“Inside-out sustainability: The neglect of inner worlds”

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Abstract: This project leaves from the fundamental conviction that the transition towards more sustainable futures is not only a transition of businesses, technology or design – but fundamentally happens in our inner worlds, our values, mindsets and worldviews in relation to our connection with others and reported to nature. This inner dimension and its perception, which is so far unexplored in the transition is essential for the development of collective action for sustainability. However, within the complexity of the bigger context of sustainability, there are few methods and tools available that allow for the development of this type of inner worlds, and to analyse the relation of these. Therefore, we propose to explore a transition towards action in sustainability, starting by relating the inner worlds of a person to the outside inner dimension of sustainability through a relational thinking approach between both dimensions, to transform and expand one's personality towards transitioning to the collective action of tomorrow.

Keywords: leadership; sustainability transformative learning; creativity; compassion; connection

1. Introduction

With the rise of technological innovations over the past decades, old systems have started slowly unfolding and breaking down in face of the expanding human population, and its negative effects caused to disrupt the global and local climate patterns. With the continuous need of change towards a non-zero-sum culture (win-win), the need of addressing the wellbeing of the planet, more and more we see educational institutions taking the role into adapting new and continuous innovative learning processes to tackle the complex context of sustainability. Transitioning from linear to modular path of progression towards the final assessments, focusing more and more towards implementing sustainability through different classes, semesters or programs of similar topics, there are still a few missing components of such current programs, ignoring to address a relational thinking approach between inner worlds of sustainability and its personal relation to students, as a step towards understanding such complex correlations. Sustainability is viewed achievable as a collective action (Wahl, 2017) but for this to happen a different perspective, to our inner worlds in connection to this bigger context is needed for students to engage at a personal level.

Therefore, this research project aims to enhance current educational programs that focus on sustainability, by developing a toolkit that integrates and interconnects the dimensions of sustainability to the personal inner worlds, focusing on the development and transformation of each student in relation to sustainability. The toolkit will be introduced to students as an alternative to existing books, tools, methods, theories (etc.) that help in their personal development but also that triggers behaviours for sustainability. The toolkit will aim to facilitate the understanding of the bigger context of sustainability and personal relation to students, in a visual captivating way that will allow students to periodically reflect and look back upon their transformation. Throughout the research study, the following research question and sub-questions have been addressed:

Research Question

What factors of the inner worlds (values, mindsets, beliefs etc) of sustainability affects each student, to a continuous, collaborative and transformative learning process, towards a collective action in Sustainability?

Sub-questions

What are the inner worlds within each student, that most contributes to a collective action in sustainability?

What opportunities are there to use art or creative methods based to strengthen the factors that contribute to the transformative learning process?

2. Literature review

2.1 Sustainable Cultures

Looking back at ancient civilizations, we can see how they experienced a different kind of relationship with nature. Ceremonies and sacrifices, symbolic forms of exchange, expressing gratitude and attention for nature, listening, treating nature as one entity, self-sufficient and autonomous that poses some limits that can be only understood through a dialogue between human and nature. And with each new generation that relationship and dialogue slowly changed, and if once we experience nature as a spiritual source of good and evil powers, we now only see a means to fulfil our desires. (Parodi & Tamm, 2019) This journey through time, left us to the distinction of the self and world, creating a barrier between nature and culture. On one side we benefited from the analytical reasoning that promoted the evolution of science and technology, but on the other side, due to the neglect of nature we are currently facing imminent climate chaos. Moving forward, Owen Barfield (1988, as cited in Wahl, 2017)) expresses the need of both perspectives as part of the "final participation", our evolution of self-reflective consciousness and free will, allowing us to make choices to either creatively support or destruct life's processes of nature. These global challenges can be seen as wicked problems, with no predictable solution as their changing requirements are difficult to recognize, and Grint (2010) highlights the need of a shift in authority from individual to collective (Satterwhite, Miller &Sheridan 2015).

In response to such complex challenges, relational thinking has gained recognition in understanding human systems across academic disciplines in an attempt to reformulate our perception of the relation nature – culture. System thinking are not a set of tools, but it can provide a framework for defining issues as systematic wholes. The following set of principles guide usually systems thinking, namely balancing the short-term and long-term perspectives, thinking of the "big picture"; considering measurable and no measurable factors; recognizing the dynamic, complex and interdependent nature of systems; and remembering that each of our actions has a counteraction in the larger scale. (Walsh, Böhme & Wamsler, 2020) Within these systems analysis, "leverage points" represent a point of power for those who use it, as they allow us to navigate through complex systems by identifying barriers where solutions can be implemented, with the purpose of causing change in system behaviour. Additionally, Forrester (1990) describes complex systems as counterintuitive, as in new systems never tackled before, one cannot use leverage points intuitively without aggravating the problems in cause.

One of the most powerful leverage points for creating change rests within paradigms shifts in emerging systems. (Meadows, 1999) Paradigms are known for framing the world as we perceive it, understand it, but also for questioning current sustainability crises, therefore is crucial for students to interpret the paradigms shaping their field of work and act accordingly to the most recent and relevant theories and practices, continuously developing in their field. (Walsh, Böhme & Wamsler, 2020).

2.2 Relational approach to dimensions of sustainability

Actions towards sustainability and system change, lies within people's inner worlds – their thoughts, beliefs, personalities, emotions; which contrasts and is overpowered by the current preoccupation of external contexts and collective social structures. Considering people's inner worlds as part of the dimension of sustainability, adopting new paradigms through critically questioning their current mental models while breaking their assumptions is a powerful way to a gradual but consistent change in sustainability outcomes. (Ives, Freeth & Fischer, 2019)

On one hand, in the Sustainist Design (Guide), responsibility is taken as to include social, economic and ethical dimensions of sustainability. Our relation with nature being redefined and integrated as part of our *"social design strategy"* that includes the natural environment as a priority (Schwarz, 2013). But on the other hand, in order to integrate the "inner" and "outer", "personal and collective" dimensions of sustainability, a relational approach to ontology, epistemology and ethics is needed to present the paradigm created around sustainability in education, research and practice. The terms are following presented based on the definition most relevant to sustainability.

1. *Ontologies describe the "assumptions (which may be implicit or explicit) about what kinds of things do or can exist in [reality], and what might be their conditions of existence, relations of dependency, and so on" (Scott and Marshall 2009, p. 531).*
2. *Epistemologies describe how we come to know the world. They define the criteria, standards, and methods for understanding reality (Steup 2018).*
3. *Ethics describes "what is morally good and bad and morally right and wrong" (Singer 2019, para. 1). It includes cultural values, morals, and norms shaped by social and political life.*

The relation of these categories is presented by Walsh, Böhme & Wamsler (2020), as to define and reorganize a new paradigm relationship, that could further contribute to relational approaches to sustainability incorporating both inner worlds of a person and inner dimensions of sustainability. Firstly, relational ontologies are presented as a way of overcoming the separation created between nature-culture and any dualism that shapes the modern worldview. In order to understand the relational ontology corelated to sustainability, further systems of knowledge describe indigenous and religious wisdom, traditions, process philosophy, new materialism and speculative design. Secondly, relational approaches to epistemologies are developed to consider the observer's roles in creating knowledge, which is further spread across systems, focusing on re-establishing the boundaries across transdisciplinary methods and incorporate multiple layers of knowing. Through the combination of mental models and worldviews, we are processing and creating a sense of what is around us, which our relationships and interactions depend on to define 'the system in question' (Wahl, 2017). Additionally, only a few studies tackle the relational approach to sustainability in research field studies, like Walsh, Böhme & Wamsler (2020) presents it.

In relation to the further development of the toolkit, the following emerging relational epistemologies in the field of philosophy (focusing on integral theories) and in the field of transdisciplinary sciences (developing systems theory as a way of knowing) are considered. Respectively, the Integral Theory introduced by Wilber (2000), which contours the individual ('in here') and collective ('out there') as an interconnected whole system, with the ideal of becoming more aware of our thoughts, as they are the cause of our problems in the first place. Further developed by O'Brien and Hochachka (2010), the integral theory is expanded to understand current and future climate change adaptations, integrating transdisciplinary studies and combating perspectives. Moving to the complexity theory, is described "the periodic, rhythmic dance between order and chaos, between stability and transformation as a fundamental pattern of self-organization in complex (living) systems." (Kauffman,1995) Chaos could lead to a breakthrough, if appropriate action is taken, or the failed opportunity will lead to the breakdown of the world. At the edge of chaos, complex dynamic systems are at their most creative (Wahl,2017). Furthermore, as to define and scale-link the complexity of natural processes the Panarchy Model is framed by Holling (Gunderson & Holling, 2001 as cited in Wahl 2017). The idea behind is to combine learning and continuity through the interactions between cycles, as the more extensive these cycles become, the less predictable and controllable they become. The Panarchy model makes us understand that transformative resilience not only happens as is built from bottom up, but by including all perspectives and aiming for collaboration. (Wahl,2017)

The imminent chaos that we are facing at economic, social, ecological and environmental levels, is an interconnection resulted from a *'crisis of perception'.* Capra explains how our worldview is formed based on outdated knowledge and that we tend to get lost in small details of one discipline, rather than have a holistic view and maintain our focus on the long-term viability of all life. (Capra as cited in Wahl, 2017)

2.3 Creativity and relational approach to ethics

Transformative learning (TL) is introduced as a 'conceptual metaphor' into defining the theoretical frame of further research into the dimension of ecological consciousness. A place based approach is presented by Pisters (2019) with three key concepts re-appearing , namely (re-)connection, concerning all experiences and processes defined by the interconnection with all (living) systems found in nature; (self-)compassion, following interconnection as a way of living and relating to each other, over suffering; and creativity, as the means of realization at the crossing path of interconnection and compassion.

Exploring complex issues through creative practices, allows us to improve our understanding by constructing and deconstructing meaning, by understanding the self, our actions to follow, and unique skills that help us in the process of leading and supporting others (Schwarz, 2013).Creativity and leadership in sustainability, demands us to expand our knowledge to the entire system rather than looking at individual components, as to discover new ways of acting and creating. Additionally, for a meaningful and successful leadership in sustainability a flexible, dynamic and resilient approach is needed, for planning our cities and communities. Leaders may recognize the challenge in constantly re-addressing their values,

behaviours and ethics, as both sustainability and leadership requires to constantly "think and act differently". To strengthen this skill creativity should be treated *"as a practice and philosophy"* as only then a leader can find solutions in a personal and ethical way that reaches beyond self-interest (Ferdig, 2007)

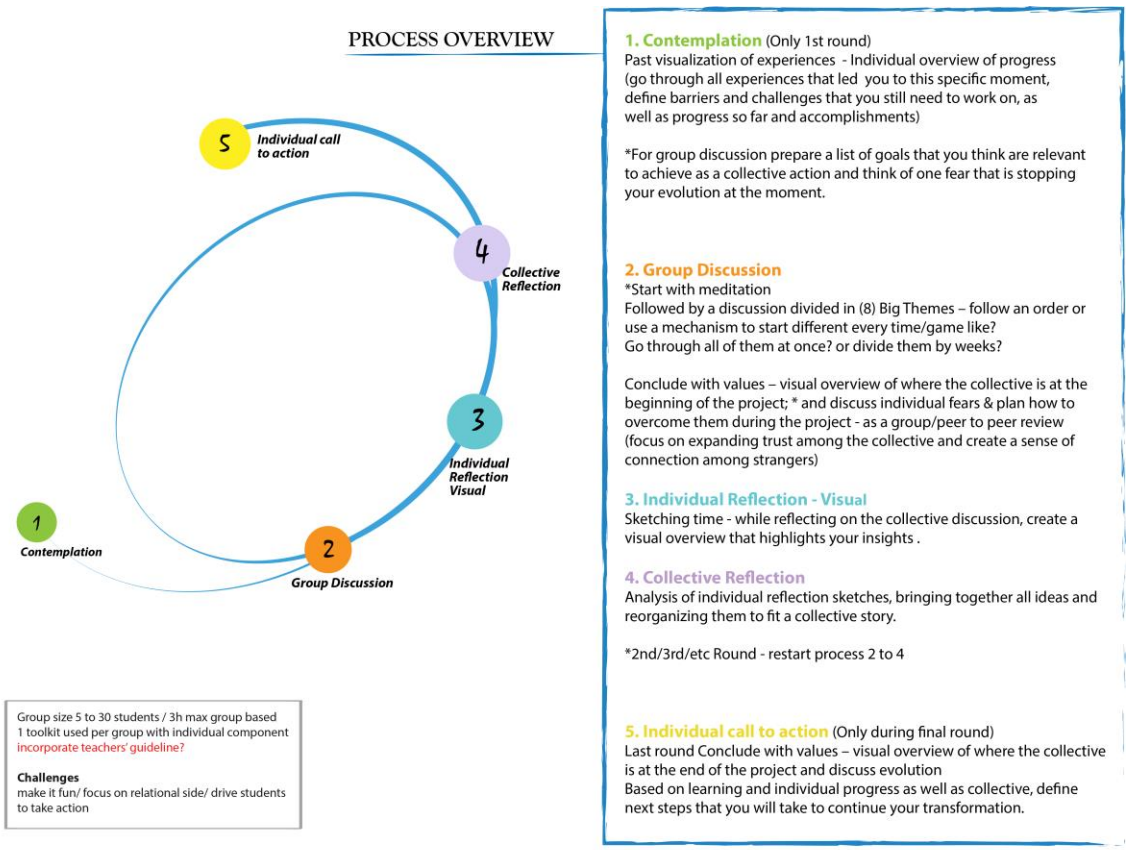
Lastly, is introduced the relation approach to ethics, within the area of climate and environmental ethics, characterized by a non-anthropocentric perspective. With a focus on biocentrism and ecocentrism, meaning that all life from ecological systems to biological organism is taken into account, and human needs stop being in the centre of our actions. (Walsh, Böhme & Wamsler, 2020). A new direction is emerging, slowly relying on collaboration and shared creativity a new paradigm of the relationship nature – culture is being shaped, where technologies, intentions and human aspirations are aligned to the goals of sustainable and social design. Moreover, the key to social change relies on "peer progressives" who hold the key to social change. (Schwarz, 2013)

3. Research Methodology

The research was conducted mostly online, from Den Haag (The Netherlands), as a result of the current pandemic covid-19. While the end toolkit aims to target students, from THUAS studying an already existent sustainability based project, the research project takes into account different experts opinions from this area, to help establish an overview of all existent perspectives on the relation of inner worlds of an individual to the inner dimension of sustainability. Based on the literature review, the following questions have been answered through the secondary research: Why is a transition of perception needed to achieve a collective sustainable action over the long term? What type of relational approach is needed to tackle and include both dimensions to further experience a personal transformational change within sustainability? What are some of the existing theories that promote relational thinking? And what role does creativity play into addressing the complex challenges of inner dimensions of sustainability? As new questions develop, additional methods of research are employed to help answer the new questions: what are the inner worlds of students that most contributes towards a collective action? And what barriers do they have to overcome? How does one develop those inner worlds for a continuous transformative learning process? And lastly, how does the relationship of both inner worlds combined look like as a system, to serve for further development of the toolkit?

Starting with the secondary research, I was able to discover the evolution of cultures and their changing relation to nature, the impact of technology evolution on nature that results in the continuous climate changes and crises that we now suffer from. Further, previous theoretical frameworks are explored and the relational thinking approach to ontology, epistemology and ethics is presented as an intra-act for tackling the relational approach to sustainability. Lastly, creativity, connection and compassion are discussed as part of the Transformative Learning framework, and considered key skills for the further development of the toolkit. Based on the Transformative learning framework from Pisters et

al (2020), which focuses on the 3C's of a regenerative consciousness (Connection, Compassion and Creativity, the following process has been developed, in agreement with the client. The process describes a set of five activities meant to allow for a reflective journey experience both individually and collectively. The picture bellow describes the first activities proposed.



Interviews were conducted mostly online or via phone, with experts from different areas within sustainability. The purpose of the interview was to understand from different perspectives, what are key elements from these inner worlds of oneself and inner dimension of sustainability that relate across professions, including prejudices, barriers, biases that one may encounter while being on this journey. Key insights aimed to be provided by possible solutions that are across board in terms of overcoming the barriers at the end of each dimension.

Online & Offline Meetups represent an important part of the research as they provided a key mix-up of topics on my research and people from different domains as well as nationalities, with the goal of learning about common cultural values, viewpoints and perspectives that contribute towards achieving a collective action in sustainability.

Co-creational discussions, will be organized after the midterm, hosted online with a group of experts within the topic of sustainability but also with students, as part of the

research phase but also as part of the initial design process. The focus of the co-creation will be to guide participants through different perspectives on the relationship between inner worlds of an individual to inner dimensions of sustainability, and to gradually build a bridge between those worlds. The participants will be asked to share some of their experiences on a specific question, to first all reach an understanding of their backgrounds and further explore different dimensions of their personality in relation to sustainability.

For analysing the above methods, triangulation will be employed to validate the data across the different sources. Grounded theory, will be used as an inductive methodology that provides guidelines for gathering, synthesizing, analysing, and conceptualizing qualitative data for the purpose of theory and system construction of inner worlds of sustainability that have direct impact on Leadership.

4. Results

Aiming at answering the questions imposed by the literature review, the research methodologies previously discussed, are analysed and presented in the following chapter. Highlighting the most relevant results and further addressing the sub-questions: What are the inner worlds within each student, that most contributes to a collective action in sustainability? And what opportunities are there to use art or creative methods based to strengthen the factors that contribute to the transformative learning process?

4.1 Interviews

The interviews were conducted with 7 experts within THUAS university, 3 experts from Delft University and 2 entrepreneur designers. Across all interviews, experts mentioned the general use of the world leadership as too broad and it should rather be defined as collaborative action, to entail the attitude of a shared responsibility.
Considering the inner worlds of students, the 3c's were agreed upon as starting skills needed to bring into focus for the further development of our relationships. Discussing key factors that define that transformational change as an experience within, 9 out of 12 regarded intrinsic motivation as a key element in continuing learning and creating change, while staying "robust against all kinds of crises". 3 out of 12 experts, mention the 'aha' moments as a stepping stone into becoming aware of the bigger effect that one's actions may have in the bigger context and into achieving a holistic view. Contrasting, internal barriers limiting oneself, are defined by mistrust between teachers and students, limitations of the rules, the lack of information, the hollow view, even pressure and too much empathy are expressed as damaging for students throughout their learning and changing process. In order to approach creativity for collaborative action, experts suggest critical thinking and lateral thinking as a way of 'thinking outside the box' and allowing curiosity to guide in complex contexts.

4.1 Online and Offline Meetups

As part of the Online and Offline Meetups, the participants stated that one of the most common desires lies within the statement agreed upon, respectively "trust that we can all add value". Additionally, both in educational institutions as well as outside there's a need for building long-term relationships, that are flexible and continuous, which leads to the need for better communication and collaboration to create true impact in sustainability. Leadership can be used as a means of taking initiative and advocating for sustainability, but there's a deeper need in aligning together to reach the goals for sustainability as a collective and overcome future uncertainties.

5. Conclusions and discussions

Sustainability was presented as a 'wicked' problem and in this challenging transition from an individual to collective attitude, a relational approach of systems emerged as possible direction for the further development of the toolkit. By revising previous theories and models and systems, a relational approach was established with ontology, epistemology and ethics that are further integrated and analysed in the relation between nature-culture.

Defining connection, compassion and creativity as the 3 C's in the Transformative learning phase of a student, further barriers must be addressed for a continuous adaptation of an individual through complex challenges or crises. Additionally, for the evolution of the toolkit the research emphasises on the need of challenging students perception and should usable for future-oriented speculation or sustainability challenges.

Further limitations of the research and project are presented with the Covid-19 Pandemic, as the methodologies have been reconsidered and readapted to fit within the requirements, which might alter to some extent the direction of the toolkit as well as the results. Considering the current crisis and future ones to come, the research and toolkit are shaping towards a wider range of educational programs within THU, to further address the need of a relational approach of both personal inner worlds and dimensions of sustainability.

6. References

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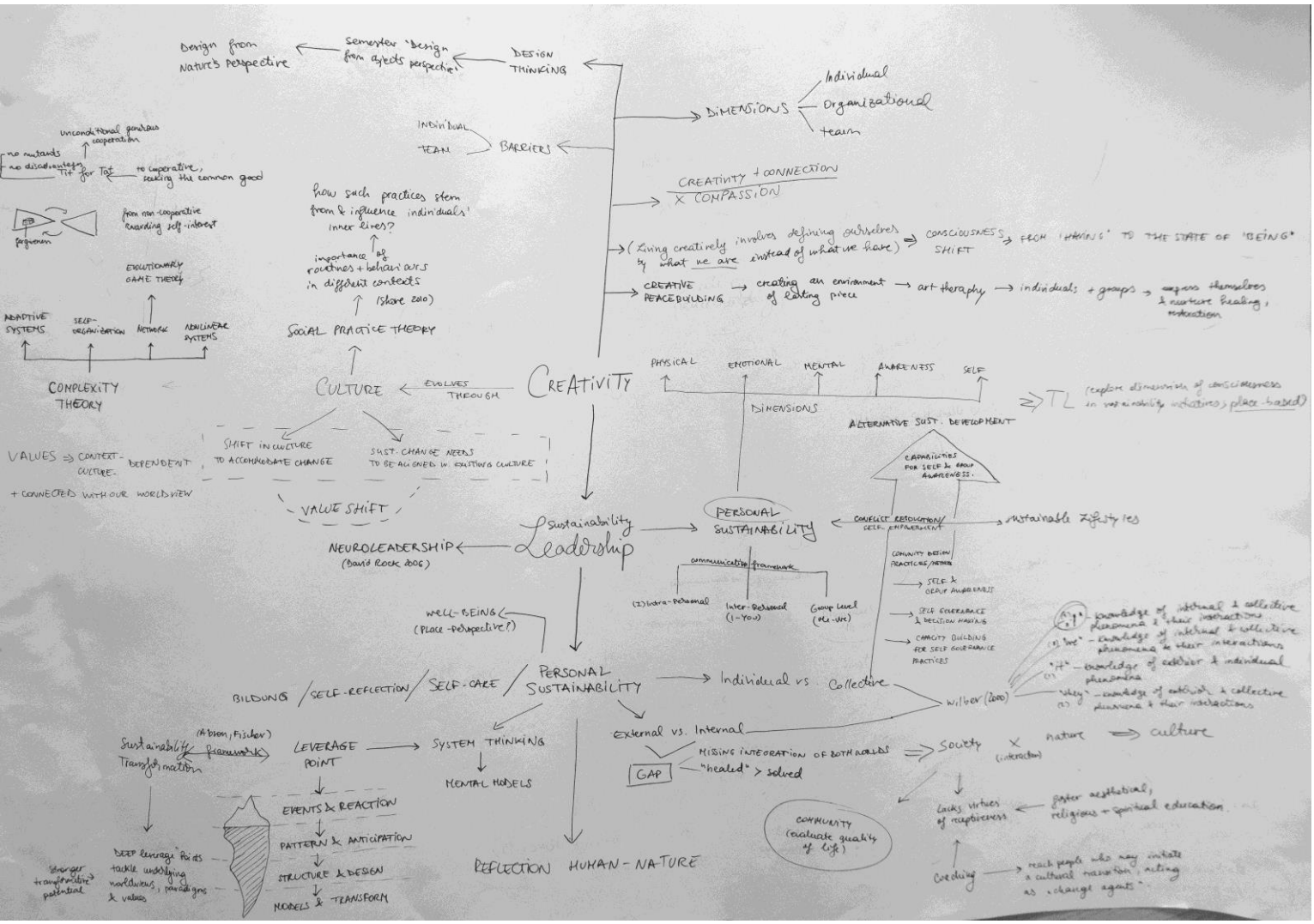
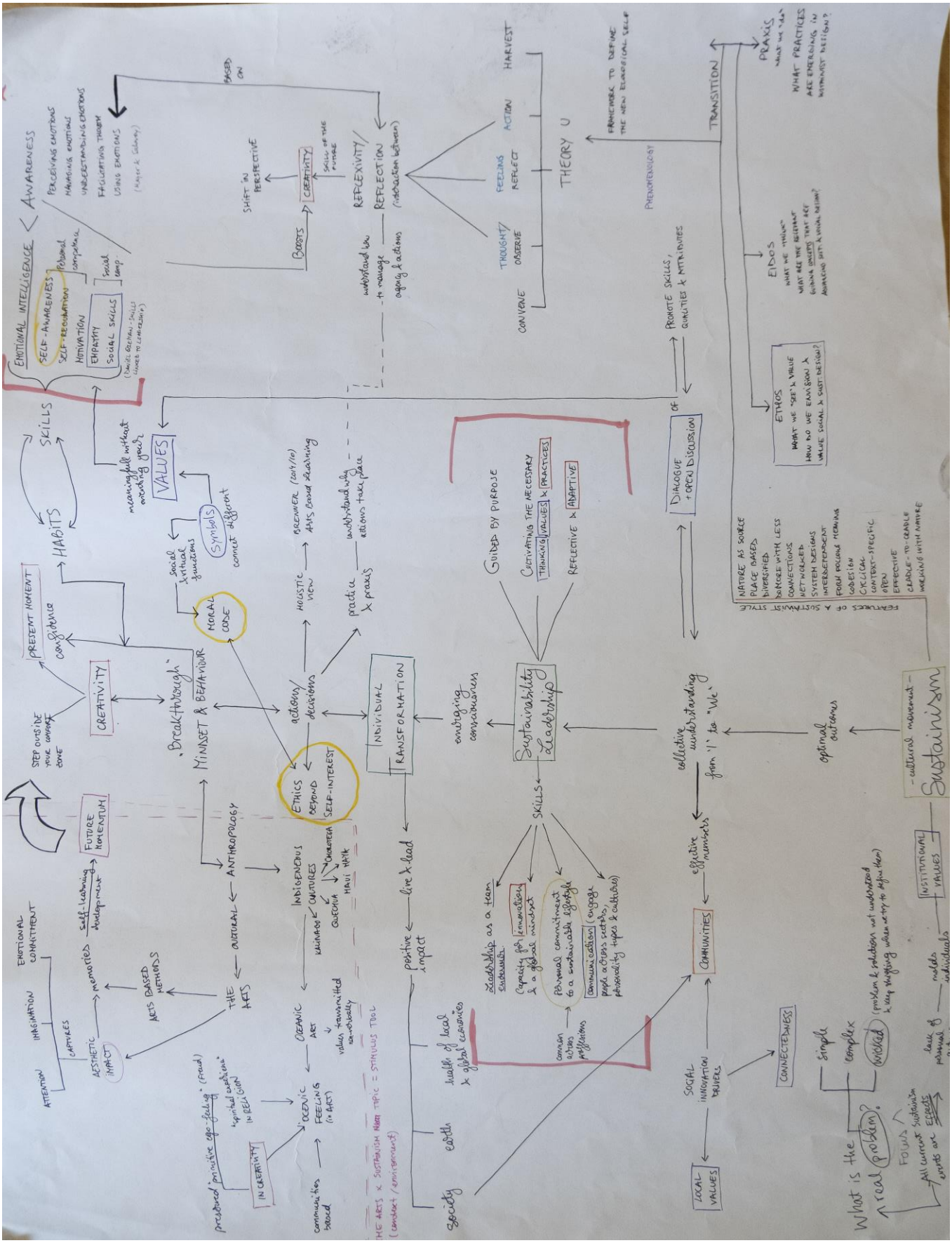
APPENDIX A
Mind Maps Literature Review

The following pictures represent 2 Mind-maps that help me identify the context of the toolkit by highlighting possible directions and areas. The mind maps were done throughout week 5 to 7, exploring macro-contexts and further defining the parameters of the project.




EMOTIONAL INTELLIGENCE
AWARENESS
SELF-AWARENESS
SELF-REGULATION
MOTIVATION
EMPATHY
SOCIAL SKILLS
SKILLS
HABITS
VALUES
PRESENT MOMENT
CREATIVITY
MINDSET & BEHAVIOR
MORAL CODE
ETHICS BEYOND SELF-INTEREST
ACTIONS/ DECISIONS
INDIVIDUAL TRANSFORMATION
REFLEXIVITY/ REFLECTION
THEORY U
TRANSITION
PRAXIS
EIDOS
ETHOS
DIALOGUE + OPEN DISCUSSION
PROMOTE SKILLS, QUALITIES & MINDSETS
Sustainability Leadership
Sustainism
COMMUNITIES
SOCIAL INNOVATION DRIVERS
LOCAL VALUES
INSTITUTIONAL VALUES
CONNECTEDNESS
What is the real problem?
simple
complex
wicked
SOCIETY
EARTH
positive impact
live & lead
width of local & global economies
leadership as a team endeavour
personal commitment to a sustainable lifestyle
common actions/ positions
communication (engage people across sectors, personality types & cultures)
emerging consciousness
GUIDED BY PURPOSE
CULTIVATING THE NECESSARY THINKING/VALUES & PRACTICES
REFLECTIVE & ADAPTIVE
collective understanding
from "I" to "We"
optimal outcomes
NATIVE AS SOURCE
PLACE BASED
DIVERSIFIED
NATURE WITH LESS CONNECTIONS
NETWORKED
SYSTEM DESIGNS
INTERDEPENDENT
FOUR FOLDING REMINDS
COHESION
CYCLICAL
CONTEXT-SPECIFIC
OPEN
EFFECTIVE
CRADLE-TO-CRADLE
WORKING WITH NATURE
FEATURES OF A SUSTAINISM STYLE
FRAMEWORK TO DEFINE THE NEW ELEMENTAL SELF
PHENOMENOLOGY
BASED ON
SHIFT IN PERSPECTIVE
BOOSTS
CREATIVITY
SKILLS OF THE FUTURE
THOUGHT/ OBSERVE
FEELING REFLECT
ACTION HARVEST
CONVENE
WHAT WE VALUE
WHAT ARE THE RELEVANT QUESTIONS THAT ARE GUIDING OUR ACTIONS? WHAT IS VITAL NOW?
WHAT PRACTICES ARE EMERGING IN SUSTAINIST DESIGN?
ARTS BASED METHODS
THE ARTS
AESTHETIC IMPACT
CAPTURES
MEMORIES
EMOTIONAL COMMITMENT
ATTENTION
IMAGINATION
EMOTIONAL COMMITMENT
FUTURE MOMENTUM
STEP OUTSIDE YOUR COMFORT ZONE
"Breakthrough"
PRESENT MOMENT CONSCIOUSNESS
CREATIVITY
ANTHROPOLOGY
CULTURAL
INDIGENOUS CULTURES
KAWAKAWA
OUCHUA
MAORI HAKA
ORGANIC ART
values transmitted non-verbally
ORGANIC FEELINGS (& ACT)
communities based
IN CREATIVITY
"primal" primitive ego-feeling (Freud)
"spiritual experience" in REGRESSION
THE ARTS x SUSTAINISM MAKE TOPIC = STIMULUS TOOL (conscious / unconscious)
meaningfull without meaning yours
social spiritual functions
SYMBOLS
connect different
HOLISTIC VIEW
practice x praxis
REASONER (Carl Jung) ARTS based learning
understanding takes place
Social Innovation
Emotional Intelligence
Daniel Goleman
Leader to Leadership
Values Systems
Values Skills
Emotional Skills
Social Skills
Personal Competence
Social Competence
Perceiving Emotions
Managing Emotions
Understanding Emotions
Facilitating Thought
Using Emotions
Mayer & Salovey

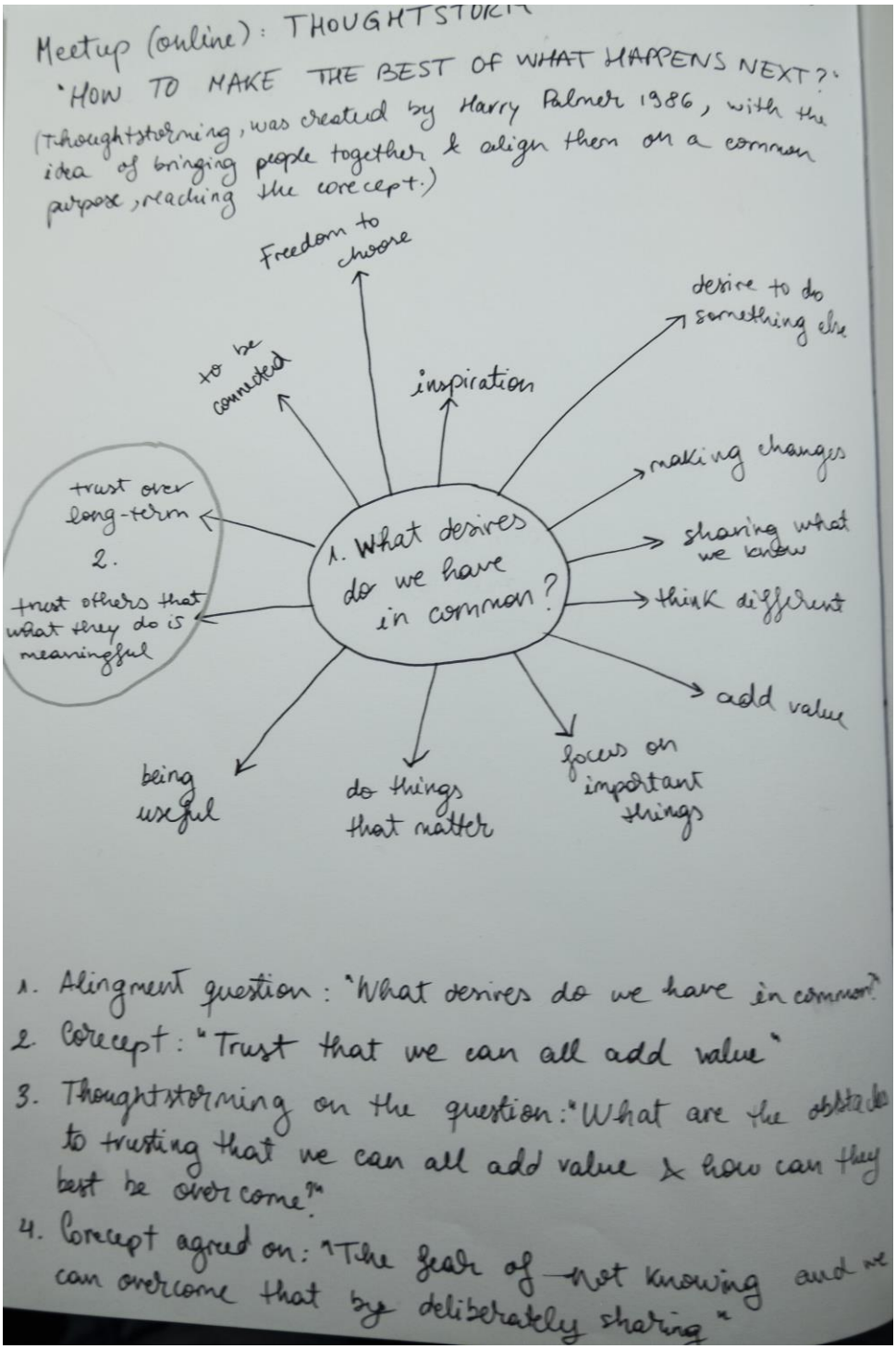
APPENDIX B

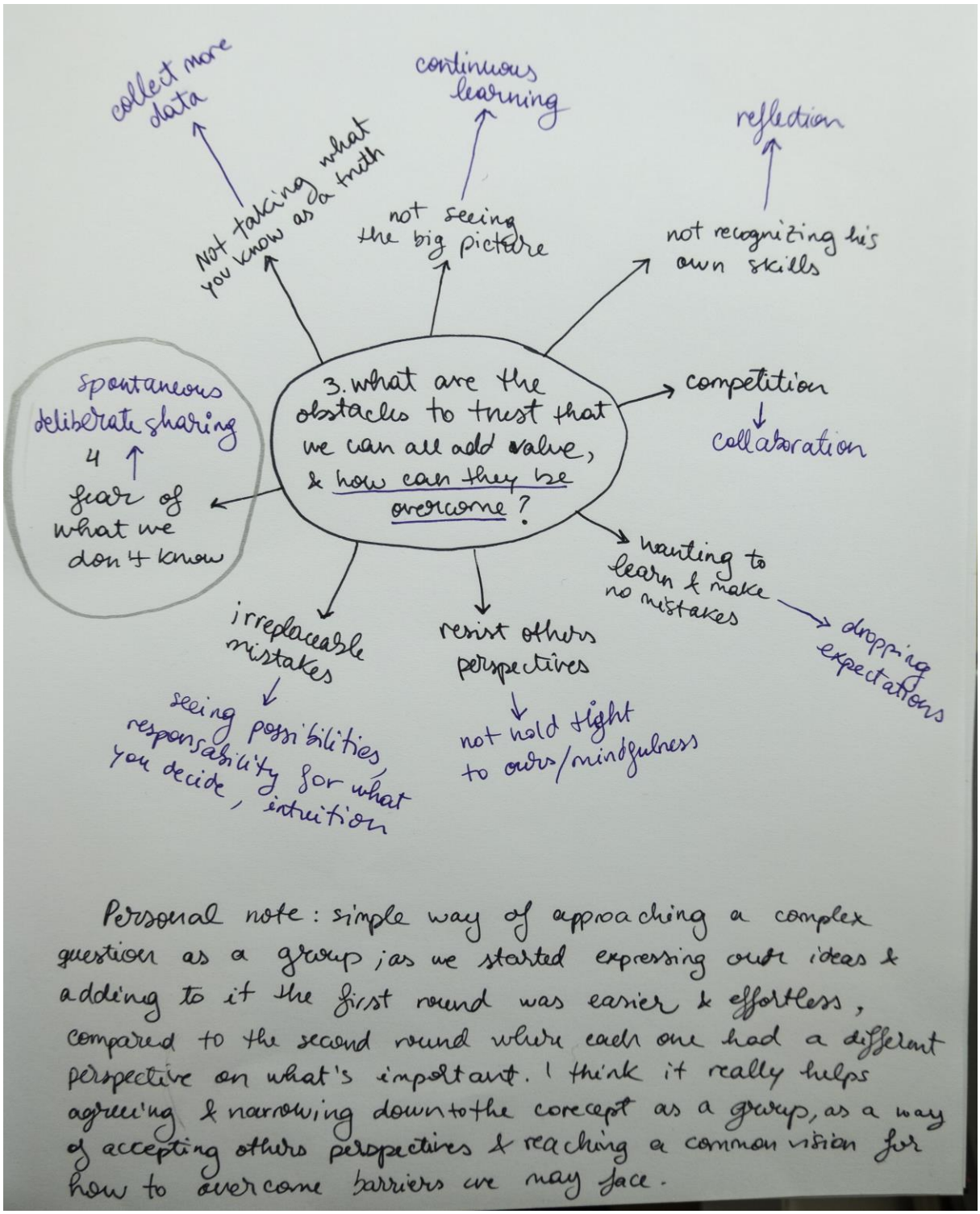
Online and Offline Meetups Overview

Offline meeting - Crazy Ones, is a group of experts, teachers, lecturers and students from THUAS, that montly initiate meeting into defining possible solutions to current problems that the university is currently dealing with. During the meeting that I was able to participate, it was discussed missing elements that defavoritize our school into the implementation over the long term of sustainability and in what way could it be tackled (post-its). Below is an overview of the insights from that meeting.

Online Meeting – Thoughtstorm 'How to make the best of what happens next?' Online meeting through meet-up . The following two images show the results of the meeting.

Additionally another meetup will follow in week 11.

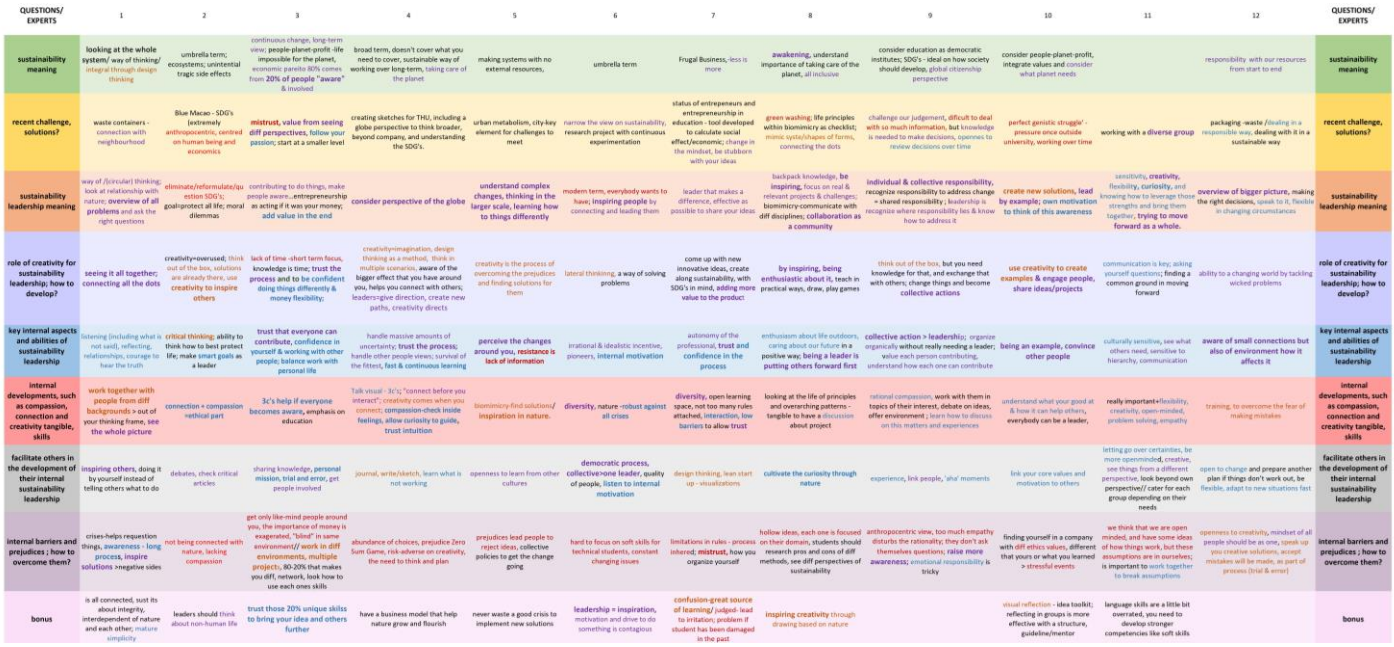




Personal note: simple way of approaching a complex question as a group; as we started expressing our ideas & adding to it the first round was easier & effortless, compared to the second round where each one had a different perspective on what's important. I think it really helps agreeing & narrowing down to the corecept as a group, as a way of accepting others perspectives & reaching a common vision for how to overcome barriers we may face.

APPENDIX C
Overview Analysis of Interviews

Bellow i created an overview from the first insights.



creativity/ list of codes	what is creativity	methods	how to enhance creativity
integral through design t+A2:A16hinking	integral	design thinkingx3	confusion-great source of learning
work together with people from diff backgrounds x2	creativity=imagination	journal, write/sketch	connecting with people from diff backgrounds x3
critical thinking;	creativity is the process of overcoming the prejudices and finding solutions for them	think in multiple scenarios,	openness to creativity
think out of the box x2, solutions are already there, use creativity to inspire others	create new solutions/examples x2	biomimicry-find solutions/ inspiration in nature. X2	speak up you creative solutions, accept mistakes will be made, as part of process
journal, write/sketch	training, to overcome the fear of making mistakes	lateral thinkinng	think out of the box x2
creativity comes when you connect	solutions are already there, use creativity as a source to inspire others	lean start up -	critical thinking;
creativity=imagination, design thinking as a method, think in multiple scenarios,		mimic syste/shapes of forms,	trial & error
creativity is the process of overcoming the prejudices and finding solutions for them		visual reflection -x2	

Barriers - red	Internal Barriers	Sustainability barriers (broad)
anthropocentric, centred on human being and economics	mistrust x2	anthropocentric view x2, centred on human being and economics
mistrust x2	they don't ask themselves questions x2	not being connected with nature, lacking compassion
eliminate/reformulate/question SDG's;	lack of time -short term focus	the importance of money is exagerated
lack of time -short term focus	judged- irritation; damaged in the past	abundance of choices, prejudice Zero Sum Game, risk-adverse on creativity, the need to think and plan
not being connected with nature, lacking compassion	perfect genistic struggle' - pressure	green washing;/ dificult to deal with so much information, - resistance is lack of information
get only like-mind people around you, the importance of money is exagerated, "blind" in same environment	diff ethics values	limitations in rules - process inhered/ wrong assumptions on how things work
abundance of choices, prejudice Zero Sum Game, risk-adverse on creativity, the need to think and plan	"blind" in same environment	hard to focus on soft skills for technical students, constant changing issues
prejudices lead people to reject ideas,	hollow ideas, each one is focused on their domain,	
hard to focus on soft skills for technical students, constant changing issues	prejudices lead people to reject ideas,	
limitations in rules - process inhered	too much empathy disturbs the rationality;	

purple coding-RQ	Mindset	Values	Beliefs
connection with neighbourhood	collective action > leadership (x5); organize organically; shared responsibility	CONTRIBUTING (x4)=sharing knowledge, value each person involved;	trust (x3) - the process; that everyone can contribute
way of /(circular) thinking; look at relationship with nature; overview of all problems and ask the right questions	diversity, all inclusive (x6)// awakening (x3)/collaboration as a community (x2)	taking care of the planet (x2)	continuous change, long-term view;
seeing it all together; connecting all the dots x2	inspiring others (x5) - through solutions, being enthusiastic, (x3)/ being an example (x4) - makes a difference	"connect before you interact"	critical requestion everything you know (x3)
inspiring others - through solutions	leaders=give direction, create new paths, creativity directs (x3)	value from seeing diff perspectivesx2	irrational & idealistic incentive, pioneers/autonomy of the professional
debates, check critical articles	handle massive amounts of uncertainty; & other people views; survival of the fittest	sensitive to hierarchy, communication	change in the mindset, be stubborn with your ideas
think about non-human life	consider perspective of the globe-planet (x6)	motivation and drive to do something is contagious	effective as possible to share your ideas
sharing knowledge, get people involved	narrow the view on sustainability	backpack knowledge(x2), focus on real & relevant projects & challenges;	openness to learn from other cultures
trust that everyone can contribute	way of /(circular) thinking; look at relationship with nature;		
trust the process	understand complex changes (x3)/		
contributing to do things, make people aware...	ability to a changing world by tackling wicked problems (x2)		
value from seeing diff perspectives	, thinking in the larger scale,connecting all the dots x2		
economic pareito 80% comes from 20% of people "aware" & involved	cater for each group depending on their needs x2		
continuous change, long-term view;	Frugal Business,-less is more		

BLUE CODES	Inner worlds - means	leading to collective action	long term skills
listening (including what is not said), relationships, courage to hear the truth	reflecting/ requestion things x3 - 'aha' moments/experience	follow your passion; personal mission, add value in the end	trial and error x2
crises-helps requestion things, awareness - long process		link your core values and motivation to others	make smart goals as a leader
mature simplicity	mature simplicityx2 (dealing with it in a responsible way)/emotional responsibility/rational compassion	trust those 20% unique skilss to bring your idea and others furtherx3	fast & continuous learning
connection + compassion =ethical part	connection + compassion =ethical part	allow curiosity to guidex2, trust intuition; listen to internal motivation X2	opennes to review decisions over time, let go over certainties x3
make smart goals as a leader	compassion-check inside feelings,	cultivate the curiosity through nature;enthusiasm about life outdoors, caring about our future	flexibility x5-adapt to new situations fast
follow your passion; personal mission, trial and error	communication on these experiences x3	(culturally)sensitivity x2	creativity, problem solving, empathy
trust those 20% unique skilss to bring your idea and others further	be confident x3 - doing things differently & working with other people; in the process	own motivation to think of this awareness	3c's help if everyone becomes aware,
add value in the end		robust against all crises	work together to break assumptions

APPENDIX D
Topic list & Interviews

One interview was conducted face-to-face before covid-19, after all of the interviews switched to online via Skype, Ms Teams or via phone. Before starting to address the questions, an appreciation is shown to the participant for joining, following the topic is introduced and permission for recording is requested, before addressing the following questions:

Introduction

1. Can you introduce yourself and your work?

EXPERT EXPERIENCE

2. What does sustainability mean for you?
3. Can you tell me about a recent challenge you faced while working on a sustainability project? How did you overcome it?
4. What does sustainability leadership mean for you?

CHALLENGE

5. What do you see as the role of creativity for sustainability leadership and how would you develop this?
6. What would you consider the key internal aspects and abilities of sustainability leadership and why?

IMPLEMENTATION

7. How would you make internal developments, such as compassion, connection and creativity tangible, visible and/or discussable daily skills?
8. What would you do to facilitate others in the development of their internal sustainability leadership?
9. What are the internal barriers and prejudices that you encounter in yourself, students and/or colleagues that have be overcome for sustainability leadership? And how would you go about overcoming these?

CLOSING

10. Was there anything you would have liked to have shared but haven't been able to?
11. Can you recommend one or two people we have to include in this research?

INTERVIEW 1

1. Can you introduce yourself and your work?

I'm a lecturer in at THUAS in the Business Department of BFM, I lecture Sustainable Business, I do research in 3 main areas: Environmental Education, biological conservation having to do

with biodiversity, and I will say a broad area of ethics (environmental and philosophy). I try to combine my research interests with things I lecture on, and as far my interests concern, I consider Biodiversity loss, one of the largest… not even the largest problems, but to use a very emotional word, tragedies that we are facing.

2. What does sustainability mean for you?

Referring to what I mentioned before, sustainability has to do with ecosystems, is a very large broad term, an umbrella term and under it we put pretty much everything from human rights, to equal pay, to gender equality, to some environmental issues but as I said for me at least, I do think what we are doing with other human beings sometimes it can be also horrendous, in instances such as slavery, or modern slavery now, war… but I think what we are doing with other species, especially wild species we simply put, exterminate them. In the same way that in history there are only few cases of genocide in which an entire group of people such as in Ruanda, or Second World War, in concentration camps, the Jews and gypsies are being exterminated. And this extermination is not something intentional in many cases ironically, is a side effect of our industrial development, and it's ironic indeed because we don't see it as tragedy. Is just some kind of collateral damage.

3. Can you tell me about a recent challenge you faced while working on a sustainability project? How did you overcome it?

So if you look at Sustainable developments, 17 SDG'S, I usually show that in as my first slide, and in the next side will be the parrot looking at you from the film RIO, the blue Macao, and the question to the audience is : what does a Blue Macao have to do with SDG'S? Or what does a Blue Macao think about the SDG's? So for example, the first two ones , related to poverty and economy, poverty has do with hunger, massive plantations, that pretty much destroys the habitat of the Blue Macao; poverty also links to community, that connects to cities, lands, deforestation that again leads to the destruction of their habitat.so the point is, it's a reverse proportion/relationship. From the time Rio 1 was made to the second one, the Blue Macao went extinct in real life. And that to me in itself is the most disturbing thing about sustainability is that we keep talking about sustaining all kind of systems, social systems we talk about sustainable economic growth while it is often times economic growth, consumption resources that destroys not just one single bird but thousands, millions, and sometimes entire species and we don't find this problematic. So, I find the entire SDG's and I wrote quite a few articles about it and some other critical thinkers argued on them, I find them extremely anthropocentric, basically centred on human beings entirely, they are also economy centred, if you look at the entire document underlies the SDG's not just the 17 tiles, yeah it talks about economic growth a lot sustained economic growth, as solution to sustainability challenges and not a problem at all. It also kind of has this absurd idea of yeah you can lift people out of poverty, you can have better health, save millions of lives, but we have growing population, human population, growing material demands and somehow, we going to keep climate change and a bit of biodiversity, but is combined well it's not good for humanity if things happen to them, because again we cannot drive economic benefits for it or climate change will threaten our systems. Perhaps other people might disagree with my opinion when you interview them and might say that they love the SDG's …that's what infuriates me sometimes! I just can't stand it, every time they speak about our school transit to the SDG's and there's no critical questioning whatsoever it just boggles my mind.

4. What does sustainability leadership mean for you?

Well I don't we should achieve the goals, the SDG's should be thrown out of the window and never achieved, they should be completely reformulated and rewritten, the goal should be to

protect life on earth as a foundation; I also don't believe in people-planet-profit, because there will be no people and no profit, if the planet is not there. So, first we should ask ourselves what the goals are, and if the goal is saving life on earth in the most ethical possible way, so considering intrinsic value of non-human beings for ex, then the leadership right now in most countries is absolutely failing. For ex. In NL you have party for animals and its being made into ridicule especially when it started 10 years ago, because they treat cute things and kind of silly things, and they were called a one issue party; but they didn't agree they called the others a one issue party, we are a billion issue party, because we talk about billions and billions of non-human beings. And here's for ex a leadership of a political level that has been quite successful, as they started 11 years ago they only had one seat in the parliament, now they've grown to 5 seats, and they talk about biodiversity and sustainability in a larger sense, and climate change and all kind of systems that are interconnected. And another example is from Douglas Tompkins, who use to have shares in Patagonia and there's a corporate person who was trying to change a lot of things in such a way that basically the money would be used for better purposes, but in truth the dilemma that he is facing himself, a moral dilemma, is the fact that he become a billionaire is derived from something which had to do with increasing consumption of his products, that he says nobody really needs. Or for example the leader of Amazon, donated like 20 billion of personal assets to fight climate change, but at the same time is delivering billion of packages especially in this crisis, so can that compensate for the environmental damage which is done? So, you do something on one hand as a corporate leader, and on the other hand you are doing charity. So, I think one of the questions for the leadership is indeed to stop and think, just like with the SDG's, first what we want to achieve what are we leading on? Its easy to say I'm a leader, follow me, but again if the core value is life on earth and you see very few leaders in corporate. Doing that, and also down on the ground you have lots of social movements, but you also have a non-corporate movement, such as the extinction rebellion, that might be blocking the roads and demanding climate action, and you have another movement which is much bigger next to it which is the yellow vests, that are demanding the price of oil to go down, because they are demanding everything to be cheap and environmental regulations should be thrown out of the window. Democracy has all kind of things in it, and not necessarily inherently good, if we give the power to the people, that doesn't mean we solve all our environmental problems either.

5. What do you see as the role of creativity for sustainability leadership and how would you develop this?

   Yes and no, I don't like the term because its been overused quiet a lot and we use it for pretty much anything, or nothing. In fact we even had creativity workshops at IB (international business) where we were given a macaroni and marshmallows and we had to build as a team some kind of structure from it, I think most of us hated it, even though it was kind of amusing. But I think what we talk about in creativity and leadership is some kind of thinking out of the box coming up, I don't think its necessary, solutions are already there, its clear what we have to do. You don't have to be too creative, you can use creativity to inspire others, but I don't necessarily think of creative solutions, they might actually take you away from your core task of stopping deforestation, stopping pollution, there's nothing creative about it so yeah…

6. What would you consider the key internal aspects and abilities of sustainability leadership and why?

   One of the skills is critical thinking, once again I find it a very big challenge if we talk about just some kind of sustainability leadership it could be about anything, so the ability to think critically to understand that's I think the competency number one. The ability to think how to best reach the goal of protecting life on earth, through which means social mobilization, so it

could be a task of political leaders but the irony of that is that they are being elected by people and if for examples somebody like Mark Rutte (our Dutch leader) right now says, ok let's forget about corona crises, lets focus on climate change as the global emergency, I don't think he will be re-elected next time around. And in fact, in some countries the president gets assassinated if he gets too cute and cuddly with the animals and says we should actually stop this economic growth or he will be declared mad and put into a mad house. so I think one of the points of leadership is about to think very smartly if you have very good goals how not to get yourself thrown out of politics, assassinated or thrown out of a corporate position like a CEO position, because you are seeing as to soft or not focusing on profit anymore.

7. How would you make internal developments, such as compassion, connection and creativity tangible, visible and/or discussable daily skills?

   Connection and compassion are the ethical part of it, I don't know how to do it best because the things when you tell people in general, you have to care about the same Blue Macao, you have to care about billions of (non)-human beings, well if you tell it this way non-creatively already, some are going to say that they care already, some will say yeah good luck with your caring but I'm not interested, goodbye; but yeah I do think connection with nature, with each other, connection without a species and caring and compassion for them, the fact that who are we perhaps destroys others, shouldn't we feel sorry for what we are doing, yeah its one of the key mechanisms but also the key questions is, how do we get there?

8. What would you do to facilitate others in the development of their internal sustainability leadership?

   One of the things I do on my courses, so we look at critical articles, and have debates on subjects such as if poverty reduction can be decoupled from increase of consumption of natural resources and I ask students to think very closely about relationship of economy and environmental systems. One of the first article discussed is "the new flat earth society", argues that will not have a problem at all if the earth was flat, because economic growth could be indefinite, and things like sustainable developments could continue for generations to come without a problem at all. Well basically he says that if you believe that earth was round then this is a complete nonsense, sustainable development the way is currently conceived is not such a great idea; there's also another article about the more intense agriculture becomes among other things it also hurts welfare of animals for example, so basically in my own work when I teach students, and during my lectures I will usually let students talk and ask questions. Through those debates in class, reading, films at the end they will have a more critical ability to look at things like SDG's and relate to them on a higher level.

10. Was there anything you would have liked to have shared but haven't been able to?

    I can share my articles about the SDG's and that could perhaps add to it, I do think we should start thinking very critical about sustainability and especially sustainable development goals, and not just keep repeating what everybody repeats, maybe we should not have the SDG's and the leaders should really think about non-human life on earth and billions of others

INTERVIEW 2

1. Can you introduce yourself and your work?
   Candidate B: More than 40 years' experience in different areas. For 10 years I own my business, called WIN, previously I had more than 30 years in telecommunication, I change environments as result of technical developments and effect it had on people. I was not

happy, and I was constantly for something else, but somehow, I didn't make the change until I was 51. I thought I would retire but instead I founded WIN, where we build an experimental environment regarding the future of work, I started blogging about it, and I realized writing was always something I wanted to do but never followed my dream because I didn't thought it was possible to make it at that time. The interesting fact is that I forgot about my book being published in 1990 and now is interesting how I managed to have an income, earning maybe less than I used to, but this transition helped me learn what it means to work for your own values, and money is only part of it. We need a new perspective from work that is not only about money or material

2. What does sustainability mean for you?
   Means that not everything has to stay the same, but we need a long-term view besides the daily things we need to do. Simply put, in order to survive we need to find the meaning for longer term and how to contribute. I believe everyone can contribute no matter where u come from. Sustainability is one of the things that come up long time ago, when it was included in the people-planet-profit scheme, but if we look at it now, we can see that we are making life impossible for the planet. You don't need everyone to be aware, but you need at least 20% to believe in it, this is one of the principles that I follow ever since I discover it. Is named economic pareito, and it implies that 80% of results come from the 20%. For example, in bookstores 20% of books make 80% of the turnover, if you take away that 80 percent it re-organizes itself and it will be another 80, which is worthwhile to follow but not for the results you need. So, if you focus on 20% of population becoming aware and involved in sustainability, it would further transfer to the rest of 80%

3. Can you tell me about a recent challenge you faced while working on a sustainability project? How did you overcome it?
   The most thing you have to overcome is called mistrust..., you need to ask yourself, are you doing it for your own sake or to do something that is bigger than yourself? And like before the I'mBink course, I wasn't aware of all thing of sustainability until I quit my job, and you don't realize things are different until you find yourself in a different context. There is value to see things from diff perspective it's not a matter of good or bad but about what can you learn to add value and what u see is when you look at things differently, you start also following your passion. When I found myself in that new context, that forced me to look at things differently, I started writing about it, and creating new work. It's always important to make it part from a larger context /bigger purpose, people-planet-profit and see where contributions can be added. Minimizing to Bink course, with things were doing in the end it works at a smaller level, but starting smaller I think is better nowadays.

4. What does sustainability leadership mean for you?
   From the same view in this time, I think all kind of contributions to do things, to make people aware of etc, is part of leaders' job, as well as for developing a long-term view that bets for everyone and make it happen. It also means entrepreneurship, not in sense of owning a company but, you need to act as if it was your money if even if you work for someone else. You want to add value in the end.

5. What do you see as the role of creativity for sustainability leadership and how would you develop this?

Time, trust and money; People lack time, we always busy doing our things for short term. The experience is that trust takes the longest time to get confidence do things in a different way, that's what we can do to organize things in a different way, as we most of the time are busy with things of today I think it must be a combination of the short and the long term, but not everyone will be able to do that and are willing to do that. Therefore, I really think in the way that's the same as we are working here in I'mBinck. Not everyone has to believe in it but what we have is a network of people who believe in this approach of things and they are willing to take some time to put some time despite of everything is responsible for earning his own money etcetera But the belief and spending some time and energy and making it an environment where you would like you know to be part of because you're proud of it etcetera and in the end it's also profitable for you work or your company; and the only thing you can be surprised of is so many people once this kind of were way of working living…why isn't it happening? And why aren't we just facing it?Because I really think that more than 80% of people want this and the only thing is they don't know how. So that's why I really think you have to use all the things which is happening to make people conscious that it is already happening, and you can be part of it if you want. But it also can work if not everyone is participating But it's complex because as to what I say I say I put a circle around and talk about my environment for this issue which is the Bink course, and if you put a circle around it we are part of what is happening in the Hague, Netherlands, the World, etc. so you can't close yourself off of it and also you have to be flexible in how you spend your time and your money to make it happening.

6. What would you consider the key internal aspects and abilities of sustainability leadership and why?
   Trust that everyone can contribute, its starts with confidence within yourselves, but it also comes from working with other people. Because it's very difficult to look at yourself because what you think is very normal, for other people is not normal, and the biggest mistake that you can do is to only get like-minded people around you, because from the people-planet-profit approach, you really think you need to bottom up and you need to cool down, you need both, you need left you need right, you need people looking from an economic perspective, you need people who look from a more idealistic perspective; so it's the combination of those three and if you aware of that and you think of it, you only need 2 other people to get things started. So you can start very small, and gradually make it larger, the big problem is society nowadays is only large figures, that's the thing that gets interest, earning lots of money that is what people think is success, and if you start small, a lot of people think are not very successful. But in these times, I think we can really prove that is different, if you start small you can always make it bigger and then what you see is that you don't need lots of money to start with for example. So, the importance of money is much more exaggerated I think in this society and if you think that on one side you need money on the other you need time, and knowledge is time, and you also need trust. What I discovered is that if you work and live this way, you also need less money (back to previous example), and you can still have time to do the things you want to do in your life.

7. How would you make internal developments, such as compassion, connection and creativity tangible, visible and/or discussable skills?
   If you realize the size of the rational thinking, you need time, money, etc. is the softer part and I think the skills we need when we look towards the future, we should be aware it a very important part to develop those soft skills. And the way you describe it, with the 3c's help if everyone gets aware, needs more emphasis as well as in education

8. What would you do to facilitate others in the development of their internal sustainability leadership?
   Share the knowledge about it, what we do is for the community not for me, I don't own it the knowledge so it should be accessible and available and with that knowledge we build new fundaments, and my personal mission to get more people involved in the whole transition, because young people should have more say on what we are going to develop. And besides that, I use my writing skills to become more aware of it and share my network. But in sharing and co-creating something that is bigger than yourself, so we share our network, very valuable of 1,500 people, that all want this kind of development and no one knows why, there is no one solution only, and is kind of trial and error what you do but if you facilitate, the willing you give them a kind of platform, that can go further, and more people get enthusiastic about it, and at the same time you can build you own experience as well

9. What are the internal barriers and prejudices that you encounter in yourself, students and/or colleagues that needs to be overcome for sustainability leadership? And how would you go about overcoming these?
   You must be active in different networks, the solution is not coming from within the school for example, is just one environment, the more u is working and living in the same environment you get "blind". Because you look with the same people to the same problem, that not come to new solutions, therefore is important to be part of several projects and not only focusing on one thing. But in the end if you bring it back to that 80% - 20%, and if you know what is the 20% that makes you different from me that is the kind of basis you can always rely on, and it gives you a lot of trust because is something that belongs to you and no one else, and at the same time every person is unique, and it makes you unique, although we can believe in the same thing, its interesting to look at other people how you can help each other or use each other, to bring your idea further. So, besides school, different networks is important and your private environment and I always believed in the number 3 (people-planet-profit).

INTERVIEW 3

1. Can you introduce yourself and your work?

   (starts by showing his work environment) so this is my work room, I have a creative profession so all my materials are here, and this is a door that I use as my desk and when I work creatively I also have all this documents out, because my brain thinks of all these different things and this is how I maintain an overview and I sometimes record videos so I the background there for that, and I have lights for when I need to take photos of my work, and I have another door (desk) here with multiple items and many drawing of stuff I created. So my introduction is Hi, I'm Candidate C, and I'm an expert visualizer, my background is actually in Industrial Design Engineering, so I'm an engineer and I work for 5 years at a company to learn how to make really beautiful drawings, what I've noticed is that the moment I start talking to people about what they want in that drawing and I ask questions, then we can also go a little bit deeper where I help them create mature simplicity. For leadership this is really important because if you want to move a group of people and get them to go towards a certain goal, you need to be clear about what it is, and if you use expensive words and vague descriptions… if there's no clarity people won't move. So the mature simplicity is that you understand difficult topics so well that you don't need any difficult words to explain it, and a lot of the people I help are executives or management teams who are in a transformation, where everything is new and is

there for only very hard to use words for that new thing that you're going for. My clients are for example the CEO, achieved informational officer of Erasmus university in Rotterdam or the national organization to help universities, so that level of education to do all the marketing, so I do big drawing for that organization.

2. What does sustainability mean for you?

   Sustainability is a word that can mean different things depending on the context, if its at a personal level, but for me is also how I work everyday and if that is sustainable for me, you know can I carry on, can I continue doing that over long time if I look at the work that I deliver for clients and is that a sustainable business model, would I need constantly new customers? Sustainability is also a term for my clients thinking if what they do is also sustainable? And if they can carry on their business model; and sustainability in general, on how we take care of our planet and is it sustainable, meaning the planet will survive if we keep doing it, but I think it's actually a sucky word, it doesn't cover what you need to cover when you're talking about the planet because in my vision it would be useful if you have a business model that actually helps nature grow and flourish.
3. Can you tell me about a recent challenge you faced while working on a sustainability project? How did you overcome it?

   So one of the drawing we made was for the finance and control of educational track at your university and the role shifting so we need to let both the people in university, and high schools, to let all the professionals know that we see that for someone who is in the financing control in education that they need to be able to have an understanding of the SDG's, so we noticed that the sustainability to think broader and beyond your own company, from a globe perspective, which means you take into consideration the perspective of the whole
4. What does sustainability leadership mean for you?

   I think that's a type of leadership that can really look from the perspective of the globe, so for example I have a background in design thinking where I learned to look at the perspective from the end user, so I've trained this skill and its very easy for me to talk as if I would be a client and what I would like, for most of my clients this is really refreshing cause they find it very hard to do that, because they want to spread a message but then I come and ask but is that what the client wants to hear? And they stop and realize they haven't thought about it, and sustainability leadership will be one step beyond that. So, to be able to take the perspective of the globe and I think that is a skill that technically I use, but for this perspective I am not using it so I would have to learn this myself.
5. What do you see as the role of creativity for sustainability leadership and how would you develop this?

   I think creativity is also imagination, and what I mentioned with design thinking as a method but also as a process is that you start thinking from the perspective of someone else and that's what I think is necessary, that you look beyond your own customer, and that you go to the globe perspective. And I think the role of creativity is to be able to think in multiple scenarios. So that's one, scenario thinking – what is the effect that I have; but also if you are aware of a bigger effect in the world around you, then creativity can also help you connect with others in the field to seek out new opportunities. So I think the creativity is much more necessary to create new and that has everything to do, for example if you use one app that see that works well across devices, if you notice that hey this can be used in many more ways, then you also need creativity to look at this options and to create new (business) opportunities. Moreover, I

believe what we need in the future, for sustainable leadership is for people to be able to give direction and create new paths, and in order to do that you need the creativity to direct.

6. What would you consider the key internal aspects and abilities of sustainability leadership and why?

   You need to be able to handle massive amounts of uncertainty, there so many things you can't know. So, you have to trust the process, that's one. I think also to handle other people views, you need to be able to accept that other people might be also right, but wrong in your opinion, so you need to be much more accepting of reality because it won't be to your liking. And you can picture this by looking down and seeing the nr 6, and then the person across will say no, no, no that's a 9, and you're both right but you're disagreeing. And I think in sustainability leadership there will be the exponential version of the fast change that we see around us so not only do you need to be able to handle uncertainty, you need to be able to adapt, survival of the fittest. That's an ability to adapt and what will help is learn, fast learning, continuous learning.

7. How would you make internal developments, such as compassion, connection and creativity tangible, visible and/or discussable daily skills?

   So, I have this method that I found after my talk with Bas about the minor, but is called Talk Visual, and the idea is that you visualize what we are talking about. It's both a method and a way of working, and you mentioned the 3 c's, I noticed that is exactly the things that I do. With connection it really means that I'm listening to what you're saying and I'm trying to write down what I'm saying and check if this is really what I've been saying, I try to get the information but for our interaction I need first to connect, that's one of my mantras "connect before you interact". Si it's necessary to connect, then with the creativity it comes automatically the moment I start putting all these pieces in front of me with this method, I can't stop myself from seeing connections and patterns, so my mind comes up with solutions and patterns. And regarding compassion, if I'm really checking in with someone, I also want to check in internally, what do I feel? Because what I feel tells me something about the other person's feelings. So, I do my work really well because I allow curiosity to guide me, because I trust my internal sensors like intuition.
8. What would you do to facilitate others in the development of their internal sustainability leadership?

   So for example I have this journal, and I write in my journal every day, and sometimes I write double, drawings in there but its like a work of art, but the point is that I am very conscious that in order for me to be more successful in this world I need to do better than other people are doing, not like winning but more like what is really working? And for that I need to learn what is not working.
9. What are the internal barriers and prejudices that you encounter in yourself, students and/or colleagues that have be overcome for sustainability leadership? And how would you go about overcoming these?

   I think one of the major internal things is that I come from a world where there was no internet and what we have now is abundance, you have to choose, so its more important that you choose and that you create a direction and a path for the future, but the prejudice is Zero Sum Game, there's a ted talk about it and what it means is that for me to win you have to loose, but in the world of abundance it doesn't work, in love if you create something new there's even more love. When I work with clients, they say how about you share and make

your core product open source, they would never agree and that's an internal barrier, because if they think of the amazing amount of other stuff they will get, attention, respect… I had it with a colleague once and I said we should give more drawing lessons, and he said wait but if they know how to draw then we are out of a job, and I was like: what?? No…nooo, it doesn't work like that. Sharing about insecurity, I work with clients in transforming their company into digital, but we also need the cloud, it took them 2 months to come up with this because they don't exactly know how to make that solution and when they were working on it and they were insecure, they didn't share much because every employ thought "they're going to fire me". Another barrier is risk-adverse on creativity. So, they see something new but instead of trying it they shy away, and another barrier is that they can't think in little steps, that's the core of agile working, that you work step by step. So sometimes I let the client choose between two options, and my colleague says no we need to give them one option and see if it works and then it starts a whole discussion about one or two, the point of here guys is you don't think it all out, just do five tests on this one, five on the other one and check and on the base on the results you take decisions. So this whole I need to think and plan is another barrier, because the risk adverse is that people not enjoy trying out new things and I have this mindset that if I never tried I think I can do it, but most people don't do it.

10. Can you recommend one or two people we have to include in this research?

    Henk-Jan Room

INTERVIEW 4

1. Can you quickly introduce yourself and your focus in your current work?
   Candidate D, I Work at delft in technical departments, and when I started at the Hague 5 years ago focused with build environment in the city and main focus to create a sustainable city within Urban Metabolism, of course there are giant challenges, but the city is a key element for the challenges to meet. It's a dense area that creates options to combine things, to make things symbiotic and also making tremendous spaces u need to study quite well.

2. How do the activities of Urban Metabolism contribute to the transition towards more sustainable futures?
   There are a few areas of contribution, including research, education, minor programs, like smart sustainable cities on heat transition. Addressing questions like how can we provide thermo-comfort to districts of the Hague without using fossil fuels? We also collaborate a lot with citizens group, one is situated around the peace palace, one at Thuas and one around the dunes. There are also some small projects for students to participate on topics like fossil fuel, district heating systems, local initiatives for sustainable heating in the Netherlands, finding out what causes the current negative feelings around it and how can it be driven by citizens. Besides the research in heating systems, we also focus on waste and water.

3. What does sustainability mean for you?
   Making systems that don't need external resources, that are not wasteful, don't pollute the environment and provide a good source for people, provide good basics things without ruining the planet

4. What does leadership for sustainability mean for you?
   Certainty, complex changes, most people don't understand these kind of things. It's interesting with the virus, all the warnings and people still can't change their habits for a few days, even if

it's for their own safety and other. And all the other things people can't really think in big change because they just are thinking in terms of doing the same thing, but we better learn how to do things different. It's amazing to see even in my domain and in the topic of heating systems in the city, how many intelligent people don't understand what this giant change means. Private industries don't change by itself u need the government to be involved for change, which is hard, the ideology on one hand that is better to use democrats which don't change by itself, once they are place private industry can take over. For example, telephone industry started as a private industry but then government said that is inefficient because you need connectivity among all networks to work worldwide, and then the government decided to take it over and nationalize it for all to use, and after can be privatized again; which the same thing happened with the internet.

5. Considering Leadership in Sustainability, as part of the transformation of well-being of cities and citizens, where do you think rests the key core internal and external abilities that leaders should command and why?
   Many people are unable to perceive these changes, it's hard to live in a society where you can't hug someone, or shake hands, seems as if we were an experiment now, but its far more complicated for sustainable changes. For example, people that are used to deal with their car and needs to change in order make transport sustainable, they claim very often that yeah its expensive but I think the resistance is because of the lack of information. If you would calculate the expenses for both cars you will see that in the end the overall price is the same. People just want to adopt something and not think about, we all want to innovate and if u talk to people they always tell u about the resistance that they meet even though they are good ideas

6. How do you see the relation of creativity and sustainability leadership?
   Yeah, we all have a lot of prejudices which we need to some extent. But all these have led people to reject ideas, so projects fail because people think is not interesting as they know another that failed a few year ago and they won't even consider it. In my field one prejudice we are dealing with is organic waste, in NL people believe is not worthwhile to separate waste and deliver separated, because it's not treated differently. This started in 1980 when municipality started collecting organic waste and didn't have the capacity to incinerate all of it, and people still believes that applies even if technology advanced and now the process allows for all waste to be treated. You need collective policies to get the change going, the climate introduced problems for the past 20 years within more technological markets, when u need change u need government policies to be involved.

7. How would you go about developing creativity, and creative thinking for sustainability leaders?
   Laura Stevens in biomimicry, focuses on all these solutions encountered in nature that can serve as inspiration and also show you that is quite complex to develop a solution that also happens in nature, which is really imaginative and requires lots of creativity. Also interesting for people to learn how thing sometimes might be different organized in different cultures which u don't learn as a tourist/ they expect all to be the same but when u live in another country there are daily issues that u face and are organized in a different way. If they would realize it, there would be more opportunities for developing creativity from a different way. Some more efficient than other but openness is important and sometimes lacking.

8. Was there anything you would have liked to have shared but haven't been able to?
   Is challenging to think what is happening now. Never waste a good crisis, somehow could be interested to think how to use this crisis to get more cloud for sustainable development and

present issues that we want to solve, not just as options but good ideas to implement better solutions.
People now suddenly cooperate better through internet, but 20 years ago people believed that because of the rise of technology in the future we will all work online while living by the countryside, but the exact contrary happened.

9. Can you recommend one or two people we have to include in this research?
   Laura
   Delft
   Jaco Quist, j.n.quist@tudelft.nl
   Kas Hemmes

INTERVIEW 5

1. Can you introduce yourself and your work?

   Candidate E, associate professor at TU Delft. After his master's in physics he was coordinator of the Delft fuel cell research program in the Materials Science Department for 15 years. As of 2001 I joined the faculty of Technology Policy and Management working on energy systems, sustainability and technology dynamics. I coordinated a number of European and national research projects in the area of fuel cells, hydrogen and natural gas at the interface of technology and society.
2. What does sustainability mean for you?
   It's an umbrella definition, so almost everything is included, sometimes let's say is just all the goodies, this is in summary, what I tell students also is that I try to broaden their understanding of sustainability. So, most people have a narrow definition on sustainability and it actually includes almost everything

3. Can you tell me about a recent challenge you faced while working on a sustainability project? How did you overcome it?
   One of the challenges is to narrow the view on sustainability, they focus on one problem that they think that can fix the whole problem, so that's content wise. If you say project, I think of a research project, and for ex in education, so you see education as a project which we never define as a project.

4. What does sustainability leadership mean for you?
   Leadership is sort of a modern term, that everybody wants to have; it is also inspiring people, meaning people who inspire others, people like Amory Lovins in sustainability, from the 70's he's been involved in developing renewable energy, technologies and implementing them in society. Other people outside sustainability like Martin Luther King for example, they really show leadership that's what I connect to leadership, not personal leadership where you sort of lead others.

5. What do you see as the role of creativity for sustainability leadership and how would you develop this?
   I studied creativity and it's a really interesting topic, there's a lot of literature some inspiring names : Edward de Bono, he has written books on lateral thinking and creativity, he also has

a very interesting book for children: "how to solve problems", he asks children to ask to solve problems like how do you weight an elephant? And he shows that children sometimes got the physics wrong, but they come up with ingenious ideas like if you put the elephant in a boat, and the ocean displays they have some notions very interesting to look at.

6. How would you make internal developments, such as compassion, connection and creativity tangible, visible and/or discussable daily skills?
   If you look at people who try to change the world, they often do that from an idealistic incentive, sustainability for instance they put solar panels on the roof, and now everybody does it but at the beginning they were the pioneers and they didn't for the money because it was not about economic growth at the time, they did it for idealistic reasons, they just thought we have to go that way so let's start somewhere and that comes from internal motivation. If you look at economists, they say when does a new technology enters society? Well there's a turning point when you have enough and where the price becomes cheap enough and that it becomes economics and then it will take off, but you see that it doesn't work. Because in the beginning is never economic and then you will never get a certain market, production and the price will never go down, so you need people who against all odds just implement them anyways. Be a bit more irrational and more idealistic, not being the homoeconomicus.

7. What would you do to facilitate others in the development of their internal sustainability leadership?
   Well everybody has to do it, not only leaders, it's a very democratic process, like pioneers they just do it, there's no leader that tells them what to do, they do it because they have internal motivation, so I really oppose to the idea that you need one leader to get that done, so I'm not interested in the qualities of that leader, because I don't think they should be there in the first place. It's about quality of all people, so the soft skills of all people and listen to their internal motivation to do things which may not pay off or not be very rational, but they just do it. Against all odds, against all reasoning, against all leadership. Things are different all the time, and you cannot anticipate that and just follow a leader, you need diversity, maybe that is another aspect. If you look at nature is very diverse, and therefore is robust against all kinds of crises, like corona who may take out human beings but not nature and the other animals because it's a diverse system and robust. Also, your sustainability development system should be robust in terms of diversity.

8. What are the internal barriers and prejudices that you encounter in yourself, students and/or colleagues that have be overcome for sustainability leadership? And how would you go about overcoming these?
   For technical students I think is hard to focus on soft skills, when they have to focus so long on technology and mathematics, and they forget how technology is implemented in society and what consequences that has. That context with society is different in different time frames, so for example when I was a physics student, we were talking about the implications of technology like nuclear bombs and its consequences and nuclear energy for the whole world. So, we were discussing polemology, the science of war and peace, and that was our society-technology relations studies. Today is more about sustainability and within sustainability things also change, so for example in the 70's it was really about renewable energy, developing wind energy as a starting point, later on of course global warming popped up, so there different phases in time where you have different issues and you should be aware that you are in such a phase and that things might change

9. Was there anything you would have liked to have shared but haven't been able to?
   Now we really miss that connection in this time, and if you really want to talk about leadership, maybe you better call it inspiration, some people are really motivated and driven to do something and that is contagious. So, if someone is really motivated, sort of everybody wants to join that and feel and do the same way

10. Can you recommend one or two people we have to include in this research?
    Theo Wolters (MSc TU Delft Industrial Design), founder of the company Fabrique in Delft, we did some innovative technology projects together with him on biomass gasification. (Biomexx)

INTERVIEW 6

1. Can you introduce yourself and your work?

   Candidate F, lecturer at the Entrepreneurship program/department, that's for 3 days a week; 2days a week I'm a researcher, currently researching Frugal Business Model Innovation. And Frugal means doing less with more, Frugal Businesses achieve produced product that you use less resources. For instance, it originates from India or from Africa where people don't have the resources and they come up with ingenious solutions. So I'm studying this ingenuity or innovativeness in order to transfer it into the western, more developed countries so we learn to use our creativity using less resources or creating more value with the same amount of resources. And as a researcher I'm connected to the Center for Frugal Innovation of Africa, that's research program by the Leiden, Delft and Erasmus university, combining their efforts on this topic.

2. Can you tell me about a recent challenge you faced while working on a sustainability project? How did you overcome it?

   So one is the Frugal Business, and another one is the status of entrepreneurs and entrepreneurship educations programs. What I try to aim is that when a person creates a new business, you eventually have to calculate what's the financial effect of your new business. That's basically in every business plan. You need to be financially sustainable. What I would like to add to that is companies or education programs not only calculate that financial calculate but also calculate social effect and I created a tool that students can calculate financial effect but also their impact based on the SDG's. so, what I would like to create is to change is the mindset, don't think only about whether its profitable also, think about that does it actually add to the planet, one way or the other. And use the same set of skills that accountants do, so it's about calculation, not just telling a story, but it's about proper research, validating and calculate. That's a bit of a challenge to get that, to get it incorporated in the program of my own education and in other programs. But by being very stubborn, pitching my own proposals to everybody who wants to hear it and try to get my tool integrated in education programs, once it's in there, usually it stays there. My tools also presented in September, there was the opening of the academic year, then my tool was presented to all the educators of THUAS, and now I got "a foot in the door" with certain programs like international business and European studies, so I try to get my tool integrated in other education programs with the aim of changing the mindset of not only calculate your financial effect but also your social effect.

4. How did you come up with the idea behind the tool?

   Basically it's the story of my own career, I am a finance professional, I was a finance director when I was in my 30's, quite successful, but really miserable in what I was doing, getting as

much profit for the company I worked for and get the highest the salary for me in the process. So that's what my life looked like, and when I was 40, I ended up in a midlife crisis, that men do when they are in their 40's some buy a new car, or change wife, but I pursued a new career. I started teaching and in teaching I see that my financial skills could be transferred to the social domain, and that how I used my own knowledge in order to get something done in the social domain, or the impact entrepreneurship programs.

5. What does sustainability leadership mean for you?

   Well basically what I'm trying to do is to be that leader that actually makes a difference, not just change one student, I love the fact that some of my students graduate on a circular business model, which is great, but you creating a tool in education programs has a multiplier in it so, when more education programs use it, you get more change, that I can reach only as a lecturer myself. So, leadership is trying to get to be as effective as possible and get it across, what I think is important to change.

5. What do you see as the role of creativity for sustainability leadership and how would you develop this?

   An entrepreneur is successful when you can come with something which is non-existent at that point because you can't compete with for instance Google, or with a bakery that is around the corner, you have to come up with something that should be always better. That part in coming up with a good business idea it has a lot of creativity in it. And what I add to that creativity part is don't come up with something that you think has a good chance of being successful market wise but also think of something with the SDG's in your mind, can you make a difference somewhere, can you add something to one of the SDG's ? and in the process adding more value to your product, so customers want to buy good products, but also they want to buy products which well could be biological, or solving child poverty whatever, it has also really interesting market opportunities. In that creative part I add a new value, meaning the SDG's, make products that could change even a little bit the world for the good. And therefore, you need creativity, you have to come up with something new and that's always challenging how you can organize the education process, and entrepreneurship students can actually come up with something new, but that's the challenge.

6. What would you consider the key internal aspects and abilities of sustainability leadership and why?

   That's a broad question, and I'm more talking like a professional and how I do it, and I get the change from my university to come up with solutions myself, so you need to have what you could say is the autonomy of the professional, you need some trust as an organization in the professional who can make change possible, so if you have too many rules, the process will be inhered. So, what I think is important is that the professionals in every aspect in daily life are much controlled or have to apply to so many rules, you have to try to give confidence and trust in order for them to come up with new solutions.

7. How would you make internal developments, such as compassion, connection and creativity tangible, visible and/or discussable daily skills?

   I just came from a week in Munich, a bootcamp, that's a high intensity of education programs and every year I'm so amazed with what happens there, and in one-week students can get so much done, event international students. You need diversity in student groups, so international students brought together, from different disciplines but also from different countries works really well. So diversity is important, second one, you need an open learning space physically so you need to have space where people can intermingle without to many rules attached; third one is visualization tools, if everybody is taught to a certain education

programs a few years ago, and everybody was sitting behind their own laptop and continually ticking on their laptops, there was no interaction between me and the students and I hate that. Just basically summarizing my words, why do we have a class? If I can just write it down for you, so you need interaction between students, professionals, educators, etc. and that has a really meaningful connection, so I also plead for low barriers between lecturers and students, so also there is the trust from educators and students that they can do better that we might think.

8. What would you do to facilitate others in the development of their internal sustainability leadership?

   What we use is design thinking, that an underlying step process to get to a certain project result, also lean start up has its own visualizations, it all comes to canvases, empty paintings that you have to fill them using post it notes and group creativity. And If you create a design thinking step by step process, and those steps are made by filling in different canvases. That's at least how I organize a lot of my lessons in the minor entrepreneurship, which is fully based on design thinking and canvases that we use.

9. What are the internal barriers and prejudices that you encounter in yourself, students and/or colleagues that have be overcome for sustainability leadership? And how would you go about overcoming these?

   Too much emphasis on knowledge, trust between students and lecturers also, the limitations found in the rules set by the organization based on timing and how much rooms are available, you have to organize yourself within certain limitations. And I think that's it, I don't see many barriers in myself so

10. Was there anything you would have liked to have shared but haven't been able to?

    Confusion for example is a great source of learning, there's the trust factor again, if students trust me that in the end will get there, because confusion shouldn't end up as irritation. Students are the ones who usually demand structure, they need to know from a to b, exactly how you get to the end results and that's different when you have creative processes, then you need a basic amount of trust because anything what gets out is ok, so I can't tell you what is ok at this point of time sometimes students are confused, and that's a problem only if students have been damaged in the past that they think they can't trust the lectures, that they will be treated eventually unfair, when that exists, they will judge that confusion much more negatively when the student have more confidence in the fact that in the end it will be ok, and that depends immensely between the different programs of our university, and the discord away, the culture between programs. So, in a minor you have different students from different programs and they all different per program, in how they speak to me, interact or even if they trust me.

INTERVIEW 7

1. Can you introduce yourself and your work?

   Candidate G, To put it in a nutshell, since 2016 I've been studying a second Masters at Arizona State University, in Biomimicry, and to put it shortly that's a translation of the strategies in mechanisms in nature translated to design engineering, for example or social design, in different disciplines. What I learn there, I teach in the classroom at THUAS, and kind of a concentrated version of what I learn there, and I do research on how students are learning and how biomimicry is helping students learn to become more aware of global goals, the SDG'S, climate issues, education issues, production methods…so you think about the ethics of design,

and also about the creation, like I just said the translation so that's called emulate and also reconnecting to nature, I think if we understand nature a bit more, then we are more bound to protect it. So I think the combination of the three essential elements of biomimicry come together in the triad that I'm doing with the learning, teaching and doing research on what the students do, so the final part is doing the research on how students learn and what does it help them, and how do they learn from the analogies, like taking two contexts from biology to design and that connection in between, like a metaphor.

2. What does sustainability mean for you?

   It might be a general thing, but is like an awakening, an understanding of the importance of taking care of the planet we live on, and that's really all inclusive, its taking care of the planet and environment but is also taking care of how we think, our minds, and are we fit being part of nature.

3. Can you tell me about a recent challenge you faced while working on a sustainability project? How did you overcome it?

   I was a teacher on sustainable product design and for example student were trying to come up with sustainable ideas but most often they were kind of hollow, like they were just reusing pallets from the beer factor or something, so recycling just a few elements and calling that sustainable, and that in my eyes it's kind of like Green Washing and I wanted to give students some kind of methods to really measure the sustainability of their project and I think life principles within biomimicry, kind of gives them a set of checklists. So that's one of the messages that I try to get across students, is if you want to sustain more sustainable design you can mimic shapes or forms, or actually look at the processes that are taking place in nature and mimic that, that's behaviours, and the next step would be also mimicking systems and systems thinking is quite difficult to do, but the more you can achieve a holistic view instead of a hollow view, when you're trying to save the world against plastic maybe you shouldn't make things out of plastic, so you know trying to connect all the dots and think about whatever you do there's an action and then a reaction, so thinking about those different connections and relationships within a system will really might help students think about sustainability better

4. What does sustainability leadership mean for you?

   I think also having some kind of backpack knowledge that you can make help education be an inspiring but also when u focus on being a leader you should focus on real and relevant project and challenges and not just ok let's make another chair, that also really cool as a designer but not really looking at what we need. Its more about making more stuff. So, I would rather it be a real and relevant and inspiring and require scientific research, so I think that's one of the things that biomimicry really does and really helps you communicate within diff disciplines and bring all this knowledge together. So, if I can do that, that's for me being a leader within sustainability. Collaboration that we have as a community.

5. What do you see as the role of creativity for sustainability leadership and how would you develop this?

   Like I said before, if you can really inspire your students and be enthusiastic and really have solid knowledge about what your teaching and your teaching a sustainability issues, then I think that's your role as a leader, and how you can be creative with that is, in my profession anyway is to teach in different ways, we can go outside and pick up acorns, or chestnuts and look at how they grow and how they work. We can also draw on a big blackboard in innovation playground and the students get inspired by each other's drawing and they will be drawing this beautiful animal, and organism and when they start drawing the mechanisms on how they work, that's also inspiring. So, using different ways and playing games in the classroom to

trigger the sustainability within students, I think that's being a sustainability leader and being creative with that.

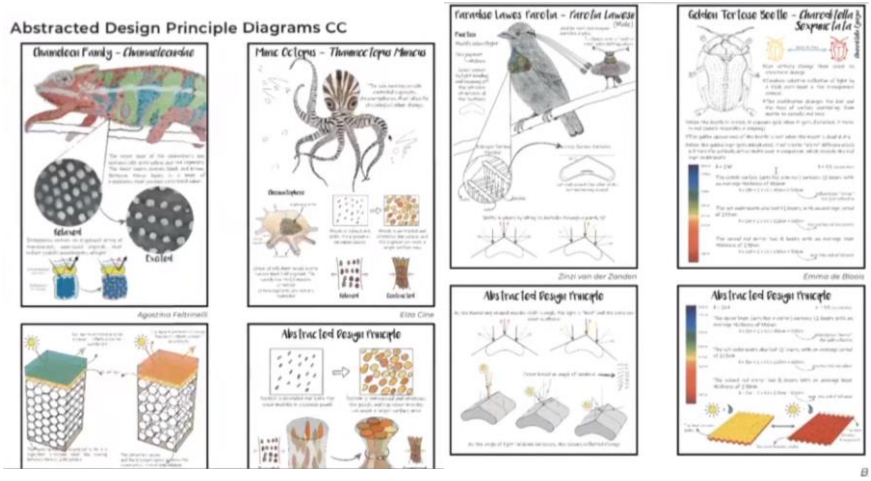
6. What would you consider the key internal aspects and abilities of sustainability leadership and why?

   The key aspects are enthusiasm about life outdoors, so nature and really caring about our future, what happens and not in doom say way, but in a positive way. Not say. If we don't do this the world is going to die, but say if we do this, we can have some really cool things going on, so its bringing the same challenge in a different way, so I think that's a key issue, and how you approach a challenge and actually how let others play the role I discovery because is really a large part of people opening their eye on the sustainability and if people discover, like in biomimicry, organisms like the chameleon that can change colour and they can discover actually how the chameleon does change colour, it's kind of like this wow moment and it really, having those students present that information and encourage them to take part in the global design challenges, that's being a leader, is giving them the tools, but then taking a backseat and letting them be pushed for it and being proud of what they've learnt. That's also important for leaders, to not put themselves first, but put others forward.
7. How would you make internal developments, such as compassion, connection and creativity tangible, visible and/or discussable daily skills?

   For me is kind of an easy question because I would take this form of life's principles and the first the time you see oh this are just some vague thoughts, but if you look at it and choose one. These are overarching patterns, and if you take for e.g. Cultivate cooperative relationships now when you're designing and ask the students who can you cooperate within the community to make this project a success? That's just one, if your local materials and energy, will you look at wind, or solar energy or modern energy in the neighbourhood? So, going through each of the sub principles makes it very tangible for me to have a discussion about what you are doing.
8. What would you do to facilitate others in the development of their internal sustainability leadership?

9. What are the internal barriers and prejudices that you encounter in yourself, students and/or colleagues that have be overcome for sustainability leadership? And how would you go about overcoming these?

   Well everybody who I know who teaches comes from a sustainability school of some sorts and everybody has their own backpack of knowledge of how they learn something. Maybe you can learn to use the life cycle assessment, maybe u learned circular economy point, or different ways to measure the sustainability, what I would see as a connecting factor is to get more students to research on the different ways of measuring sustainability and then having more open actions about it and showing the pros and cons of each method and sometimes you may be able to choose an easier method or something that's more global, maybe more vague, but then you can take that as a starting point and then move on and try in on sustainability issues.
10. Was there anything you would have liked to have shared but haven't been able to?



These are the kind of things that students will draw, and I think this is kind of exemplary of what I meant so students will go into looking at the octopus for example and really do some scientific research, and its secondary research of course because there are biologists that have done research on the mimic octopus and on the Paradise bird and the golden tortoise beetle, and the students come up with these abstracted design principles which kind of explain how the feathers reflect those colours and I think doing things like this is really a good way to get people interested and being curious and cultivate the curiosity to even consider looking to nature to help them design. I would just like to invite people to take the time to check some things out and see if they can do it themselves.

11. Can you recommend one or two people we have to include in this research?

    Marjanne Cuypers, marjanne@blueblocks.nl

INTERVIEW 8

1. Can you introduce yourself and your work?
   Candidate H, lecturer in global citizenship at THUAS, and citizenship practitioner at the ROC of Twente. I previously worked for the University of Groningen, Saxion University of Applied Sciences, Utrecht University and Jure in the political heart of Dutch democracy, and in The Hague, I work on various themes that touch on global citizenship.

2. What does sustainability mean for you?
   I'm writing a paper on this topic, and sustainable developments, looking from an educational perspective, and the role of schools and university, you should consider education as democratic institutes that are apart from other institutions like politics, government, etc. For me sustainable development, referring to the good in coming futures the most used definition, underlying the different sustainable development goals, Its important to understand the meaning from this because It has an impact on developing educational material that addresses sustainable development topics, "addressing the needs of the present without compromising the future" which is an ideal of how society should develop. Bu there's a lot of discussion on this, problems like tension in economic growth, & environmental protection, for the definition to work out, you have to take into account all of them to achieve a balance, beyond social cultural interests. We have an anthropocentric view, nature is valuable only as long as it serves the human being; is difficult to define the needs of future generations, and if we are entitled to decide for them. The ideal on how

society should develop, based on the SDG's the goals are quite to the point. SDG's from global citizenship perspective its meaningful when students and teachers participate thinking how to deal with this societal problems raised in SDG's, the participation means to discuss the solution we have and what we can propose; other discussions we have are on the ideal of how society should develop, it adds lot of values discussing what is best but requires also a critical thinking approach.

3. Can you tell me about a recent challenge you faced while working on a sustainability project? How did you overcome it?
   In primary schools with children, and in education with students , we discuss a lot of societal problems, and we are working on plastic and textiles and what I noticed is the most different problems that challenge our judgement and also while we work with companies. What is important for teachers is to let the people make their own judgement about the problem, understand the amount of stakeholders that face environmental issues, and that they don't always match, is difficult to deal with so much information and take into consideration all this when you talk about it, we really want to make a change but it needs to be intelligent, that we thought about it and discussed it as citizenship. We also need lots of knowledge to make a decision, and your decision cannot be definitive, you have to be open to revise the kind of decision you have made, from an ecological point of view, what can be good at one point cannot have the same impact after a couple of years, openness to review the decisions you made and viewpoint them over time is a necessity.

4. What does sustainability leadership mean for you?
   What I see in education is that often it's narrowed to the individual responsibility, but also as a collective, to hold a sustainable development is important as citizens to recognize the responsibility for change, your individual decision doesn't affect the total, but if you want to really change you need to organize yourself collectively and address changes, not thinking they have the entire responsibility but a shared one, and address stakeholders to make sure they are doing something as well. Leadership is to recognize where responsibilities lies and to know how to address it.
5. What do you see as the role of creativity for sustainability leadership and how would you develop this?
   Besides creativity, you need lots of knowledge as well about the issue, and where you expect creativity to enable you develop potential solutions , you need both to think out of the box, and you also need to know a lot to get outside and to exchange with others that. When u think about leadership you need to be able to change things and become collective agents.

6. What would you consider the key internal aspects and abilities of sustainability leadership and why?
   I would use the term collective action over leadership, which is not a good word for a group. I think is important to organize in a more organically way, without really needing a leader, one competency important here is to value each person contributing to this collective action, being a leader in this action will be to understand how can everyone contribute;

7. How would you make internal developments, such as compassion, connection and creativity tangible, visible and/or discussable daily skills?
   We are very rational thinkers, with bad, poor judgement of situations, research shows that when you have too much empathy, that it disturbs the rationality. If you have all the facts and not have empathy, you are able to make better decisions.
   bloom- calling for rational compassion

Is good not to be overwhelmed by emotion, this is a rational compassion, and if you say you want to develop this you should work with them in topics that they are interested, and use this to help them identify the issue & show them the complexity of the issue, help them think and discuss about them, research shows that we are not good at discussion, listening to each other, sharing, doesn't happen spontaneously, what you will need is to have more skills to collaborate together: they need to debate on their ideas and look at what kind of actions they can do, but you cannot force them to develop rational compassion, you can offer environment, project that matters to students and communities and learning how to discuss on this matters and experience these.

8. What would you do to facilitate others in the development of their internal sustainability leadership?
   Experience, link people realize conditions of people living and working together, having these aha moments.

9. What are the internal barriers and prejudices that you encounter in yourself, students and/or colleagues that have be overcome for sustainability leadership? And how would you go about overcoming these?
   Students don't see the point to ask themselves such questions, same for colleagues, one of the goals of the university is to have responsible professional but then it's not everyone, but this the biggest one, if I don't reach the teachers, I don't reach the student, we are doing some collective research with students, for students voice to lift their opinions and hopefully more awareness will be raised in this concern. Emotional responsibility is tricky in this situation.

10. Was there anything you would have liked to have shared but haven't been able to?
    There will definitely be more associations coming up for students next year and I will really love to hear more their perspective of being students also and what they experiment throughout the university.

INTERVIEW 9

1. Can you introduce yourself and your work?
   Candidate I, and I'm a lecturer at Industrial Design Engineering where I teach different topics on sustainability, values, design methodologies, etc and doing a PHD on how you can facilitate reflection with design professionals to better cope value-based conflicts.

2. Is your work primarily individual, or do you work in groups or teams? And when do you think you achieve best results?

   Both, some of my tools are focused on individuals, but I also organize workshops with Ide students and Master students. I think it's all part of it, sometimes you have to train reflection in groups so you can share your experiences and learn in that way and other times particularly if you have some personal experience in your graduation project for example your first job, then personal reflection is helpful, but what I learned is more effective is to not do it by yourself but to sick help, so that could be a mentor, coach, supervisor, even friends. But helping and talking with someone else about it is the best way, and also having a structure and guideline.

3. What are the most common problems that you encounter as a Design Coach?

The most common one I call 'The Perfect Genistic Design Struggle', where you as a designer often want to have high quality very meaningful products, whereas the client or manufacturer says that we have to cut cost otherwise will not have enough income, and another one is when you start working in a company they have certain work ethics or values and these are completely different than what you experience in university. Somehow students feel under a lot of pressure when they are working during university, but the pression is much higher once they start working in a company. So, this transition period is very loaded with all kinds of stressful events, and a lot of them told me they had to work overtime to meet their standards.

4. What does sustainability mean for you?

   For me it means that you consider people, planet, profit in your design project so integrate all the values in the project you take into account what the planet needs, that you don't over use materials that you think of a complete lifecycle of a product but you also think 'ok does it harm people or not', that you design it in such a way that it has positive effects over negative and that also it brings value and prosperity to people.

5. What does leadership for sustainability mean for you?
   I'm not really familiar yet with the word leadership but I think as a designer you can be very creative and think of really new solutions that other cannot think of. So, you lead by example, so in that sense I think there it could lie the value for the designer. So for example, last year with design with nature you had this coconut, that it was a filtering system for rivers, where you filer out the plastic and this became quite huge in the biomimicry network and they submitted they idea and went to Panama to present their idea, and they continued to work on it over summer… so in this way it kinda comes as an example project. More famous right now is the Boyan Slat, the filtering system in see

   The **Sustainability Leadership** Institute's (2011) offers another definition, suggesting that **sustainability** leaders as "individuals who are compelled to make a difference by deepening their awareness of themselves in relation to the world around them.

6. What are your thoughts based on to this definition of sustainability leadership?
   I think in a way it's a nice definition, but from my own experience it has to come from you own motivation. So as long as you as a person are not motivated to contribute in that way and if you do not want to think of this awareness then it won't happen. So if you have motivation then the definition it holds true, but if you're not motivated then you can raise this awareness in people but as long they're not willing to contribute, it will be really hard to convince to take them along and to really create awareness. And now there are a lot of more people motivated to do something, but they realize okay its really urgent with the climate change, pollution, etc. 10 years ago it was a much smaller group and much difficult to own this leadership only by being aware. I remember I set up my company in 2007 and I wanted to this, and from little I knew I wanted to this with sustainability and I will convince companies to do something with this. I was aware, but it was still hard for me to convince companies so I could not earn money with that, but they hired me for my creative skills

7. So how can we create a bridge that overcomes this gap from personal motivation to lead and inspire other around us?

I think you have to link your core values and motivation to others. So for example in my case I started doing that by teaching rather than convince companies. My friend on the other hand, she could set an example in the company, so she was somehow much more equipped to that in a company and I was not so equipped, but I could teach it to students. So you have to link it to your own skills as well, what you are really good at and then try to convince people through what you're really good at because then you can reach out more people than if you just try something and you're not really good at and it becomes a real struggle.

8. What do you see as the core internal and external abilities sustainability leaders should command and why?
   I think you have to understand what your good at and then everybody can be a leader, so for example I say you should be able to convince companies then I would never be able to do that at that stage, so maybe I had to develop some skills that my friend already had. So, I think it really depends on knowing what your good at and how that it can help others, doesn't need to be a long list of skills but look for what you're good at.

9. How do you see the relation of creativity and sustainability leadership?
   Yeah I think is really important to have creative skills in order to have impact a a sustainable leader. As I said before you can lead by example in this way, and if you use your creativity to create examples then people start becoming more engaging and sharing each other ideas and projects. A couple of Ide students created a Tuk Tuk, for emergency aids and its such a nice example that everybody in school, but also other organizations and networks want to promote it, it has that x factor. And that is what you can do as a designer create that x factor in an example and then everybody wants to show it around, so that's were creativity and sustainability match.

10. Was there anything you would have liked to have shared but haven't been able to?
    Regarding your reflection part of the toolkit, if it's for designers I learned in my research that they like visual reflection, it's not only writing stories, but they can visualize that very well. I don't have any specific rules, but visual reflections it could either be as flowcharts or a metaphor, cartoons. I think that is maybe nice to have in the back of your mind when you design that toolkit

11. Can you recommend one or two people we have to include in this research?
    The new lecturer Kim Podner, or at Delft University you can find some researchers on the topic like Connie Backer.

INTERVIEW 10

1. Can you introduce yourself and your work?

   Candidate J, I work at THUAS, I'm a lecturer in international business but before I worked in this program I also worked for the marketing and health program. I've been working through the ACTL, and I was a teacher trainer at a basic didactic foundation for, and I also designed and facilitated all sorts of training around teaching and learning in the international classroom. At the moment I'm working at the center of expertise at THUAS, of global learnings and doing a PhD in lecturer competencies for the international classroom, and the whole thing is that we're not sure which competences are the most important but I will tell you from my experience and from what I read.
2. What competencies do you consider more relevant in an international classroom?

I think is very important that they are culturally sensitive that they can see what their students need, I think it's very important to that they are very aware of their students backgrounds, like for example who is used to working in groups, who is used to raising their hands and who in class is more used to be in silence and repeating what the teacher says for example, they have to be very sensitive to hierarchy, very sensitive to communication, and if you find ways to accommodate this in class, to be able to bring all those perspective together to activate interaction to design. Just assignments and activities that are actually for students to mix, to integrate into and to use their perspective, whether it is a cultural perspective or disciplinary perspective, it just needs an engineering to bring it to the front of your classroom. So, I think lecturers should be both culturally aware and didactically very strong.

3. Can you tell me about a recent challenge you faced while working on a sustainability project? How did you overcome it?

   Well I'm currently teaching a first-year project in IB and it's the students first group project and although I kind of do everything according to defer. It's still a challenge, students mix and to make them work together, coaching students in a way them all. As a lecturer there's only so much you can do.

4. What does sustainability leadership mean for you?

   Sensitivity, creativity, flexibility, curiosity and how to leverage those strengths and bring them together, trying to move forward as a whole. There's never a right way, because there always some new kind of problems.

6. What would you consider the key internal aspects and abilities of sustainability leadership and why?

   So we have to let go over certainties a lot, we have to be more openminded, more creative and we have to learn to see things from different perspectives, and again I think both for students and for teachers, who have to be role models there. And really look beyond our own perspective both on teaching but also on our content. We have to really look beyond borders between how we can work together.

7. How would you make internal developments, such as compassion, connection and creativity tangible, visible and/or discussable daily skills?

   I think these skills are very important not only for students but also for teachers, and I see soft skills are most important, like flexibility, creativity, open-minded, problem solving, empathy. As criteria, problem solving is the most important one, cause you never know what's going to happen and you just have to go straight in there, and I have some colleagues who like to work by the book and that is never going to happen. Every group is different, the needs of every group are different, and moral international classes that are much more explicit, so you have to cater for your class and find ways to make it happen that particular folder. You have to make sure that you are very inclusive. Sort of things that you do or the approach that you use should make sense to all your students, which might be used different examples that are triggered by, kind of input who might need different level of explicitness and as a lecturer you have to be super flexible and adapt to that

8. What would you do to facilitate others in the development of their internal sustainability leadership?

I think communication is the key, about what you expect from yourself, about others, about how you would like to be treated, how you would like to work together, but regarding any problem, I think communication and reflection are the most important. And also, really think, why do I do what I do? Why does she do that? And how can we find common ground in the forward; and I would say in education we model it and we try it out, with like instructions and guidance to give our students and ourselves the tools to kind of incorporate it,

9. What are the internal barriers and prejudices that you encounter in yourself, students and/or colleagues that have be overcome for sustainability leadership? And how would you go about overcoming these?

   I see that although we think that we are open minded, we all have an idea of what good learning is, of what good teaching is, what good corporation is and we really need to let go of that and we really need to be very explicit, to realize what those assumptions are in ourselves, to be able to talk about it with others, only if we are concerned about our own assumptions, we can bring it together, and make a new set that we can all work with. And I think in an international group as yours, gives us great opportunities to practice this because it's so clear, it's like a playground to try out things

10. Was there anything you would have liked to have shared but haven't been able to?

    I think that when we talk about international groups or classrooms, in my case we talk a bit about language and that language skills in itself might be a little bit overrated, and obviously you need language for conversation but your flawless English accent is not going to be the main thing to help you, you need to also develop some strong competencies

INTERVIEW 11

1. Can you quickly introduce yourself and your focus in your current work?
   Candidate K, I work for THUAS as a lecturer and also as an Industrial Designer, specialized in packaging design and innovation. Also, sustainability and circularity make great part of it.

2. What does sustainability mean for you?
   It means that we have to be quite responsible with our sources, so that means we have to take care of all raw materials for packaging. There's much more of course but I'm focusing on packaging and the resources to produce and process these to get them to the end users and a very important part of sustainability is a third part, which once the packaging is being used, what can we do with the waste? The more responsible we behave with dealing with package waste the more sustainable it is. From start to end all packaging included.

3. What does leadership for sustainability mean for you?
   If You work on sustainable packaging in a team, you have to make many decisions, and there is no perfect solution, so good leadership means that first of all you have an overview in everything involved in packaging design, and involves making the right decisions and sticking to that not change the rules. Make sure that you will speak to it, and if circumstances are changing like is the current case, you have to be flexible to adopt to a new situation.

4. Would agree with the need to have a shift from individual leadership to a collective attitude?
   Yeah, I mean if you consider the whole packaging change and as a fuel economic activity it will be a completely different leader for a manager for example, to a situation where you are

considering sustainability in general. And of course, there is always a delicate balance between fuel economic interests and sustainable interests.

5. Considering Leadership in Sustainability, as part of the transformation of the well-being of cities and citizens, where do you think rests the key core internal and external abilities that leaders should command and why?
   Hmm..it's a good one. First of all I think that is important good leadership to be aware of everything involved or touching the packaging change, so otherwise will get sub-optimizacion. So the packaging is not something that stands alone, it has to do with producers, exporters, distributers, retail, waste management...so you need to have great awareness of let's say the whole environmental economic that you're dealing with, that is very important.

6. How do you see the relation of creativity and sustainability leadership?
   Being creative of course is an ability to a changing world. And creativity can also be seen as the ability to tackle hairy problems, so easy problems could be tackled without any creativity you just solve them; and when problems get more complicated or wicked you use creativity to find solutions

7. what barriers and limitations do you see for stakeholders to learn these creativity mindset as part of sustainability skill?
   First of all, it should be an openness to creativity so if one doesn't want to be creative to find solutions, it doesn't make sense working in a team with other people so the mind-set of all people involved should be as one. And when you decide to look for creative solutions you must speak to that. And other characteristics is to accept that mistakes will be made. And mistakes don't need to be seen as failures but as part of the process, like trial and error.

8. How would you go about developing creativity, and creative thinking for sustainability leaders?
   I think when it comes to leader and leadership it's not only the mindset but also training for example can help. A lot of people who are in the lead for example, project managers that are of a certain age they had their education in another area than the time we live in now, so training is very important. And lots of senior managers are trained in a way to not make mistakes, and sometimes creativity is only for artistic professional and not something embedded in the nowadays product development processes.

9. Was there anything you would have liked to have shared but haven't been able to?
   Well, the last part about creativity is important of course, try things out and be open to change to another plan when things don't work out. And also, be flexible, the world is changing rapidly, what was last year might not be the best solution for today, so you have to be able to switch fast and to adapt to new situations fast