYSIS: SIGNIFICANCE OF INTERACTIONS IN SITUATED SPACES

In the third analysis, it was investigated how the process of human interaction influences citizens' actions. The analysis suggests that citizen action should be understood not only as a process of enacting networks as suggested by the second analysis but also as a process of enacting situated orders that are produced within the interactions between human actors.

The analysis finds that when participants interact in situated spaces - this includes citizens as well as planning professionals, they have a need to establish some sort of intelligibility in the interactions that makes clear to them what they are doing. To do this, they enact a situated order between them that comes to govern what is deemed meaningful behaviour in that specific space. Hence, the situated order when enacted in the interactions between human actors creates certain affordances for actions. The analysis describes two different orders in the two spaces that are analysed: one that is characterised by amicability, trust, and professional discourses and another where a larger affordance is made for personal arguments and individual preferences. The orders become rather different, despite similar backgrounds, by virtue of the interactions.

What is found in the analysis is that the situated order is not an actor or actor-network that exists prior to the interaction between the participants in the space, but an actor that emerges from the interaction and is situated in the space in the sense that it does not necessarily make sense outside the specific space in which it is produced. This means that there is an element in infrastructure planning processes that cannot be predicted before it emerges which adds a dynamic aspect to the action formation processes and infrastructure planning in general.

It is furthermore suggested by the findings that the situated order that is enacted in the space influences the actor-networks that are enacted by individual citizens as the situated order seems to become the obligatory passage point for the citizens' actor-networks. This means that the meaning and influence of actors change according to the situated order that is enacted in the specific space the citizen participates in. A specific actor that was investigated in the analysis was the citizen's identity. This actor was not completely contingent on the situated order and the interactions but certainly to be influenced and adapted to it and situated in the space. The findings add to the conclusions made in the second analysis not by denying the role of the citizens' actor-networks in the action formation process but by suggesting that it is necessary to be alert to the transformative potential of the situated order to fully understand their influence on citizens' actions.

One of the major potentials in the ethnomethodological approach taken in this analysis is in understanding the variations in action between citizens and situations that can be difficult to understand when relying on universal explanatory factors such as fairness, socio-demographic characteristics, etc. This can be done either by focussing on the effect of interacted orders or by illuminating how citizens' actor-networks are transformed within the interactions between participants.

7.4 HOW CAN CITIZEN ACTION BE UNDERSTOOD?

Having concluded on the findings from the three sub-research questions, it remains to conclude on the overall research question: How can citizens' actions in relation to infrastructure development be understood? The dissertation's results show that it is a valuable contribution to existing understandings of citizen action to perceive it from a situated, network approach where the enactments and interactions of citizens are key mechanisms in the action formation process. This approach shifts the perspective from isolated influencing factors to the micro-process of action formation. The findings show that action can be understood as:

- Situated and meaningful in the citizen's everyday life; and
- A process of sensemaking, translation, enactment, and interaction - not a result.

Action is found to be affected by:

- Networks of human, material, and immaterial actors – Networks that are assembled by the citizen;
- The re-assembling of actor-networks that can be initiated by actors other than the citizen; and
- Interactionally produced and enacted situated orders.

The findings can be summarised by the following model of citizen action:

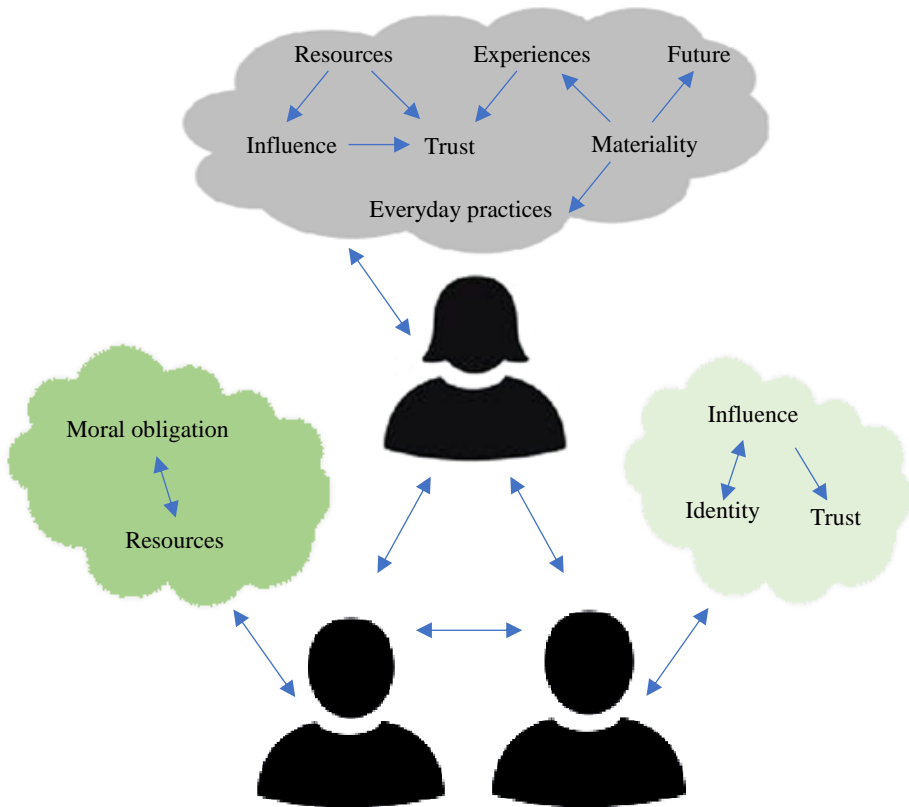


Figure 7.1: How citizen action can be understood

Drawing on the conclusions from all three analyses, it is evident that the enacted situated order (the arrows between the citizens) is not exclusive of the existence of individual actor-network (the clouds), rather, the mechanisms should be seen as supplementary in the action formation process. The findings show that the combination of sensemaking and ANT is valuable in understanding the dynamics between the actors that already exist and how they come to influence citizens' actions and the situated order approach is useful in understanding how new meaningful actors are produced and enacted. The situated approach developed in the dissertation does not rule out that certain actors such as fairness, compensation, and trust, that are repeatedly found to influence citizens' actions in existing research, play a role in relation to citizens' actions in infrastructure development processes. What the findings suggest, though, is that there is no guarantee that the effects of the actors are the same in every planning process.

CHAPTER 8: DISCUSSIONS OF THEORETICAL AND PRACTICAL CONTRIBUTIONS

Having concluded on the empirical findings of the dissertation, a final task is to discuss what contributions can be drawn from the findings to the practice field of public participation and how the dissertation's results contribute to furthering the theoretical approach to citizen action.

8.1 THEORETICAL CONTRIBUTIONS

It is a result in the dissertation that the actions of citizens are situated in the context they occur. But despite the focus on the situated-ness of actions, the action formation process builds on something that can resemble more universal mechanisms. Hence, despite the empirical focus on situated actions, the theoretical perspective is broader. The results found in the dissertation thus offer some contributions to the theoretical field related to citizen action. These will be discussed in the following section.

The dissertations have employed the interactional perspective of ethnomethodology that despite being underdeveloped empirically, is not a completely new theoretical approach in relation to citizen action (see e.g. Nothdurft 1995; Barnes et al. 2004; or Tolmie, Chamberlain and Benford 2014). What constitutes the contributions from the dissertation are the new perspectives that have been added to the interactional approach taken from different field such as organisational literature (sensemaking) and science and technology literature (ANT). ANT introduces two concepts to the field of citizen action that can be considered new: the significance of the materiality as an actor and the network approach. What ANT does very well is to analyse complex processes with many actors, as it has very effective methods to handle complexity. ANT has already been applied to understand the many actors that are at play in wind turbine conflicts (Jolivet and Heiskanen 2010) and to the understanding of complex policy processes (Doak 2009), but to my knowledge applying it with the aim of understanding citizens' sensemaking and actions is a novel use of the theory. Furthermore, it introduces the concept of network to the understanding of action that provides the opportunity to handle the complexity of the multitude of actors that influence citizen action and how they influence each other in the action formation process. Scholars have suggested that the study of influential factors would benefit from considering the interactions between influential factors (Wolsink 2000; Walker et al. 2011), but any coherent framework for doing this is unknown to me. ANT proposes such a framework, and this is a considerable contribution to understanding the dynamic nature of action formation.

An additional theoretical contribution from ANT to the field of citizen action is the introduction of materiality. As commented earlier, material impacts have been treated empirically in the literature on citizen action in infrastructure development (see e.g. Wolsink 2000; Devine-Wright 2005; or Pedersen et al. 2009). What ANT contributes is a theoretical understanding of the role of materiality. ANT proposes that material actors have agency just like human actors and can change the actions of citizens by changing their actor-network constellations and sensemaking (Callon 1986). This entails a radically different perception of materiality than what is usually assumed in the literature on citizen action in infrastructure development. However, because the data in the dissertation primarily focussed on defined spaces of public participation, the impact from changes to material factors over time and the effect they might have on citizens' sensemaking and actions was not investigated to its full potential. The findings do however suggest that materiality is an important actor to consider in the action formation process, and that materiality seems to have multiplicity (Mol 2002): - it has different meanings in different networks. The findings thus warrant further investigation into the dynamic nature of its impact.

Inspired by the sensemaking theory and the ethnomethodological approach, the dissertation furthermore contributes to the theoretical conceptualisation of citizen action by taking a constructivist approach to action. A dominant theoretical conceptualisation of action in relation to infrastructure development is action as a reaction to a proposed project, the impacts it causes, or the process of how it is introduced to the public (Bell et al. 2005; Soland, Steimer and Walter 2013; Walter 2014). In contrast to the dominant approach, the dissertation conceptualises action as a continuous ongoing process of action formation. Interaction and enactment are both concepts that describe action formation processes and both are found to be important concepts when trying to understand the dynamic process of action formation in relation to infrastructure development. This constructivist approach moves the focus from *what* influences action to *how* action is formed. This shift in focus seems to be helpful especially considering the dissertation's results that show processes can transform the factors that influence action. This makes the narrow focus on influencing factors problematic if it is not coupled with a constructivist approach.

A final theoretical contribution of the dissertation is a novel combination of the sensemaking theory and ANT. The combination of a sensemaking approach and ANT has been attempted elsewhere e.g. by Pollack, Costello and Sankaran (2013) who use the combination of the two approaches to analyse the implementation of a new software system in public sector agencies. However, the application to understanding individual citizen action in planning processes is novel. The combination of the two theories enables the analysis of how citizens make sense and form actions in relation to infrastructure development while also considering the many heterogeneous actors that play

a role in the process. The sensemaking theory does focus on how other actors influence citizens' sensemaking processes through the enactment process, but the interaction between actors other than the sensemaking individual is not directly considered (Weick 1995). Hence, ANT adds an additional dynamic aspect to the sensemaking theory. On the other hand, the sensemaking theory helps the analysis zoom in on the individual actors who in the pure ANT perspective risk being forgotten, because the network constitutes the object of study, not the individual actor. The combination of the two theories thus creates an interactional, yet individualised perspective on citizen action.

The aim of the dissertation was to investigate the mechanisms that form the citizen's action formation process as a way to understand citizen action in infrastructure development processes and ultimately what has been developed in the dissertation is an approach to understanding citizen action that could be useful for analysing citizen action in situated spaces that reaches beyond infrastructure development processes.

8.2 PRACTICAL CONTRIBUTIONS

In its onset, the dissertation had two objectives: to establish a scientific basis for understanding citizen action in infrastructure development processes and to use this insight to develop more constructive public participation processes. Given that the research process was inspired by an action research approach (Gustavsen 2007), the insights that were acquired in the process were fed directly into the development of participation methods in cooperation with the Danish TSO. However, during the process of writing up the results, additional insights have emerged that contribute to the practice of public participation. These contributions will be discussed in the following section.

The results in the dissertation indicate that public participation processes to a greater extent should be sensible towards individual sensemaking processes and at the same time acknowledge the important role of the citizen's everyday life, community and context. What emerges from the results is that the citizen's sensemaking process is both social and individual and is grounded in the citizen's everyday life. Therefore, citizens' concerns in connection to infrastructure development can be very diverse. The public participation process should be able to handle this diversity. Participatory spaces naturally cannot accommodate every single participant, but structures that enable the citizen to make inquiries, ask questions in private, and talk to planners and like-minded citizens are accommodating to the individual nature of citizens' sensemaking processes and would better address the citizens' individual concerns.

However, the results also indicate that it is imperative not to lose sight of the contextualised nature of citizens' action formation process when designing public participation processes. The results suggest that the action formation process can be based on actors that are not present either in the same time or space as the participation process. First, this means that citizens' actions related to infrastructure planning are not something that can be managed by applying the correct participatory methods as the methods only apply to the specific temporal and geographical space; secondly, it means planners need to be sensible to the context of the planning process in order to understand the citizens' actions. What emerges from the analysis of citizens' action formation is that their actor-networks are very different in composition, but also that they share many actors that originate from events in the local community such as earlier planning processes. This means that the temporality of the public participation process is often too short. A typical assumption when planning public participation processes is that local citizens start their relationship with a proposed project the moment they are introduced to it. However, the history of the local community and the citizens start long before the introduction of the project, and the results in the dissertation show that actors originating from the time before the introduction have equal status to the project in influencing the action formation. Hence, there is a need for planning practitioners to recognise and factor in the history and context of not only individuals but also local communities. I would argue that in some cases the context rather than the project should be the starting point when designing the public participation process.

An additional contribution from the findings of this dissertation to the practice of public participation is to underscore the situated nature of citizens' actions in participatory spaces. The results suggest that citizens enact situated orders when interacting in participatory spaces and that this order influences the way they act. The result means that a degree of uncontrollability must be expected and accepted by planning professionals. The results quite clearly show that the planners are not alone in setting the agenda and determining the course of action in the participatory space, and trying to control the course of actions completely is therefore not constructive. On the contrary, the results indicate that giving the citizens more control and with that an opportunity to interpret their own sense into a situation and enact a situated order will accommodate a more constructive process. However, to be able to do this, planners need to be sensible to the existence of a situated order and how it is enacted. This requires some insight into the relationship between participating citizens and the broader context of the local community. This can be a challenge for planning professionals who are often outsiders to a community (Scott 1998) and are used to being in control of a situation (Yang 2005, Yang and Callahan 2007).

A widespread tool for investigating the context of a planning processes is a stakeholder analysis. Proponents of the method argue that it provides planners with:

“(...) a solid starting point for identifying, classifying and categorizing stakeholders and understanding their behavior in order to better manage them.” (Whitton et al. 2015: 129)

The findings in the dissertation suggest the opposite. The dynamic and situated character of citizen action means that a static picture of the stakeholders in a planning project risks quickly becoming inaccurate in a process where so many dynamic mechanisms are at work. In the future workshop conducted with the TSO planners during the research process, one of the main challenges identified by the planners was conducting accurate stakeholder analyses. The findings in the dissertation help explain why they are so challenging and indicate that more dynamic, holistic, and anthropologically inspired analyses of the local community might be more informative.

It should be noted that the practical implications of the dissertation’s findings are firmly based within a citizen’s perspective. This means that what is described here is a process that does not take into consideration the organisational and political conditions of the participation process which, as indicated by the Conditions-article, might constrain planning professionals’ opportunity to design the process. Like the action formation process, the participation process does not happen in a vacuum, and planning professionals are influenced by a number of framing conditions that also influence how the public participation process is designed and implemented. Many interests are at play and it can be a difficult field to navigate especially if the proposed project is controversial. However, even under such circumstances, the points made above will provide planning professionals with a better understanding of why citizens do what they do, which should provide a better scientific basis for conducting more constructive participatory processes.

CHAPTER 9: REFERENCES

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APPENDIX A. Papers

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Paper I (Most Engaged): Citizen self-mobilisation, motivational factors and the group of most engaged citizens: The case of a radioactive waste repository in Denmark

(In the process of submission)

Paper II (Situated Order): Exploring the significance of situated orders for citizen action in spaces of public participation

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(In the process of submission)

Paper III (Conditions): What determines the substantive influence of public participation? An investigation of planners' views on conditions for participatory practices in Denmark

Restricted access at:

<http://www.tandfonline.com/doi/abs/10.1080/02697459.2016.1174970>

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Paper IV (Public Concerns): Social impact assessment in Europe: A study of social impacts in three Danish cases

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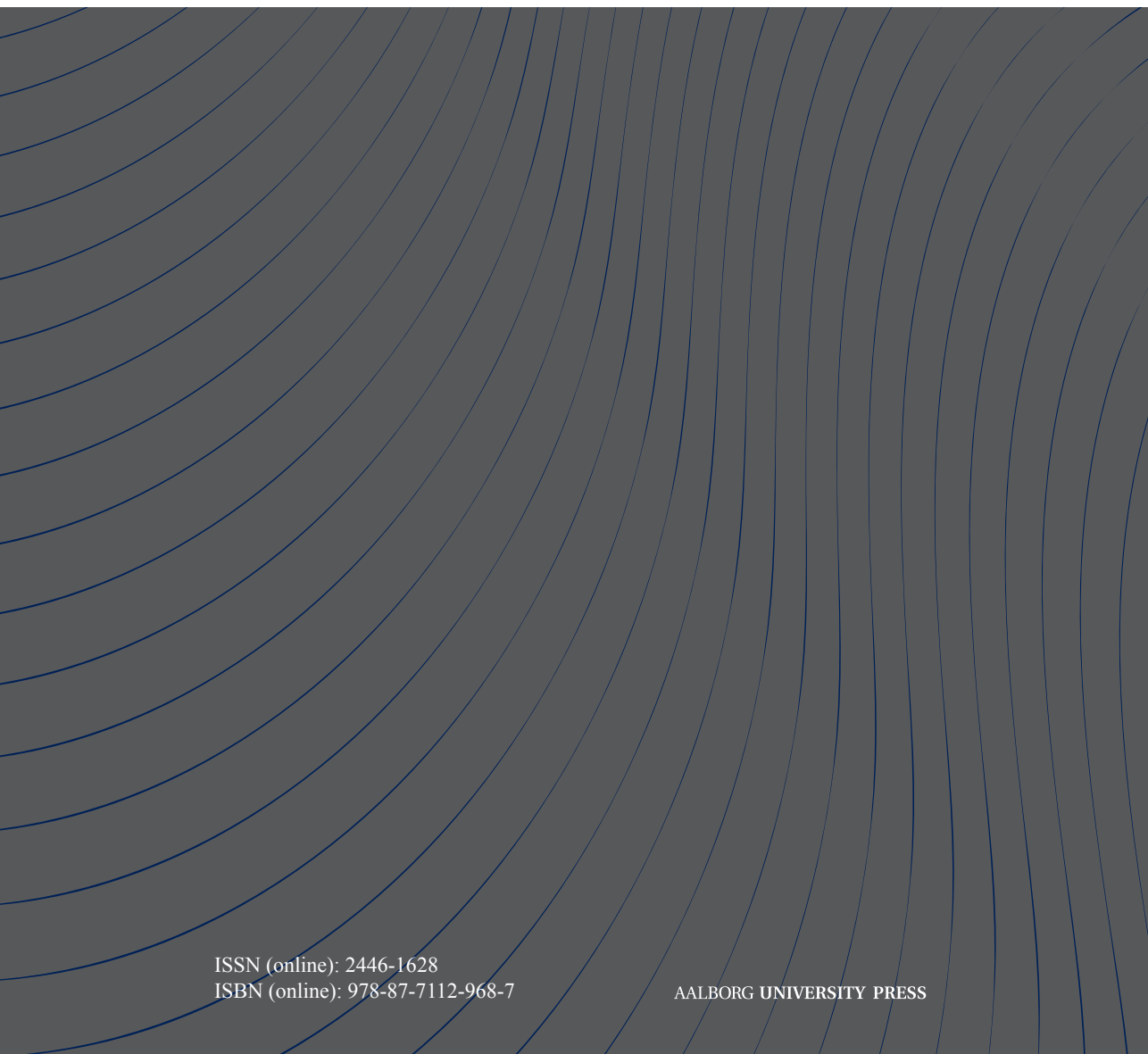
Doi: <http://dx.doi.org/10.1142/S1464333215500386>

Paper V (Sensemaking): Beyond public acceptance of energy infrastructure: How citizens make sense and form reactions by enacting networks of entities in infrastructure development

Restricted access at:

<http://www.sciencedirect.com/science/article/pii/S0301421516303238>

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