Our disenchanted hope

An exploratory outlook on youth, climate change adaptation and transformation

Mattias Holmström

Master Thesis Series in Environmental Studies and Sustainability Science,
No 2015:001

A thesis submitted in partial fulfillment of the requirements of Lund University International Master's Programme in Environmental Studies and Sustainability Science (30hp/credits)

LUCSUS
Lund University Centre for
Sustainability Studies

Our disenchanted hope

An exploratory outlook on youth, climate change adaptation and transformation

Mattias Holmström

A thesis submitted in partial fulfilment of the requirements of Lund University International Master's Programme in Environmental Studies and Sustainability Science

Submitted May 13, 2015

Supervisor: Ebba Brink, LUCSUS, Lund University

Abstract

Threats and challenges posed by climate change require societal adaptation in order to withhold the functioning of fundamental human and natural systems. Efforts to adapt to climate change have mainly focused on institutional measures and overlooked the capacity of citizens in general and young citizens in particular. However, recent literature considers youth to possess a unique role as agents of change to facilitate adaptation and risk reduction. Following this, the purpose of this study is to explore the role of youth for climate adaptation. The youth of today are the leaders of the future and hence, examining young people's understanding about their surrounding environment can give valuable indications of our development trajectory. In this endeavour, I have conducted a case-study with five focus group interviews on an upper secondary school in Malmö, Sweden. Through a conceptualisation of climate change adaptation, my analysis suggest that the youth show tendencies of transformative adaptation but that their full potential is restrained by feelings of hopelessness. This hopeless feeling is based on a perception that one's own efforts to mitigate or adapt to climate change would be useless considering the perceived inaction of other powerful societal actors. Theory suggests that unresponsive political systems can make young people feel disenchanted if their needs and values are not sufficiently recognised. Here, I argue that empowering young people to believe that they possess agency of change could be crucial for successful adaptation. How and where such empowerment could take place, for enhanced adaptation towards a societal transformation and to reach sustainable development, is a concern for future research however.

Keywords: Transformative adaptation, risk reduction, sustainable development, young people, change agents, focus groups

Word count: 13031

Acknowledgements

Thanks…

First and foremost to Ebba Brink,
without your valuable comments and feedback this thesis would be much worse, I think.
To Flavia, for appreciated advices during the feedback sessions,
and to Emma, for insightful revision and mutual confessed library depressions.
To teachers and pupils at Malmö Latin and to Sophie at the Swedish Society for Nature Conservation,
for the success of my thesis, you all have my deepest appreciation.
To Emelie, who has lived and breathed with this thesis as much as I
and to the fantastic LUMESians of Batch 17, whom I will remember till the day I die!

Table of Contents

1 Introduction 1

2 Youth and adaptation – a conceptualisation 4

2.1 Adaptation, “adaptigation” and (disaster) risk reduction 4

2.2 Positioning youth in climate change and risk reduction debates 6

2.3 Adaptation as transformation 8

2.4 Towards transformative adaptation 11

3 Methodology 13

3.1 The context of youth and Malmö 13

3.2 Five focus groups 14

3.3 Analytical approach 16

3.4 The quality of this study 17

4 The role of youth and their implications 19

4.1 Terminological confusion 19

4.2 A shock is needed to reduce the distance 21

4.3 Reproducing norms and values 24

4.4 Youth as agents of transformative adaptation 26

5 The role of youth – an outlook on adaptation 29

References 32

Appendix A – Interview guide 39

1 Introduction

"*Sustainability is the most promising path forward, and youth can lead the way*"

Ban Ki-moon (2009)

For long it has been known that mitigating current greenhouse gas emissions will not be enough to avoid climatic changes within this century. Threats and challenges posed by climate change require societal adaptation in order to withhold the functioning of fundamental human and natural systems (Adger, Arnell, & Tompkins, 2005; Nelson, Adger, & Brown, 2007; O'Brien et al., 2012; Pelling, 2010). Hence, adaptation and risk reduction activities that reduce vulnerability of such systems become key issues for sustainable development (Kates et al., 2001; Kates, Parris, & Leiserowitz, 2005; O'Brien et al., 2012). Still, the pathway towards adaptation that ensures resilience and sustainable development faces major challenges (Adger et al., 2005).

In efforts to respond to climate change, it has been argued that citizens and institutions could develop a 'symbiotic relationship' as they are interchangeably dependent on each other for successful environmental action (Gausset & Hoff, 2013). Hitherto, efforts to adapt to climate change have mainly focused on institutional measures[1], for example flood walls or dikes as flood defences, or reduction of urban heat island effect through vegetation (Wamsler, 2014). But with a changing climate it has been acknowledged that institutional efforts alone will not be enough to alleviate the impacts of climate change (Wamsler, 2014). For that sake, the adaptive role of citizens has gained recognition. Still, citizens are rarely involved in efforts for climate change adaptation (Satterthwaite, Huq, Pelling, Reid, & Romero Lankao, 2007; Wamsler, 2014; Wamsler & Brink, 2014c) and the research on how citizen adaptive capacities could contribute to climate change adaptation is scarce (van Kasteren, 2014; Wamsler & Brink, 2014a). Despite the growing consensus of the importance to support citizens' adaptive capacities, they are not adequately stimulated by institutions (Wamsler & Brink, 2014a). This is unfortunate as the citizen-institution relationship is likely to be of great importance for sustainable adaptation (Wamsler & Brink, 2014a; Wamsler, Brink, & Rivera, 2013).

While increased focus is directed to the significance of including citizens in adaptation strategies, several scholars place particular emphasis on the importance of involving young citizens (Anderson, 2005; Campbell, Skovdal, & Campbell, 2013; Petrasek MacDonald, Harper, Cunsolo Willox, & Edge, 2013). This recognition contradicts previous framing of youth as passive victims of climate change with

[1] For a comprehensive overview of institutional measures taken, see Wamsler (2014).

low or no level of agency (Fernandez & Shaw, 2015; U. S. Harris, 2014; Haynes & Tanner, 2015). The marginalisation of young people, which could restrain their agency, could probably and primarily be explained by their age. This could be manifested by their absent voice on adults' agenda in sustainable community development (Percy-Smith & Burns, 2013) or by their lack of participatory channels for risk reduction measures (Fernandez & Shaw, 2015). Yet, it is recently suggested that youth, defined as people aged between 15 and 24 (UNDESA, 2013), have a unique role in communicating risk information (Mitchell, Haynes, Hall, Choong, & Oven, 2008; Towers, Haynes, Sewell, Bailie, & Cross, 2014) and act as agents to facilitate adaptation and risk reduction (Haynes & Tanner, 2015; Tanner, 2010). Tanner et al. (2009) go even further when asserting that the inclusion of children and youth in community adaptation planning is crucial for coping with future climate challenges. Enhanced youth participation in societal efforts to deal with climate uncertainties could therefore widen the scope of how to achieve successful adaptation.

Several arguments can be made for why youth should be at the centre of the climate debate. As today's youth are the leaders of the future, I support the claim of Meinhold and Malkus (2005), that examining young people's understanding about their surrounding environment can give valuable indications of our development trajectory. They are not only the leaders, but also tomorrow's householders and house owners, who evidently constitute an important target group in a changing climate. Moreover, one could argue that today's youth will "inherit" the climate impacts of tomorrow and should therefore have the right to participate in the decisions affecting their future. This argument of 'youth as inheritors' has also caused Line, Chatterjee and Lyons (2012) to assume that young people have greater capacity to be concerned by the impacts of climate change[2]. Increased representation of marginalised groups in risk reduction activities could not only benefit societal adaptation as such, but also lead to more sustainable, integrative and empowering projects (Cadag & Gaillard, 2012). This further suggests that young people are an important group to target if we want an outlook on society's ability to adapt to climatic change. However, as there is limited literature on what role young people can play for combating the impacts of climate change, such roles need to be identified (Pandve, Deshmukh, Pandve, & Patil, 2009).

Following this, the purpose of this study is to explore what role young people can play for climate adaptation in society. From a climate change adaptation perspective, I attempt to fulfil this purpose by exploring how young people perceive their role in society. It is my belief that analysing young

[2]Line, Chatterjee and Lyons' (2012) study looked at young people's future travel intentions and how climate change influenced their intention to use more environment friendly modes of transportation.

people's self-perception will provide a valuable outlook on society's future ability to adapt to climate change. However, the fulfilment of this purpose will not only give new insights to the fields of adaptation and risk reduction, but also to the discipline of sustainability science. As I provide an outlook on society's ability to adapt to climate change this thesis could give understandings to one of the fundamental objectives of sustainability science, posed by Kates et al. (2001): "promoting social learning necessary to navigate the transition to sustainability" (as referred to in Miller et al., 2014, p. 240). The following outline will explain how I have approached this issue.

In the next chapter (2) I will present the conceptual framework of this thesis. It starts off with an outline of the historical dichotomy of mitigation and adaptation and the growing consensus that both strategies are needed to respond to climate change. To get a better understanding of the role of youth for adaptation, I turn to the larger literature of disaster risk reduction in an attempt to position youth in these debates. However, critics of adaptation, who perceive adaptation as resistance, or resilience, argue that it would not be enough for sustainable development as it allows development as business-as-usual. For this purpose, transformation has emerged as one potential solution. Following this conceptualisation, I describe my methodological approach (3), focus group procedure and analytical method. I will thereafter analyse my empirical material (4) out of the conceptualisation of adaptation. This is done by analysing young citizen's perception of adaptation in different societal contexts. Finally, I present my conclusions (5) and discuss society's future ability to adapt to climate change.

2 Youth and adaptation – a conceptualisation

In this chapter I will present the concepts that constitute the foundation of this thesis. It will furthermore support the purpose of this study by providing a framework to classify the role of youth for societal adaptation in an exploratory manner. It starts off by taking a closer look at the concept of adaptation, its historical background and on-going development. Before I define three interpretations of adaptation, I will position youth in the context of adaptation and risk reduction. This is then followed by the concept of transformative adaptation as a way towards sustainable development.

2.1 Adaptation, "adaptigation" and (disaster) risk reduction

Although humans have always adapted to environmental change, the complexity of identifying triggers and drivers of climate change in combination with its uncertain consequences and effects pose particular challenges to human development. Understanding adaptation, and how it is linked to related bodies of knowledge, can provide valuable insights into how to meet these challenges. Originally, the term adaptation stems from biology or ecology and it refers to the process, action or ability (Adger, Hughes, Folke, Carpenter, & Rockström, 2005; Gallopín, 2006) for an individual or a system to improve their behavioural characteristics to better adapt to change (Lei & Wang, 2014). IPCC's fifth assessment report defines adaptation as "The process of adjustment to actual or expected climate and its effects. In human systems, adaptation seeks to moderate harm or exploit beneficial opportunities. In natural systems, human intervention may facilitate adjustment to expected climate and its effects" (IPCC, 2014, p. 1758). In this definition, I would like to underline the wordings of 'adaptation seeks', which implies that moderating harm is not guaranteed but requires active involvement to be achieved. To grasp another angle, Nelson, Adger and Brown (2007, p. 397) define adaptation as "the decision-making process and the set of actions undertaken to maintain the capacity to deal with future change or perturbations to a social-ecological system without undergoing significant changes in function, structural identity, or feedbacks of that system while maintaining the option to develop". Here adaptation refers to 'decision-making' and 'the set of actions', which further support Pelling's (2010) view of that power lies at the heart of adaptation.

Although there is compelling evidence that mitigation and adaptation strategies are needed to cope with intensifying climatic hazards (Biesbroek, Swart, & van der Knaap, 2009), mitigation has historically been favoured. Mitigation strategies are usually related to the reduction of greenhouse gas emissions and carbon footprints; meanwhile, adaptation refers to the activities of trying to cope with the impacts of climate change. Or, as simply explained by Laukkonen et al. (2009, p. 288): /…/ mitigation aims to

avoid the unmanageable and adaptation aims to manage the unavoidable”[3]. When implemented, however, the two concepts have been partly separated, which have formed a dichotomy of approaches (Biesbroek et al., 2009). This dichotomy has led Dymén and Langlais (2013) to propose the usage of the term *adaptigation* in an attempt to integrate the concepts for better understanding of how to respond to climate change. Although adaptation was early recognised, the political and scientific attention, driving the climate policy development, was until recently focused on the mitigation of greenhouse-gas emissions (Biesbroek et al., 2009). This favouring of mitigating activities has in the literature been referred to as the ‘taboo on adaptation’ (Pielke, Prins, Rayner, & Sarewitz, 2007). Here, proponents of adaptation activities were accused of being defeatist, fatalistic or engaged in ‘do-nothing strategies’ (Biesbroek et al., 2009). As did Al Gore in 1992 when declaring that adaptation advocates represented a “kind of laziness, an arrogant faith in our ability to react in time to save our skins” (quoted in Pielke et al., 2007, p. 597). This should, however, be seen in the contextual environment it was uttered. Maybe adaptation would not be needed to such an extent if mitigation had been widely recognised and practised in the early 1990s.

While the integration of, and interaction between, mitigation and adaptation strategies is essential for successful responses to climate change (O’Brien et al., 2012), their relationship is not yet fully understood. Laukkonen et al. (2009) argue that mitigation and adaptation can both complement and contradict each other on multiple levels. Hence, they argue that a methodology, or a tool, is required to help individuals, communities or countries to decide upon the best response to climate change. However, such methodology, or tool, is hard to generalise as local adaptation solutions are needed because the impacts of climate change vary with locality (van Kasteren, 2014). Furthermore, whilst the importance of local mitigation activities has for long been emphasised and recognised, local adaptation measures, on the household and individual level, are still to be widely documented (van Kasteren, 2014; Wamsler & Brink, 2014b). This is especially true for the citizen category of youth, which is unfortunate as including citizens in adaptation strategies could be a key factor of success (Wamsler & Brink, 2014a).

Another related body of literature, which may help to get a better understanding of what role youth can play in reduction of climate-related risks, is disaster risk reduction (DRR). Although both adaptation and DRR aim to build resilience and adaptive capacities to cope with hazards (Lei & Wang, 2014; Wamsler, 2014, p. 16), there are some differences. The clear disparity is that DRR relates to all kind of

[3] For more differences between climate change mitigation and adaptation see Biesbroek, Swart, & van der Knaap (2009)

hazards, whereas adaptation refers specifically to climate-related threats (Mercer, 2010). Furthermore, DRR has a short term approach as it focuses on disastrous events while adaptation strategies require planning in a long term perspective (Birkmann & von Teichman, 2010). Whilst DRR is mainly involved in local level, or bottom-up, initiatives as disasters first strike upon local people, adaptation has emerged from top-down driven policies where local participation generally has been excluded (Mercer, 2010). Instead of pointing out the distinctions, several studies now try to find their synergies and opportunities (Lei & Wang, 2014; Solecki et al., 2011) to merge the two concepts in an attempt to respond to and cope with challenges posed by climate change (Birkmann & von Teichman, 2010; Lei & Wang, 2014). Furthermore, it is important to stress that both adaptation and DRR aim to confront the societal contexts in which climate change related hazards occur, rather than addressing climate change as such (Adger, Huq, Brown, Conway, & Hulme, 2003). This means that there can be social obstacles for action-taking – especially for young people.

2.2 Positioning youth in climate change and risk reduction debates

As I have already implied, youth is an important target group for climate adaptation and DRR. This is also recognised on the international arena where the United Nations Department of Economic and Social Affairs asserts that in order to be better prepared for climatic hazards, young people should be supported as environmental agents in their locality (UNDESA, n.d.). But when it comes to dialogue and knowledge sharing, such privileges are often controlled by policy makers (Haynes & Tanner, 2015). Studies conducted on youth and climate change have focused on their coping capacity (Ojala, 2013), emotions (Ojala, 2012b), participation (A. Harris, Wyn, & Younes, 2010), communication (Doyle, 2007; Hibberd & Nguyen, 2013), behaviour (Line et al., 2012) and ethics (Markowitz, 2012). When exploring the role of youth in climate change, a study from Ojala (2012b) indicates that late adolescents feel more hopelessness over global issues than do children, which is probably because they have better understanding of complexity. Such feelings of hopelessness are often, in the context of climate change, referred to as 'climate anxiety', which is unfortunate as it can lead to a vicious cycle where people choose not to take action because they feel powerless. However, these hopeless feelings can be mitigated if people have faith that powerful actors act responsibly in their environmental engagement (Ojala, 2013). Complementary, Ojala (2012a) found that young people who believe that laypeople collectively can make a difference in society, also showed stronger tendencies of pro-environmental behaviour. These feelings of hopelessness and climate anxiety, among other things, are furthermore something that the growing field of *education for sustainable development* is trying to address (Percy-Smith & Burns, 2013; Shaw & Oikawa, 2014).

In terms of sense-making, Wibeck (2014) explored how young people (and adults) objectified climate change, that is, how they make the issues of climate change concrete and tangible. She found a common approach among the participants was that they distance themselves from the issues of climate change as it is hard for laypeople to influence. According to Doyle (2007), this distancing is because climate change, and its effects, are in media often depicted in a global setting and in powerful symbols, such as melting glaciers. Laypeople's ability to influence, or their ability to take action, is also something that Percy-Smith and Burns (2013) looked into when studying young people's role in sustainable community development. They argue that young people could develop further in this role if given greater autonomy and less restriction from adults. This is furthermore in line with the argument posed by Hart (1992), saying that to become an active citizen, practice at a young age is needed. Complementary, Evans, Milfont and Lawrence (2014)[4] found that engaging the public in local adaptation could also increase people's willingness to adopt emission-reducing behaviours. The reason for this, the authors argue, is that such efforts can make the global problem of climate change less distant and more tangible.

Returning to the literature of DRR, youth have traditionally been framed as marginalised and vulnerable without any greater potential to prevent or respond to disasters (Fernandez & Shaw, 2015; Harris, 2014; Haynes & Tanner, 2015; Tanner et al., 2009). It is not until recently that there has been an updated recognition of the valuable role youth can play for DRR (Fernandez & Shaw, 2015). Studies have mainly focused on: youth as risk communicators (Haynes & Tanner, 2015; Mitchell et al., 2008), enhanced youth participation (Fernandez & Shaw, 2013, 2015; Petrasek MacDonald et al., 2013) and youth as agents of change (Tanner et al., 2009; Tanner & Seballos, 2012). In their study, Tanner et al. (2009) map out several roles young people can enact for climate change and DRR activities at community level. They found young people as risk analysts, designers of projects, communicators of risk to parents and others, mobilisers of people and resources and as constructors of social networks. These findings contend previous studies of youth as vulnerable and marginalised and instead point to the potential of youth as agents of change to prevent and respond to climate change (Tanner et al., 2009; Tanner & Seballos, 2012).

In a broader perspective, engaging in risk reduction or adaptation may not automatically lead to a sustainable society. Often quoted in relation to climate change, John Holdren (see Kolbert, 2009) emphasises that humanity basically has three choices: mitigate, adapt or suffer, and that we will

[4] Although their study was conducted on adults with a median age of 49, their argument is still applicable to those of younger ages.

probably do some of each. However, recent literature on adaptation has criticised the limited alternatives and instead proposed a fourth option – transformation.

2.3 Adaptation as transformation

This section will focus on adaptation as transformation. Pelling (2010) presents three visions of how adaptation can intervene in development: as resilience, transition and transformation. Adaptation as resilience refers to change that allows existing structures, functions and practices to persist (Pelling, 2010). Transition acts to achieve incremental change in society as part of adapting to climate change. Adaptation as transition does not aim for regime change, but rather to implement innovations, changes within prevailing structures and influence the governance of adaptation (Pelling, 2010). These terms of adaptation as resilience and transition have later been revised to be referred to as *resistance* and *incremental adjustments* (Matyas & Pelling, 2015). Critics argue, however, that adaptation as resistance would only allow 'development as usual' (Eriksen, Inderberg, O'Brien, & Sygna, 2014) and not lead to a sustainable society in the long run. Since adaptation in a broad sense "/…/ refers to the act of making something fit for a new situation or use" (O'Brien, 2012, p. 669), adaptation would not only answer to the impacts of climate change, but also on other changes such as urbanisation or the economic consequences of globalisation (O'Brien, 2012).

This opens up for a variety of interpretations of adaptation, where the lowest level of adaptation (adaptation as resistance) could be seen as treating symptoms and the highest level (adaptation as transformation) focuses on the causes of illness (Pelling, 2010, p. 143). From these interpretations, O'Brien (2012, p. 669) asks the critical questions of "what is being adapted to"? And "why adapt?" With these questions she tries to illuminate the underlying power structures that might be reluctant to change. To answer these questions we have to go deeper than if asking how to treat symptoms.

Where adaptation as resistance allows and perpetuates development as business-as-usual, transformation enables new policy responses that overlook existing systemic forms (Matyas & Pelling, 2015) as it suggests fundamental change to the functioning of systems (Pelling, O'Brien, & Matyas, 2014). But what this actually implies is not clear-cut. Nelson et al. (2007, p. 397) define transformation as; "a fundamental alteration of the nature of a system once the current ecological, social, or economic conditions become untenable or are undesirable". Moreover, in an attempt to deconstruct transformation, Pelling et al. (2014) map out seven activity spheres where conflicts over power can be

revealed. These are individuals, technology, institutions, livelihoods, environment, behaviour and discourse (see Figure 1).

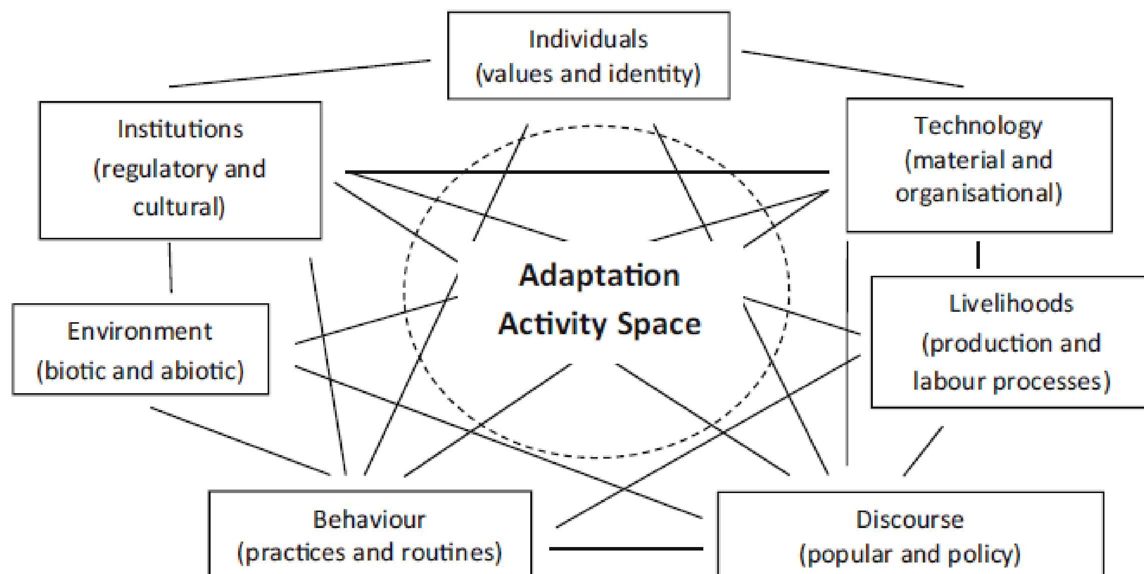

Figure 1. A framework of the adaptation activity space (Pelling et al. 2014)

In this formulation of concepts, Pelling et al. (2014) aim to shift from an epistemology of political-economy to one of political-ecology. In contrast to political-economy, political-ecology could help locate the unequal relations in society that affect our surroundings by giving stronger authority to nature and environmental processes as drivers, mediators and sites of power (Pelling et al., 2014). All activity spheres are inherently dynamic as well as responsive to change in the surrounding action spaces. This allows each individual sphere to transform by internal processes of change. But to choose what activity sphere to engage in might differ by interest and stakeholder. As this thesis aims to explore the role of young people in adaptation, the activity spheres individual, behaviour and discourse are of particular interest as they could give valuable insights of my empirical material.

The action space of individuals suggests fundamental changes of norms and values (Pelling et al., 2014). Democratic theory suggests individuals are able to transform if they are exposed to democratic institutions and practices. On the other hand, liberal theory asserts individuals to act according to their self-interest, which implies that they will transform when they feel they would benefit from such action. According to Pelling et al. (2014) this clash could be overlooked by educational theorists that separate learning as preparedness for a specific context and learning as how to think critically about that particular context. This is an important distinction because individuals need to be able to critically reflect on their everyday actions in order to achieve an individual transformation. This relationship

between the self and society (which furthermore is the epicentre of social contract theory one that has inspired many thinkers throughout history[5]) becomes key in this endeavour as it concerns the balance of influence that societal processes have on the individual. For the sake of transformative adaptation, Pelling et al. (2014) emphasise that individuals that learn communally and through practice could acquire an added value than if they learn alone and conceptually.

Behavioural change has been emphasised in efforts to adapt to climate change (Pelling et al., 2014). There are also several studies exploring the link between attitude and behaviour in an environmental context (Line et al., 2012; Meinhold & Malkus, 2005). Routine behaviour has been argued to perpetuate existing norms while reproducing common values, which allow institutional systems to persist (Shove, 2010). Following this trail, Pelling et al. (2014, p. 10) argue; "Transformative adaptation is likely to be observed less through fundamental changes in behaviour, and more through changes in the social contexts in which they emerge". In this sense, and for the sake of moving beyond current mundane practices, institutional interventions have the potential to shape individual's ways of life (Shove, 2010). Pelling et al. (2014, p. 10) again: "While there has been an emphasis on behavioural change as an adaptation to climate change, individual action tends to be legitimated through social institutions and the wider social political system, including its development discourse". So in contrast to liberal theory mentioned above, this suggests widespread behavioural changes to emerge out of intervention made at institutional rather than individual levels.

The transformative discourse of adaptation takes a critical approach to the content, boundary and trajectory of current adaptation strategies (Pelling et al., 2014). It also expands to embrace a broader agenda, including the mitigation of greenhouse gases and pathways to a resilient and sustainable future (O'Brien, 2012). Contemporary discourse of how to tackle climate change often suggests technical innovations, behavioural changes or international governance (Pelling et al., 2014). But as the discussion proceeds, risk and vulnerability increases. The transformative discourse targets not only adaptation but also the underlying drivers of climate change, such as power relations in society (Pelling, 2010, p. 9)

In theory, transformative adaptation involves both individual change and changes on various societal levels. However, theory might turn out differently in practice. As implied, adaptation as transformation can be controversial as it challenges those who currently benefit from the status quo, its systems and

---

[5] E.g. Thomas Hobbes, John Locke, Jean-Jacques Rousseau and Immanuel Kant.

structures (Pelling & Manuel-Navarrete, 2011). It is, however, unlikely that a transformation will happen overnight, and thus, "/…/ transformation might consist of a combined set of incremental transitions that transform coping systems from within" (Wamsler & Brink, 2014b, p. 22). This further suggests that a transformation can emerge from an accumulation of incremental adjustments (Pelling et al., 2014).

2.4 Towards transformative adaptation

As indicated, both adaptation as such, and adaptation as transformation imply change, which is why I will now turn to two types of catalysts of change. Following O'Brien et al. (2012), to overcome the barriers and to achieve transformative adaptation, there is a widespread call for leadership. In one sense, change can come out of charismatic individuals who inspire others to change their behaviour (Eyben, Kidder, Rowlands, & Bronstein, 2008). However, leadership can have many faces and derive from various directions and on multiple scales. For instance, for local communities to invent, envisage and build pathways for a sustainable future, Edwards and Wiseman (2011) argue that political leadership is needed. Additionally, leadership is not only called for from powerful decision-makers but also from institutions (O'Brien et al., 2012). However, although young people show interest for political issues, unresponsive political systems can make them disenchanted if their needs and values are not sufficiently recognised (Harris et al., 2010). Such outcomes would be unfortunate if transformational change is desired. But remembering that those in power might be reluctant to change; leaders that benefit from current systems may not want to encourage activities that may have transformational outcomes. For that purpose, a shock to the system could be necessary.

Change can emerge from a sudden collapse, or a disaster, that puts power structures out of place and reveals the weaknesses of the elite, which could open up for new forms of leadership and governance (Eyben et al., 2008). This type of change as 'shock to the system' (Eyben et al., 2008) has also been referred to as 'focusing events' (Birkland, 1996) and 'tipping points' (Pelling & Dill, 2010). Furthermore, climate change impacts can act as the shock that reveals the wanting of institutional architecture, which can open up an opportunity for transformation (Pelling, 2010, p. 121). This is not to say that disasters result in socio-political change, but rather that they can reveal the instability of prevailing structures. Hurricane Katrina and the cloudburst in Copenhagen in 2011 are two out of many exemplifying cases proving this point. Adger et al. (2005) even argue that it is likely that governmental action is legitimized through extreme climatic events.

Furthermore, estimating the consequences of climate change (i.e. 'loss and damage' see Huq, Roberts, & Fenton, 2013) suggests that waiting for a disastrous event to achieve change can be costly. So why

await a sudden shock if it could be prevented by proactive measures? Once again it boils down to a question of power dynamics and reluctance to move beyond the status quo. Yet, talking about costs, transformation can cause significant costs if a system converts into a new equilibrium (Matyas & Pelling, 2015). But if "change is emergent" (Eyben et al., 2008, p. 203), it becomes more a question of how long we are willing to wait and how much we accept to lose before we are ready to change.

To sum up, the debate of how to tackle the hazards of climate change has evolved from prevention and control to mitigation and eventually to adaptation and transformation (O'Brien, 2012). This development is a consequence of the growing scientific recognition that adaptation is needed as some degree of climate change is inevitable due to systems lag and past emissions (O'Brien, 2012). However, the critique on adaptation as resilience could be summarised as Albert Einstein famously said; "we can't solve problems by using the same kind of thinking we used when we created them". For this sake, we need to take a more critical stance to the root causes of climate change. Although considering local adaptation could increase the willingness to mitigate climate change (Evans et al., 2014), enhanced adaptation may not cope with the fundamental changes needed for a sustainable society. In this endeavour, empowering young people is necessary to counterweigh the powers that draw humanity further into scarcity, barbarism and ecocide (White, 2011). Young people ultimately have the most to lose and therefore they have to be at the forefront of the needed transformation (White, 2011). It is within this conceptualisation of adaptation that I will analyse my empirical material in order to provide an outlook on adaptation. But first I will explain the methodological approach of exploring the role of youth.

3 Methodology

This study is based on an approach of social constructionism. Reality is thereof not something naturally given but instead arises from processes of ideology, interests or power (Alvesson & Sköldberg, 2009, pp. 24–25). With this approach, there is no objective truth but reality is subjectively understood out of the interactions between researcher and target group (Alvesson & Sköldberg, 2009, p. 40). I follow the constructionist approach as it is my standpoint that the roles of youth are socially constructed by society and that their roles are something emergent from social and societal interactions. However, social phenomena derived from social interactions are not static but are constantly being revised (Bryman, 2012, p. 33), which implies that the roles of youth are dynamic and malleable. With this approach, a case-study on an upper secondary school and five focus group interviews with a purposeful selection of pupils have been conducted.

3.1 The context of youth and Malmö

The city of Malmö, part of Scania County, is located in the southernmost part of Sweden. Depending on the scenario, this particular county of Scania could experience as much as 6 ˚C on average temperature increase by the year 2100 compared to 2000 (SMHI, n.d.-a, scenario RCP 8.5). The temperature rise is projected to lead to an increase in precipitation of up to 50 % (SMHI, n.d.-b) and previously, it has been estimated that the sea level could rise by 1 metre in this region (Ehrnstén, 2011). Although the international goal of limiting global warming to 2 ˚C is achieved, Europe, and especially Scandinavia, is still expected to experience a higher warming than 2 ˚C on average (Vautard et al., 2014). This pose future adaptive challenges to Malmö.

Malmö has also been exposed to several floods in recent years and as a response, the municipality has developed an action plan for climate change adaptation that aims to cope with future climatic uncertainties (Malmö Stad, n.d.). While other groups of society are mentioned as important stakeholders (e.g. real estate managers, house owners and associations), youth is only referred to as secondary benefiters for educational purposes in urban gardening projects. This is problematic as young people will eventually grow up and hold likewise positions in society. Exploring young people's roles for adapting to climate change could therefore provide significant insights in Malmö's efforts to cope with future climatic hazards.

Following Morgan's (1998, p. 56) strategy of purposeful samplings, I selected an upper secondary school in Malmö, which currently is the target for a four year (2012-2016) pilot project for education for sustainable development. The aim of this pilot is to integrate sustainability at all levels of education

and to reduce the gap between pupil climate anxiety and their actual ability to act and influence their future (SSNC, 2012). As the project is run by the Swedish Society for Nature Conservation (SSNC), in close collaboration with the City of Malmö and Malmö University, it is my belief that focus group discussions with pupils from this school can generate richer material than if a random case was selected.

3.2 Five focus groups

Choosing between individual interviews and focus groups is a question of depth versus width (Wibeck, 2010, p. 50). The idea with focus groups is to make the participants discuss a topic and together explain and discuss their different opinions and experiences (Barbour & Flick, 2007, p. 2). A benefit with focus groups is therefore that participants can both query and explain themselves to each other, which can make the discussions more than the sum of individual interviews (Krueger, 2015, p. 22; Morgan, 1996). Thus, focus groups are more relevant in my study as the academic notion of adaptation might be confusing for the participants. And as Krueger further argues, focus groups are suitable when the study's purpose is to understand people's opinions, perceptions or ideas about an issue, behaviour or idea (Krueger, 2015, p. 21). The method is therefore appropriate when investigating complex behaviours and motivations (Krueger, 2015, p. 21).

Focus groups are furthermore appropriate when conducting explorative studies. Vivid group discussions can elicit more emotions and perceptions (Kvale & Brinkmann, 2009, p. 166) and "The range of argumentative behaviours exhibited by participants results in a depth of dialogue not often found in individual interviews" (Smithson, 2000, p. 116). Nevertheless, the outcomes of these interactions should not be treated as individual opinions, nor as opinions shared by the entire group, but rather as discourses that emerge from this group context (Smithson, 2000). I will later on in this chapter describe my process of analysing these emergent discourses, or themes, as I have chosen to call them.

The number of focus groups depends on the complexity of the researched topic. A higher number of groups is suitable if the topic is complex and if there are myriads of influencing factors. But the rule of thumb, as stated by Morgan (1996) and supported by Wibeck (2010, p. 62), is that most research projects consist of four to six focus groups. One reason is that the material begins to be saturated in the first few groups and little new information emerges thenceforth (Krueger, 2015, p. 23; Morgan, 1996; Wibeck, 2010, pp. 60–61). Another reason is that too many focus groups can result in unmanageable material (Wibeck, 2010, p. 60). Due to the resources available in the scope of the study and because of the narrow topic of interest, I have limited the number of groups to five. This number

is also in line with what Krueger (2015, pp. 27–28) refers to as a single-category design, which is suitable when investigating one single feature of a phenomena. Since social science research is generally more interested in deeper understandings of participants' meanings and how their perspectives are socially constructed (Barbour & Flick, 2007, p. 60), smaller focus groups are more in line with the epistemological approach of my thesis.

In the five focus groups, there were four groups with four participants and one group with six, aged between 17 and 19. Wibeck (2010, pp. 62–63) argues that the groups should not be fewer than four nor larger than six. Because if there are, on the one hand, fewer than four participants, there is a risk that one person will take on a role as a mediator over the other two (see Simmel 1964, in Wibeck, 2010, p. 62). If there are, on the other hand, more than six participants, there is a risk of emerging coalitions and that more introverted participants might get less space to speak (Wibeck, 2010, p. 62). Therefore, I decided to have group sizes between four to six participants.

The five focus groups in this study were selected out of existing class projects that focused on different topics within sustainability and are in different ways related to adaptation. Creating focus groups from already existing project groups might result in discussions over topics the interviewer does not understand. An active moderator who frequently interrupts the discussions, asking for clarification, might then disrupt participant interactions, which contradicts the whole purpose of focus groups (Morgan, 1996). The selected focus groups sometime consisted of members of different class projects, which in my mind facilitated a broader debate as they had different perspectives of the topic.

Lewis (1992) argues that friendship groupings are the most important criterion when creating focus groups of young people because such groups are more likely to feel comfortable expressing different opinions. However, this is contested by Vaughn, Schumm and Sinagub (1996, p. 63) who posit that if the group consists of strangers, they are more likely to be truthful and freely disclose their opinions as they are surrounded by people they will never meet again. This is an important point as my interview questions aimed to reveal how young people perceive themselves. Most groups comprised classmates that already knew each other, which in my opinion, resulted in more vivid discussions. Still, it is hard to determine whether the groups with less vivid discussions were because they did not feel comfortable or if they were just not interested in the topic.

Focus groups participants totalled 18 girls and four boys. It was my intention to have a balanced number of girls and boys throughout the groups but this was not possible as their participation was voluntary and decided on site. In most cases, it was also a group of friends who volunteered, which evidently resulted in this gender difference. I find it hard to determine if the discussions would have

turned out differently with a more balanced set-up. But drawing on my reflections, made in the previous paragraph, it is my opinion that in the focus groups where the participants were friends had more vivid discussions. This imbalance could perhaps have turned out differently if I had pre-announced the preferred group setting or consulted more groups.

Sometimes there might be dominant voices in focus groups that overpower dissident voices (Smithson, 2000). That is unfortunate, as so called "silent participants" may share detailed opinions if appealed to directly by either the moderator or other participants (Smithson, 2000). Therefore I actively sought to involve participants who had not yet joined the discussion by *non-verbal signs* (Wibeck, 2010, p. 60). This means that the moderator points out the next speaker with his or her body language. This manoeuvre was, however, hard to execute as I was too concentrated on the things the active speakers were saying. In this sense, I could have benefited from a co-moderator. A tactic I found more compelling, was to use phrases such as "what does everyone else think" and "does anyone think something different" (Gibson, 2007, p. 480).

Language is furthermore central when conducting a study with a constructionist approach (Gergen, 2012, p. 1001). Words and questions can be interpreted in many different ways (Alvesson & Kärreman, 2012, p. 42) and similarly, it is my belief that wordings like 'climate change adaptation', 'disaster risk reduction' and 'urban heat island effect' would restrain rather than facilitate open discussions. Instead, I used a photo of the latest flood event in Malmö (31st August, 2014) as material (see Appendix A) to stimulate conversation (Barbour & Flick, 2007, p. 84; Wibeck, 2010, pp. 78–79). This practical example aimed to tie their roles to a concrete context.

With regard to time and resources available, a semi-structured interview guide was the best option for this study (see interview guide in Appendix A). Consequently, I followed Krueger's five categories of questions (2015, p. 44): opening, introductory, transition, key and end questions. This structure enabled the focus group interview to achieve a comfortable conversational atmosphere (Morgan, 1998, p. 58), create a personal reference point by contextualising the issue with stimuli material (Barbour & Flick, 2007, p. 84) and finally to summarise the final position of the participants (Krueger, 2015, p. 46).

3.3 Analytical approach

As for my analytical approach, I have not applied any specific methodology but instead tried a range of methods and tactics to find my way forward. In order to find certain themes in the interviews, I followed the procedure of Line et al. (2012, p. 272), whom continuously tried to answer the questions

"what is this about?" and "what is being referenced here?" In this, so called vertical read, I reformulated the excerpts into shorter concentrations (see Kvale & Brinkmann, 2009, p. 221), which provided a manageable overview of the material. The concentrations from one group were then reflected with the others. This horizontal read was iterated until certain patterns could be recognised. In line with the research question of this study, I divided the analytical chapter into four subsections that illustrate different aspects of how youth understand their own role in society out of a perspective of adaptation. These subsections were thematised both in accordance with the key findings of the focus group interviews and in the areas where I could observe tensions. One key finding was for instance that there was a terminological confusion of adaptation. An example of tension was that norms and values were contested in one context, whilst accepted and reproduced in another. From these themes, I then applied my theoretical conceptualisation to classify what role young people can play for adaptation.

Later in this thesis I have chosen to not present the empirical material in a separate chapter. Instead I merge it with the theoretical conceptualisation directly in the analytical chapter. The reason for this is that I imagine myself as a researcher to co-create knowledge when moderating the focus group interviews. Kvale and Brinkmann (2009) assert that the researcher cannot ignore, or see past, his or her pre-formulated assumption about the material and it should therefore not be presented as objective in a separate chapter. I follow this assertion as I believe it to be hard for the reader to distinguish from what is already pre-interpreted by myself. It is furthermore my belief that this approach will enhance the overall impression and presentation of the empirical material.

3.4 The quality of this study

To ensure the quality of this study I have applied four validity criteria for a qualitative study*: credibility, authenticity, criticality* and *integrity* (Whittemore, Chase, & Mandle, 2001). Credibility and authenticity are achieved by a transparent revelation of my methodological approach. In my analysis, I have also been careful with the selection of presented excerpts. In an attempt to reveal emerging opinions or discourses, I have some times chosen to present a few or more rounds of the discussions in order to place specific opinions in a context. Furthermore, to make all participants feel comfortable and convinced that what they say will stay safe with the researcher, it is important to emphasis the praxis of confidentiality (Wibeck, 2010, p. 139). I therefore explicitly stressed the terms of their participation: that their participation was voluntary; that they could at any time leave the discussion and that the discussions were to be audio recorded. I also offered to erase any of the participants' comments from

the transcript if this was retrospectively requested. There were, however, no such requests but perhaps the knowledge of the option provided comfort for most people (Barbour & Flick, 2007, p. 96).

The fact that I used a conceptualization as a theoretical framework allowed me to interpret the empirical material through different lenses, which contributes to the criticality of this study. I have also applied a reflexive approach, in which it is my endeavour to critically reflect on the working progress and not stick to personal assumption and prejudices. Furthermore, using pre-existing groups raise ethical questions of confidentiality, and hence, integrity. It is important to bear in mind that participants have a life after the group discussions and the publication of the study, and the researcher should therefore strive to minimise possible negative consequences (Barbour & Flick, 2007, p. 67). This insight has reminded me to be careful when presenting my empirical material so that it would not be possible to link the expressed opinions directly to any of the participants. However, full anonymity cannot be guaranteed as the discussions are conducted in groups. Still, this was nothing that seemed to bother the participants.

4 The role of youth and their implications

As I have stressed, it is my belief that people are influenced by, and simultaneously influencing, their surrounding environment. Meaning that they can apply and contest norms and values they are exposed to in order to create their own perceptions and understandings of society. Hence, I have chosen to divide this analytical chapter into four subsections that illustrate different contexts, in which youth understand their role in climate change adaptation.

4.1 Terminological confusion

In this section, I will analyse the terminological confusion of adaptation. It reveals that there was an unwillingness to accept the social consequences of the term, which could be problematic for society's future ability to adapt.

It is quite clear that the participants were unaware of the concept of climate change adaptation. When they were asked for activities to alleviate the impacts of climate change, they explicitly referred to mitigation measures such as buying ecologically produced food, using your bike, less driving, recycling, buying second hand etc. It was not until I thoroughly drew a picture and explained the difference between mitigation and adaptation that they expressed a practical understanding of the concept. These findings suggest that the terminological understanding is poor, which can be problematic for example in cases of public information campaigns etc. However, it does not mean they were unaware of adaptive practices.

After showing participants the photo of the flood event in Malmö, they mentioned several adaptation measures that they had used. Some mentioned piling stuff on stools in the basement. Others mentioned that they actively avoided storing valuable items in their basements due to the fear of a flood event. The discussions also revealed some responses to floods. One participant said they moved around stuff in their basement after they discovered a minor leakage. Another one had stayed inside during the cloudburst. There were also examples of preparedness. One participant mentioned that they had fastened their flowerpots on the balcony because of an oncoming storm. Although all these activities could be assigned adaptation practices, participants referred to these as preparedness or responses.

The difficulty to distinguish between adaptation and mitigation among laypeople has also been documented by van Kasteren (2014). But although van Kasteren does not discuss any reasons for their poor terminological knowledge, it is hard to neglect the historical dominating focus on mitigation activities as a possible explanation. After I had explained the differences between mitigation and

adaptation, participants showed reluctance to accept the concept. They were so focused on how to mitigate climate change that when I explained the meaning of adaptation they felt it to be connected to failure as illustrated in the following discussion:

> Participant 11: Exactly, we have been aware of the greenhouse effect for long now but it feels like although there were a green wave of activists back then it is not until now when we actually start thinking, 'oops, it's actually warmer'. /---/ So I think, it's like that you get fed with that kind of thinking, and because of that you do not think about what to do until it really hits.
>
> Participant 12: It feels kind of weird to think about it [adaptation]. Like me building a bunker [ironic] (hehe). It might happen, but I feel more that I do not want to think about that, I rather think about what to do to mitigate it [climate change] than just accepting it.
>
> Participant 13: I'm thinking the same, it is like our pride, if we accept that this will happen then we have surrendered and failed and we can't accept such failure.
>
> Participant 12: It is just getting worse if everybody fails, or that we accept that we have failed, then everything will just collapse much faster.
>
> Participant 13: But you might have the thought anyway.

The discussion reminds of the taboo on adaptation, meaning that to accept and engage in adaptation is to accept that humanity had already given up its mitigation strategy. But to antagonise the terms in this way is unfair because both activities are needed to respond to climate change (Laukkonen et al., 2009). On a more notable point, participant 11 in the first round above refers to a communication that feeds you with a specific kind of thinking. This suggests that the communication of mitigation is so strong that it omits thinking in terms of adaptation. At least this is how it is perceived by the participants. As shown above, they gave examples of practiced adaptation measures when asked about the flood event, which means they are aware of practical adaptive measures. But for them these measures were not related to the term adaptation. It seems as the dominant mitigation discourse has locked its adherents to only focus on mitigating actions and not adaptation. Adaptation is in this sense associated with failure, which can be hard to accept. This further suggests that the unwillingness to accept that some climate change will happen leaves them to mainly focus on mitigating actions.

Drawing from Edwards and Wiseman's (2011) reasoning of historical transformations such as the abolition of slavery, the downfall of apartheid or the fall of the Berlin Wall, we can see that the transition from fear and despair to hope and action requires an understanding that an alternative future is possible. Perhaps even the dichotomy between mitigation and adaptation has played out its role. As climate change is unavoidable, the term adaptigation could provide a broader understanding of how to respond to climate change. Creating a widespread acceptance of the significance of

adaptation, under the term adaptigation, could then work as a catalyst for adaptation while ensuring that attention remains on mitigating measures.

4.2 A shock is needed to reduce the distance

This section will illustrate how the participants distance themselves from the issues of climate change, which leaves them with frustrated feelings. To cope with this, they later argue that people in general need a 'wake-up' call in order to understand the severity of climate change. This way of reasoning can become a vicious circle that makes people feel hopeless about their ability to take action.

Many participants explained their climate anxiety to be because of the physical distance between actions and consequences. They felt bad because their actions contribute to climate change but that the impacts will be felt by somebody else at another location. This was connected to feelings of hopelessness about what we as individuals can do to tackle climate change. The following excerpt comes out of a discussion of what to do about climate change and why it is hard to take action:

> Participant 1: I think it is still all this with that it is easier to 'sweep it under the carpet' than to actually do something about it. It is like the ordinary family [Svensson-familj[6]] just, 'no it is not like that' [climate denial], 'so we will just keep going as it is. It [climate change] is over *there* somewhere'. This is easier than… taking action and do something about it because taking action is a hassle… but. So I think that could be a pretty big, denial, push-off, defence mechanism that kicks in.
>
> **Why do they kick in?**
>
> Participant 1: I guess it is much because you are inherently anxious, but that you don't really know what to do about it [climate change]. It's like…
>
> Participant 2: Yes it's like, that you feel that it [climate change] will not affect yourself and your lifetime (Participant 1: mmm) that much. So therefore you feel like; 'ah whatever, I will just keep going' [status quo].
>
> Moderator in bold.

The discussion illustrates that the difficulties of relating your own everyday activities to the abstract issues of climate change make people passive in their responses to climate change. This goes in line with Wibeck's (2014) findings that a common approach is to objectify climate change as something global but distant. Some participants also mentioned that their view on climate change was affected by warnings and threats that were communicated via Facebook or movies. This could support Doyle's (2007) claim that visible evidence of climate change can produce a distancing effect, given that images often project the melting of polar ice caps or Mayhem in developing countries. Because of this

[6] This concept refers to a stereotypical Swedish family.

distancing effect of climate change communication, Wibeck (2014) argues that such communication should instead use fora that facilitate dialogue and enable participants to actively get engaged in causes, effects and responses to climate change. This approach could also give young people faith in the effects of collective behaviour (Ojala, 2012b).

Following the distant feeling of climate change, the participants expressed an understanding of today's unsustainable behaviour that we cannot proceed with in the future. As one participant said: "We know that travelling with airplanes is harmful to the environment and I don't think we are allowed to do that in the future". Similar to this example is the reasoning of one participant who said: "In the future, I think we will look back on this time and think how crazy we were to damage our environment to such an extent". One group discussed this as a matter of their age;

> Participant 15: In our age in particular, maybe when we get older… we will be more concerned when we get children and family and the like, (mmm) you don't care so much about yourself then [when you are older] but more about others.
>
> **How come it is like that? Why do your care less when you are younger you think?**
>
> Participant 15: Because you are more selfish, you just want to have fun all the time.
>
> **Do the rest of you feel the same way?**
>
> Participant 16: Yes, I feel kind of that you can't influence that much, so it feels kind of meaningless to engage, hehe…
>
> Participant 17: No it's no use…
>
> Participant 16: Exactly!
>
> Moderator in bold.

This is another example of distancing yourself from engaging in the issues of climate change. But instead of distancing oneself in terms of space, as the previous example illustrated, this excerpt refers to distance in time. Similar is that both examples draw upon a feeling that "it's no use" in trying to do something because it will not make any difference. This feeling of hopelessness could possibly be explained by Ojala's (2012a) findings, suggesting that those who do not believe in the collective forces also have a lower propensity of showing pro-environmental behaviour. Some argue that if people just get enough information they will live more sustainably (see Cleveland & Jacobs, 1999). However, this is a too simple way of looking at it, which is exemplified by one participant who said: "I know we should act more sustainable, and I want to, but it doesn't matter when nobody else are doing it". Instead, this suggests that they are aware of the issues and that they feel they should do something about it.

There was a large agreement among the participants that action is needed to cope with the issues of climate change. But in some discussions I noted reluctance to the social consequences of adaptation. It was argued that if our society keeps adapting to the new hazards posed by climate change, then people will not take the problems for real:

> Participant 5: But I think that since we can afford this it will be that we keep developing the protections for us, but we keep driving cars so it will get worse and worse elsewhere and less worse here but we will just build better [resilient] houses because we can afford it so it doesn't matter.

The quote draws attention to the inequality in that more wealthy nations have better possibilities to adapt to climate change than do less wealthy nations. This leads to frustrated voices that uttered a need for disasters in wealthy nations to make people aware of the seriousness of climate change. The following quote comes at a point where the participants discuss their own responsibility, in relation to the responsibility of municipalities, to respond and adapt to future floods in Malmö:

> Participant 1: … But everybody have to take their responsibility and go through what has happened. Why did this not happen for many… I mean a couple of years ago? Why does it occur now? What about… what's the difference? That everybody kind of has to wake up… and yes, also take own responsibility in this context, because it doesn't help… and we can't just sit here and point finger, single out a scapegoat as if 'now it is because of this and now it is because of that'. Because that is how it is in Sweden, as long as you know where the problem is, and you have identified a scapegoat, then you can just lean back with your ego and just 'now that's done', then there's nothing more to it. And somewhere I kind of feel that, well… then it might be good if some get their basement flooded and so that they give it a second thought.

What is suggested here, is a shock to the system (Eyben et al., 2008). This approach assumes that if people are hit by a shock that inflicts some kind of damage to their values, they will take on sufficient action to prevent it from happening again. This is another example that spreading awareness alone is insufficient to make people responsive to nearby or oncoming threats. This shock-to-the-system logic can furthermore be applied to various kinds of penalties. If an individual breaks the law for instance, he or she will get, according to the magnitude of the crime, a punishment in terms of a reprimand, fine or prison sentence. The aim of this system is to first and foremost work as a threat that will prevent people from committing crimes. Secondly it aims to remind an individual that if they commit a crime, they will get prosecuted. In turn, the penalty should reflect the degree of the crime, which will give them a 'wake-up call' that their behaviour is not accepted and that they will have to act differently in the future. However, applying this reasoning on climate change becomes problematic when shocks can strike unannounced and with short notice. It also becomes problematic because people might not understand what they did wrong. In many cases they have done nothing wrong but mostly acted as they always have done, which becomes insufficient when the climate is now changing.

Taking this reasoning of a shock to the system one step further implies that if you do nothing to protect your premises you basically have yourself to blame. Here, it is assumed that in order for people to understand the seriousness of climate change, they need to get exposed by it. In one sense, this might be true, but it would also overthrow the whole idea of DRR and adaptation, which is to reduce the likelihood and degree of damages. It would also dismiss the idea that we can learn from each other, not repeating past mistakes. However, the same participants that argued this way also showed a tendency to frame climate change as something spatially and temporally distant. Meaning that, on the one hand, they say that climate change is so far away and they do not know what to do, whilst on the other hand saying that if you are affected – blame yourself for not adapting. This circular way of reasoning leaves the participants in a Catch-22 situation where neither adaptation nor risk reduction measures would make any difference. It is for this reason, Evans et al. (2014) suggest local adaptation strategies that include the public because such efforts could reduce the distance and make the issues of climate change more concrete. However, influential societal actors could also show example of how successful collective actions could move beyond this impasse (Ojala, 2012a), which is the field that I will turn to next.

4.3 Reproducing norms and values

This section will bring up one of the most common themes that came out of the focus group interviews, namely an urge for stronger leadership. I will analyse this by drawing on the activity spheres from Pelling et al. (2014), which were presented in the conceptualisation of adaptation. Here, I will focus on the participants critical versus non-critical stance of norms and values for transformative adaptation.

One of the clearest patterns throughout the discussions were the participants' urge for enhanced institutional leadership and a proliferation of societal role models to take action on climate change. The perceived inability of politicians to guide citizens how to act and tackle climate change resulted in frustration among the participants.

> **Who is responsible?**
> Everybody: All of us!
> Participant 6: But most of all those that could influence the most, which would be nations and then large companies.
> Participant 7: I mean, the thing is, there are many companies as we talked about before that have more power globally than the politicians. That is what needs to change in order to control their emissions and stuff like that. I mean, there have to be new laws and stricter regulations…
>
> Moderator in bold

As illustrated in the excerpt, it seems as if they question international governance and power dynamics when referring to companies that have more power than the politicians. The solution, however, does not question the distribution of power, but rather gives more power to governments. Still, the participants strongly announce they are all responsible for acting upon climate change. Although it is referred to 'control of emissions' in the quote above, the transformative discourse of adaptation also questions the underlying drivers of climate change, which includes mitigation actions (O'Brien et al., 2012). However, the situation again felt hopeless as many large corporations are very powerful and only care about profits. When framing the issue like this, the individual efforts of recycling and biking can become ludicrous in relation to how much greenhouse gases industries emit every day. This reasoning and the following feeling of disenchantment were found in many of the group discussions. At first it seemed as they felt bad because they felt they did not engage in the issues of climate change enough. This was, however, quickly covered by pointing at all the powerful companies that emit tonnes of greenhouse gases every day, leaving their own efforts negligible. After this disclosure they felt better about themselves because they defended their actions with the fact that it would not make any difference anyway. However, some of them also acknowledged their selfish approach and admitted its foolish reasoning, concluding that the climate will suffer due to this approach. So although they question the international power dynamics, their perception of that their own efforts would be meaningless seems to hamper their agency.

This disenchantment poses a question of how youth perceive themselves to make a change in society. If young people are unhappy with the prevailing structure, its system and practice, what do they think they could do? Answering this question from a democratic theory perspective, as in Pelling et al. (2014), suggests that the participants should already possess the tool of change as they have been exposed to democratic institutions and practices. In a way, this is true. Many of the participant's suggestions of how to make a change also referred to traditional ways of raising awareness and creating opinion through petitions and network building. But in terms of adaptation as transformation, what if the democratic society and its institutions systematically disregard transformative adaptation? Pelling and Manuel-Navarrete (2011) remind us that questioning those who currently benefit from status quo might be challenging as those in current power positions might lose their privilege. So if those in power were unwilling to change, such an outcome would also omit liberal theory as a catalyst of change. However, there were examples pointing to a critique of their everyday practices. This was exemplified by one participant who cared more about taking a hot shower for 15 minutes, than for two minutes in cold water. I interpret this statement to show a self-critique on the one hand, but an ignorance of this critique on the other because, as it seems, it would not make any difference.

In one of the focus groups I triggered a long discussion by asking the participants if they thought they could make a change in society. The clear answer was that you could, but that it would require huge efforts by that individual. As you would face heavy resistance from all kinds of people that do not care about climate change, your efforts would most likely be in vain. As the discussion continued, that feeling was intensified when they brought up other powerful actors, which according to their opinion, made inadequate efforts to cope with climate change. This goes in line with what Harris et al. (2010) argue that young people can get disenchanted if their needs and values are not recognised by the political system. If their values and needs were extreme by any kind, I would say Harris with colleagues' argument would be void. But in this case when they are in terms of living in a healthier environment, I found it most relevant.

All of the empirical findings in this section have until now been examples of young people being positive about taking action to both mitigate and adapt to climate change. But they were then disenchanted because of the perceived inaction of powerful "others". This could possibly be explained by Shove (2010) who suggests that they apply a non-critical behaviour and reproduce common values, which perhaps reluctantly allows institutional systems to persist. In a sense, they are reproducing norms and common values as they found it meaningless to do differently. Still, I would not agree that they took a non-critical approach to this behaviour. Instead I found the disenchantment to be because their perception of that it is pointless to engage, which points more towards the importance of collective peer pressure (Ojala, 2012a), than on the individual's own capacity of self-criticism. With unresponsive systems, transformative adaptation recommends individuals to critically reflect on taken for granted norms and values and I will therefore take a closer look at such examples of in the following section.

4.4 Youth as agents of transformative adaptation

The previous section analysed the participants' disenchanted feelings in relation to their perception of the inaction of powerful institutional and private actors. In this section I will expand on the participant's critical approach of the status quo and demonstrate examples of how youth show tendencies for a transformative adaptation.

When discussing the consequences of climate change, the participants were often concerned with rising sea levels. This resulted in wide adaptive suggestions ranging from moving to the moon to abandoning the whole concept of basements or establishing a widespread emergency squad that could help people in case of emergencies. Here, I will not discuss whether these suggestions are legal, physically possible or valid. I will instead concentrate on their approach of reasoning. Other

suggestions for how to adapt to climate change were to take into account the new streams of climate refugees and open up the boarders. A final suggestion was to halt adaptation as resistance, i.e. shutting the water out, but instead acknowledge the new circumstances and turn Malmö into a new Venice.

I will pay some extra attention to this very last example, as there were others of the same kind, which points in a direction of contesting norms. The following quote illustrates the willingness to accept new standards of living if the sea level rises:

> Participant 2: I guess we have to live more efficiently, there are these small houses that you can buy. There are these small houses that you can live in, around 16 m^2. It will be more of that kind of living instead of big houses and large buildings that… because they demand a lot, they both require lots of space and they demand lots of energy to heat up. So I think we will have to live much more compact, because the land areal will decrease and we will have to move further inland. And also that it become denser, less space and more on the height I guess. It also depends on where in the world you are and what natural disasters that affects you, because here in Sweden the land area will decrease.

In fact, living on smaller areas was not the only alternative discussed. Building a huge wall to protect the city was also suggested. There was, however, a strong consensus amongst participants that such a wall would not be an ultimate solution because it would eventually break. Hence, they accepted to instead adapt to the new circumstances and live on a smaller area. This further implies that they are willing to give up the current norm of living if the circumstances demand it.

In one group it was discussed that the government could prioritize their investments differently, i.e. not funding additional shopping malls but instead doing something to prevent floods. Such interventions could be argued to go against the liberal model of governance and its eternal pursuit of economic growth. In a later discussion over what happened after the flood event in Malmö, the following quote emerged:

> Participant 5: Well, I don't know, but there were lots of basements where people in apartments have this kind of cage with storage and people had thrown out stuff on their courtyards. I know because close to Fair Play [a sport facility centre in Malmö], there is a large lawn where people had just dumped tons, and people, me and a friend, went there and 'dumpstered'[7] lots of stuff and took furniture and books and other stuff.

There are many circumstances that could explain this behaviour. For instance, one can imagine people going through garbage in hope to find stuff to sell because they need the money. It can also be because people do not afford to buy food and hope to find something edible. However, the way this quote was uttered, and from the previous discussions, it is not my belief that those were the reasons. Instead, I

[7] The term refers to 'dumpster diving' or 'skipping', which is a practice of going through commercial or residential garbage that has been discarded for various reasons. In this case, the stuff had been discarded because of flooded basements.

would say that the quote depicts a mentality of practicality and an attitude to make use of goods as long as possible. Following Pelling et al. (2014), transformative adaptation might be observed in behaviour that emerges from a particular social context. In this sense, sifting through stuff that others have thrown away indicates a willingness to move beyond current state of a throw-away society.

Both examples of moving beyond a throw-away society and the previous example of a willingness to live on a smaller area indicate a willingness to adapt to the new circumstances. But this also becomes a way of breaking prevailing norms. As opposed to the findings in the previous section (4.3) where it seemed as youth were disenchanted by the inaction of other actors, these findings instead suggest youth to act as agents of change for a transformative adaptation. The latter excerpt furthermore shows examples of ways to bypass the current system when the particular context gives the opportunity. In this way, young people could act as their own leaders and role-models for new paths forward.

5 The role of youth – an outlook on adaptation

In this thesis I have claimed that examining how young people perceive and understand their surrounding could give valuable insights into our society's development. As today's youth are the leaders of tomorrow, it is unfortunate that they traditionally have been framed as marginalised and passive victims of climate change. However, recent literature of risk reduction has introduced youth as agents of change that constitute a crucial part of sustainable community development. It is with this background that the purpose of this study was to explore what role young people can play for climate adaptation in society. From a climate change adaptation perspective, my aim was to fulfil this purpose by exploring how young people perceive their role in society. In this closing chapter I will present my concluding remarks and also discuss their implications for climate change adaptation.

The participants seemed to be influenced by the climate change debate's strong focus on mitigation, which was illustrated by a poor terminological understanding of adaptation as well as a reluctance to accept the term because of its strong connotation of failure. This status is unfortunate for enhanced societal adaptation as we know that both measures are needed in order to reduce the impacts of climate change. For this purpose, it might be time to give up the dichotomy of the concepts and instead push for a widespread acceptance of adaptation. Both adaptation and mitigation could then jointly be promoted by a wider term, such as adaptigation. However, one can ask whether the terminological understanding of mitigation and adaptation make any difference for more widespread adaptation. As knowledge about climate change spread, imposed feelings of hopelessness could appear when individual coping feels useless. This can make individuals feel alone in the fight against this immense threat. To alleviate such feelings, increased terminological understanding might not be enough.

From the analysis, it could be noted that the complex issues and abstract solutions of climate change created feelings of hopelessness. Youth could adopt a passive role for adaptation if they perceive that their capacity to take action will be useless. As a consequence of passive citizens, it was argued that society needs to experience a shock in order to understand the severity of climate change. This reasoning can become a vicious circle where risk reduction and adaptive measures are neglected or seen as maladaptive. The rationale of this reasoning is a perception that climate change is happening somewhere far away, which in turn makes people passive. To counteract this passivity, it was argued that people would have to be exposed by the threat in order to become more active. Still, it seems as though this circular issue has its origin in the perception of climate change as something distant. For adaptation, the question then is how to reduce this distance and instead spread feelings of agency and that one's own actions could make a difference. For this purpose, theory suggests empowering efforts

that could both infuse inclusive feelings that one's actions are equally important and provide simple tools for individual and collective action. This could imply that instead of investing resources in trying to give people information on how to act more pro-environmental, resources could be put into reinforcing faith in collective behaviour.

The analysis indicates that the participants felt disenchanted to engage in adaptive measures. This could be because of their perception that powerful societal actors do not engage in either mitigating or adapting measures responsibly and sufficiently enough. In this sense, they are reproducing the hierarchical norm of change that is initiated on a higher governmental level and then reflected further down to the citizen level. Here, one can discuss whether the structure is essentially unresponsive to young people's needs and values, or if young people's approach of expecting change is misguided. Prevailing structures could of course also facilitate change, not only counteract it. But although the empirical material indicated disenchanted feelings, the analysis still showed tendencies of youth as agents for transformative adaptation. The analysis indicates that there is a willingness to give up current norms in order to adapt to a changing climate. The analysis also shows tendencies of transformative adaptation when it comes to renegotiating values. As young people have shown propensity for transformative adaptation, enhanced youth participation in adaptation strategies may gain a foothold in prevailing adaptive practice, which could then excrete ripples throughout the institutional adaptation practice. In turn, that could possibly augment young people's perception of their ability to act as agents of change, which could give room for more transformative adaptation.

My empirical material, in addition to other studies, suggest that information and knowledge is not the only root cause of action. There are social pressures that can both hamper and facilitate change. On the one hand you could argue that if people had more information about sustainability they would act in a more sustainable manner. On the other hand, there are many things in life we just do without any particular reason. That is, without enough information to back up the action. Behaviour is among other things influenced by tradition and culture, i.e. common norms and values. As norms and values are dynamic, this means that if people contest current norms, they could act as role-models of change that strive to build a new norm with adapted values to the prevailing circumstances. Since human caused climate change poses threats to the functioning of human and natural systems, a renegotiation of current norms and values is urgently awaited. Here, young people can play a key role in shaping a sustainable future.

As I have outlined in this thesis, youth can play more, or less, active roles for climate change adaptation. The question for a sustainable society is *what* role is the most promising in order to meet future uncertainties. Here I would argue that empowering young people to believe that they possess agency

of change could be crucial for successful adaptation. A next step for further studies could then be to explore how and where such empowerment could take place. Such findings could provide a pathway for enhanced adaptation towards a societal transformation and sustainable development. This is urgent as "We are the last generation that can fight climate change. We have a duty to act" – Ban Ki-moon (2015).

References

Adger, W. N., Arnell, W. N., & Tompkins, L. E. (2005). Successful adaptation to climate change across scales. *Global Environmental Change*, *15*(2), 77–86. http://doi.org/10.1016/j.gloenvcha.2004.12.005

Adger, W. N., Hughes, T. P., Folke, C., Carpenter, S. R., & Rockström, J. (2005). Social-Ecological Resilience to Coastal Disasters. *Science*, *309*(5737), 1036–1039. http://doi.org/10.1126/science.1111534

Adger, W. N., Huq, S., Brown, K., Conway, D., & Hulme, M. (2003). Adaptation to climate change in the developing world. *Progress in Development Studies*, *3*(3), 179–195. http://doi.org/10.1191/1464993403ps060oa

Alvesson, M., & Kärreman, D. (2012). *Kreativ metod: skapa och lösa mysterier*. Malmö: Liber.

Alvesson, M., & Sköldberg, K. (2009). *Reflexive Methodology: new vistas for qualitative research* (Second edition). Los Angeles ; London: SAGE, 2009.

Anderson, W. A. (2005). Bringing Children into Focus on the Social Science Disaster Research Agenda. *International Journal of Mass Emergencies and Disasters*, *23*(3), 159–175.

Barbour, R., & Flick, U. (2007). *Doing focus groups*. Thousand Oaks, Calif: Sage Publications.

Biesbroek, G. R., Swart, R. J., & van der Knaap, W. G. M. (2009). The mitigation–adaptation dichotomy and the role of spatial planning. *Habitat International*, *33*(3), 230–237. http://doi.org/10.1016/j.habitatint.2008.10.001

Birkland, A. T. (1996). Birkland. 1996. Natural disasters as focusing events. *International Journal of Mass Emergencies and Disasters*, *14*(2), 221–243.

Birkmann, J., & von Teichman, K. (2010). Integrating disaster risk reduction and climate change adaptation: key challenges—scales, knowledge, and norms. *Sustainability Science*, *5*(2), 171–184. http://doi.org/10.1007/s11625-010-0108-y

Bryman, A. (2012). *Social Research Methods* (4th edition). New York: Oxford University Press.

Cadag, J. R. D., & Gaillard, J. (2012). Integrating knowledge and actions in disaster risk reduction: the contribution of participatory mapping: Integrating knowledge and actions in disaster risk reduction. *Area*, *44*(1), 100–109. http://doi.org/10.1111/j.1475-4762.2011.01065.x

Campbell, E., Skovdal, M., & Campbell, C. (2013). Ethiopian students' relationship with their environment: implications for environmental and climate adaptation programmes. *Children's Geographies*, *11*(4), 436–460. http://doi.org/10.1080/14733285.2013.812302

Cleveland, H., & Jacobs, G. (1999). Human Choice: the genetic code for social development. *Futures*, *31*(9), 959–970.

Doyle, J. (2007). Picturing the Clima(c)tic: Greenpeace and the Representational Politics of Climate Change Communication. *Science as Culture*, *16*(2), 129–150. http://doi.org/10.1080/09505430701368938

Dymén, C., & Langlais, R. (2013). Adapting to climate change in Swedish planning practice. *Journal of Planning Education and Research*, *33*(1), 108–119.

Edwards, T., & Wiseman, J. (2011). Climate Change, Resilience and Transformation: Challenges and Opportunities for Local Communities. In I. Weissbecker (Ed.), *Climate Change and Human Well-Being* (pp. 185–200). New York, NY: Springer New York. Retrieved from http://link.springer.com/10.1007/978-1-4419-9742-5_10

Ehrnstén, T. (2011). *Klimatanpassningsatlas för Skåne* (No. 2011:23). Länsstyrelsen Skåne. Retrieved from http://www.lansstyrelsen.se/skane/SiteCollectionDocuments/Sv/miljo-och-klimat/klimat-och-energi/klimatanpassning/kunskapsunderlag/Klimatanpassningsatlas_2011.pdf

Eriksen, S., Inderberg, T. H., O'Brien, K., & Sygna, L. (2014). Development as Usual is not Enough. In T. H. Inderberg, S. Eriksen, K. O'Brien, & L. Sygna, *Climate Change Adaptation and Development: Transforming Paradigms and Practices* (p. 296). London: Routledge.

Evans, L., Milfont, T. L., & Lawrence, J. (2014). Considering local adaptation increases willingness to mitigate. *Global Environmental Change*, *25*, 69–75. http://doi.org/10.1016/j.gloenvcha.2013.12.013

Eyben, R., Kidder, T., Rowlands, J., & Bronstein, A. (2008). Thinking about change for development practice: a case study from Oxfam GB. *Development in Practice*, *18*(2), 201–212. http://doi.org/10.1080/09614520801898996

Fernandez, G., & Shaw, R. (2013). Youth Council participation in disaster risk reduction in Infanta and Makati, Philippines: A policy review. *International Journal of Disaster Risk Science*, *4*(3), 126–136. http://doi.org/10.1007/s13753-013-0014-x

Fernandez, G., & Shaw, R. (2015). Youth participation in disaster risk reduction through science clubs in the Philippines. *Disasters*, *39*(2), 279–294. http://doi.org/10.1111/disa.12100

Gallopín, G. C. (2006). Linkages between vulnerability, resilience, and adaptive capacity. *Global Environmental Change*, *16*(3), 293–303. http://doi.org/10.1016/j.gloenvcha.2006.02.004

Gausset, Q., & Hoff, J. (2013). Citizen Driven Environmental Action. *The Journal of Transdisciplinary Environmental Studies*, *12*(1). Retrieved from http://www.journal-tes.dk/vol_12_no_1_page_20/no%201a%20Introduktion.pdf

Gergen, K., J. (2012). Social Constructionism. In R. W. Rieber (Ed.), *Encyclopedia of the History of Psychological Theories* (pp. 1000–1005). New York, NY: Springer US. Retrieved from http://link.springer.com/10.1007/978-1-4419-0463-8

Gibson, F. (2007). Conducting focus groups with children and young people: strategies for success. *Journal of Research in Nursing*, *12*(5), 473–483.

Harris, A., Wyn, J., & Younes, S. (2010). Beyond apathetic or activist youth: "Ordinary" young people and contemporary forms of participation. *Young*, *18*(1), 9–32. http://doi.org/10.1177/110330880901800103

Harris, U. S. (2014). Communicating climate change in the Pacific using a bottom-up approach. *Pacific Journalism Review*, *20*(2), 77.

Hart, R. A. (1992). *Children's participation: from tokenism to citizenship*. Florence, Italy: UNICEF International Child Development Centre.

Haynes, K., & Tanner, T. M. (2015). Empowering young people and strengthening resilience: youth-centred participatory video as a tool for climate change adaptation and disaster risk reduction. *Children's Geographies*, *13*(3), 357–371. http://doi.org/10.1080/14733285.2013.848599

Hibberd, M., & Nguyen, A. (2013). Climate change communications & young people in the Kingdom: A reception study. *International Journal of Media & Cultural Politics*, *9*(1), 27–46. http://doi.org/10.1386/macp.9.1.27_1

Huq, S., Roberts, E., & Fenton, A. (2013). Loss and damage. *Nature Climate Change*, *3*(11), 947. http://doi.org/10.1038/nclimate2026

IPCC. (2014). Annex XX: Glossary. In V. R. Barros, C. B. Field, D. J. Dokken, M. D. Mastrandrea, K. J. Mach, T. E. Bilir, … L. L. White (Eds.), *Climate Change 2014: Impacts, Adaptation and Vulnerability. Part B: Regional Aspects. Contribution of Working Group II to the Fifth Assessment Report of the Intergovernmental Panel on Climate Change* (pp. 1757–1776). Cambridge University Press, Cambridge, United Kingdom and New York, NY, USA. Retrieved from https://www.ipcc.ch/pdf/assessment-report/ar5/wg2/drafts/fd/WGIIAR5-Glossary_FGD.pdf

Kates, R. W., Clark, W. C., Corell, R., Hall, J. M., Jaeger, C. C., Lowe, I., … Svedin, U. (2001). Sustainability Science. *Science*, *292*(5517), 641–642.

Kates, R. W., Parris, T., & Leiserowitz, A. (2005). What is sustainable development? Goals, indicators, values and practice. *Environment*, *47*(3), 8–21.

Ki-moon, B. (2009). International Youth Day, 12 August 2009. Sustainability: Our Challenge. Our Future. Retrieved February 11, 2015, from http://undesadspd.org/Youth/InternationalYouthDay/2009.aspx

Ki-moon, B. (2015, May 10). We are the last generation that can fight climate change. We have a duty to act | Ban Ki-moon | Comment is free | The Guardian. Retrieved May 10, 2015, from http://www.theguardian.com/commentisfree/2015/jan/12/last-generation-tackle-climate-change-un-international-community

Kolbert, E. (2009). Obama's Science Adviser Urges Leadership on Climate by Elizabeth Kolbert: Yale Environment 360. Retrieved January 20, 2015, from http://e360.yale.edu/feature/obamas_science_adviser_urges_leadership_on_climate/2179/

Krueger, R. A. (2015). *Focus Groups: a practical guide for applied research* (5th edition). Thousand Oaks, Calif: Sage Publications, cop.

Kvale, S., & Brinkmann, S. (2009). *Den kvalitativa forskningsintervjun*. Lund: Studentlitteratur.

Laukkonen, J., Blanco, P. K., Lenhart, J., Keiner, M., Cavric, B., & Kinuthia-Njenga, C. (2009). Combining climate change adaptation and mitigation measures at the local level. *Habitat International*, *33*(3), 287–292. http://doi.org/10.1016/j.habitatint.2008.10.003

Lei, Y., & Wang, J. (2014). A preliminary discussion on the opportunities and challenges of linking climate change adaptation with disaster risk reduction. *Natural Hazards*, *71*(3), 1587–1597. http://doi.org/10.1007/s11069-013-0966-6

Lewis, A. (1992). Group Child Interviews as a Research Tool. *British Educational Research Journal*, *18*(4), 413.

Line, T., Chatterjee, K., & Lyons, G. (2012). Applying behavioural theories to studying the influence of climate change on young people's future travel intentions. *Transportation Research Part D: Transport and Environment*, *17*(3), 270–276. http://doi.org/10.1016/j.trd.2011.12.004

Malmö Stad. (n.d.). *Handlingsplan för klimatanpassning Malmö 2012-2014.pdf*. Malmö: Miljöförvaltningen. Retrieved from http://malmo.se/download/18.6559ffe5145840d28d677a8/1399536086537/Handlingsplan_Klimatanpassning_Malm%C3%B6_2012-2014_webb.pdf#search=%27klimatanpassning+ungdomar%27

Markowitz, E. M. (2012). Is climate change an ethical issue? Examining young adults' beliefs about climate and morality. *Climatic Change*, *114*(3-4), 479–495. http://doi.org/10.1007/s10584-012-0422-8

Matyas, D., & Pelling, M. (2015). Positioning resilience for 2015: the role of resistance, incremental adjustment and transformation in disaster risk management policy. *Disasters*, *39*(s1), s1–s18. http://doi.org/10.1111/disa.12107

Meinhold, J. L., & Malkus, A. J. (2005). Adolescent Environmental Behaviors: Can Knowledge, Attitudes, and Self-Efficacy Make a Difference? *Environment and Behavior*, *37*(4), 511–532. http://doi.org/10.1177/0013916504269665

Mercer, J. (2010). Disaster risk reduction or climate change adaptation: Are we reinventing the wheel? *Journal of International Development*, *22*(2), 247–264. http://doi.org/10.1002/jid.1677

Miller, T. R., Wiek, A., Sarewitz, D., Robinson, J., Olsson, L., Kriebel, D., & Loorbach, D. (2014). The future of sustainability science: a solutions-oriented research agenda. *Sustainability Science*, *9*(2), 239–246. http://doi.org/10.1007/s11625-013-0224-6

Mitchell, T., Haynes, K., Hall, N., Choong, W., & Oven, K. (2008). The roles of children and youth in communicating disaster risk. *Children Youth and Environments*, *18*(1), 254–279.

Morgan, D. L. (1996). Focus groups. *Annual Review of Sociology*, 129–152.

Morgan, D. L. (1998). *Planning Focus Groups* (Vol. Focus Group Kit 2). Thousand Oaks: Sage Publications, Inc.

Nelson, D. R., Adger, W. N., & Brown, K. (2007). Adaptation to Environmental Change: Contributions of a Resilience Framework. *Annual Review of Environment and Resources*, *32*(1), 395–419. http://doi.org/10.1146/annurev.energy.32.051807.090348

O'Brien, K. (2012). Global environmental change II: From adaptation to deliberate transformation. *Progress in Human Geography*, *36*(5), 667–676. http://doi.org/10.1177/0309132511425767

O'Brien, K., Pelling, M., Patwardhan, A., Hallegatte, S., Maskrey, A., Oki, T., … Yanda, P. Z. (2012). Toward a sustainable and resilient future. *Managing the Risks of Extreme Events and Disasters to Advance Climate Change Adaptation. A Special Report of Working Groups I and II of the Intergovernmental Panel on Climate Change (IPCC)*, 437–486.

Ojala, M. (2012a). Hope and climate change: the importance of hope for environmental engagement among young people. *Environmental Education Research*, *18*(5), 625–642. http://doi.org/10.1080/13504622.2011.637157

Ojala, M. (2012b). Regulating Worry, Promoting Hope: How Do Children, Adolescents, and Young Adults Cope with Climate Change?. *International Journal of Environmental and Science Education*, *7*(4), 537–561.

Ojala, M. (2013). Coping with Climate Change among Adolescents: Implications for Subjective Well-Being and Environmental Engagement. *Sustainability*, *5*(5), 2191–2209. http://doi.org/10.3390/su5052191

Pandve, H., Deshmukh, P., Pandve, R., & Patil, N. (2009). Role of youth in combating climate change. *Indian Journal of Occupational and Environmental Medicine*, *13*(2), 105. http://doi.org/10.4103/0019-5278.55130

Pelling, M. (2010). *Adaptation to climate change: from resilience to transformation*. London ; New York: Routledge.

Pelling, M., & Dill, K. (2010). Disaster politics: tipping points for change in the adaptation of sociopolitical regimes. *Progress in Human Geography*, *34*(1), 21–37. http://doi.org/10.1177/0309132509105004

Pelling, M., & Manuel-Navarrete, D. (2011). From resilience to transformation: the adaptive cycle in two Mexican urban centers. *Ecology and Society*, *16*(2), 11.

Pelling, M., O'Brien, K., & Matyas, D. (2014). Adaptation and transformation. *Climatic Change*. http://doi.org/10.1007/s10584-014-1303-0

Percy-Smith, B., & Burns, D. (2013). Exploring the role of children and young people as agents of change in sustainable community development. *Local Environment*, *18*(3), 323–339. http://doi.org/10.1080/13549839.2012.729565

Petrasek MacDonald, J., Harper, S. L., Cunsolo Willox, A., & Edge, V. L. (2013). A necessary voice: Climate change and lived experiences of youth in Rigolet, Nunatsiavut, Canada. *Global Environmental Change*, *23*(1), 360–371. http://doi.org/10.1016/j.gloenvcha.2012.07.010

Pielke, J. R., Prins, G., Rayner, S., & Sarewitz, D. (2007). Climate change 2007: Lifting the taboo on adaptation. *Nature*, *445*(7128), 597–598. http://doi.org/doi:10.1038/445597a

Satterthwaite, D., Huq, S., Pelling, M., Reid, H., & Romero Lankao, P. (2007). *Adapting to climate change in urban areas: the possibilities and constraints in low- and middle-income nations*. London: International Institute for Environment and Development.

Shaw, R., & Oikawa, Y. (Eds.). (2014). *Education for Sustainable Development and Disaster Risk Reduction*. Tokyo: Springer Japan. Retrieved from http://link.springer.com/10.1007/978-4-431-55090-7

Shove, E. (2010). Beyond the ABC: climate change policy and theories of social change. *Environment and Planning A*, *42*(6), 1273–1285. http://doi.org/10.1068/a42282

SMHI. (n.d.-a). Sveriges framtida klimat: Förändring av årsmedeltemperaturen i Skåne län, scenario RCP 8.5. Retrieved February 24, 2015, from http://www.smhi.se/klimatdata/framtidens-klimat/klimatscenarier?area=lan&var=t&sc=rcp85&seas=ar&dnr=0&sp=sv&sx=0&sy=212#area=lan&dnr=12&sc=rcp85&seas=ar&var=t

SMHI. (n.d.-b). Sveriges framtida klimat: Förändring av årsnederbörden i Skåne län, scenario RCP 8.5. Retrieved February 24, 2015, from http://www.smhi.se/klimatdata/framtidens-

klimat/klimatscenarier?area=lan&var=n&sc=rcp85&seas=ar&dnr=12&sp=sv&sx=0&sy=46#area=lan&dnr=12&sc=rcp85&seas=ar&var=n

Smithson, J. (2000). Using and analysing focus groups: limitations and possibilities. *International Journal of Social Research Methodology*, *3*(2), 103–119.

Solecki, W., Leichenko, R., & O'Brien, K. (2011). Climate change adaptation strategies and disaster risk reduction in cities: connections, contentions, and synergies. *Current Opinion in Environmental Sustainability*, *3*(3), 135–141. http://doi.org/10.1016/j.cosust.2011.03.001

SSNC. (2012). Avsiktsförklaring gällande Modellskolan Malmö Nya Latinskola - En skola för hållbar utveckling. Naturskyddsföreningen. Retrieved from http://malmo.se/download/18.316abac5146f22d0f29b01/1404333565947/Avsiktsf%C3%B6rklaring+Modellskolan+Nya+Malm%C3%B6+latinskola_120907+%282%29.pdf

Tanner, T. (2010). Shifting the Narrative: Child-led Responses to Climate Change and Disasters in El Salvador and the Philippines: Child-led Responses to Climate Change and Disasters. *Children & Society*, *24*(4), 339–351. http://doi.org/10.1111/j.1099-0860.2010.00316.x

Tanner, T., Garcia, M., Lazcano, J., Molina, F., Molina, G., Rodriguez, G., … Seballos, F. (2009). Children's participation in community-based disaster risk reduction and adaptation to climate change. *Participatory Learning and Action , 60*, 54–64.

Tanner, T., & Seballos, F. (2012). Action Research with Children: Lessons from Tackling Disasters and Climate Change*. *IDS Bulletin*, *43*(3), 59–70.

Towers, B., Haynes, K., Sewell, F., Bailie, H., & Cross, D. (2014). Child-centred disaster risk reduction in Australia: Progress, gaps and opportunities. *AUSTRALIAN JOURNAL OF EMERGENCY MANAGEMENT*, *29*(1), 31.

UNDESA. (2013). *Definition of Youth*. United Nations Department of Economic and Social Affairs. Retrieved from http://books.google.com/books?hl=en&lr=&id=AFWFe_FdPwgC&oi=fnd&pg=PR9&dq=%22%E2%80%A6+%E2%80%9Cwhere+a+striking+76+per+cent+of%22+%22it+reiterated+that+the+United+Nations+defined+youth+as+the+age+cohort+of+15-24.+The%22+%22(aged+15+to+24+years+old)+living+with%22+&ots=GJIytIEpD5&sig=RtAIrp8EHk_ZRsLdIQJCI_y9gUw

UNDESA. (n.d.). *Youth and climate change*. United Nations Department of Economic and Social Affairs. Retrieved from http://www.un.org/esa/socdev/documents/youth/fact-sheets/youth-climatechange.pdf

Van Kasteren, Y. (2014). How are householders talking about climate change adaptation? *Journal of Environmental Psychology*, *40*, 339–350. http://doi.org/10.1016/j.jenvp.2014.09.001

Vaughn, S., Schumm, J. S., & Sinagub, J. (1996). *Focus group interviews in education and psychology* (Electronic resource). Thousand Oaks, Calif: London: SAGE, cop.

Vautard, R., Gobiet, A., Sobolowski, S., Kjellström, E., Stegehuis, A., Watkiss, P., … Jacob, D. (2014). The European climate under a 2 °C global warming. *Environmental Research Letters*, *9*(3), 034006. http://doi.org/10.1088/1748-9326/9/3/034006

Wamsler, C. (2014). *Cities, Disaster Risk and Adaptation [electronic resource]*. Hoboken, N. J.: Taylor and Francis.

Wamsler, C., & Brink, E. (2014a). Interfacing citizens' and institutions' practice and responsibilities for climate change adaptation. *Urban Climate*, *7*, 64–91. http://doi.org/10.1016/j.uclim.2013.10.009

Wamsler, C., & Brink, E. (2014b). Moving beyond short-term coping and adaptation. *Environment and Urbanization*, *26*(1), 86–111. http://doi.org/10.1177/0956247813516061

Wamsler, C., & Brink, E. (2014c). Planning for Climatic Extremes and Variability: A Review of Swedish Municipalities' Adaptation Responses. *Sustainability*, *6*(3), 1359–1385. http://doi.org/10.3390/su6031359

Wamsler, C., Brink, E., & Rivera, C. (2013). Planning for climate change in urban areas: from theory to practice. *Journal of Cleaner Production*, *50*, 68–81. http://doi.org/10.1016/j.jclepro.2012.12.008

White, R. (2011). Climate change, uncertain futures and the sociology of youth. *Youth Studies Australia*, *30*(3), 13.

Whittemore, R., Chase, S. K., & Mandle, C. L. (2001). Validity in qualitative research. *Qualitative Health Research*, *11*(4), 522–537.

Wibeck, V. (2010). *Fokusgrupper: Om fokuserade gruppintervjuer som undersökningsmetod* (Andra upplagan). Lund: Studentlitteratur.

Wibeck, V. (2014). Social representations of climate change in Swedish lay focus groups: Local or distant, gradual or catastrophic? *Public Understanding of Science*, 0963662512462787.

Appendix A – Interview guide

Introduction – create a welcoming atmosphere where everybody feel comfortable to speak

- Welcome! Repeat confidentiality, recording and their voluntary participation.
- Round of presentation, i.e. *opening questions* (Krueger, 2015)
- Describe your project? What was it about? I.e. *introductory question* (Krueger, 2015)

Theme 1 – Create a framework, i.e. *transition questions* (Krueger, 2015)

1. Stimuli material – what do you think of when you see this picture?

Photo: Kjerstin Ekvall, Malmö, August 31st, 2014.

2. Were you affected, or do you know anyone that was affected by the floods last year?
    - How?
    - Have you or your family been affected by any kind of disaster or other environmental hazard that was due to weather?

Theme 2 – Action/perception/responsibility i.e. *key questions* (Krueger, 2015)

3. Did you take any kind of action to prevent negative consequences?
4. What do you think one can do to prevent negative consequences from adverse weather events?
    - Relate to the answers of question 2, could you have done anything to prevent negative consequences from affecting you?

5. How do you feel about climate change?
    - How do you think climate change will affect us here in Malmö? Or in Sweden?
6. Who do you think has the responsibility to make sure that the people in Malmö do not suffer from new floods or heat waves?
    - What responsibility *do you* have to make sure you are not affected?
    - What responsibility does the municipality or other institutions have?

Theme 3 – Summarise the most important aspects, i.e. *ending questions* (Krueger, 2015)

7. Reflecting back on what we have talked about, how do you feel you could influence your current position? What agency do you feel that you have?
8. We are close to the end of this discussion now, could anybody perhaps try to summarise what we have talked about?
9. Finally, do you have anything to add? Do you think there are important aspects that we did not talk about?