Body-Environment Dialogue: Using Somatic Experiences to Improve Political Decision Making

Alisa Sidorenko
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ACKNOWLEDGEMENTS

My incentive to work on the thesis was not at all in obtaining the degree. First and foremost, for me this thesis was the opportunity to explore the topic which I consider meaningful, to get in touch with the sphere which, I believe, is underestimated in the contemporary academic world — even among the people passionate about the environment, sustainability and changing the world. If we are to change the world, we need to look into our innate capacities first.

The thesis is the reflection of my own journey. It is the bridge between two different chapters of my life, the bridge made of personal experiences and realizations. They would not be possible without the people who were meaningful for me during the past months. I want to thank the people who contributed to my thesis, whether realizing it or not:

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ABSTRACT

Humankind is facing global ecological problems and resulting from these social issues, while continually destroying the ecosystems which are the life-support mechanisms of the planet and human civilization. The socio-economic system is largely influenced by top-down decision making. Political decisions are a high leverage in sustainability issues, but contemporarily they are conducted in the reductionist way, focusing on short-term profit and jeopardizing the planet and people in the long run. The thesis explores the ways of integrating more holistic approach into political decision making.

The study describes the connection between cognitive processes (e.g. learning or decision making) and somatic experiences: human decisions are considered a dynamic product of interaction between the cognition, body and environment. The theory of deep learning helps to understand how decision making can be transformed, and embodied cognitive science explains what facilitates the process of deep learning. The study develops the concept of “body-environment dialogue” — the somatic and cognitive integration of an agent and the context through which the agent receives non-verbal information processed then into the agent’s inner knowledge. The way of processing the information, unlike analytical thinking, is grounded into mindfulness and reflection. It results in the holistic insight about the global socio-ecological system and its interconnections, awakes intrinsic values and causes the change in one’s decisions and actions. Embodied experiences and connection with natural environment are considered the ways to facilitate deep learning which, in turn, affects decision making.

The empirical part of the research tests the possibility to affect decision making through embodied contact with nature and the local context. The experimental study project based on 3-day outdoor experiential course demonstrates a certain change in the participants’ decision making as well as illustrates the challenges and drawbacks of such approach.

Keywords: Sustainable Development, decision making, deep learning, embodied cognition. 

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SUMMARY

The problem for the current study is political decision making, presently conducted in a reductionist way, harming in the long run the planet and people. The top-down decisions shape the whole socio-economic system: influential officials hold the power in the resource management, production and trade, land use, nature depletion and regeneration, subsidies, conflicts, social welfare, etc., from local to global levels. Meanwhile, the decisions do not always serve for the future resilience and sustainability of nature and people. The focus is often put on a short-term profit which is considered pragmatic in the current commoditized and monetized paradigm. The study searches for the ways to bring more holistic vision into political decision making.

The thesis firstly describes the decision making mechanism as the interplay of two cognitive systems existing in each individual — the intuitive system (1) and the logical analytical system (2). Then, it explores how decision making can be reformed. To affect profoundly both cognitive systems (1 and 2), the U Theory of deep learning is proposed. The U-process starts from suspending the existing paradigm and letting go of the pre-established assumptions, approaches profound insights, and results in transforming decisions.

The study focuses on the communication methods which facilitate deep learning. The insights, values and senses cannot be transmitted through verbal explanations. The analytical system (2) is the one which understands verbal language, but it arises from the surrounding monetized paradigm defending its status quo. Meanwhile the source of deep understanding is unresponsive to verbal instructions, but is sensitive to experiences. Embodied cognitive science helped to find the way of deeper dialogue with the human cognitive mechanism. The embodied cognition interprets human thinking as interaction between body, mind and environment. The body and surrounding context are as involved in thinking as the brain processes. The human body is a communication tool having capacities to transmit and process information beyond analytical thinking. Somatic experiences, interaction with the environment and mindful reflections build the foundation for inner knowledge to emerge. Such inner knowledge (natural wisdom) reflects holistic understanding of the world and one’s own connection with it. The knowledge is transmitted non-verbally and grounded into embodied experiences.

The context is an active actor for knowledge creation. The “perfect” environment for deep learning is considered to be nature. Nature unloads cognition from distractions, frees one from social constraints and pre-established economic paradigms; it helps to unlearn — to empty one’s mental space for reflections. Physical and cognitive contact with nature provides the insight of interconnectedness of everything in the web of life. This insight is the basis for bringing intrinsic values and holistic vision into one’s actions and decisions.

The empirical part of the research tested the possibility to affect decision making process through embodied contact with nature and local context. The change in decision making approaches of the participants was observed through the experimental course.

Keywords: Sustainable Development, decision making, deep learning, embodied cognition.

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GLOSSARY

Ba — the context in which the knowledge is created (ba means “space” in Japanese).

Context — the surroundings of a case: physical natural and man-made environments, social structures, cultural and ideological aspects, mental space.

Deep Learning — profound change in one’s perspectives.

Ecological Self — contrary to an egoistic and anthropocentric “self”, the ecological self refers to the environmentally responsible behavior and understanding of nature’s intrinsic values.

Outdoor Experiential Learning (OEL) — practices and programs in natural environment which aim to transform or/and develop the inner qualities and perspectives of an individual or a group. Nature is used as a facilitating context, allowing participants to become focused, mindful and free from distractions, and as a teacher, demonstrating its patterns and interconnections.

Priming — an effect of human cognition when exposure to a certain stimulus triggers the responses to other stimuli.

System 1 — one of the two Systems responsible for the decision making process. System 1 is intuitive, heuristic-based, fast, impulsive and unresponsive to verbal instructions.

System 2 — one of the two Systems responsible for the decision making process. System 2 is logical, analytical and rule-based; it is slow and conscious.

Biodiversity — the variety of species on the Earth, ensuring the functioning of the ecosystems.

Body-Environment Dialogue — somatic and cognitive integration of an agent and natural context through which the agent receives non-verbal information processed then into agent’s inner understanding.

Ecosystems — a community of organisms interacting with each other and with their living and non-living environment, all together functioning as a system. In the ecosystems the energy and matter is exchanged, creating cycles of elements.

Ego-Depletion — the state when an individual is suppressed cognitively, emotionally or physically and performs poorly in cognitive tasks.

Grassroot Initiatives — a movement driven and supported by local communities’ politics.

Interconnectivity — the notion of wholeness and interrelations between everything in nature and the global socio-ecological system.

Leverage Points — the places in any complex system where a slight shift can produce big changes in the whole system.

Non-verbal Communication — communication between agents (individual, collective, or human-to-nature) not via speaking but with alive experience, embodiment and intuitive sensations.

Resilience — the capacity of a system to respond to a disturbance, adapt and recovering.

Somatic — (adj.) referring to bodily processes, to the internal physical perception, employed in movement.

Systems Thinking — understanding that the elements of one system construct a complete entity and influence one another.

Wholeness — the quality of different elements — objects, subjects and events — to form a complete entity.
1. INTRODUCTION

Political decision making is a broad framework, underlying the contemporary socio-economic system from local to global levels. Resources, society, economy, ecology — most patterns of the current world are shaped or affected by influential decisions. Political decision making is the obscure background beyond all territories and natural resources. Be it a city in Bangladesh or an indigenous community herding reindeer far in the North — the system around, access to the resources, nature protection, production and trade, urbanization, censorship, welfare, as well as the sustainability issues arising from it — everything is influenced by political decision making, predetermining the nations’ resilience and sustainability.

It is not only politicians themselves who are involved in political decision making, but the range of influential entities, corporations and financial agencies lobbying political decisions. Happening one by one, political decisions construct the global pattern of the contemporary world.

The current thesis focuses the challenge of global sustainable development on personal transformation: it is exploring the ways of changing one’s perspectives and values, and therefore decisions. The linkage between personal change and global sustainability is the influence of political decision makers — their power to speed up the transition to more sustainable/resilient civilization. If the process and values beyond political decision making are reformed radically, it will provide the favorable ground for the transformation in all other fields. The shift in political decision making is not only the matter of technical solutions. It is more about the human qualities, the cognitive, mental and emotional fields. It is about holistic understanding of the environmental and human system, awakening of values, connecting to the genuine intentions and being mindful about own actions and decisions.

1.1. Background: Deadlocks in the Current Political Decision Making

This section outlines the role of political decision making in the contemporary world and particularly in sustainability issues. It outlines certain characteristics of the decision making in the current socio-economic system, explains its roots and consequences.

1.1.1. Role and Patterns of Political Decision Making

Nowadays, despite a growing number of grassroot initiatives, the top-down approach is prevailing in all major decisions in political, economic, social and ecological spheres. Policies, subsidies, agreements, sanctions, as well as administrative decisions on particular cases, predetermine the course of local and global development. The power and responsibility for the final implementation decisions are concentrated in the hands of influential officials at different regional, national and international levels. Decisions of limited groups of political and administrative actors affect every single person, nation and the environment in a broad sense. The global sustainability challenges, such as biodiversity
loss, climate change or ocean acidification are also addressed within influential political decisions. While official decision makers hold the responsibility for social, economic, environmental and political development, the decisions’ quality in terms of sustainability and resilience remains questionable.

It would be unfair to say that political and administrative decisions always serve the idea of sustainability and improvement of common people’s lives and overall environmental conditions. The focus is often put on short-term profit rather than long-term environmental and social sustainability. The roots of decision making, impairing the society and nature, lie in the combination of multiple aspects of how people’s thinking is shaped in the current Western mindset. These aspects are illuminated further.

1.1.1.1. Focus on monetary values as a consequence of neoliberal economic system

In the Western socio-economic system, under tough conditions of neoliberal economy, profit is preferred over abstract intrinsic values. People are prompted to develop the pragmatic mindset. Pragmatic thinking is considered to correspond to intelligence (Toplak et al., 2011); however, such intelligence has brought the global population to irresponsible resource management and current fragile state of economy, society and nature. Counting everything in monetary terms, we tend to place rationality in the core of our actions, but we end up with the irrational way of managing our world as we destruct the economic and environmental base of human civilization. Striving for efficiency and profit we are fastened to the reductionist vision of them and get net losses in a long run. As Raj Patel wrote it in the “Value of Nothing” (2010, p. 21) “We are trapped by a culture and politics that insist that unfettered markets are the way to value the world properly”.

1.1.1.2. Distraction from the intrinsic values

Focusing on monetary values, people start to neglect the intrinsic values of precious assets such as nature and social fellowship. Kathleen D. Vohs’ research, “The Psychological Consequences of Money” (2006), proves that the people primed with the idea of money decrease their compassion abilities and become more selfish. Within the neoliberal system the mindset is shaped to prefer a relatively short-term profit instead of slow maintenance of the core assets. Tho Ha Vinh said in his interview (2014), “… in the West we have gone too far reducing human nature to mere material dimension, to physical and material needs”. He claims that the latest research in neuroscience, psychology, sociology prove that qualities like compassion, altruism, generosity are human innate qualities, but they need to be educated in the society the same as a child’s innate ability to speak needs to be educated. In reality, people go further away from these innate qualities and natural values as the focus on money significantly diminishes the voice of the genuine intentions. As a result, the decision making process largely ignores the intrinsic values, which can be seen in everyday decisions and even more exaggerated in political and administrative decision making.
1.1.1.3. Linear thinking in chaotic systems
Furthermore, political actors’ perception of problems is limited in time and geographical scale. During the decision making process, political actors tend to have narrow focuses and to consider the particular case in the particular environment and its direct consequences, while omitting the bigger picture and broader after effects.

Being limited within the boxes of their working environment, officials often evolve the inability to see the complex patterns and the whole system which is to be affected by their decisions. The focus on one side of a complex picture is a characteristic of the linear thinking. The linear thinking hinders understanding of connections between our individual or collective decisions and the world around. The socio-ecological system is the one of a chaotic nature, hence actions in one spot unpredictably affect the system in other places. Applying linear thinking to the chaotic system leads to unpredictable and hazardous consequences.

1.1.1.4. Limited communication
Besides narrow foci and linear thinking of decision makers, they get limited information about the problem context. Presently the communication with the decision makers is often carried out in a reductionist way. They get the information through reports while remaining physically and mentally in their working environments. This process had been deepened since the decision making scaled up from local communities to the regional and national authorities and later to the international levels. Due to the complexity of connections in the system, understanding the bigger pattern is not possible from the limited information communicated to decision makers through reports or verbally, in the best case with facilitation of graphic sources, without deeper connection to the case’s context. The information is communicated outside of the cases’ contexts. It results in two adverse outcomes: firstly, the lack of an insight about the context hinders holistic understanding of the case; secondly, the decision maker tends to externalize the problem and does not develop a genuine motivation to resolve the problem in the best way.

1.1.1.5. Formalistic knowledge
Another side of limited communication is the unilateral approach of getting to know the case’s context. The official focus for decisions is on empirical data; decision makers rely on formalistic knowledge shaped into economic reports, environmental assessments and cost-benefit analyses. As the ground of the reports and analyses is formalistic, it does not convey deeper knowledge and understanding of socio-ecological systems in the area. The insight of the whole system is left aside in such communication and personal values are not addressed.

Formalistic knowledge supposes to provide more adequate picture of the problem, so the ideas of the inner, traditional or local types of knowledge are omitted. As Varela, Thompson and Rosch state (1991), in the present world people rely on science as the dominant source of knowledge, but only the common ground between scientific knowledge and everyday experience can provide complete understanding. Formalistic
science does not embrace the intrinsic values and the whole spectrum of geographical, time and personal interconnections within the system. Consequently, the communication with the decision-makers is operated outside the case’s context. All these aspects result in the reductionist consideration of the problems, causing low quality decisions in the long run harming people and ecosystems.

1.1.2. Today’s Unsustainable System and Biodiversity Loss

1.1.2.1. Journey beyond the planetary boundaries
Primarily due to the current way of decision making — both personal and political — humankind continues to deplete the planet’s physical capacities which are the base for functioning of our civilization. The current global system is unsustainable: we face global ecological and social issues of resource shortage, conflicts and poverty, while continually destroying the natural assets and the Earth’s ecosystems.

The ecological systems are the life-supporting mechanisms for all human activities, but humanity alters them exploiting resources faster than they are able to regenerate (Constanza et al., 2012). Loss of the vital rain forests is accelerating, global ecosystem services are damaged, and the greenhouse gas emissions are growing globally (Rockström et al., 2009). Global waters pollution and acidification are intensifying and the social issues related to it, such as poverty, inequality, diseases and armed conflicts are far from being eliminated. Human activities force the Earth outside the stable environmental state through the wide range of ecological challenges, which include “species extinctions, depletion of ocean fisheries, shortages of freshwater in some areas and increased flooding in others, soil erosion, depletion and pollution of underground aquifers, decreases in quantity and quality of irrigation and drinking water, and growing global pollution of the atmosphere and oceans..., including global climate disruption” (Constanza et al., 2012).

According to the Planetary Boundaries report (Rockström et al., 2009), humanity has already violated three of nine Earth-system processes defining as the safe operating space for human civilization. The violated processes are namely climate change, biodiversity loss and the nitrogen and phosphorus cycle (Fig.1).

1.1.2.2. Biodiversity Loss
Biodiversity loss has accelerated heavily during human civilization. Flora and fauna species die out at a rapid pace, the pace that had not been seen since the last global mass-extinction event and is now rated 100 to 1000 times more than the natural rate of extinction (Mace et al., 2005). It is important to notice that biodiversity is the fundamental base of ecosystems functioning. The biodiversity factors determine the ecosystem’s properties and its stability, fertility and sensitivity to irruption. “Biotic factors such as the abundance, distribution, dynamics, and functional variation among biodiversity components of ecosystems regulate the magnitude and variability of ecosystem processes, such as production or decomposition” (Mace et al., 2005, p. 80).
Biodiversity is a substantial condition for healthy ecosystems which ensures stability of the planet, including all species and human civilization. Its loss even on a local level can have pervasive effects on the Earth ecosystem functioning. “Loss of biodiversity can increase the vulnerability of terrestrial and aquatic ecosystems to changes in climate and ocean acidity, thus reducing the safe boundary levels of these processes” (Rockström et al., 2009). Species extinction causes breakdowns in the whole ecological systems which in turn affect the social dimension and overall resilience of the planet and human civilization. Therefore the thesis here has stronger focus on the issue of biodiversity loss than other planetary boundaries, as biodiversity properties interact with other planetary boundaries.

The largest effect on biodiversity loss is caused by the land use, mainly by the conversion of natural areas into agriculture or urban areas (Rockström et al., 2009). These are exactly the issues addressed through political and administrative decision making, the tracts of land whether or not crucial for local, regional and global ecosystems and their beneficial services are to be replaced with industrial, urban or mono cropping agricultural areas. The actions of converting natural areas into depleted zones is based on decisions of influential political actors.

Despite the great global capacities and intellectual development, despite enormous achievements in science and technologies, despite all productive potential, “we are not achieving sustainable well-being and indeed we are moving in the wrong direction at an increasing rate” (Constanza et al., 2012, p.vi). Although we have scientific knowledge that the current system is threatened, we lack holistic and deep understanding which could change the way of personal and political decision making. Daly noted (2005, p. 100), “humankind must make the transition to a sustainable economy — one that takes heed of the inherent biophysical limits of the global ecosystem so that it can continue to operate long into the future”. However, it is not only the economy that has to be changed but the whole paradigm beyond the contemporary way of thinking, communication and decision making.
1.2. Cornerstones of the Thesis: Problem, Purpose and Hypothesis

This section specifies the purpose of the research, the problem addressed in it and the overall assumptions used in the study.

1.2.1. Problem

As we see from the Background section (1.1), the current political decision making is characterized by a range of adverse connotations, while it plays a principal role in the whole socio-economic-ecological system and particularly in sustainability challenges. The problem evolves from the described deadlocks of the current mechanism of political decision making.

The problem beyond the research is the reductionist approach in political decision making, harming ecosystems and society in the long run. By political we also mean different administrative levels of local, regional and national policy implementation decisions. The reductionism of the current approach is derived from the various aspects operating simultaneously:

– considering monetary values as rational;
– geographically and timely limited consideration of decision consequences;
– alienation from the problems context, thus externalizing the problems;
– relying on formalistic knowledge without deeper understanding of the system;
– ignoring the intrinsic values;
– working with incomplete and inefficiently communicated information about the problem, thus shallow understanding
– lack of the experiential insight;
– inability to see bigger patterns and the whole system (see 1.1.1.1-1.1.1.5).

How do we address the problem and what could be the means to change the current way of political decision making?

In her article “Leverage Points: Places to Intervene in a System”, crucial for the system analysis, Donella Meadows suggests the hierarchy of leverage points. Within any complex system, she describes, there are the leverage points — “the places where a small shift in one thing can produce big changes in everything” (Meadows, 1999, p.1). Meadows lists the leverage points from the least influential to the most, accordingly to their power to affect the system (Table 1, left). If we consider the current socio-economic-ecological realm as a complex system, we can identify analogies of the leverage points (Table 1, right).

The strongest leverage points are respectively (2) “The mindset or paradigm out of which the system arises” and (1) “The power to transcend paradigms”. These aspects are the most difficult to change as the system tends to keep the paradigm from which it originates. However, a shift in these leverage points triggers big changes in all other aspects.

“You could say paradigms are harder to change than anything else about a system...

But there’s nothing physical or expensive or even slow in the process of paradigm change.
In a single individual it can happen in a millisecond. All it takes is a click in the mind, a falling of scales from eyes, a new way of seeing” (Meadows 1997, p. 18).

Political decision making explicitly reflects the paradigm beyond the current socio-economic system, consisting inter alia of neoliberal perspectives, short-term thinking, neglecting intrinsic values and overlooking humans’ belonging to the ecological system. An attempt to shift — transcend or change — the paradigm beyond political communication and decision making is adjacent to the strongest leverage points in the system. Therefore this field and the stated problem require attention of everyone interested in sustainable development, and are essential for the research.

Table 1. Hierarchy of the leverage points from the lowest to the highest (own table).

<table>
<thead>
<tr>
<th>Places to Intervene in a System</th>
<th>Analogies in the current system</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. The power to transcend paradigms</td>
<td>Shift of the paradigm beyond socio-economic relations</td>
</tr>
<tr>
<td>2. The mindset or paradigm out of which the system — its goals, structure, rules, delays, parameters — arises</td>
<td>Neoliberal economy perspectives, utilitarian relation to natural resources, disconnection from nature, neglecting intrinsic values, short-term thinking</td>
</tr>
<tr>
<td>3. The goals of the system</td>
<td>survival, power, getting wealthy, short-term prosperity</td>
</tr>
<tr>
<td>4. The power to add, change, evolve, or self-organize system structure</td>
<td>international agreements, unions, wars, global pollution limits</td>
</tr>
<tr>
<td>5. The rules of the system (such as incentives, punishments, constraints)</td>
<td>companies pay taxes, nobody infringes the patent, children should be educated at school</td>
</tr>
<tr>
<td>6. The structure of information flows (who does and does not have access to information)</td>
<td>publication of hazardous effects of operation, open information, free speech, communication design</td>
</tr>
<tr>
<td>7. The gain around driving positive feedback loops</td>
<td>growing population, soil erosion</td>
</tr>
<tr>
<td>8. The strength of negative feedback loops, relative to the impacts they are trying to correct against</td>
<td>controlling mechanisms (e.g. voting in democratic society), austerity programs, diversity</td>
</tr>
<tr>
<td>9. The lengths of delays, relative to the rate of system change</td>
<td>Delay between a decision and implementation, delay between realization of the problem and its fixing</td>
</tr>
<tr>
<td>10. The structure of material stocks and flows</td>
<td>Transport networks, demographic structures</td>
</tr>
<tr>
<td>11. The sizes of buffers and other stabilizing stocks (relative to their flows)</td>
<td>inventories, stocks, reservoirs</td>
</tr>
<tr>
<td>12. Constants, parameters, numbers</td>
<td>wages, prices., subsidies, taxes, standards</td>
</tr>
</tbody>
</table>

1.2.2. Research Aim

In this research we address the issue of political decision making focusing on the communication with influential official actors. We aim to come closer to understanding of how the decisions’ quality can be affected. We are looking for the way of how the decision maker can experience deep learning, resulting in holistic understanding of the system’s wholeness. We attempt to find a path for the intrinsic values to be brought into political communication, which is presently operated at a shallow level.
The study aims to describe the connection between decision making as a cognitive processes and deep experiential learning in natural environment and contextual social setting. Applying the concepts described in the theoretical section, we use empirical study to examine if the desired deep learning can be facilitated through embodied practices, defined in the study as non-verbal communication methods.

1.2.3. Hypothesis
The thesis illuminates the ability to affect cognitive processes, particularly learning and decision making, through non-verbal means of communication. Instead of a shallow level of communication with officials— through reports and verbal explanations outside the context, a deeper connection with the context prior to decision making is proposed. The connection with the local context is complemented with experiences in the natural environment for raising awareness and understanding of the patterns and interconnections of the ecological system and the civilization. The underlying goal is to bring decision making to more holistic vision — the understanding of the world not as a mere sum of social, economic, ecological and political processes, but that all the processes construct one whole. Such vision of the unity between different parts of the global system, the interconnections from local to worldwide level and the continuity of the past, the present and the future, should be incorporated into political and administrative decision making.

The theory, described in the part 2 of the thesis and applied for the empirical study, brings together the concepts of decision making, deep learning, embodied cognition and experiences in natural (wild) environment. Embodied cognition is used as the path to understand how the cognitive processes can be affected and deeper insights can be achieved. Non-verbal communication in the current thesis refers to embodied experiences — practices focusing on the body, senses or physical connections with the place — through which a person’s cognition is affected. Embodied cognitive science presupposes that decisions are products of dynamic interaction between the cognition, body and environment. A human body has the capacity to serve as a unique communication tool, absorbing and processing information beyond analytical level, resulting in the inner knowing. The thesis’ hypothesis assumes that embodied experiences in wild nature (outdoor experiential practices) can facilitate deep learning, which brings up the consciousness about the wholeness and interconnectivity of the world. Deep learning in its turn, results in the transformation of decision making.

The overall combination of the applied theories is described as the concept of “body-environment dialogue”. The term will be used throughout the thesis to refer to somatic interaction with the context with the purpose to affect cognitive processes. The experimental part of the study tests if the body-environment dialogue affects the decision making process.
1.2.4. Research Questions

The primary research question (PQ1) embraces the problem of the prevailing reductionist approach in political decision making, characterized with neglecting long-term perspectives, focusing on superficial values and inability to see the socio-ecological system holistically: (PQ1) How to integrate a more holistic value of ecosystems and biodiversity into political decision-making?

In order to define whether the thesis’ hypothesis is true or not, the thesis intends to answer the secondary research questions (SQs):

(SQ1) Does the human body have the capacity to transmit and acquire knowledge that goes beyond conventional considerations?

(SQ2) Do non-verbal communication and affiliation with the environmental and social context impact the decision making process?

(SQ3) How does the understanding of how humans acquire knowledge, impact on changing political decision making?

1.2.5. Scope and Limitations

The scope of the thesis touches upon the fields of decision-making, embodied cognitive science, conceptual frameworks of deep learning and inner knowledge, systems thinking, mindfulness and bodymind concepts and the outdoor experiential practices. The research is relevant for the European and North American context as the sources refer mostly to the contemporary Western culture, however there are no sharp borders as the world is presently globalized and interconnected. The ground for the thesis is built upon literature sources, interviews, an empirical study and personal observations and reflections. The constraints for the thesis work, as for many other academic purposes, are time and accessible empirical material as well as cognitive capacities, as the topics touched upon are vast.
2. THEORY

In order to understand how political decision making can be transformed to incorporate a more holistic approach, a few different spheres of study are described and linked together. The Theory chapter ties together decision making, deep learning and presence, embodied and situated cognition, nature and outdoor experiential practices (Fig.2). Each sphere and the linkage between them are in succession described in this chapter. Their intersection provides a new vision on the problem and helps to design the empirical part.

Fig. 2. The concepts used for building the theory (own drawing)

2.1. Decision Making Process: Marriage of Two Sides of You

This section describes briefly how the human cognitive dual decision making mechanism functions. It also outlines which drawbacks affect the cognition and hinder our genuine intentions, changing results of decision making process.

2.1.1. Dualism of Decision Making

The concept of dual system is commonly used in the cognitive science to describe how a human’s mind deals with decision making. In short, Individuals have two parallel operating cognitive systems with different characteristics (Frankish, 2010). Kahneman (2011) calls them System 1 and System 2 and explicitly describes how the two work and interact with each other as well as how they become biased. Throughout the thesis we will refer to these dualistic systems, thus it is crucial to understand their nature.

System 1, or “fast thinking” (Kahneman, 2011), is described as a heuristic-based (Viswanathan & Jain, 2013). It is characterized as an implicit, fast, nonverbal and relatively unresponsive to verbal instructions (Frankish, 2010) and refers to automatic and unconscious processes. Contrary to System 1, System 2 is analytical, rule-based and reflective (Kahneman, 2011). It is slow, conscious and controlled, uses working memory and is responsive to verbal instructions (Frankish, 2010). System 1 effortlessly generates intuitive impressions and believes, while the System 2 works with explicit reasons and deals with “effortful mental activities” (Kahneman, 2011, pp. 20-21).
As both systems are active simultaneously, the question arises, which System plays the central role in decision making. “A shared belief among scholars working on the dual-system approach is that decision making is influenced by both systems” (Viswanathan & Jain 2013, p. 485). System 1 generates impressions and beliefs which are used by System 2 to make the final choice. “These sub-systems influence one another and perhaps in parallel rather than in a sequential manner” (Viswanathan & Jain, 2013, p. 489). However, the perspectives differ from that the impressions from System 1 are “the main source of the explicit beliefs and deliberate choices of System 2” (Kahneman, 2011, p. 21) to that “System 2 overrides impressions and impulses of System 1” (Stanovich & West, 2000). Kahneman (2011, p. 48) describes their interaction as that “System 1 creates a story and System 2 believes it” but, he points out, when the stake for decisions is high, then it is System 2 which controls intuitive and impulsive System 1. Therefore, considering responsible political decision making, we can conclude that the decisions are made from within the controlling System 2, which is however affected by impressions generated in the intuitive System 1.

2.1.2. Drawbacks of the Systems

2.1.2.1. Biased Cognition

Both Systems supposedly help a person in cognitive tasks. However, they both can be biased. Kahneman (2011) describes that similarly as people get visual illusions, they can get cognitive illusions. When we look at a visual illusion, we perceive an image that is different from objective reality. Likewise, we are subjected to cognitive illusions, when we belief in something which is not objectively true.

Typically, cognitive biases are assigned to System 1, as it is based on heuristics and associations, versus System 2 based on logics (Frankish, 2010). If impressions arising within System 1 are biased, it results in false beliefs. It is difficult to recognize cognitive illusions as they arise from our perception of the situation. The biases can become systemic, therefore the control by the analytical System 2 is required. System 2 serves to monitor the impressions coming from System 1 and decide what is wrong and what is right (Kahneman, 2011).

In order to avoid biases arising in System 1, the person relies on System 2, especially for responsible decisions. What is omitted in this picture is that System 2 also can be dubious. System 2 is based on logics, but the logics are grounded into external preconditions that people are subjected to. When a person is raised and educated in a certain paradigm, s/he obtains this paradigm’s logic. System 2 is not an objective source of choices but a mirror of the paradigm in which it was developed. If System 2 was educated within the system promoting short-term fixes and focusing on monetary values, it will support this logic to control genuine intentions arising from System 1. Consequently, the decision-making is imprisoned in the existing patterns, which are difficult to change as any idea of the change is examined by controlling System 2 defending its status quo.
2.1.2.2. Overloaded Attention

Besides being biased, the cognition can simply be overloaded to process even obvious information. The state of “ego-depletion” (Kahneman, 2011, p.42) characterizes the situation when an individual is suppressed with mental efforts and performs poorly in cognitive tasks. What is important, is that all efforts — cognitive, emotional and physical — are connected and can equally cause the ego-depletion.

System 2 requires efforts to pay attention. Our capacity for such effort is finite and we cannot allocate the resources for many things simultaneously. Allocating attention to one task within System 2, we diminish attention to what is happening in the surrounding world (Chabris & Simons, 2011). The present socio-economic system requires from a person constant attention to multiple cognitive tasks (job duties and social roles, economic profits and debts, appearance and status, everyday decisions and overwhelming information flow in the social networks, advertisements and news). It diminishes people’s capacity to address other questions. For instance it leaves no space for reflection on how our thoughts and assumptions are created. Intelligent and capable System 2 becomes overloaded. People get no spare capacity to reflect upon their own choices and the whole system they live in.

2.1.3. Contextual rationality

We have looked at Systems 1 and 2 and seen that they can be biased or overloaded. Thus, the impressions of System 1 and analytical choices of System 2 depend on preconditions. Both Systems and consequently the decision making process can be affected severely by circumstances of the problem. In some conditions impressions and feelings of System 1 can override logics of System 2, and vice versa in other conditions.

People relying more on System 1 are called “lazy thinkers” (Kahneman, 2011, p.48) as they go for intuitive answers rather than pushing themselves to effortful mental activities. Toplak, West and Stanovich claim in their research that such people are less rational. Rational, they describe, means intellectually alert and skeptic about intuitive feelings (Toplak et al., 2011). However, the question is what rationality is.

Rationality is an abstract underlying motivation behind human behavior (Donahoe, 2009). Rationality is not an objective source but rather a subjective dimension which changes when the conditions are changed. Human rationality is contextual. What is rational in this particular conditions, will not be considered rational by the same individual in different circumstances. The conceptuality or situatedness of cognition are based on the notion that “human behavior emerges out of and can only be understood in the context of an individual with evolved predispositions that are culturally mediated, in interaction with his/her social, cultural, and physical environment” (Donahoe, 2009, p. 14).

While the concept of rational choice assumes that all motivation in human behavior and decision-making is reduced to self-interest and materialistic means, “this is a misguided anathema based on a very narrow and caricatured understanding of rational choice” (Donahoe, 2009, p. 4). Townley (2008) describes the mechanism of contextual rationality:
to count an action as rational, an individual cannot be aware of the actions’ reasons neither of their causal efficacy. “Both elements (reasons and efficacy) may be left to the context in which the action takes place” (2008, p. 1). The rationality of a choice and action can refer to other impressions than the economic values. Donahoe emphasizes “the importance of emotion-triggered intuitions and heuristics” (2009, p. 2), which “after all have their bases in evolved somatic reactions to certain environmental stimuli” (Donahoe, 2009, p.14).

To summarize, a human’s sense of rationality (and thus behavior, choices and decisions) evolve from the context and preconditions — social, political, economic, physical, cultural. The surrounding environment, emotional aspects and unconscious impressions, often based on somatic experiences, play an important role in rational decision making.

2.1.4. Snapshot and Questions (2.1)

The section 2.1 describes the functioning of the human brain and the dualistic mechanism of human decision making, based on intuitive heuristics-based System 1 and analytical controlling System 2. The decision making process functions as the marriage of these two Systems: living and operating together, each of them has its duties and areas of responsibility. There are domains in which one of the Systems is dominating and the fields where another one controls and has the last word. As in an ideal team or a loving couple, the two Systems complement each other and listen to each other’s opinion.

However, both subsystems can be biased. System 1 is subjected to cognitive illusions and System 2 is educated by the surrounding paradigm which can be faulty. Furthermore, the decision making depends on cognitive resources which have the same source with other mental, emotional and physical capacities. The resources are finite and thus the Systems’ capacities are limited when the attention is overloaded as it is in the contemporary lifestyle. It causes that a person has no spare capacity to reflect upon her/his own assumptions and decisions. Last but not least, the rationality of choices depends on the context and circumstances.

The questions to keep in mind for the further sections are

(q2.1.1) Which process can affect both System 1 and 2 and therefore change the decision making profoundly?

(q2.1.2) What can help to liberate the Systems 1 and 2 from biases?

(q2.1.3) What can free the overloaded attention and liberate our mental, cognitive and emotional resources?
2.2. Deep Learning: Theory U and Presencing

Transformation in decision making is rooted into another cognitive process — learning. Learning itself is a broad phenomenon: any time when we acquire new information or discover the meaning of what we have known, we experience learning. Through learning a person enhances the knowledge, which can transform his/her viewpoints. This section describes the concept of deep learning, or U-process, which influences a person’s beliefs, choices, actions and decisions. The deep learning is seen as a triggering point for changing political decision making.

2.2.1. Choice of the Conceptual Framework

The theoretical concepts, used for the thesis to illustrate the idea of deep learning, are Theory U (Scharmer, 2007) and the concept of Presence (Senge et al., 2005). They two were developed hand-in-hand and describe the process of profound change in one’s perspectives. This conceptual tandem was chosen among other learning theories because the result of Presence and U-process are deep insight and intense change in actions and decision making.

Other learning theories have been considered prior to the choice. For instance, the experiential learning, described by Kolb (1984), also aims to improve a person’s knowledge and understanding of the field. However, this learning process is based on repeating the same patterns as have been used by others before. A person experiences something that had been established and learns the best known way to do it. With seeing the field from the same categories it is hardly possible to bring a change to it.

Another theory, transformative learning (Mezirow, 1997), to the contrary, works with the change in perspectives and even describes the nature of such change. However, from our point of view, the phenomena of transformative learning is included in Theory U and thus has not been chosen separately as a base for the study. Theory U is the overall concept, embracing learning, transformation, worldview, decision making. Presence is the threshold toward the transformation, the core of deep learning, ensuring the change in decisions. In the process of deep learning, a person not only acquires new information to his/her analytical System 2, but also the impressions, feelings and values of System 1 are changed. Therefore it has the capacity to affect both Systems and change the decision making profoundly.

A potential challenge of working with Theory U is the difficulty to describe “how to”. There is no clear algorithm of achieving “the bottom of the U”, although gradual stages of the process are described. However, this is the goal of the research to find out what facilitates the deep learning.

2.2.2. Theory U

Theory U is a theoretical model of profound transformations in individuals and organizations through attaining deeper levels of thinking. Its name comes from the figure of U which mirrors the process of the deep learning and change (Fig. 3).
The concept was considerably developed by Otto Scharmer (2007) and is primarily based on cognitive development. First we define what differs U-learning from usual learning, then we explain stages of the U-process.

### 2.2.2.1. Habitual learning vs deep learning

Deep learning is contrasted to habitual or reactive learning (Senge et al., 2005). In habitual learning a person repeats the pre-established patterns of thinking and doing. S/he sees the field through the categories which are familiar and comfortable. A person interacts with the real world, but the learning is closed into the loop of reenacting the existing habits. It is possible to learn new skills, but they will serve to old ways of dealing with a problem.

*In reactive learning, our actions are actually reenacted habits, and we invariably end up reinforcing pre-established mental models... At best, we get better at what we have always done. We remain secure in the cocoon of our own worldview, isolated from the larger world* (Senge et al., 2005, p. 11).

Both reactive learning and U-process of deep learning are based on interaction with reality and on physical and cognitive experiences of the world. However, the outcome from the deep learning differs fundamentally. What is different in the U-process is “the depth of awareness” which consequently affects our perspectives and decisions (Senge et al., 2005, p. 12). The U-process aims to uncover one’s latent capacity to comprehend the system as a whole and recognize oneself as an active part in it.

Going through the U-process, a person experiences another level of attention which changes the relations between the observer and the observed: instead of seeing the world as an external realm, the person begins to feel as a part of the *wholeness*. Understanding the complex system brings attention to the connections. Senge et al. (2005, p. 51-52) notice that this experience is often difficult for learners to express verbally, while it leaves people feeling deeply connected to a bigger source. The perception of the wholeness and interconnections, and feeling of affiliation with all parts of it is the outcome of the U-process’ gradual stages.

### 2.2.2.2. Left side of the U

To outline the U-process concisely, we use the figure originating from Senge et al. (Fig. 3) and describe separately the left and right side of the U, before and after the profound transformation happening at the bottom. The bottom of the U is where a person gets the holistic insight about the system, where the inner knowing emerges.

Entering the U process (left up corner), a person has already *downloaded* the information about his/her realm — the person is familiar with the system and sees it through habitual categories. A crucial part of deep learning is *unlearning* — the ability to clear, to empty yourself in order to become aware of your inner condition (Örtqvist, 2015). Un-learning, or letting go pre-established models and identities, is the aim of the left side of the U, and it has a few stages, as described below.
(1) Suspending

A general aim of the left-side, making deep learning different from habitual learning, is to learn to see differently. The first step to learn to see, is to develop suspension to your consistent thoughts. A human cognition is full of taken-for-granted assumptions educated into us throughout life. The assumptions arise from the invisible realm of relations, influences, priming — the field which is not judged by our cognition. The suspension is the opportunity to reflect upon our assumptions and thoughts, judge how genuine they are. Addressing them suspiciously, one gets the opportunity to realize which of them are genuine for the person and which are superficial visions imposed by the system that the person belongs to.

Through suspending we become aware and less attached to the stories or superficial visions. The ability to suspend our own thoughts should be cultivated and trained (Senge et al., 2005). “The discipline to first notice how we are truly feeling and be honest in acknowledging “what is”, objectively, emotionally and physically” takes time and effort to develop (Fritz in Senge et al., 2005, p. 139). Reflecting on the visions consciously, discerning physical and emotional reactions from them is a practice for suspending our assumptions. It enables to see the reality broader then it is presented to us. It is important to realize that how we are used to see the reality is likely to be biased and limited. Such limited perspective hinders our ability to learn another model of the socio-ecological system, a model which would encompass more of human innate qualities and socio-ecological resilience compared to the one we currently use. Suspension enables the realization of the threats we face and the opportunities we omit and potentiates the further journey down through the U-process.
(2) **Redirection**

When suspending assumptions-as-given is cultivated, the view on existing paradigm is already disturbed. The matter is not destroying the thoughts and beliefs but acknowledging what they are, where they come from and how genuine they are to the person’s self.

The next phase, according to Scharmer, is redirection of attention. At this step the attention is switched from the exterior to the interior: from objects of cognitive process to the source of mental activity, of intentions and thinking.

As long ago as in Ancient Greece, Aristotle wrote about *Nous* — “the capacity to grasp the source of intentions” (Scharmer, 2007, p.16). He was describing five “capacities to grasp the truth”; the other 4 capacities\(^1\) are science, producing, practical wisdom and theoretical wisdom. But only Nous looks into the source of wisdom and knowing. By redirecting attention and looking into the source of cognition, a person explores the primary knowing.

Eleanor Rosch, the cognitive psychologist, describes the difference between the analytical knowing and primary knowing (Rosch, 2000). The analytical knowing — the only knowing type which most people use throughout their lives — separates subjects, objects (I and it) and events. The human mind identifies isolated objects and events, finds the contingency between them, relates the items to each other and stores the results in memory. Primary knowing, on contrary, arises from understanding world as interconnected timeless wholes. Primary knowing realizes that the mind and the world are aspects of the same whole. Rosch explains that in Tibetan Buddhism the primary knowing is known as “wisdom awareness” which proclaims that selves and objects are not independent items but interconnected matters. The primary knowing utilizes unconditional value instead of conditional usefulness (used by the analytical thinking).

Similar division between different types of knowing can be met in other academic sources. Bateson (1972) writes about the difference between the purpose-oriented way of thinking and the “wisdom”. When humans act purposely but without understanding interconnections of the whole, ignoring the nature of global ecological system and basing their assumptions on their “common sense” — this is what Bateson calls purpose-oriented thinking. Oppositely, the “wisdom” is the thinking from within the system, with deep insights of its wholeness and interconnections. Likewise, Brian Arthur, who Scharmer and Senge worked with, notices two different types of understanding: first type that you can work with on cognitive level and the second type — a deeper, fundamental knowing (Arthur in Senge et al., 2005, p. 85).

Redirecting attention is a step towards primary, fundamental knowing. Noticing the interior source brings subject-object awareness, which enables the possibility to see the connotations that have not been seen before (Senge et al., 2005). Being aware of the source of intentions, one realizes over time (and reflection) that his/her interior source is connected to the bigger whole system. This opens the way to the larger awareness.

\(^1\) Epestime (science), Teche (producing), Phronesis (practical wisdom), Sophia (theoretical wisdom), Nous (the capacity to grasp the source of intentions)
(3) **Letting go old identities**

After suspending models-for-granted and redirecting attention to the inner source, in order to be able to learn on a transformative level, one should let go of pre-established categories — the identities which shape the existing way of thinking, seeing and making choices (Scharmer, 2007). Unlearning is creating the space for learning (Örtqvist, 2015). Letting go old identities and pre-established models opens the capacity to see with the fresh eyes. However, this step requires considerable cognitive effort as it stumbles upon so-called the voice of judgment (Scharmer, 2007). The voice of judgment does not allow us to release our prejudices and stereotypes and hinders the ability to let go the old paradigm. This is the point where controlling System 2 (educated within the existing paradigm) does not allow genuine intentions to break through the wall of judgment.

Being able to let go of the old identities, releasing the stereotypes and cognitive patterns, allows to learn not from the past but from “what is emerging” (Senge et al., 2005). The process turns the observations and suspending into intuitive impressions about the flawed state of the organization and decisions. It creates the ground for the change which happens at the bottom of the U-process.

### 2.2.2.3. The bottom of the U and barriers of the current system

Passing the left-side of the U-process demands considerable mental and cognitive resources. The resources are activated through the process of reflection. It is reflection which allows human cognition to compile together different pieces of observation into the holistic insight. Silence and reflection are “the space to feel” (Senge et al., 2005, p. 79).

The barrier of the current system is the overloaded attention (see 2.1.2.2.). Being constantly busy with social and economic tasks the human cognition is left with no spare resources for reflection. This is a part of the questions stated in the previous section — what can free the overloaded attention and liberate our mental, cognitive and emotional resources? (q2.1.3)

Before discussing the process, we need to specify the destination. The destination is the bottom of the U, where the inner knowing arises (Scharmer, 2007), “the place where the future is talking to you” (Örtqvist, 2015). At this point, described as Presence (see 2.2.3), one starts to comprehend the things from a deeper source than the rational mind. The spot is characterized by the feeling of being interconnected with the whole. Being verbalized and written down, this description does not provide the sense of the feeling, as the inner knowledge lies in the category of “unspoken”. The experience differs substantially from what we can describe in verbal form. The experience is the feeling itself, profound and genuine impression of being a forceful part of the whole (Senge et al., 2005). It appears through somatic senses, connecting mental world with the bodily reactions, reinforcing the impression.

Thousands of sources — from Buddhist narrations to contemporary academic literature — have been written on the topics of reflection, transformative meditation (Kabat-Zinn, 1994), interconnectivity, mindfulness (Varela et al., 1991), transformation (Mezirow, 1997), deep ecology and ecological self (Devall & Sessions, 1985), synchronicity
(Jaworski et al., 2011), etc; the field of unspoken is however something left for experiences rather than verbal/literal explanation. The thesis, nevertheless, aims to explore the ways of facilitating the passage of a person through the U to such experience.

An academically accepted way to illuminate and label the phenomena of interconnectivity is systems thinking — the interdisciplinary field describing how the complex systems interact and influence each other (Forrester, 1968). Systems thinking is both the approach and the process crucial for working with complex systems and thus important for the study.

2.2.2.4. Interconnectivity and systems thinking
The Systems thinking is an analytical approach stating that different parts of a system are interconnected. Instead of studying pieces of systems separately (as in traditional approach), systems thinking tries to bring them together and study holistically (Forrester, 1968).

Our attention naturally inclines toward distinct discrete articles. With analytical thinking, as we noticed above (see Rosch in 2.2.2.2) we tend to separate objects and events. If we try to see “the larger system” we look at how one part interacts with others and try to infer the larger pattern (Senge et al., 2005). It makes the way of thinking linear and reductionist, and hinders understanding of the world’s complexity and interconnectivity. We study parts instead of the whole and do not see the profound relations between them, through which each element can cause the chain reactions affecting the system. As a result, people obtain the limited impression of the consequences of their actions. The linear thinking makes people keep the patterns of the Earth’s depletion in favor of short-term profits. We do not connect our choices and decisions to the resulting world which we create. It is a substantial step in changing decision making — to learn to interpret discrete events and objects as parts of the continuous whole.

“New mental models, concepts and ways of working are needed to change mankind’s trajectory towards sustainability. One aspect of this transformation will be a move away from linear ways of thinking to a more systemic, interconnected one. Instead of examining systems in a fragmented manner by looking for linear relationships between different parts of a system, a systems approach to understand the complex dynamic of the whole system. The implications at the personal level is for an individual to view himself as part of and equally dependent on a larger system, the Earth” (Alsford et al., 2013).

The insight of the interconnectivity and the wholeness of the system is a crucial aspect of deep learning. When a person realizes deeply that his/her decisions and actions affect the system and can cause the unpredictable chain effects, his/her rationality expands (as our rationality is contextual and depends on circumstances, see 2.1.3). This moves the decision making to another level of awareness.

Systems thinking conjoins the vision described in the theory of the U-process: the vision of the holistic continuous realm where all parts are interconnected. It is interesting
to notice that one of developers of the systems thinking is Peter Senge, the author of 
Presence. His book, “The Fifth Discipline” (Senge, 1990) described how systems thinking 
can be used for organizational problem solving. Senge (2005) states that pure intellectual 
understanding can never achieve the level of wholeness. When we try to grasp the whole 
only intellectually, the best that we can get is the conceptual understanding (Senge et al.,
2005). It is another, instinctive, source of understanding which helps to comprehend the 
integrity of the global system. There is no dualism between the intelligence and instinct 
(Vianna, 2015) and while one phenomena requires intellectual processing, others are bet-
ter to be grasped experientially. The sense of consequential connections lies deeper than 
the intellectual understanding. Feeling that actions and decisions are connected to what 
the world becomes like, we are transforming from passive observers to active participants.

Going from the realization to actions is mirrored in the right side of the U.

2.2.2.5. Right sight of the U

The right side of the U leads a learner from cognitive realization to acting in a new way. 
Its steps encompass envisioning, enacting and embodying (Fig. 2). Firstly, the person 
crystallizes the new vision gained through reflections in the bottom of the U. “The term 
“crystallizing vision” does not mean making a vision fixed or rigid. On the contrary, vi-
sions are alive only in the moment we see and choose them. In this sense, crystallizing is 
ongoing — continually re-creating the vision freshly in the here and now” (Senge et al.,
2005, p. 140).

After the vision is crystallized, the person starts to act, at the first step by prototyp-
ing. Prototyping is creating of smaller sample of the change or innovation you want to 
bring. It is “something small, speedy, and spontaneous; it quickly generates feedback 
from all the key stakeholders and allows you to evolve and iterate your idea” (Presencing 
Institute, 2015)

While the left-side stages of the U-process are cognitive processes, the eventual 
goal is acting, embodying the new vision into reality. After transforming the perception 
(left side of the U), and transforming self (the bottom of the U curve), it is time for trans-
foming actions. The acts then come spontaneously, bringing something new into reality 
(Scharmer, 2007).

What is left undescribed is what enables the transformative action. It is the source 
of sensation which opens up in the bottom of the U. The reconnection with this source 
was described by Senge as Presencing — the term made up of blending the words "pres-
ence" and "sensing".

2.2.3. Presencing

The core of Presence is sensing what is going to emerge (Senge et al, 2005). It is a blend-
ing of mental, emotional and physical sensations of the potential change. This sensation 
arises from our deep source and allows us to tune in the future potential (Presencing In-
stitute, 2015). Instead of relying on past experience, a person discovers what can be cre-
ated and brought to the reality. No technical nor social innovations would be possible
without this unspoken sensing of the new. Whether you think of touch screens, internet, quantum physics or alphabet — nothing of it would appear if people were relying only on the experience of the past. Rather, in each case of true innovation the new potentiality was sensed and brought into the reality. As Brian Arthur said, “All great discoveries come from a deep inner journey” (Scharmer, 2007, foreword by Senge). Scharmer refers to Presencing as to “…a learning that is not based on reflecting the past, but rather on feeling, tuning into, and ‘bringing-into-the-present’ all future possibilities” (Scharmer, 2002b).

The Presence concept was discovered and explained after summarized lifetime research of Senge, Scharmer, Jaworski and Flowers. During the work they were interviewing thousands of leaders, innovators, leading organizations and governments. They discovered that all people bringing new categories to reality experience the sensation of being connected to the deeper source of intentions, which they describe differently but are all their own deep personal journeys (Senge et al., 2005). One way or the other, the interviewees describe that the knowledge about what to do appears to them naturally. A substantial step, allowing the inner knowing to emerge, is reflection. Reflection is a calm and mindful process through which the person’s cognition compiles the pieces of information into a holistic understanding. This holistic understanding is the profound sense of what systems thinking studies. Not knowing, but sensing and understanding the connections and the system’s wholeness conceive the feeling of what should be changed. In this way the innovative solutions emerge naturally. The person gets into Presence — sensing the intersection of present patterns and possibilities of the future. After the state of the Presence, a person goes up through the U-process to transforming actions and decisions. The decisions are a strong instrument of action, especially if one is an influential decision maker. If the political actors have gone through deep learning prior to decision making, changes would be brought to all spheres of the contemporary socio-political-economic system.

2.2.4. Snapshot and Questions (2.2)

Theory U is the framework used in the thesis to describe deep learning process. There are different stages of the U-process: suspending the pre-established models, redirecting attention from external objects to the internal source, letting go old identities. The bottom of the U-process is characterized by deep insight of interconnectivity of different parts of the whole system. As a person comprehends the connections in the system, his/her cognition realizes the way to affect it. Presence is the sensation of what is to emerge, what should be brought to the reality, which results in the profound transformation in one’s perspectives. After this the person moves to acting — up to the right side of the U. For political decision makers that action are their influential decisions, and that could potentially be transformed through deep learning. The question to keep in mind for the further sections are:

(q2.2.1) What can facilitate a person’s deep learning?

We have acknowledged that deep learning affects decision making and how this mechanism works. In the U-process of deep learning both System 1 and System 2 of the dual decision making are provoked and obtain new insights. Meanwhile, the question is (q2.2.1) remains what can facilitate the course of deep learning. This section describes the fields of embodied cognition, mindfulness and the outdoor experiential learning.

2.3.1. Embodied Mind

Learning and decision-making are cognitive processes, happening in the invisible realm of an individual's mind. However, cognition is not an abstract dimension of the brain itself but “the product of dynamic interplay between neural and non-neural processes” (Wilson & Foglia, 2011). What Wilson and Foglia mean by non-neural processes are bodily experiences. In the foreword to “Knowing Bodies, Moving Minds” Bresler (2004) outlines that during the last 2000 years Western culture was developed upon the worldview “body versus mind”, opposite to the Ancient Greek and traditional Eastern concepts of body-mind unity. The dichotomy between body and mind in Western traditions is, in some opinions, rooted into the Christian vision of the body being “sinful and Earthly”, as opposed to godlike everlasting spirit (Dewey, 1929, p. 249). Others trace it back to Plato philosophy which privileged the mind over the body causing mind/body dualism (Peters in Bresler, 2004). It resulted further in “othering” rationality from emotional considerations. Perhaps, the separation of physical and mental sides can be seen as the starting point of humanity’s disconnection from natural environment and the seed of our utilitarian attitude to it.

Presently the notion of embodiment is coming back in the field of cognitive science, as well as anthropology and other scientific disciplines, bringing body-mind cohesion to the academic thought. The reconnection of body and mind is now recognized as a promising direction for education and learning (Bresler, 2004). Scientific recognition that cognitive processing is tightly bound with somatic experiences is known as embodied cognition — a domain of cognitive science studying the physical side of thinking. Our aim is, using lenses of embodied cognitive science, to see if cognitive processes can be affected through bodily experiences and somatic interaction with the environment.

2.3.1.1. Interplay of the cognitive and the somatic

Embodied cognition considers the working mixture of perceptual, cognitive, and motoric capacities that we have as humans. The mixture outflows into the sequence “Perception — Cognition — Action” (Wilson & Foglia, 2011). But between Cognition and Action there is decision making. The decisions are reflections of the cognitive process — both conscious and unconscious — as well as they are preconditions of actions.
Research in the field of embodied cognitive science explain that cognition is interconnected with the somatic processes, with the perceptual system and motoric execution. As Hernandez (2015) describes, the cognition happens not only in the brain, but in the entire body. Human cognition is connected to 5 senses which centralize information in the brain to get the perception, Hernandez explains, but referring to the psychological research done on awareness, he emphasizes that the awareness is not local. It cannot be fully localized in the brain alone, it is placed in the body or even outside the physical body (Hernandez, 2015). Moreover, cognition is deeply affected by the surrounding world (context) and thus depends on the physical and social environment:

“Cognition is not bounded by the skull, so cognitive systems may include both non-neural parts of the body and even the beyond-the-body environment” (Wilson & Foglia, 2011).

It is a philosophical question but also the subject of cognitive science to define the origin of human cognition: whether it is an ethereal process of human thinking or it is rooted into the physical dimension of the body and tangible experiences. Nonetheless, cognitive and somatic processes are tightly interconnected. For instance, using only the body alignment, the skeleton and the sense of gravity, making the work of muscles less, we let more oxygen access your brain, which makes the thinking process clearer (Hernandez, 2015).

Cognitive scientists Varela, Thompson and Rosch in their work “Embodied mind” (1993) describe the circulation between cognitive science and human experience. They emphasize the mutual operation of cerebral and bodily mechanisms. According to them, it is the interaction between physiology, sensorimotor activity and the environment what constructs our cognition. All cognitive processes are deeply rooted into the everyday experiences and embodied processes (Varela et al. 1991). Similarly, Husserl (1970) examines human consciousness in “life-world” as he calls it — original, real world of experience and activity, opposite to the abstract world of theoretical thoughts. He describes that the life-world is the ground for all theoretical (cognitive) activity. Hence, the cognition arises from our somatic experiences and the interactions with the environment.

2.3.1.2. Body as a communication tool
In simple terms, the cognition is a dynamic product of interactions between a body, mind and the world. The perception and cognition are enacted through bodily experience. According to Merleau-Ponty (1945, in Varela et al., 1993), the embodiment has double direction: (1) a body acts as the experiential structure which experiences something coming from the outer realm; (2) a body serves as the context of cognitive process happening “inside” the individual. In the first case the body and its capacities serve to obtain experiential and informational material; in the second the body is the mechanism for processing that material. From these postulations of embodied cognition we can conclude that a body is a unique communication tool which has the capacity to obtain and transfer information (1), and also to process the information (2).
(1) Capacity to communicate (body as an experiential structure)

As a communication tool, a body accesses and delivers information. Besides the senses of taste, touch, hearing, etc., a body has certain qualities which are hardly comprehensible by contemporary Western mindset. It has the capacity to obtain information naturally through the close contact with the context and to react beyond the analytical mechanisms.

This capacity of bodies have been used for centuries in traditional communities for learning through dancing and body games (Bresler, 2004). Understandable examples of communication based on the body capacity to “sense” could be martial arts, dance, capoeira and other physical arts. For instance, capoeira is the Brazilian-originated blend of martial art, dance, acrobatics and music. Players do quick and complex moves avoiding direct contact with each other. When players develop their “body-literacy”, they are able to anticipate what the partner is about to do (Vianna, 2015). The intercommunication of bodies turns into magnificent and powerful dance based on intuitive sensing what movement is coming next.

“In capoeira] communication happens within the dialectics of cooperation (dance) and competition (fight); because the dance element demands cooperation between the two players to build a flow of moments, and the combative element... is the one that breaks such flow” (Vianna, 2015).

The fluidity and speed with which a good player reacts to the upcoming kick is not comparable with human capacity to obtain and proceed the signal intellectually.

Another example is contact improvisation which is the dance technique that integrates tactile and vestibular senses of the partners and uses the forces of motion, weight and gravity. (Marchant et al., 2010) “Contact improvisation challenges dancers to continually adapt to unpredictable movement ... generated during spontaneous tactile interaction” (Marchant et al., 2010, p. 185). Marchant et al describes how the contact improvisation dance “directs the dancer’s attention to sensation and non-verbal communication”. Similarly with the above mentioned example, the communication is operated completely by a human body which senses the movement — what is happening and what is to happen — and reacts back. The flow in which dancers move and interact illustrates the ability of body to receive information beyond the cognition.

Similar sensing is achieved in arts, when one acts not from the intellectual source but from intuition and what is called inspiration. Scharmer (2007) notices this physical understanding which humans achieve in sports and arts. To conclude, “we communicate in more ways than our Western lifestyle allows us to realize... The spoken language is just one of the ways we communicate, and very often not a very efficient one” (Vianna, 2015).

(2) Capacity to process (body as the context of cognitive process)

Sensing the movement and feeling the environment is a great capacity of a human body. But above it, humans have the capacity to assemble pieces of physical information beyond analytical thinking.
Wilson and Foglia (2011) deduce from other sources that a body has different functions in cognitive science. One of its roles is a distributor for cognitive processing, which means that an individual’s body distributes cognitive load of computational and representational capacities between neural structures and non-neural parts of the body. According to them, the bodily structures can be “at least partial realizers of the physical machinery realizing cognitive processes”. Human body is an active part of cognitive processing.

A good illustration is the “Florida effect” from the research by Bargh, Chen, and Burrows (1994). Young participants were asked to assemble sentences from given words: one group got sets of neutral words, while one used the words associated with the elderly stereotype (Florida, lonely, grey, sentimental, forgetful, retired, wrinkle, alone, etc.) (Bargh et al. 1996, p.236). After the participants accomplished the task, the researchers observed the change in the physical behavior. The group primed with the elderly stimuli, was walking more slowly down the hallway leaving the experiment. The experiment illustrates that, first of all, the participants’ minds absorbed the stimuli of being old just from associative words. Secondly, it made their motoric excursion change. This empirical study shows that humans physically recoil cognitive impressions obtained through an abstract stimulus.

Not all human experiences are processed intellectually in order to extract knowledge about the experience. Information from different experiences is regularly assembled unconsciously and transforms into intuitive, “inner” knowledge. It finds itself in the “gut feeling” and physical reactions. In the neoliberal reality we tend to ignore the inner knowledge and suppress it with pragmatism, formalistic knowledge and superficial values. The inner knowledge reveals itself through our somatic senses: when we are aware and centered and act according to our genuine intentions, when the decision “feels right in the stomach, the heart and the head” (Örtqvist, 2015).

If our somatic system has the great capacity to assemble information beyond the analytical thinking, how can we activate it? Can it help to facilitate deep learning? Varela et al. (1991), alike the authors of the Theory U and Presence, refer to mindful practices and reflection as the methods of using embodiment for cognitive processes, for getting deeper insights.

2.3.1.3. Mindfulness: stillness and reflection

We have considered the role of reflection as the primary tool allowing the cognition to assemble “different pieces of observation into holistic insight” (see 2.2.2.1). Either presence or lack of this holistic insight predetermine decisions. The way to obtain and deepen the insights is further addressed below.

Reflection is a bodily-mental state, often being referred to the condition of mindfulness. Psychologist E. Langer (1989) describes mindfulness as the human ability to be thoughtful about experiences, to apprehend and be cognizant, opposite of being automatic and acting habitually. In more basic sense mindfulness means to be present and to involve physical senses into cognitive processes (Varela et al., 1991). It includes “paying attention to whatever we are experiencing in the moment, without being distracted by memory, expectations, or imagination” (Burch, 2012, p.3)
“Mindfulness means that the mind is present in embodied everyday experience; mindfulness techniques are designed to lead the mind back from the abstract attitude to the situation of one’s experience itself” (Varela et al., 1991, p. 23).

Burch (2012) compiles different ways of thinking about mindfulness. “It can be a heightened state of concern and due diligence in decision-making; a particularly lucid awareness of everyday experience; clear awareness of subtler processes of one’s own mind such as distinguishing thoughts from feelings from desires, etc.; clear awareness of being aware, i.e., self-reflective consciousness...” (Goddard, 1938; Tart, 1994; Thera, 1967 in Burch, 2012, p.2). Dr. Kabat-Zinn defines mindfulness as a state of “awareness consisting of unhurried, non-judgmental attention to one thing at a time” (Kabat-Zinn, 1994, p. 4).

Mindful and reflective processes do not happen in visible realm. They are rather characterized as “sitting still” practices, but they significantly change the state of thinking and awareness. They give the space for assembling pieces of information into systemic understanding and infuse deeper insight about the holistic system and interconnections.

Mindfulness makes it possible to see connections that may not have been visible before. But seeing these connections doesn't happen as a result of trying — it simply comes out of stillness. (Kabat-Zinn in Senge et al. 2005)

Addressing the field of mindfulness, Varela, Thompson and Rosch in their work build the bridge between contemporary cognitive science and Buddhist meditative psychology. They prove that meditation practices are not only relevant for cognitive science but are the core of human comprehensive cognition.

Meditation, as a mindfulness practice, is a discipline of concentration — strong but strainless (Kabat-Zinn, 1994). “It involves a readiness to look beneath the surface appearance of things and to open ourselves to the inner meaning they have” (Burch, 2012). Meditation leads the mind back from theoretical and abstract preoccupations to one’s experience (Varela et al., 1991). It reveals the “continuity between Self and world” (Varela et al., 1991, p. 3) — how the individual, objects and events of the system are interconnected. Therefore, mindfulness, meditation and reflection are three interweaved facets of deep learning — profound understanding of the system’s wholeness. The bodily experience and concentration on one’s senses play the central role in the mindfulness, bringing a person to here and now. It is the embodiment — the cohesion of body and mind — which allows to expand the scope of cognition.

2.3.1.4. Bodymind and Situated Cognition

(1) Bodymind

In everyday life we are not constantly aware of each part of our bodies unless we feel pain, sore or itching sensation or interact with too hot or too cold surfaces. We take the body for granted and do not sense it in normal conditions. Meanwhile, it teaches us. Similarly as we take the body for granted, we take for granted our assumptions and thoughts. Sensing the body as present, being aware of it and listening to it gives us the control not
only of the limbs but of ourselves in the deeper meaning. As far as we become aware of our bodies, we become aware of our thoughts. Kahneman (whose work we used to describe the dualistic decision making system) notices (2011, p. 50) that “cognitive scientists emphasized in recent years, cognition is embodied; you think with your body, not only with your brain”

Being aware of the body, a person can feel if some parts do not function properly. One can detect it before the part starts to hurt. Being aware of each part of the body, sensing when something is functioning wrong, one has the control over it and can prevent the problem. Similar quality is applicable to the mind. When one stops to take the movements for granted and notices what is happening in his/her body, one starts to notice the thoughts as well. The mind becomes reflective, and the person is now aware of what exactly s/he thinks and what is the source and intentions of the thoughts. The person can discover that some of his/her thoughts are assumptions-for-granted which s/he has not questioned. The same as a hurting part of the body, one’s thoughts and assumptions may also need to be healed. It requires awareness and mindfulness about the cognitive processes and their source. As Hernandez stated in the interview, to acquire more sensitivity, we need to practice and develop those skills (Hernandez, 2015).

Starting to notice thoughts and assumptions and reflecting upon them — whether they are genuine or just taken for granted from the surrounding paradigms — is the first step of profound change, which Scharmer and Senge describe (see 2.2.2.2.(1)). Firstly, it is the direct connection to self-understanding (Varela et al., 1991). Secondly, it brings the opportunity to see the world with an open mind (Scharmer, 2007) and thus be able to change.

(2) In Situ
The bodymind concept focuses on a human body as the experiential structure for cognitive and emotional processes. The embodied cognition field, however, recognizes another important actor in the body-mind relations. This actor is the environment — physical, social and cultural surrounding of cognitive processes (Varela et al., 1991). In this work we use the term “context”, which includes everything that “surrounds” the cognitive processes: natural and human-made environments, people and social structures, time and space, and larger connections within the global system.

In embodied cognitive science the body's interactions with the context is called situatedness and the field of study is the situated cognition (or cognition in situ) (Varela et al., 1991). The situated cognition affirms that knowing is inseparable not only from the body, but also from the larger environment. Cognition cannot be separated from the context. All knowledge, it claims, is bound to social, cultural, physical and other contexts.

“By using the term embodied we mean to highlight two points: first that cognition depends upon the kinds of experience that come from having a body with various sensorimotor capacities, and second, that these individual sensorimotor capacities are themselves embedded in a more encompassing biological, psychological and cultural context” (Varela et al, 1991, p. 172).
“Knowledge creation always depends on situated perception, cognition, and action” (Scharmer et al. 2002, p. 8). The idea of the context in which the knowledge is created is known as *ba*, meaning “space” in Japanese. The concept was initially introduced by the philosopher Nishida and later developed by Nonaka and his colleagues (Kaiser & Fordinal 2010). Ba is a shared space used for the creation of knowledge, individual or collective. The concept of *ba* corresponds to the situatedness of cognition on a deeper level as it includes all types of environment, not limited by the physical one, but virtual and mental space too (Nonaka & Konno 1998). *Ba*, according to Nonaka, determines the quality of knowledge. Thus, the environment, or context, — physical, social, cultural, mental — does not simply affect learning, but predetermines the cognition and the emerging knowledge.

2.3.2. Outdoors as the Room for Learning

We have tied together change in decision making with deep learning, and the deep learning with mindfulness and bodily experiences. What is left to address is the context — physical, social and mental environment of the process. In the previous section we saw that the context of learning is principal for the results. This section outlines the potential of natural environment to facilitate deep learning.

2.3.2.1. Ideal ba

The framework of situated cognition presupposes that the cognitive processes are not only tightly connected with the outer context, but that the context itself is an active actor of learning. How does the context of the present urbanized environments affect people's cognition? In the first sections we outlined the obstacles hindering deep learning. Namely they are pre-established models (assumptions taken for granted), overloaded attention and biases of decision making system. In the contemporary socio-economic system, firstly, a person is constantly surrounded with imposed identities which are taken by individuals for granted and suppress the person’s inner identity and hinder the learning that is new (see 2.2.2.2 (1), (3)). Secondly, the person’s cognitive capacity is distributed among social, economic and massive informative tasks, so that s/he has no spare resources for reflection (see 2.1.2.2.). All in all, the environment in which the knowledge is supposed to be created, is not in favor of that creation. Other way round, the context biases, overloads and distracts the cognition.

What kind of physical context can ease the overloaded attention and does not impose superficial values and paradigms? What kind of environment does bring a person closer to the conscious, mindful state? Asking these questions we naturally come to the realization of the capacity of natural environment to alleviate the above mentioned obstacles. Nature is the synthesis of physical and mental environment free of social constructs and distractions, superficial values and imposed judgments. The wilderness environment is a unique space where individuals are no longer confined with the normative personal and social constructions of everyday lives and the distractions of urban areas (Jackson, 2013 in Alsford et al., 2013).
Being a distraction-free space, natural environment unfolds human cognitive capacities. Nature helps us to relax and become focused (Örtqvist, 2015). It discharges the overloaded attention and helps to allocate the cognitive resources more efficiently, allowing to focus and reflect upon the experience. It brings the mind to the state of present, giving spare space for mindfulness and reflection (Senge et al., 2005).

Besides that, there are other characteristics of wild nature which make it a unique context facilitating deep learning. Nature is rich with natural patterns of life and ecosystems. As Senge et al (2005) notice, seeing larger patterns makes us feel interconnected. Being *in situ* of these patterns, we comprehend the system and realize connections between its different parts: causal connections as well as general similarity of patterns between ecological systems, personal systems and socio-economic systems. The body communicates with natural environment, holistically absorbing physical information, allowing it to transform into deeper understanding of natural patterns beyond analytical thinking.

With enough time in wild nature, a person obtains the feeling of being a part of the web of life. This sense of affinity and interconnectivity and seeing the system as the whole are the foundation of the inner knowledge, appearing in the dialogue with nature. It stimulates the *ecological self*: when the intrinsic values penetrate through the membrane of ego-centered short-term thinking — the thinking we’ve seen as rational. The rationality itself shifts in terms of what is rational and what is not, as these categories are contextual (see 2.1.3.).

The context, as mentioned, is an actor of cognitive processes. Nature environment allows to redirect attention and free the cognition from pre-established identities. It gives the cognitive space for reflection, crucial for the insight to emerge. Additionally, nature, as the amalgam of ecosystems, demonstrates the interconnections in the system. Therefore nature serves as a perfect environment for deep learning and the U-process.

### 2.3.2.2. Using Nature as a Classroom

The capacity of nature to facilitate deep mindful learning is especially important now, when we talk about unsustainable civilization. The depletion of natural resources and disruption of biodiversity often depend on decisions of influential actors. The capacities of nature had been realized and are used by various institutions for awakening human innate qualities and conceiving knowledge about ecological sustainability.

Naturakademin is one of several organizations using “nature as a teacher and classroom for faster and deeper learning” (Naturakademin, 2015a) for officials and influential actors. Their approach is based on combination between mindfulness practices and physical contact with nature for developing organizational strategies and leadership and bringing awareness of sustainability into the corporate setting. Naturakademin’s practitioners work with municipalities, businesses and NGOs (Gennvi, 2013 in Alsford et al. 2013). For its programs Naturakademin uses the framework of the U-process (Naturakademin, 2015b).
Another example of the program aiming to affect influential officials through using nature as the context for deep learning, is the Natural Change Project in Scotland. It was founded to embed sustainability into Scottish culture and invited influential officials from Scottish society (Key 2013 in Alsford et al. 2013). Over time it became the “leadership training which catalyzes social change for sustainable future” (Natural Change Foundation, 2015) which was bringing influential civil actors to the programs in wilderness. Natural Change influenced significantly Scottish society and helped to embed sustainability into mainstream mindset (Watson 2013 in Alsford et al., 2013).

Tällberg foundation works internationally with influential officials and plays a catalyzing role in transformative changes of business and governance in terms of planetary boundaries, environment, climate change, energy, human rights (Tällberg, 2015a). They build the platform for the dialogue but also use outdoor practices. They arrange programs for top-level civil actors — ministers, heads of the government and organizations, political leaders, business executives (for example, in the list of alumni one will find Kofi Annan, Hilary Clinton, Vaclav Havel, Gro Harlem Brundtland, Brian Arthur and many others (Tällberg, 2015b)).

The list of institutions and practitioners using outdoor experiential practices for transformation in strategies of influential officials can be continued. Alsford, Ćuruvija and Malewski (2013) conducted the research analyzing various organizations using outdoor experiential learning (OEL) for influential officials to develop sustainability thinking. They looked into the programs consisting of the following 4 components: (1) the process of knowledge creation takes place outdoors, using natural environment as the context, (2) the process includes solitude — time alone for reflection, (3) the program targets influential individuals with significant leverage potential, (4) the program attempts to engage participants in leadership towards sustainability (Alsford et al., 2013).

Being exposed to the dynamic patterns between the individual and the environment, the participant obtains the sense of complex connections in the system but also develops the sense of responsibility which changes the decision making (Higgins, 2009). Örtqvist (2015) describes OEL as the great way of working with a person’s inner condition. It teaches a person to feel the quality of his/her decisions — “what feels right in the stomach, heart and head”. The outcome of the OEL varies for different programs, but the core findings include “a greater understanding and awareness of complexity, connection and consequences of actions” (Alsford et al., 2013, p.9).

“Through increased understanding of the dynamics and "wisdom" of nature and the reconnection with our inner and outer nature, individuals and groups become better equipped and inspired to see the situations and opportunities with greater clarity and responsibility” (Naturakademin, 2015a, translated).

The core of the thesis problem is omission of the intrinsic values and lack of holistic understanding in the political decision making. OEL is probably the most justifiable way for addressing this issue. “It is crucial not to underestimate the importance of the shift toward intrinsic values as a way of helping humans avert ecological catastrophe”,

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Rantanen writes (2009, p.i) describing that “personal relationships with nature may provide some insight into the way people treat the environment; disconnection of humans from the natural world may be contributing to our destruction of the planet’s natural systems”.

OEL, reconnecting people with nature and their inner self, and creating desired environment for the deep learning, is a unique tool for affecting decision making in the field of sustainability issues. Örtqvist describes that OEL has the capacity to affect individual and organizational decisions and strategies. Alsford, Ćuruvija and Malewski (2013) conclude that OEL can change the way of dealing with sustainability issues. The intense personal change happening during the process, they write, can facilitate the shift toward sustainability.

2.3.2.3. Obstacles

The studies show that OEL has great capacity to bring understanding of the system and thus to affect decision making (Higgins, 2009; Rantanen, 2009; O’Connell et al, 2005; Alsford, et al., 2013). The story of T. Roosevelt’s change in mindset toward more ecological thinking after his outdoor experiential learning practices shows that “the OEL has the capacity, when used correctly, to impact policy change at the highest levels of human society” (Alsford, et al., 2013, pp. 9-10). However, OEL programs for changing decision making remain a pioneering field (Örtqvist, 2015) which makes it challenging to engage people. “While shown to be effective, the OEL remains underused as a tool for engaging professionals in sustainability and lacks a strategic approach for helping these professionals to enact sustainability measures” (Alsford, et al., 2013, p. iv). Although outdoor programs had been successfully implemented into some curricula for sustainability training, O’Connell et al. (2005) describe that there are many factors hindering the sustainability education in outdoor practices. These include “the complexity of changing values and lifestyles”, “Western society’s philosophical history and conceptualization of the outdoors”, commodification of the outdoor recreation, implication of technologies and “the feeling of disempowerment” (O’Connell et al. 2005, pp. 82-84). The challenge of changing values and lifestyles is probably the deepest hindering factor connected to all other factors. The dependence on comfort is an attribute of contemporary Western societies; it keeps people obeying the existing order of consumption and nature depletion even though the sustainability problems have been broadly realized. The pattern of mainstream lifestyle, focused on monetary values, is so pervasive that there is a risk of suppressing the OEL’s long-term impact after coming back from the programs, even if an initial positive result was achieved in wild nature. Additionally, the primary obstacles of the deep learning — overloaded attention and biases of the existing paradigm — gradually come back in force as soon as a person is back to the old setting. The disempowerment, which O’Connell et al notice, results from acknowledging the global problems without understanding the possible solutions. It is what differs the right side of the U-process from a simple realization of complexity of the sustainability problems. The gap between being aware of the problem and being awake for individual actions hinders people from the change. This is why many of the OEL programs focus also on leadership skills and target influential actors who can affect the political, social and economic system through their decisions.
2.3.3. Snapshot and questions (2.3)

The section 2.3 brings together the embodied aspects of deep learning. It describes the unity of body, mind and context. It briefly introduces the concepts of mindfulness and reflection as a part of embodied cognition. According to the presented framework, a human body is a unique communication tool serving for receiving, transmitting and processing information into inner knowledge beyond analytical thinking. An important component of the embodied cognition is the situatedness, or the environment of the knowledge creation. The surrounding context, in which physical, social and mental environments are included, is seen as an active actor of the cognitive processes and learning. Further, wild natural environment is proposed as the ideal context for deep learning. The overview of the outdoor experiential learning describes its potential for influencing political decision making. Body, nature and cognition are seen as sides of the whole and thus their active interaction creates significant impact on person’s insights, values and decisions. The section answers two related questions:

(q2.3.1) What context does not impose superficial values and paradigms and ease the overloaded attention?
(q2.3.2) What environment does serve as a perfect context for deep learning?

2.4. Conclusion: Intersection of the Theory Parts and the Problem

The overall problem of the thesis is political decision making, harming ecosystems and society in the long run. The research aims to explore the basis for how decision makers can experience holistic understanding of the system’s wholeness, how the intrinsic values can be brought to the decision making process and how decisions’ quality can be affected (see 1.2.2). The theory chapter interweaved together different fields leading us to the conclusion. This section highlights the links between all parts of the theory, explains the connection with the problem and builds the ground for designing the empirical part.

2.4.1. The Story of Theory

In order to understand how the current state of political decision making can be transformed, the research investigates different spheres of study, building interconnections between them (Fig. 4) in order to address the thesis’ problem.

Firstly the mechanism of human decision making was examined in the framework of the brain’s dual system. Intuitive fast System 1 is the source of impressions and beliefs for the decisions, but analytical System 2 controls impressions of System 1 when decisions are responsible. The reformation of decision making is possible only when both systems are affected — the logics (or paradigm) beyond System 2 and intuitive impressions of System 1.
Secondly, the Theory U of deep learning was introduced. Deep learning is the way of transformation of both System 1 and System 2. In deep learning, one learns not from the pre-established models but from the future, from the change which is to happen. The U-process results in transforming actions and decisions. The transformative state, when one senses the change is introduced as Presence. Through the U and Presence one realizes the wholeness and interconnectivity of the system, and his/her active role in the system’s chain effects.

Both System 1 and 2 can be biased, as the impressions, assumptions and overall paradigm of the surrounding system are taken for granted without questioning. The first phases of the U-process focus on suspending the pre-established models and letting go old identities. Being suspicious about the source of our decisions is the first step to change them. Then the Presence state is the space of feeling “what is to emerge”. Presence reveals our deep source and allows us to turn to the future potential. In the U-process it is followed with crystallizing the understanding of what should be done, changing perspectives and decisions, conceiving the ground for actions. If we talk about political decision making, where the main actions are decisions, the U-process brings the agent (a person or collective) to a new way of thinking and decision making.

Thirdly, we described the perspective of embodied cognitive science, which expands our usual view of how we, as humans, sense, create and communicate knowledge. Embodied cognitive science explains that the cognitive processes — and thus also learning and decision making — are interconnected with the somatic processes and senses, with the perceptive system and motoric excursion. Human cognition is the interplay between neural processes, body and environment. Body itself is a communication tool which has the capacities to receive information from the context and to process it into the inner knowledge. This inner knowledge cannot be taught verbally, but through human experiences. As noticed, System 1 is unresponsive to verbal instructions; the impressions arise from interactions and experiences. Hence, the embodiment, or use of somatic experiences and senses, is seen as the way to facilitate deep learning process.
Fourthly, the theme of mindfulness and meditation is addressed in the frameworks of deep learning. Reflection and mindful practices are the core of the U-process, opening a person’s thoughts to deeper insights about the system, allowing to assemble information into the holistic understanding. The same time, mindfulness practices bring mind and body together, reflecting the idea of embodied cognition.

The fifth element is the context, or situatedness. Cognition is not only embodied, it is situated — placed in certain physical, social, cultural, mental environment on which it depends. Human rationality, which is the ground for responsible decisions, is contextual and can alter due to circumstances. The environment is an active part of cognition and knowledge creation. In her interview, Örtqvist (2015) described that there are the inner environment and the outer environment, playing role in decision making. The inner environment is more important for the outcome of decision making. However, the outer environment affects the inner one, especially on the stages of unlearning and reflection. The question arising is what context can bring one’s inner environment in balance, provide the mental space for reflection, and therefore facilitate the deep learning. It is meaningful to find the context where the person’s System 1 is not subjected to constant priming with the concepts of money, with political and economic prejudices.

As we could see from the previous section, the freeing of the mind from social constraints and easing the attention overload is possible through the contact with nature. The natural environment helps to unload attention and allocate the cognitive resources more efficiently, to direct attention and focus on inner feelings rather than on assumptions imposed by the external socio-economic system. Nature is seen as a perfect environment for unlearning, reconnection with oneself, reflection and deep learning.

Therefore, the sixth concept introduced is outdoor experiential learning (OEL). OEL combines the aspects we have looked into throughout the thesis. It uses nature as an active actor and as the context for creation of the knowledge. The OEL programs focus on embodied and mindful experiences, allowing a person to naturally receive the information about the inner and outer systems. The time of solitude and reflection creates the favorable conditions for transforming the information into the inner knowledge — deep insights about the whole system, interconnectivity, ecological and personal patterns and affinity between oneself and nature. OEL reconnects people with nature and their inner self — their source and genuine intentions. With somatic experiences in nature, the cognition is touched through the basic medium — the body. OEL creates the interaction of nature, body and cognition which are the sides of the whole. This interaction allows to the unfolding of the cognitive capacities, to awaken human innate qualities and intrinsic values, to bring out the insight of the wholeness. Natural environment facilitates deep learning, which in turn affect the persons’ perspectives and decisions. To summarize, the interplay of embodied experience, deep learning, reflection and nature as the context of the learning process was found to be the way to reform political communication and decision making.
2.4.2. Problem, Hypothesis and Research Questions

The problem, used as a starting point for the thesis, is that the value of the environment is diminished in the political decision making in favor of economic gains and short-term benefits. This not only depletes nature but in the long run undermines social and economic dimensions of human civilization. The issues of political decision making are rooted into the current neoliberal paradigm (considering the focus on monetary values as the only rational), limited understanding of the whole socio-environmental system and its consequences, and externalizing the problems. In a deeper sense it is related to the alienation of humans from nature and one’s self, from the intrinsic values and the ability to see larger patterns of the whole system. The thesis aims to find the way to address these roots and find a potential way to the transformation of influential decision making.

The hypothesis is that the interaction of mind, body and nature is the way to address the problem and to answer the PQ1: *How to integrate the value of ecosystems and biodiversity into political decision-making?* Bodily and mindful experiences in nature, as we expect, equip decision makers with deeper understanding of interconnections in the world. Nature as the context of learning facilitates the U-process, bringing people to the transformative change. Not least, the contact with the context provides deeper understanding of the situation, which improves the integrity of the decision making with the internal aspects of the problem.

*(SQ1) Does human body have the capacity to transmit and acquire knowledge that goes beyond conventional considerations?* Yes, as the section 2.3 describes, the human body has the capacity to serve as a communication tool, not only receiving information but also processing it beyond the analytical thinking. The insights conceived through experiences provide deeper understanding of the context. Moreover, such insights are not biased with media and socio-economic paradigms. There are grounded in inner “knowing” or “sensing” the interconnections in the surrounding world.

*(SQ2) Do non-verbal communication and affiliation with the environmental and social context impact on the decision making process?* Yes, somatic contact with the context, along with mindful presence and reflections, produce inner knowledge in an agent (a person or a collective). It creates new impressions in System 1 which can affect decision making. However, the pre-established paradigm of controlling System 2 can override the impressions, unless System 2 is not transformed synchronously.

*(SQ3) How does the understanding of how humans acquire knowledge, impact on changing political decision making?* Acquiring knowledge is essentially the learning process. Through learning one obtains new information, new impressions which can influence one’s choices and decisions. Understanding how new impressions and beliefs are created, we can develop the programs and strategies for bringing about the change into decision making. For instance, the field of outdoor experiential learning is considered as a proven tool with high potential to support transformation in strategic communication and administrative decision making, as long as the tool is designed and used properly. Concluding from the thesis’ hypothesis, outdoor and embodied practices have the potential to conceive the inner knowledge which is not typical now in political and administrative decision making.
It is important to mention that, additionally to the literature and interviews, this study emanates from personal experience — own observations, reflections and somatic impressions. Personal considerations were the first step to the research, the foundation for searching the formalistic evidence of the personal realizations.

The described concepts are used for designing the experiment in the empirical part of the study, which is illuminated in the following chapter.
3. EXPERIMENTAL RESEARCH

3.1. Empirical Part: from Theory to Experiment

The section describes the empirical part of the thesis: the features of the qualitative approach in general, the data collection methods, the experiment and its results. The empirical experiment is a pilot study project based on the conclusions from the Theory.

3.1.1. Qualitative Approach

The goal of the empirical part was to test the hypothesis suggested in 2.4., namely that the decision making can be affected through experiential embodied practices in close contact with the natural environment and the context of the case. Because the research supposes observation of the change in behavior and decisions rather than working with numeric data, the qualitative methodological approach was chosen for designing the experiment.

The qualitative approach is a type of scientific research approach used for investigations in social, political, educational sciences and in the humanities in order to understand intentions and reasons for human behavior and decision making (Corbin & Strauss 2014). As Mack et al. (2005) note, the qualitative research aims to explore phenomena and “is especially effective in obtaining culturally specific information about the values, opinions, behaviors, and social contexts” (2005, p. 1)

Qualitative research utilizes textual data format, complexly describing people’s experiences, stories related to the study. The data is collected through observations, interviews and contact with a focus group. The approach is effective in identifying intangible factors: “it provides information about the “human” side of an issue – that is, the often contradictory behaviors, beliefs, opinions, emotions, and relationships of individuals”. (Mack et al., 2005, p. 1). Another feature of the qualitative approach is the researcher’s own self-reflections as an active part of the research. Corbin and Strauss (2014) write that in qualitative research the researcher collects and interprets data in the way that makes the researcher as much the part of the research process as the participants and the data they provide. “The self is an instrument in the data collection and analysis process” (Strauss & Corbin, 1998, p.5). The researcher’s insights help in the design, performing and analysis of the experiment, which creates the practitioner-researcher synergy (Robson 2002). The researcher’s participation stretches out from the experiment to the data analysis: in qualitative research the researchers are unafraid to involve their own experiences when analyzing materials (Strauss & Corbin, 1998).

One of the main properties of qualitative research is “the culturally specific and contextually rich data it produces” (Mack et al., 2005, p.vi). The qualitative approach supposes that understanding comes from investigating the total situation, with its cultural, personal and contextual connotations. Thus this approach itself is closer to the current thesis aiming to include contextuality and interconnectivity of the larger world into decision making. Therefore qualitative research is seen as the only suitable approach for the thesis.
Qualitative research usually uses semi-structured methods such as in-depth interviews, focus groups, and participant observation. It commonly utilizes flexible design. Flexible design is the design of experiments in which the details of the design may change depending on the findings; the plan can evolve or be altered while the project is underway (Robson, 2002). It mirrors the exploratory purpose of research and requires from the investigator to grasp and interpret information during the study, not simply record it, and being able to adapt the study to the circumstances and new findings. Flexible design is the “iterative style of eliciting and categorizing responses to questions” (Mack et al., 2005). The same time, it gives an opportunity to assess phenomena in a new light, to seek the problem’s explanation and to explain the patterns related to the phenomena (Robson, 2002). As Robson admits, flexible design studies rarely end up as had been planned. The researcher needs to balance addictiveness and rigor and be willing to change procedures if the unanticipated occurs. This aspect can serve both as an advantage and disadvantage of the research.

There is another facet of qualitative approach and flexible design, which attracts the thesis’ author. As Strauss and Corbin state (1998, p. 6), the researcher becomes “completely absorbed in the work” They write that the researchers using qualitative research often conclude after their studies that they themselves have changed beneficially throughout the experience. As the researcher is more flexible with the research, s/he is open to new ideas as well as to criticism.

There are as well challenges, typical for qualitative research and the role of practitioner-researcher. As Robson (2002) states, it is challenging to do a systematic inquiry in the setting of participation. Another issue is that the research depends heavily on the individual and his/her skills, expertise and confidence.

3.1.2. Data Collection Methods

To choose data collection methods for the experiment, usual methods of qualitative research were examined. Common methods are participant observation, in-depth interviews, semi-structured interviews and focus groups (Mack et al., 2005). Qualitative research uses textual format of data, created either by the participants through interviews and questionnaires or by the researcher through documentation of the observation process.

Questionnaires were used in the experiment in order to collect the participants’ opinions and also to be able to compare their decisions in different contexts which were created as part of the experiment. The questionnaires were semi-structured as this approach gives the participants freedom to express themselves and therefore provide more holistic data for the investigator.

Participant observation is a qualitative method appropriate for collecting data on behaviors of the participants. It aims to explore and understand the people’s perspectives and their interplay. This can be accomplished through observation alone or often by observing and participating; in participant observation researchers usually become members
of the group. This method allows to better understand the attitudes, relationships, behavior and can provide the information previously unknown to the researcher which can be crucial for the data interpretation (Mack et al., 2005). Meanwhile, the weakness of the method is that it is inherently subjective and requires conscious effort to tackle this issue.

Although the participant observation has its roots in traditional ethnographic research (Mack et al., 2005, p.13), the observation used in our experimental study cannot be classified as ethnographic. Ethnographic research assumes observation of people in their usual contexts, while it was not the case in our experiment. For our study it was rather important to see how the changed context affects the participants’ behavior and decisions. Participant observation was the core method of data collection applied in the research.

Focus groups and in-depth interviews are the methods providing the researcher with the deep information about a community or an individual. They are suitable for investigation of existing groups in their natural environment and are thus not appropriate for the experiment created in our research.

Questionnaires and participant observation methods were complemented with the semi-structured interviews and unstructured discussions with the experts in the areas relevant for the study, the literature analysis, and own experience and self-reflection during the study. The latter are considered as appropriate methods for qualitative research according to Strauss and Corbin (1998).

The interviews and discussions with the participants in the experiment aimed to build a better understanding of different sides of the research, the theoretical framework and the experiment’s results. Each interview was conducted separately by Skype or via email; the discussions were held in person or via email. The interviews were recorded by software (when via Skype), while the discussions were reflected upon later by the researcher. The fields represented in the interviews and discussions are outdoor experiential learning practices for influential officials, learning processes for transformative change, reconnection with nature and awareness training, communication and facilitation work with political actors, personal transformation and mindfulness, bodily arts, communities attempting to live alternatively to neoliberal values. The collected material was not only used for the data analysis and concluding the results of the experiment, but also for building deeper personal insight about the topic in order to conduct the study.

3.1.3. Design of the Experimental Study

3.1.3.1. The setup of the experiment

The experimental research featured a pilot study with a small number of participants. The goal was to test if the different context and methods of communication can affect individuals’ decision making. The study aimed to register the difference between the participants’ behavior and decisions in two different settings.

The participants were invited initially to a role-play workshop concerning a development case. This was then followed by a 3-day course in a natural environment which
was discussed in the development case at the role-play workshop. During the 3 days various exercises were used to facilitate integration with the natural and social context of the case which participants were supposed to take decisions on. The results were registered through the twice repeated questionnaires about their decisions on the same case: the first time at the workshop, the second time in the end of the 3-day outdoor experiential course. Additionally, follow-up discussions for reflections were arranged 10 days after the course. Both questionnaires and participant observation, as well as the results of the follow-up meeting were considered in the data analysis.

As Mack et al. (2005) note, in qualitative research the study design is usually iterative and the experiment is adjusted on the way according to what is being learned. This consideration is relevant for our study as the initial plan was evolving and altering during the process of preparations and the experiment itself.

All in all, the experiment and its setup in practice consisted of the following stages:
1. The general design of the experiment (goal, idea, process);
2. Specification of the place and duration for the outdoor experiential course;
3. Searching and recruiting the focus group;
4. Adjusting the experiment design to the real conditions of the group and possibilities;
5. Detailed design of the activities;
6. First workshop with the focus group (the 1st decision making questionnaire);
7. 3-day outdoor experiential course in Charlottendal;
8. Contextual decision making (the 2nd decision making questionnaire);
9. Follow-up meeting (the questionnaire on opinions).

The theoretical framework and interviews with the experts in adjacent areas were used during the design of the experiment. One of the factors, which predetermined many aspects of the experiment, was the recruitment of the focus group.

3.1.3.2. Focus Group

The participants were invited to play the roles of influential political decision makers and this role-play had created two main requirements for the focus group. Firstly, they should be affiliated with politics or conventional economics, thus representing “mainstream” thinking (e.g. in questions of development, land use, neoliberal values). Secondly, the participants should have high ambitions in order to accept the roles of influential politicians. It had been recognized that it is impossible to involve real political actors in the study, therefore current and graduated students in political and economic sciences were invited.

Additionally to the “politicians” group, the crew consisted of two people having high ecological awareness and affiliated with nature and cultural values of the place were recruited. This helped building the team, integrating with local environment and conducting the exercises.

As the experiment was a pilot study, it aimed for a small group of participants. The general requirements for building the group were the diversity in gender and countries of origin. While the age did not play a big role in the experiment, it was preferable to have some age difference between the participants to make the group more diverse.
The main criteria for choosing between the applicants were study and work backgrounds and their ambitions for a future career.

Recruitment of the group became a long process. The link to the application form was spread through posters and the social media channels. It became a long process of searching, checking the requirements, choosing and approving the participants. Some of the applicants were considered to have “too green” thinking, while others had difficulties to free themselves for a 3-day trip (the requirements of high ambitions naturally brought us to busy people prioritizing their work/studies). From the workshop to the outdoor course the group changed from 12 to 8 people (including two facilitators and two ecologically-aware participants).

3.1.3.3. Preparatory workshop, story and role-play
The preparatory workshop was conducted in an official setting. It was based on a role-play in which the participants were representing political decision makers. As the decision makers, they were presented with a housing project proposed to be built within the “Stockholm expansion program”. The presentation included the details on the complexity of the situation, such as the demand for housing in a growing Stockholm, rich biodiversity in the area which would be threatened, as well as the local low-impact settlement and compensation promises from the building company, etc. (see Appendix I). The participants then were asked to make individual decisions on the case and to support their decisions with reasoning.

3.1.3.4. Three-day outdoor experiential course

(1) Charlottendal
The choice of location for the outdoor experiential course is crucial for the study, as the core of the research here is the integration of decision makers into the natural and social context of the case. In the process of searching for the place a few requirements were considered:
- mostly natural environment;
- attractive landscape with rich biodiversity;
- local inhabitants: small-scale year-round settlement in the area (farms or similar);
- social and cultural connotations of local residents;
- willingness of local inhabitants to host the research;
- geographical proximity to Stockholm area (economic and time reasons);
- infrastructure (possibility to easily get to and from the place, tourist accommodation, etc);
- potential threat to have a real construction project in the area.

The place meeting all the requirements was found outside Södertalje, a satellite town of Stockholm and is called Charlottendal. The location selected is a former big farm recently transformed into a small ecovillage consisting of 6 households, kindergarten and tourist apartments (Palojärvi et al. 2013). The location has historical features which give
it a beneficial aspects for the experiential course. It is characterized by ecological awareness: the residents are dedicated to reduce their carbon impact which is mirrored in their lifestyle, production and selling of solar energy, waste treatment, sharing economy and caring for cultural aspects. The area around consists of wild forest and agricultural fields (see map and photos in the Appendix II). Playing on Charlottendal’s name and the aim to connect the participants with the place, further in the text the outdoor experiential course is called Charlottendive.

(2) Exercises and Facilitation
During the course various facilitation methods and exercises were used in order to connect the participants with the place and to awake their deeper understanding of the larger ecological system — interconnected and stretching in time and space. The combination of activities aimed to achieve a few co-dependent outcomes. Firstly, they aimed to connect the participants physically and mentally with the place, its natural and social context. Secondly, the activities aimed to build the foundation for the insight of the whole — the interconnectivity of the larger system, including causal relations and the unity between the past, the present and the future. Thirdly, these activities were to awake the intrinsic values of nature, nature-human and human-human relations. For all these purposes there were no attempts to describe any theoretical concepts to the participants or to impose an opinion, but rather to stimulate the insights through embodied learning experience in the place, through play-like exercises and mindfulness practices. Connecting with the place, reconnecting with oneself and creating favorable inner environment were in the focus of the course and served both as the aims on their own and as the means for affecting decision making process.

The exercises, facilitated discussions and role-plays were touching different fields connected to deep understanding of sustainability. Some of the topics addressed were the history of the Earth and humanity and the contemporary civilization. Others were the current state of the planet and sustainability challenges brought up from different sides, for example through exploration of what one’s role in the possible change could be. Each activity was assigned special meanings within the course, varying from the team building and opening-up to exploring the analogies of the larger socio-ecological system. Casual activities also were filled with meaning, so even such thing as food became a connection tool: whether it was an evening meal cooked by local people from the local and wild-grown ingredients, or cooking the lunches together as the analogy of creating a new world from everyone’s input. Most of the exercises attempted to involve embodiment, the somatic focus on here and now. Different opinions, backgrounds and personalities were brought together and became parts of the course as much as the planned activities. One of the facilitators was an environment journalist and psychotherapist from the local community, while the second one was the researcher herself, trying to keep the neutral position and the link between the focus group and the place. The list and brief explanation of the activities can be found in the Appendix III.
3.1.3.5. Limitations and treatments

The setup of the experiment faced a range of challenges which could limit and undermine the performance of the study. Those limitations were “remedied” with other aspects of the experiment design.

One of the primary limitations was the short time of the course. Three days (2.5 precisely) is insufficient time for learning and connecting to the place in order to change the politician’s vision. However, the use of students instead of real political actors served to “treat” the time limitation, as students are supposed to be less cognitively resistant than real political actors. It became a trade-off between flexibility of the youth mind and the short time of the course.

The same time, using students instead of influential civil servants is a limitation itself. This apparently influences the results and it is difficult to predict how the course would go with real politicians. But in a pilot study, aiming among else to test the study design itself, the condition of inviting students was considered appropriate as far as the participants have suitable backgrounds and personal characteristics. To slightly treat the limitation and to bring the participants closer to the context of political decision making, the role-play approach was used during the first workshop.

The most challenging part of the experiment was the difficulty to recruit participants with strong commitment to participate in all the 3 stages of the study. There was a difficulty to find participants who met the requirements and could dedicate their free time for the 3-days trip. Additionally, the days for the course had to be chosen in the very busy time for students. The recruited group was changing multiple times prior to the experiment and some of the participants accomplished the workshop part but were not able to join the course. There is no real treatment for this adverse aspect, only the humility to accept the changing circumstances and the willingness to work with what is at hand, as well as being able to adapt to the changing conditions.

As Robson (2002) highlights, in flexible designs it is especially important to strengthen validity as the research becomes subjective due to the researcher’s central role in the experiment. Validity can be strengthened by providing accurate and complete descriptions; checking data with the participants, being able to see biases and modify the interpretation throughout the participation, considering alternative explanations especially those which do not fit with the researcher’s vision and using data triangulation (Robson, 2002). The experiment attempted to fulfill these recommendations in data collection and analysis.

3.2. Data analysis

3.2.1. Workshop and Charlottendive

To identify the results and conclusions from the experiment, the diverse data collected throughout the research was analyzed. This section describes the approach used for the data analysis.
The aim of the empirical part was to test the possibility to affect decision making through embodied contact with nature and context. It is not only the final decision which can reflect the change in decision making, but the whole cognitive process prior to the decision, behavior and considerations about the case, and even post-decision reflection. Therefore, in order to find if there was any effect in the participants’ decision making, the analysis of their written decisions was complemented with the analysis of participant observation notes, as well as notes from discussions and reflections. As Robson (2002) notes, in qualitative research the obtained data, which comes in form of many pages of text, should be streamlined into a definite pattern — the representation of the theory or systemic issue. The data for the analysis was collected in forms of (1) written questionnaires asking for decisions on the case (construction of a housing project next to Charlottendal): questionnaire 1 (Q1) during the first workshop and questionnaire 2 (Q2) in the end of Charlottendive; (2) the follow-up questionnaire on participants’ reflections and opinions; (3) the participant observation throughout the experiment conducted and noted by the researcher. Another piece for analysis was the outcome of a creative exercise in the end of Charlottendive. These harvests were analyzed to identify the general pattern, either confirming or contradicting with the theoretical framework. The analysis aimed not to be conducted as a sequential process but rather attempted to interweave data from different documents, to convert it into the united source of information, confirming (or not) the individuals’ change and the general pattern of the study.

The analysis started with looking into each individual’s case separately. Q1 and Q2 for each participant were juxtaposed and their decisions before and after Charlottendive were compared. The findings were integrated with the analysis of the follow-up questionnaires and the observation results, which was an important step. The observation itself included not only visual evidence, but also the emotional side of the events. For analysis the frameworks from the Theory were applied: the Theory U and the concept of dual decision making were used to recognize which cognitive, mental and emotional processes were happening or not happening during Charlottendive. The analysis did not require coding as the size of the focus group for this pilot experiment was small. Lastly, all individual cases were abstracted, summarized and analyzed all together to identify the general pattern and draw the conclusions.

3.2.2. Interviews and discussions

Interviews and discussions were conducted in different times of the study and addressed different sides of the thesis with regards to the interviewee’s field of expertise. The recorded interviews were reviewed and transcribed. The most relevant information was highlighted and abstracted. Appealing quotations were chosen as the proof points. The discussions with the experts in relevant fields were conducted in open and unstructured way and the insights from them were used by the researcher for building better understanding of the field. Each of the interviews and discussions was analyzed firstly separately and then mapped to the domain of the research. The information from the interviews and discussions was then integrated in the Theory and Discussion chapters.
3.3. Results

The overall goal of the experiment was to test the possibility to affect decision making. Concluding from the hypothesis, the shift in decision making is the result of deep learning and the transformative change. However, such transformative change consists of different facets. Charlottendive aimed to address these facets, which resulted in the following anticipations:
- to connect the participants with Charlottendal’s natural and social context on somatic, mental and emotional level;
- to induce the feeling of the affiliation with nature;
- to stimulate deeper understanding of the larger ecological system;
- to awake the intrinsic values of nature and biodiversity, as well as of nature-to-human and human-to-human relations;
- to raise the insight of the interconnectivity in the larger system;
- to provide the foundation for reconnecting with oneself;
- to create good inner environment;
- finally, with help of all these, to affect the participants’ decisions.

After data analysis, it is concluded that some of the anticipations were fulfilled completely, some were partially, and some were not met. The results will be described in the frame of these anticipations. Firstly we will look into the aspects of the personal change, then into the decision making process.

3.3.1. Personal Change

First of all, one could observe a vibrant change between the arrival evening and the last morning of Charlottendive in terms of how the participants were acting and relating to the place. The participants became more open to each other and comfortable with the place but what is remarkable, more relaxed about themselves. Throughout the course the concept of different identities was addressed, bringing attention to the issue of the roles and duties one has in the contemporary society. These roles often limit us to the pre-established paradigm of decisions and behavior. Becoming free from some social constraints was reflected in the participants’ rested behavior and open, sincere discussions and expression of themselves later during Charlottendive. The exercises had not aimed to uncover the deep inner identities from the social roles, but to alleviate the limitations one has in everyday life, to underline the gap between what you are required to do in your life and what you would love to do. Letting go of the social constraints, at least partly, is a prominent step in the U-process. We can conclude that this aspect was fulfilled during Charlottendive.

Creating good inner environment, or more precisely, creating the ground for the good inner environment to emerge, was in the focus of Charlottendive. Comparing to the arrival, gradually the participants obtained a relaxed behavior, more open postures and gestures, more openness in topics of discussions, they started to be more autonomous and rested. As one of the participants said in the follow-up discussion, they switched from
intensive life to more relaxed and peaceful mode. Another participant mentioned that he appreciated that they got the great opportunity to feel free, to speak openly and to be heard. Still, there was a place for “overcoming some unease”, according to the participant. There was the trade-off between the participants’ increased openness and relaxing on one side, and the remaining inner discomfort of being in a new setting, with the amount of new information on a conscious and an unconscious level, with unusual condition of being part of the experiment, on the other side. All in all, from the observation, comments and follow-up discussions we can see that the participants were feeling rested and calm, which is a significant feature of favorable inner environment, but this state did not reach such level it would change perception.

As the participants were spending more time at the place, through exercises and discussions they were bringing up more and more of their personal experiences and feelings. Getting to know the place does not imply feeling good about it. But as the group went through diverse experiences in the local context, it was possible to conceive the affiliation with the place in the short time. One could observe that during the course the participants were relating to Charlottendal in a warm, positive and enthusiastic way. For instance, one of the participants asked for the opportunity to visit the place later with their spouse, another participant returned a few weeks later and one more chose to stay an extra day after Charlottendive. Also, when in the last exercise the question about the wishes for one’s desirable future place/way to live was asked, most of the participants mentioned the features that can be recognized in Charlottendal (it is not possible though to tell if the participants had the same perspective before the course or not, but it proves that they reflected positively on the place). Furthermore, the participants felt positive about the social context of Charlottendal, where the local families live in close contact, share certain duties and celebrations. In the follow-up discussions the participants replied that they should have spent and would like to spend more time with the local inhabitants. It was not stated in the initial goals, but during the course the term of “community” became central for many discussions, it became a thread line in the course. The community/cooperation/sharing/togetherness aspects were also observed in the result of the last exercise (mapping of the answers about a desirable way to live).

Regarding affiliation with the larger ecological system, it is difficult to say if the participants were feeling connected with nature in a broad sense. They enjoyed the long walk in woods and their short solitude time in nature. But it is a typical pattern of people’s feelings toward nature (considering that the weather was favorable), and does not illustrate the feeling of being connected to nature as a whole. However, the natural environment — rich forest, natural landscape, pond and fields — were surrounding the participants all the time and providing the deep sense of “wonderfulness” of nature. In the final exercise multiple participants mentioned natural environment (even when close to infrastructure), wild nature, natural materials, sea/lake, natural food. From this we can conclude that at least when being at the natural surroundings, the participants felt attracted and affiliated to nature.
The level of understanding the interconnectivity and wholeness of the system is challenging to trace in the data, but at least the unity of time was acquired: in the “past-future” exercises it was noticeable that the participants grasped the connection of our present actions and the future we create; during the Gaia walk (representing the history of life on the Earth in kilometers of walking, see Appendix III) the participants received and reflected upon the impression of humanity’s place in the planet’s history. The interconnectivity, or wholeness of the system, is the sense developing through a longer process of reconnection with nature and oneself and through reflections. We must admit that the course was not sufficiently long to induce this deep and holistic feeling of the unity.

From talks, exercises and the final decisions it was noticeable that the participants’ value of nature, human-to-nature and human-to-human relations was at a high level at the end of the course. The anticipations of bringing people closer to nature and other people, of touching their emotional field and awakening the intrinsic values, were met.

The described aspects of the personal change are the basis for the left side of the U-process. In an ideal case, through the left-side journey a person comes to deeper understanding, the feeling — close to the somatic sense — of what is to emerge (Scharmer, 2007). During the course some of the aspects were accomplished, but the whole path from suspending to letting go of old identities was not executed (primarily, because the course initially was not designed to follow the U-process). However, during the exercises one could notice the feeling of the demanded “coming change”, the understanding of the need of transition from the current state of economy, society, politics to another way of managing the planet and society. This feeling was observed in discussions and in the “past-future” exercises. From the observations and results of Q2 it is concluded that the feeling was not deeply rooted and far from the insight appearing “in the bottom of the U”, but it was a step in opening up for a new perspective. Certainly, it was the experience of learning — learning not from facts and verbal reports but learning from the context and ourselves. And it was the change in the personal feeling which is difficult to verbalize: the difference between the inconvenience of the first evening and the joyful laying in the grass a day later. The inner environment, the relations to the place, affiliation with nature and understanding the larger system — all these aspects are related to the cognitive processes, and were reflected in decision making.

3.3.2. Decision making

As described in the theoretical part, decision making involves the intuitive heuristics-based System 1 and the logical controlling System 2 (2.1.1). In order for decision making to be profoundly changed, both Systems should acquire reformation. The impressions for System 1 arise naturally from experiences and develop beyond analytical thinking. System 1 is related to the emotional field, sensing, somatic involvement, feelings and intuition. It does not follow verbal instructions, but is sensitive to human experiences. Charlottendal’s activities focused on creating the new impressions for the System 1 through
the exercises and close contact with the natural and social context. The outdoor experien-
tial course directed attention to the sensing which develops through human-to-nature, hu-
man-to-human and human-to-self relations.

Meanwhile, System 2 is rational and pragmatic. System 2 is the set of categories and rules established in the overall system — what is rational and what is not. As described previously, when the stake are high, logics and rationality repulse the intuitive senses. While the participants’ Systems 1 were affected by the place and context, the responsible decisions (like one they were required to make) activated System 2.

Both System 1 and System 2 can re-learn — and this is deep and transformative change, mirrored in the U-process. When they reform synchronically, the new information for System 2 (what is thought to be right) is combined with new impressions from System 1 (what feels right). But prior to accepting a new paradigm, unlearning the existing canons is required. It needs human experience and emotional involvement for System 1 and clear information for System 2, plus time, reflection and mindfulness about one’s state. Apparently, not all the conditions for this enormous process were provided in the course. It was possible to awake the intrinsic values and raise new impressions about the place (System 1), but when the time for decisions came, controlling logic-based System 2 took over. As one of the participants reflected in the follow-up questionnaire, “you guard yourself not to be narrowed to here and now as you know that this place affects you”. However, not only the participants’ decisions were changed, but even the way of considering the problem.

Comparing Q1 and Q2 it is noticeable that after the course the decision makers took more aspects of the context into account. They also demonstrated giving more value to nature (forest, species biodiversity) and to the local community. In Q2 the participants include more arguments, considering more sides of the problem and trying to find an optimal solution in the complex system. The housing project is still approved by most of the participants but they propose new requirements, conditions and ideas. In the Table 2 we provide 3 examples from the questionnaires (summarized) to illustrate changes in the decisions.

Table 2. Examples of comparing the participants’ decisions from Q1 and Q2.

<table>
<thead>
<tr>
<th>Participants</th>
<th>Decision in Q1</th>
<th>Decision in Q2</th>
</tr>
</thead>
<tbody>
<tr>
<td>Participant 1 (male, 28, background in economics and management, international economy, marketing).</td>
<td>&gt; The housing project is approved; &gt; The proposal is to extend the housing area to include the farm as well. Argumentation: the local residents will not be comfortable with the housing project next to the farm anyway, so it is easier to give them compensation for finding a new place.</td>
<td>&gt; The housing project is approved; &gt; The housing project area is possible to be reduced; &gt; using fields areas for building instead of the forest; &gt; considering each tree as valuable; &gt; new options for using landscape features to make it comfortable for the locals and new residents; &gt; request for innovative approach, not a model project;</td>
</tr>
</tbody>
</table>
| Participant 2  
(male, 30, background in political science and economic development) | > The housing project is unconditionally approved. 
Argumentation: increasing demand for housing | > The housing project is approved; 
> request for proper follow-up procedures to ensure protection of the vulnerable species; 
> request for participatory design and cooperation between the developers and local residents for “maximizing well-being of both old and new residents” “because they have “valuable knowledge about local conditions and history”” 
> fair compensation based on the mutual agreement with the locals; 
> the moral imperative is considered; 
> focus on that the local residents should be able to preserve their lifestyle and moreover they have right to expect from the new residents to maintain local living styles (within reasonable limits). |
| Participant 3  
(female, 25, background in economics) | > The housing project is unconditionally approved; 
> positive reflection on the project; 
> proposal to build also shopping center, parking, sport, amusement and kids facilities; 
> appreciation that the building company promises to use green technologies and give the compensation to the locals. | > The housing project is not approved before re-evaluation; 
“I want the political decision makers to take more time and rethink the project” 
> the request to look for alternative solutions in other areas; 
> the request to reevaluate the project and agreement to approve only if there is no better alternatives 
> in case if is however built, the compensation should include not only what can be count in monetary terms (environment, nature, feelings, pollution). |
In their decisions after the course, the participants clearly demonstrated the increased value of the environment, comfort and feelings of the local community, participatory practices and cooperation, vulnerable biodiversity, public health, ecology, intrinsic values, ethics. As we see, it is not the decision about approving or not the project, but the whole way of thinking about the project. In Q2 the participants consider its different sides (local residents’ life, housing demand, nature, cultural context of the place) and recognize more carefully the future after the project is built (materials recycling, new residents’ lifestyles). An interesting point to emphasize is the time spent on the decision by one of the participants: the participant spent about 5 min on Q1, while for Q2 he spent around 40 min (footnote: even risking to miss the final meal before the departure). It is interesting to notice that the decision in Q2 remained quite short, but the time taken for decision making increased significantly. It can illustrate how much more complex the person saw the case after the course and how he addressed the decision more responsibly. The further interpretation of the results is presented in the Discussions chapter.
4. Discussions: the Complexity of Simplicity

The study develops the concept of “body-environment dialogue” and tests it with the pilot empirical experiment. The “environment” refers to the context of the case requiring a decision. It includes physical, natural, social, cultural and mental environment, and can also incorporate other aspects such as historical, political and emotional connotations. The “body” refers to the embodied mind of the decision maker — the interaction of body and cognition, of mental and somatic processes co-influencing each other. The “body” is a receiver of inner knowledge which is to be conceived through experiences in the “environment”. The inner knowledge, or natural wisdom, is characterized as deep understanding of the wholeness and interconnectivity of everything — what in the beginning of the thesis was defined as the holistic vision. Such vision is related to systems thinking but grounded into profound sensing of the system’s interconnectivity and its intrinsic values.

The empirical part aimed to test the possibility to affect decision making with the outdoor experiential course based on the body-environment dialogue. To discuss the possibility to use the study’s results, we will first outline positive findings of the research and then move to the critique.

Non-verbal communication, which is based on somatic and mental interaction with the context, is proved to be an appropriate tool for learning and receiving information naturally, beyond verbal explanations. The experiment’s results demonstrate certain change in the participants’ decision making: after the course the participants showed more careful and attentive consideration of the problem. In their decisions they brought up the topics which they had not addressed prior to the course: the value of nature, the local community’s feelings and the perspectives for the place’s future (see Results, 3.3.2).

The reasons for the change in decision making are affiliation with this particular place and context, better understanding of the case and circumstances, and the reminder of the intrinsic value of nature. Delivering of these aspects can be seen as an accomplishment of the course’s aims. However, the changes in the decisions were not due to “the profound transformation” in one’s insights. Charlottendive was not designed for the U-process, but rather for bringing people closer to the context of the case. Better understanding of a particular case is important for a good quality decision, but it is not what should be done for the holistic reformation of political and administrative decision making. Affiliation with one particular case does not provide a firm ground for good decision making in other cases. What is needed, is the change in both the intuitive System 1 and the logical System 2, the transformation in perspectives and values, personal sensing of the interconnectivity of the global system, the feeling of oneself as an active part of the world. Such deep change in the perspectives would be the basis for high quality decisions regardless of a case’s specifics. To put it simply, it should be not so much the affiliation with the particular context that changes the decision making, but the deep all-inclusive insight, the confidence in values, long-term thinking and awareness of the larger ecological patterns. It would ensure the change not for some cases, but for the overall approach of political decision making.
Perhaps, the experimental course could deliver such outcome if it had been designed for that purpose initially. But the initial aim of the experiment was to test the change in decision making in different communication settings and affecting it through non-verbal experiences. The theoretical and the empirical parts were developing synchronically, therefore not all insights from the theory could be embedded into the empirical part.

Although the designed pilot study is considered a working model for studying the transformation in decision making, there is certain critique. Using the framework of this pilot study, but adding more focus on the U-process, addressing more the participant’s Systems 2 and recruiting real-life influential decision makers from political, municipal or business spheres, could alter the results significantly. On the one hand, strengthening the focus on the Theory U and considering more the specifics of the dual decision making would likely improve the results of the experiment. On the other hand, working with real politicians and civil servants would bring more challenges to the experiential course and completely change the outcome and the course of the exercises.

Also, a question remains regarding the sustainability of learnings: how long Charlottendive could affect the participants’ decision making. It is questionable if the results would have the effect only short time after the course while the impressions are “fresh”, or if they could be sustained, or if they would even develop after time and reflections. As it is difficult to say currently, another discussion with the participants is planned to be implemented four months after the research. The goal is to collect the long-term impressions from the experiential course and to see if any of activities would leave lasting memories and changes in one’s considerations.

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The broader insight and deeper awareness, not bounded to one particular case but built as a strong ground for overall decisions, should be the base for political and administrative decision making. But the holistic vision should be taught not only to the existing influential decision makers; it is the task for the whole population from which the decision makers come. The shift in the whole society is required, beginning from childhood and primary education. Only after having this shift in values and awareness, it is possible to talk about sustainable development. It is gradual and laborious process, demanding time, an educational strategy and understanding of the required methodology. Meanwhile, the shift in the strategies requires aware political and administrative decisions to build and implement the new strategies. It becomes a positive feedback loop, where good quality decisions reinforce the shift in the whole social system. This is why bringing awareness and deep understanding to the current decision makers is seen as an initial path to the global shift towards more sustainable world. Reformation of the existing socio-political-economic system in this case would begin from within the system itself.

There are certain practitioners and organizations already working with influential officials in nature, proving the feasibility of the awareness training (Örtqvist, 2015; Alsfold et al., 2013). There are also organizations facilitating communication with the authorities, using inter alia physical aspects while working with the decision makers (Bottone, 2015a). These organizations and their approaches justify the possibility to transform
perspectives, strategies and political decisions. However the field is pioneering and is not widely accepted as training for officials prior to decision making.

To transform the pattern of political decision making by leading each political entity through deep learning would be a laborious and hardly possible approach. Fixing the decision making process through the U-process and reconnection with local contexts for each political entity is comparable to treating each single individual from diarrhea instead of the prevention of the disease by supplying clean water and adequate sanitation. It is possible to treat the disease afterwards, but the prevention is obviously easier, smarter and more efficient. The transformation of political decision making should go not through “healing” of decision makers but through changing the structure beyond political decision making. Instead of attempts to conceive the “inner knowledge” in influential politicians, a natural way of more holistic decision making should be discovered and arranged. In order to increase the quality of political decision making in terms of sustainability and resilience, the entities with inner, experiential, knowledge of the local social and ecological systems should be involved. The problems of political decisions are amplified by detachment of decision makers from experiential understanding of the contexts and connotations. In our study we observed positive results of reconnecting decision makers with local environment — how more holistic and inclusive their considerations became. However, “reconnecting approach” would not always be possible in the real settings, and would not always have positive outcome. Instead of transmitting the local inner knowledge to influential politicians, the solution is rather to strengthen the role in decision making of local communities acting on the base of ecological and social awareness. Community-led initiatives should be mainstreamed in policy-making: top-down approaches must be combined with bottom-up initiatives (Clarke, O’Hara & Campe, 2015). The cooperation approach and empowering of local initiatives would bring the connection with local wisdom and values into broader perspective of national/international political decision making. Making decisions outside the context and not involving local actors and local knowledge is a superficial way of decision making, destined to fail in terms of resilience and sustainability. In this case, the coalition of organizations supporting community-led initiatives for sustainability and bridging them to the top-level policy makers (ECOLISE, 2015) is considered as an example of a valid approach.

Two of the discussed approaches — deep learning of influential decision makers and empowering community-led initiatives — are not contradictory. Rather they are two sides of one process, the process of deep transformation of the current political decision making.
5. Conclusions: Touching Mind

There are different types of knowledge. We humans constructed the whole structure of knowledge creation, observing the reality, extracting a discrete pattern, modeling the world and setting experiments in a laboratory. We live in the era of science which brings us advantages of technologies, and these we believe to be good for us. We undoubtedly have made enormous achievements during the last thousand years and we are accelerating to achieve even more. But scientific, empirical knowledge is only one type of knowledge accessible by humanity. We have accumulated the knowledge in labs, but we lack the understanding of how different pieces of knowledge come together. By fixing energy production in one place we end up with a war in another. Converting forest into agricultural land to grow food we are ultimately destroying the eco-system services of pollination and water purification and end up with even larger gaps in food supply. We see solutions in the things that reinforce crises in the long run. We are realizing there are certain problems in the world and we try to do something about them, designing more and more sophisticated crutches. But the world is still falling apart with climate change, species extinction, resource depletion, losing nutrients from the Earth, poverty, refugees, violence, physical diseases and mental disorders looming.

To use the achievements of scientific knowledge, we need to understand what the global system is, how things are interweaved and what we are in this system. Unlike the scientific knowledge, the deep understanding of the system does not come from laboratories and modeling. We cannot create the inner knowledge. But we can allow it to emerge.

We, as human civilization, have for centuries been disconnecting ourselves from nature. We surrounded ourselves with many qualities which we do not need. We disassociated our minds from our bodies, relying on brains but disregarding our natural way of knowing. When an infant is coming into the world, s/he is subjected to repeating the same mechanism of detachment from him/herself, to imposing the existing models of knowing and neglecting the natural capacities. Each single person
has the innate ability to comprehend and sense — on mental and bodily level — the wholeness of the global ecological system and the active connection between oneself and higher levels of it. In many cultures this connection to something bigger is seen as god or spirit, but it is basically the ability of humans to feel integrated in the global web of life, to sense the synchronicity of processes in the system, mental and physical ones. This is nothing mystical or spiritual but merely realizing our cognitive capacities, multiplied through collective actions.

In a world facing sustainability challenges at the level that has not been seen before, we cannot continue the reductionist vision of the systems and ourselves. The spiral of global patterns starts from decisions, from an individual’s interactions between System 1 and 2, grounded into interplay of a decision makers’ outer and inner environment. Ironically, sustainability and resilience of the world in many cases depend on the inner condition of individuals. The shift in political decision making starts from personal transformation. It is the matter of deep understanding of the system’s wholeness, awakening of oneself and sensing the intrinsic values. The quality of decisions is grounded into decision makers’ good inner environment — the possibility to be rested, centered and mindful about one’s thoughts, choices and actions. It is also the matter of communication with the decision makers; as one of the interviewees framed it, there are two rooms in the officials’ minds: working with political/administrative actors, you firstly enter the room of their official duties and roles. But if they trust you, they allow to enter the second room, where they are simply humans. Working with them from within the second room allows to altering insights and decisions (Bottone, 2015b).

To be able to sustain the ecosystem, to regenerate its damaged sides (natural and social ones) and to transition to the more resilient future of humanity, we urgently need to integrate deeper understanding of the whole Earth system into influential political and administrative decision making. Some sides of this understanding do not come intellectually but are comprehended through somatic awareness. Good inner environment, connection to nature and oneself, and mindfulness about one’s thoughts are the ground for the knowledge to emerge.
References


**Appendix I**

The First Workshop (Roleplay and Q1)

Date: 13th and 21st May 2015 (the same session for two groups of people) | Time: 70 min
Place: The facility of Uppsala University. Von Kraemers Allé 1A, Uppsala, 752 37
Setting: Official, detached from the case context. A standard room, white boards, chairs and walls, a dispassionate way of talking.

During the first workshop the participants were involved in the role play where they were representing influential decision-makers. The participants were asked to make their individual decisions on the case — a proposal for construction of a housing project in underpopulated area (the surroundings of Charlottendal). Brief descriptions are provided below.

**Content:**
1. Housing project: case for decision making (brief explanation)
2. Role-play (brief explanation)
3. Questionnaire

1. Housing project: case for decision making (brief explanation)

**Background: Stockholm population growth**

Stockholm is one of the fastest growing cities in Europe. With its present population of 897 000, around 30 000 people move to Stockholm each year. The city's Chamber of Commerce has reported that by 2030, the Swedish capital will overtake London as the fastest growing city in western Europe, mostly due to immigration. The Stockholm municipality is expected to grow to 1 million by 2019. By 2030, Stockholm will be home to half a million more inhabitants than it is today and will reach the population of 3 million by 2045 [1], [2]. Due to the fast population's growth, more living areas are demanded. Various projects for Stockholm's expanding has been created, most of them are waiting for approval from the municipality and county council. One of the projects is STHLM-Söder (STHLM-South). It proposes the city's expansion to the East-South in order to convert natural area of low-density population into a living suburb with new accommodation facilities and modern infrastructure.

**STHLM-Söder**

STHLM-Söder is a big elite housing project, which suggests the construction of 500 apartments the South-East from Stockholm. The project suggests to turn low-density area into a modern suburb. Newly constructed premium-class apartments will give home for 5 hundred Stockholm families. Up-to-date infrastructure will be constructed in order to connect the suburb with the city and to ensure the high quality of life and access to all needs (Fig. A1). The project will provide first-rate comfortable living space and additionally generate significant profit and opportunities for municipal development through new infrastructure in the area. The options to create shopping centrum, sport facilities and facilities for kids are also proposed.

![Fig. A1. A sample of STHLM-Söder houses from the project proposal](image-url)
Presently the considered area consists mostly of wild landscape complemented with agricultural fields (Fig. A2). It includes a low-impact settlement: a farm of 12 adults with children. Low-impact farm is a farm aiming to reduce its carbon footprint and the effect on the surrounding environment. The settlement includes 6 houses and a local kindergarten (Fig. A3). The housing project is going to be placed in the natural landscape and adjoin the farm in close proximity.

The natural landscape consists mainly of mixed forest with rich biodiversity, including rare species of beetles. The flora and fauna are probably to be threatened due to the construction process and converting natural area into urban zone. But use of high-innovative approaches with the focus on environmentally-friendly technologies (whenever possible) are promised by Skanska, the building company. The company commits to ensure that the rare species are moved carefully to new environment where they can thrive in safe conditions. The local residents are promised with fair compensation for all inconveniences during the construction period.
2. Role-play (brief explanation)

In this research, today and during our next meetings, you will represent influential decision-makers. Think of our meeting as a roleplay.

Imagine after your studies you were working as a project coordinator in big international company and built your career pretty fast. Then you also started your own business. The business went very well and you became a successful expert in many different fields. The things were changing in the life and due to your experience and social influence you were invited to political position, which you were happy to take as you have valuable knowledge and leadership skills and the job in politics values your experiences with a good payment. You still probably combine your political career with your business and now you are an influential official. Maybe you are in the board of Municipality or may be you at the County Administrative board. Think of yourselves as influential politicians who have power and responsibility for decisions.

This is Stockholm County Council building where decisions on the regional level are taken [image] and this is Stockholm Municipality, stadshuset, where the local decision are taken [image]. You can imagine yourself working here, or it can be the Council or municipality in your home country (for those who are not from Sweden) if you are more familiar with its system. The main thing is that from now and on you are one of those politicians who decide on what happens in your region. Now you will be presented a project proposal for your region and asked to take a decision on this project.

During the role-play the participants found their own area of responsibility on the political arena: they themselves came up with clearer picture of their political job — whether it is local, regional or global, what are the specifics and focuses, etc. The aim was to bring the participants closer to responsible decision making before they get the questionnaire.

3. Questionnaire (Q1, Q2)

As a political actor, you are responsible for making the decision on the project proposal.

What you have is the power. You decide whether to approve or not the housing project and on which conditions. You can come up with requirements for the stakeholders as well as with new ideas about the situation. You hold the power and the same time the responsibility for further actions. It is you who decide the future of this area.

* — mandatory fields

| Name, Surname | 
|---------------|---------------------------------|
| Your decision upon the STHLM-Söder project | *(can include any ideas and requirements for stakeholders)* |
| Examples of possible questions to consider | ? Should STHLM-Söder project be approved? ? Should STHLM-Söder project be declined? ? Should the existing situation be solved in a different way? ? Should be other conditions or requirements added, which if any? ? Should the project be expanded and take the space of the farm? ? Should the project be smaller? ? Should any specific requirements be considered for social or environmental aspect? ? Should the local residents get more compensation? ? Should the local residents get no compensation? |
| Etc... >> | |
| >> Your decision upon the STHLM-Söder project | *(can include any ideas and requirements for stakeholders)* |
| Description of the motivation for your decision/ideas | 
| Your comments on STHLM-Söder project proposal | 
| Your age and gender | 
| Your study experience | 
| Your work experience | 
| What do you want to work with | 

The results will be used for the research in communication and decision-making in political framework. The research is conducted in collaboration between Uppsala University and SLU. No results of collaboration will be used without beforehand agreement with the participants.

Feel free to ask any questions personally or via email: alisaderevo@gmail.com.
Appendix II

Location of the Outdoor Experiential Course (photos)

Date: 22-24\textsuperscript{th} May 2015 (a weekend trip)  
Time: 2.5 days  
Place: Charlottendals Gård, Södertälje kommun, 153 90  
Setting: Relaxed but with the structure of activities. Natural landscape (forest, fields, creek) and the environment of the farm (animals, self-built apartments and kindergarten, ponds, environmentally friendly technologies, local food).

Appendix II consists of visual information about the place and the 3-day experiential course. The map and some images of the place during the experiential course are provided to explain the local context visually.

*The map of Charlottendal’s location (surrounded with rich forest and fields, and no industrial constructions in the close vicinity)*

![Map of Charlottendal](image1)

![Sheep and flowers](image2)
Gaia Walk — measuring the history of life by walking distance (see Appendix III) to comprehend the share of the human civilization in the planet’s “biography”
Entrance to Charlottendal farm

Charlottendal’s kindergarten where the meals were arranged during Chalottendive course (photo from March, before green trees and grass)

Designing Gaia Walk around Charlottendal two months prior to Chalottendive. The spot symbolizes the unity of the dead matter and a new coming life.

The fake boat in the end of Gaia Walk (see Appendix III)
### Appendix III

**Charlottendive — Experimental 3-day Outdoor Experiential Course**

Besides the designed exercises, even the things like chores and food were parts of the experiencing the place. The weekend was a compromise between relaxed time and structured activities. The overall structure of the 3 days is described below. However, not all details are included in the table — it is not considered reasonable to describe each single moment of laying in the grass or all discussions under the weekend as well as the emotional background of the activities.

#### List of activities

<table>
<thead>
<tr>
<th>Time</th>
<th>Activity</th>
<th>Brief Explanation</th>
<th>Meaning</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Day 1</strong> (from 18:00, after the train)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1,5 h</td>
<td>Arrival</td>
<td>Arrival and getting to know the place / meeting the local facilitator / fika in the greenhouse / Charlottendal’s stories / walking around (houses, animals, kindergarten, apartments)</td>
<td>Landing, getting familiar with the place</td>
</tr>
<tr>
<td>20 min</td>
<td>Intro</td>
<td>Introduction of the study project / Goals and agreements (hosting ourselves, the plan briefly, mobile phones use, etc) / leaving social duties outside the place</td>
<td>Description that the project does not anticipate something from the participant, neither the place dictate any rules of behaviour. The “offer” to be free and oneself.</td>
</tr>
<tr>
<td>30 min</td>
<td>Facilitation circle #1</td>
<td>Personal introduction / sharing something that made you happy/fascinated recently (3 min each)</td>
<td>Getting to know each other not from the social roles but from what we care about</td>
</tr>
<tr>
<td>1,5 h</td>
<td>Dinner</td>
<td>Food — vegetarian, local, 75% made of wild plants / Discussions on each other’s roots (nationality, place of birth, family, parents and ancestors)</td>
<td>Appreciation to local and ecological food, to wild edible plants. Introduction into everyone’s story.</td>
</tr>
<tr>
<td>30 min</td>
<td>Cleaning up</td>
<td></td>
<td>The first hands-on chore together</td>
</tr>
<tr>
<td>1,5 h</td>
<td>Crises of the current global reality</td>
<td>Discussions on the current state of the world: what human nature is, apartheid from nature, global acceleration, concentration on material means, neoliberal system, resource depletion, economy with or vs society, etc.</td>
<td>The first connection to the sustainability issues. Generating a little “crisis” and tension, emotional involvement in the theme. No concrete proposals, but creating the space for reflection on these topics.</td>
</tr>
<tr>
<td></td>
<td><strong>Bonfire</strong></td>
<td></td>
<td>(Too late, too cold, the group decision to get to the apartments)</td>
</tr>
<tr>
<td><strong>Day 2</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1,5 h</td>
<td>Relaxed morning. Breakfast (kindergarten)</td>
<td>Making breakfast, meeting local inhabitants</td>
<td>Note about making the breakfasts ourselves: Sometimes the things happen for us and we take them for granted, but most of the time we need to make them ourselves.</td>
</tr>
<tr>
<td>20 min</td>
<td>Cleaning up, Energizer</td>
<td>Activating sleepy bodies</td>
<td>Energizer (here and later): brief games (e.g. playing animals) for awakening the group when the energy is low</td>
</tr>
<tr>
<td></td>
<td>Arrangements of the day</td>
<td>The day plan / Responsibilities distribution (time-watcher, vibes-watcher, place-watcher...)</td>
<td>The sense of responsibility for a particular part of this weekend</td>
</tr>
<tr>
<td>30 min</td>
<td>Facilitation circle #2</td>
<td>Circle: “Me-in-it” stories: To pick an object from your life which is important to you and describe its story and meaning of itself for you (imaginarily place it in the circle to show everyone)</td>
<td>Bringing more personal (inner) to the place through the meaning of the objects, sharing your stories (E.g. we had an axe for building own dwelling, a self-made drum, a boat for sailing, a broken TV as a challenge to fix, gifts from traveling, etc)</td>
</tr>
<tr>
<td>20 min</td>
<td>Joanna Macy Milling exercise</td>
<td>Nonverbal exercise based on a story by a facilitator for encountering each other in increasing pace (the role-play of city rush) and slowing down, encountering other people personally as humans</td>
<td>Illustrating the difference between our usual pace in cities, neglecting other people and our natural relations to other humans, seeing them as another complete person and soul</td>
</tr>
<tr>
<td>30 min</td>
<td>Descenders exercise</td>
<td>Role-play in pairs where one is from 2015 and another is from 2150 — asking the descendents what happened to the planet</td>
<td>Bringing a person to the thoughts of what place the Earth is going to be, what is the role of everyone, what changes can be done to make it a better place.</td>
</tr>
<tr>
<td>30 min</td>
<td>Introduction to the inner transition</td>
<td>The talks on inner (personal) resilience and sustainability, different personalities and identities, staying away from pain and away from possibilities</td>
<td>Shifting focus to our inner condition and perspectives about oneself</td>
</tr>
<tr>
<td>Time</td>
<td>Activity</td>
<td>Description</td>
<td></td>
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<td>-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------</td>
<td></td>
</tr>
<tr>
<td>10 min</td>
<td>Reflection</td>
<td>Group talk</td>
<td></td>
</tr>
<tr>
<td>1.5 h</td>
<td>Making lunch together from the scratch</td>
<td>Cooking lunch from the existing variety of ingredients and tools / Alive interaction / Ideas, implementation</td>
<td></td>
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<tr>
<td></td>
<td></td>
<td>A hands-on chore, finding your own place in the group dynamics (leader? Implementer? One who brings music and speakers?). Note about making the lunch: Life, politics, business — it is what we put into it. We’ll have different “ingredients” and different opinions about what and how to cook. But we need to find the best way to collaborate, to use our inputs and to get a good result.</td>
<td></td>
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<tr>
<td>1 h</td>
<td>Lunch, discussion, cleaning up</td>
<td></td>
<td></td>
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<tr>
<td>40 min</td>
<td>Excursion around</td>
<td>Excurion to the farm’s technologies (waste treatment, solar energy)</td>
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</tr>
<tr>
<td></td>
<td></td>
<td>More knowledge about the place and the local relation to the sustainability issues.</td>
<td></td>
</tr>
<tr>
<td>20 min</td>
<td>Prior to Gaia Walk</td>
<td>Starting from Fornborg / short intro to the old history</td>
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<tr>
<td></td>
<td></td>
<td>Shifting the perspective from the present farm to the historical moments and meanings of the place.</td>
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<tr>
<td>3 h</td>
<td>Gaia Walk</td>
<td>The long walk in the forest around the farm through the milestones about the history of life on the earth. 4,5 km of the walk mirror years of the planet history. The milestones are placed respectively to their length in the Earth’s history. Starting from the first bacteria, going through all revolutions and extinction, we finish at the human civilization. On the way we also meet various patterns of nature.</td>
<td>Walking the path through nature ourselves (body experience) we feel the distance and can bodily comprehend the length of the milestones. When after 4.5 km of the life story we come to the first hominids, which are only 13 mm and to the human civilization which is only 2 mm, we comprehend how tiny share of the planet’s history humankind takes.</td>
</tr>
<tr>
<td>30 min</td>
<td>The Walk’s finish: the boat</td>
<td>Finishing the walk back on the farm (totally about 6 km of walking in nature with multiple stops and reflections / Ending up at the fake ship made for kids / Discussions and reflections)</td>
<td>The fake ship is the image of how humans reign the earth — feeling ourselves the captains with the ruling device, while our boat is just a fake created by ourselves.</td>
</tr>
<tr>
<td>1 h</td>
<td>Mindfulness session</td>
<td>1. Silent meditation in the upstairs room</td>
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<td></td>
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<td>2. Body scanning (alike yoga nidra practice)</td>
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<td>3. Slow walk outside, feeling the soil and the body</td>
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<td>Time for mindfulness, meditation and self-reflection. The inner environment.</td>
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<tr>
<td>1 h</td>
<td>Dinner</td>
<td>Food / Discussions</td>
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<tr>
<td></td>
<td></td>
<td>Appreciation to local, vegan, ecological food, and local people labour.</td>
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<tr>
<td>1.5 h</td>
<td>Afterdinner discussions</td>
<td>Long, deep discussions on the private topics</td>
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<tr>
<td></td>
<td></td>
<td>The spontaneous discussions became a real opening up of the group and individuals.</td>
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<tr>
<td>2 h</td>
<td>Sauna and cold pool</td>
<td>Hot sauna and jumping to cold pool outside (the air temperature is about 10°C)</td>
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<tr>
<td></td>
<td></td>
<td>Opening up, strong somatic experience.</td>
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<tr>
<td>2 h</td>
<td>Bonfire</td>
<td>Circle: Native american tribal singing and drumming</td>
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<tr>
<td></td>
<td></td>
<td>Fail to get the whole group together after sauna and pool.</td>
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</tr>
</tbody>
</table>

**Day 3**

<table>
<thead>
<tr>
<th>Time</th>
<th>Activity</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>15 min</td>
<td>Morning</td>
<td>Gathering at the bonfire place / Picking up thoughts from yesterday / Minute of silence</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Reflections from yesterday, bringing up the mental context to today.</td>
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<tr>
<td>1 h</td>
<td>Breakfast / Discussions</td>
<td>Food / Discussions on religion, culture, life</td>
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<td></td>
<td></td>
<td>Bringing our personalities into the circle, opening up with what we like in ourselves, reflection on what we want to learn/develop (It is interesting to see how what some people have, other lack and want to develop)</td>
</tr>
<tr>
<td>30 min</td>
<td>Facilitation circle #3</td>
<td>Circle: 1. What personal skills/characteristics you are proud of, what do you love about yourself? 2. What skills/characteristics you would like to have/develop?</td>
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<tr>
<td>10 min</td>
<td>Introduction to little solo</td>
<td>Explanation / Agreements (no phones, freedom of choosing the path)</td>
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<tr>
<td></td>
<td></td>
<td>Explanation of the meaning of solo time.</td>
</tr>
<tr>
<td>1 h</td>
<td>Little solo in nature</td>
<td>Solitude time in nature</td>
</tr>
<tr>
<td>30 min</td>
<td>Letter to yourself</td>
<td>Writing a letter to yourself (not shown to anyone)</td>
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<tr>
<td></td>
<td></td>
<td>Picking up the reflection thoughts.</td>
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<tr>
<td>30 min</td>
<td>Stew made of wishes</td>
<td>Using pieces of colorful paper for writing your answers and putting them as ingredients together in one pan for getting a collective “stew”</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Answering to yourself consciously the question how you would like to live. (Afterwards: Mapping and seeing the pattern of the group)</td>
</tr>
<tr>
<td>15 min</td>
<td>Clay game</td>
<td>Closing up: imagining a piece of clay which we pass to each other making different shapes of it</td>
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<tr>
<td></td>
<td></td>
<td>Short connection of your imagination and mind to the body experience.</td>
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<tr>
<td>45 min</td>
<td>Q2</td>
<td>Questionnaire: personal decisions on the case</td>
</tr>
<tr>
<td>1 h</td>
<td>Lunch</td>
<td>The last lunch together / Packing up</td>
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<tr>
<td></td>
<td></td>
<td>Food together, appreciation to the place and people.</td>
</tr>
</tbody>
</table>
Appendix IV

Details of the interviews

<table>
<thead>
<tr>
<th>Interviewee</th>
<th>The field of work (relevant to the thesis)</th>
<th>Date and means of interviewing</th>
</tr>
</thead>
<tbody>
<tr>
<td>Anneli Örtqvist</td>
<td>Learning processes for transformative changes around the issue of sustainability (Outdoor Experiential Learning)</td>
<td>27th July 2015 by skype (plus two personal meetings beforehand during designing of the experimental part)</td>
</tr>
<tr>
<td>Eurico Vianna</td>
<td>International instructor of Capoeira (25 years experience of training and 15 years of teaching, experience of running a Capoeira academia in Brazil and launching of schools in different countries). Specialization on teaching within community development programs.</td>
<td>21st July 2015 by e-mail</td>
</tr>
<tr>
<td>Cristiano Bottone</td>
<td>Facilitation methods and processes with politicians, decision makers, officials, technicians, etc.</td>
<td>4th March 2015 by skype 17th April 2015 personal meeting</td>
</tr>
<tr>
<td>Alberto Hernandez</td>
<td>Bodymind, facilitating of technical knowledge of human mind and body awareness (focus on the physical experiences, optimizing breathing, the way to walk, balance)</td>
<td>14th Aug 2015 by skype</td>
</tr>
</tbody>
</table>

Outline of the interviews

<table>
<thead>
<tr>
<th>Field of work</th>
<th>Questions themes / examples</th>
</tr>
</thead>
<tbody>
<tr>
<td>Learning processes for transformative changes</td>
<td>Who ways of learning / What is the most effective way to learn? The connection between learning and decision making The context of learning / How does the environment of learning affect the process? Outdoor experiential learning Capacity of OEL to affect decision making process Naturakademin's programs / Positive outcome from the programs / Challenges faced prior to and during the programs The role of embodied practices in Naturakademins programs The role of mindfulness, solitude and reflection practices in Naturakademins programs</td>
</tr>
<tr>
<td>Facilitation methods and processes with politicians, decision makers</td>
<td>Who are the participants / their motivation to participate in the facilitation work What is the role of body and physical experience in communication Facilitation methods used in the work / embodied facilitation methods used Results / outcome / examples of positive results</td>
</tr>
<tr>
<td>Capoeira as a part of community development programs</td>
<td>Features of capoeira Communication during a roda / How do you get to know where the kick is going to come from? Analytical processing and the processing beyond analytical / Could the information about the capoeira movements during roda be processed intellectually? Human capacities to communicate on bodily level Context of developing human capacities to communicate on bodily level</td>
</tr>
<tr>
<td>Bodymind, facilitating of mind and body awareness</td>
<td>The connection between human body (and its somatic experiences) and cognition The role of body in receiving and processing information The role of body in learning and thinking Can embodied practices facilitate a person's awareness and understanding of a larger ecological system? If yes, what kind of practices, if not, what could help to bring the awareness? The role of the environment (any surrounding context) in knowledge creation A &quot;perfect&quot; context for deep learning</td>
</tr>
</tbody>
</table>