

Design as freedom in practice

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To the chamacos (children) of El 20

Foreword by Ossi Naukkarinen

I have known Claudia since 2008 when she took part in a course called *Connections* taught by myself and my colleague, Professor Yrjänä Levanto. Back then, she was studying in the Applied Art and Design MA program at Aalto University. The program was very practice oriented, strongly emphasizing hands-on approach. Our course, however, was about rather abstract theories of art, and we went through a bunch of classics starting from Plato's *Republic* and reaching up to some contemporary thinkers such as Arthur C. Danto.

Very soon, Claudia turned out to be an exceptionally active and clever student, always finding something interesting and relevant to say even if many readings were quite new to her. What was most striking was that unlike many others, she did not seem to see a gap between different strands of her studies, practical and theoretical. Both were equally important and exciting, as far as I could tell.

A bit later, I was the adviser of her masters thesis, and later still, of her doctoral dissertation, which this book that you are reading right now is based on. It was very a long process, during which we both learned a lot. Again, it was quite evident that what Claudia wanted to achieve was something that would combine and connect different kinds of ideas, materials, practices, and people. It was all about seeing and creating connections. The overall goal was to create a model or way of working that would be beneficial both for the community she worked with, for herself and for the field of design at large. The whole package was something almost ridiculously, but yet, admirably ambitious. To make the world a better place. Come on! As an advisor, you should tell the doctoral candidate to focus, focus and focus and not to try to save the whole world at once. But what can you do when your student is both idealistic, stubborn and talented? Well, help.

My own background is in the branch of philosophy called aesthetics and to some extent in social sciences. I know my art theory classics and I am familiar with the most important contemporary thinkers in my field, and I have also tried to develop some ideas of my own. Yet, there was no way I could have advised Claudia on all aspects of the whole project of hers but my expertise was most evident in the parts where she addressed questions of freedom and other philosophical topics. On top of that, I guess I was able to teach her something about how to build a solid argument, how to write, how to read – how to think and how to communicate one's thoughts to others in a clear way.

Many times I had no idea what she was up to in the field, but I trusted that it was something necessary. Still, we met, we discussed, analyzed her text, opened new perspectives and closed others, turned back from dead ends. At the same time, she was actively doing exactly the same with a number of other people, many of them being much more savvy in questions of design and various aspects of sustainability. That was the only way for her to learn to master the theme that was as broad as hers, described and developed in detail in this book.

One of the best aspects of the common journey was that little by little we both realized that we are actually doing rather similar things. She with the indigenous community in Calakmul, me in my

school. We both are experts only in a fraction of things that are important for the community but we both try to operate in the way that would help the whole community and its individual members to find ways of living and doing things that are good for them – and increase their freedom in the way Claudia describes. I think it is not wrong to say that we try to do this by helping people to see and make connections as we did in the course when I first met her.

So, even if the main theme of this book is design and its relations to freedom, design is understood in a broad way that makes it interesting and relevant for us all. Design is a collective effort to make our life better, and it necessarily has both very practical and highly theoretical and abstract aspects to it. I would like to say that the book is actually about how to think and act bravely, with both passion, determination, idealism, and realistic understanding of what can be done. It gives you hope: if you have a goal worth aiming at, it is possible to achieve it if you are able to create something together with the community you are a part of.

Foreword by Olli Varis

Is freedom a one-way street? In other words, does freedom come without a price, a cost? Freedom indeed has a price tag, which can be called responsibility. In western mainstream philosophy, it is usually seen as a combination of morality and reason, as Claudia Carduño García elegantly summarizes in this work. Thus, there is no one-way street to freedom, which would not come without a cost to somebody. If not to the one who takes the freedom, then to somebody else. Fair if the one with freedom takes the responsibility, too, and behaves under guidance of moral and reason. And bears the cost. Freedom is a two-way street also in the sense of acceptance of similar freedoms to others than what one assumes to him or herself.

It is merely the core of the mental process of an individual when developing towards adolescence, how to assume freedoms and associated responsibilities. Learning the right from wrong. Cultures and subcultures differ vastly on how much individual freedom is seen appropriate for an adult – and thus tolerated – and how much collective norms dominate individual choices. The same with individuals, more freedom one takes, more tolerance to different choices between individuals should follow. Mismatches here may be among the most stringent root causes of clashes and tensions between cultures – if not also individuals.

Even more so, now that information technology closes so rapidly many communication gaps among formerly so distant places and individuals, but at the same time forms new subcultures which are no longer so much determined by geography but by similar education, similar social media interest and so forth. They may grow highly intolerant to one another, fostering novel non-freedoms and intolerances.

Personally, I even tend to turn the concepts of freedom and responsibility increasingly into the reverse order. This may come with the age. The Freudian quest of reacting to intolerable and no-freedom supporting collective norms as the responsibility of an individual that would enhance freedom is what I mean.

For making a change – that development is ultimately about – the prevailing conditions are being modified on purpose. The question on taking a freedom and taking the responsibility to collide with the collective norms is intrinsic. So contemplates Amartya Sen, who is one of the key sources of inspiration to Claudia in this work. Claudia elegantly and wisely elaborates how freedom relates to morality, reason and ability to tolerate others and how they drive – or should drive – the grassroots level work in today's development interventions in a country such as Mexico. Claudia has extended Sen's Development as Freedom philosophy under the realm of design, calling her approach as the Design as Freedom.

Amartya Sen has been one of the rivers of inspiration for me, too. This certain similarity in the viewpoints to research that we share is one of the reasons why the work with Claudia has been so pleasant, besides of course her great personality. It has indeed been a treat to work with Claudia over several years. Claudia has been facilitating organizing and mentoring student projects to benefit many students in Mexico and other countries, and has played a fundamental role in the Aalto Lab Mexico. This has occurred in part under Aalto University's Sustainable Global Technologies Programme, that I have had the pleasure to lead. Her dissertation in hand summarizes much of this important work.



Photo by Jan Ahlstedt

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Prologue: When you're poor, you can't afford to get sick

Soon, the Sun would be hot. That is how Mayan people describe the time of the day when the Sun reaches its zenith and so do the temperatures (up to 40°C). They knew it because they were getting hungry. They had got up at 4:00 am, by 5:00 they were already working in their land. They wouldn't get a salary by the end of their day, but at least they could be sure that feeding their families was literally in their hands (as they don't own machinery). If and when the weather was benevolent, of course.

Right before noon, the men arrived in Mateo and Ofe's place, where the whole family gathered for lunch every day. But that day, rather than chatting and laughing while making tortillas, they found three women in terrible angst. As soon as they came in, Ofe claimed, "Baby Jocelyn must be taken to the hospital at once, she hasn't stopped crying in hours!" Lencho ran towards the hammock to see his one-year-old daughter, and asked Gaby, his wife to get ready to leave.

Mateo and Lencho went to get the truck. Ofelia gathered all the money she could find in the house, and gave it to Gaby. Grandma wrapped a bunch of tortillas with nopales in a cloth and gave it to them by saying, "Remember that *outside*, food is very expensive, and you might have to wait long in the hospital".



The only way in and out of 20 de Noviembre (El 20) is through a small road that intersects with the highway that connects the cities of Escárcega and Chetumal, right where the military checkpoint is. They are near the borders with Belize and Guatemala, which are entry points for drugs and migrants on their way to the United States. For that reason, the soldiers stop every vehicle that drives through, and many times, they even ask all passengers to step out of the car to conduct a routine search. They don't ask the people of El 20 too many questions; after all, the military camp is on their land.

A typical family from the community of El 20, however not the family depicted in this chapter. Photo by Jan Ahlstedt

In the Hospital of Xpujil, the doctor identified that something was wrong with the baby's kidneys. However, they couldn't give a full diagnosis because they didn't have either a urologist or ultrasound equipment. They were urged to take baby Jocelyn to Chetumal.

Gaby was hopeful that everything would be sorted out in Chetumal. A few years earlier, they could not have afforded to get medical attention, but they had paid for their affiliation to the new universal health program called Seguro Popular, which was launched by President Vicente Fox (2006-2012). Unlike any other National Healthcare System, Seguro Popular was not tied to formal employment, so even subsistence farmers were entitled to become its beneficiaries.

After an hour and a half, they arrived in the hospital in Chetumal, where they could perform the analyses, but these would cost money. "That ought to be a misunderstanding!", they all told the nurse. But she explained that beneficiaries of Seguro Popular are only entitled to receive free medical attention within their state of residence. Calakmul is located in the State of Campeche, but the nearest (big) hospital is located in the Capital of Quintana Roo. Of course, they were disappointed, but they paid the fees: 200 MXN pesos for the ultrasound plus 200 for the doctor.

The diagnosis was not very good. Although she had great chances to survive, baby Jocelyn needed urgent surgery. The operation would cost 150,000.00 MXN pesos (about 8,000€). They could not possibly pay that much money. Apparently, their only choice was to drive for around 6 hours to cross the peninsula, and take the baby to the hospital in their capital, the City of Campeche.

And so they did. However, that hospital was not properly equipped for that type of procedure. They were advised to take Jocelyn to Mérida, two hours away from Campeche.

Gaby, Lencho and Mateo were hopeful that in Mérida, the Seguro Popular program would be understood differently. However, again, they were told that they would have to pay the surgery because they were not residents of the State of Yucatán. The cost of the operation was 60,000.00 MXN; which they still could not afford. In any case, Jocelyn was hospitalized.

At 4:00 am, Ofé woke up and climbed a mountain to reach a signal for her phone and receive Mateo's message, in which he communicated the situation and asked her to collect as much money as possible. Ofé was lucky that her Canadian friend, who was writing a thesis in anthropology in El 20 kindly loaned her 10,000.00 MXN. Additionally, her good friend Carmen gave her 2,000.00, and the kids collected another 2,000.00. Then, she visited the Municipal Palace in Xpujil; where the government loaned them 3,000.00 MXN. She promised to pay every single penny back.

Gaby had never seen Lencho as sad as when in a faltering voice he broke the news that Ofé had managed to raise only 17 000 pesos. Gaby nodded and went back to her baby, held her in her arms and started walking through the corridor. At the end of it, she saw an open door, and a bunch of doctors gathered in a room. As an impulse, she walked in, got down on her knees, and begged: "Please save my baby! She's dying, she needs surgery! All we have are 17,000.00 MXN! Please!" At that point, she realized that many of those doctors were Asian, one of whom stood up and volunteered to do the

operation, despite not being a specialist. Gaby would never forget this young Japanese doctor's face; the operation was successful.

The recovery treatment was so expensive that Lencho had to do the last thing he would ever do, but the only thing that he could do. He had to sell great part of his land, which in step with the ideals of the Mexican Revolution, coincidentally celebrated on November 20th, is the main source of their sense of identity and autonomy. However, all their struggle had been worth it. Two years later, the girl still had to have some special hygienic care, but she was in perfect condition and ran like every other child.

This story was reconstructed from facts collected throughout my visits to the community called 20 de Noviembre (10 visits in 2 years and 8 months until October 2014), located in Calakmul, Campeche, Mexico. It is just one story about one struggle that one family has faced during their lives. Just one among many other stories lived by this and many other families within their community; and this is just one among many communities in Mexico, and the world. The law might proclaim that we are all born equal, but the truth is that some have it much harder. I do not, by any means intend to imply that suffering is unique to the poor, which is not the case (especially regarding health issues). However, when one is born among those who are better off, it is easy to dismiss this initial situation of privilege and to believe, instead, that fortune is completely based on one's own merits. Giving medical attention or any other basic service on condition to the availability of monetary resources does not seem *fair*; especially when that condition might largely determine a person's fortune in the long run.

Without deserving it, many people simply learn to live lives of limited choices, which is unjust. People should be free to plan how to live and to live accordingly. Very likely, humanity could do more to remedy these situations; which allegedly is a sufficient reason to claim that humanity ought to act accordingly. Most certainly, design has something to contribute to this difficult task, and if it does, then it is of paramount importance that designers acknowledge their moral obligation which comes from the ability to imagine better futures.

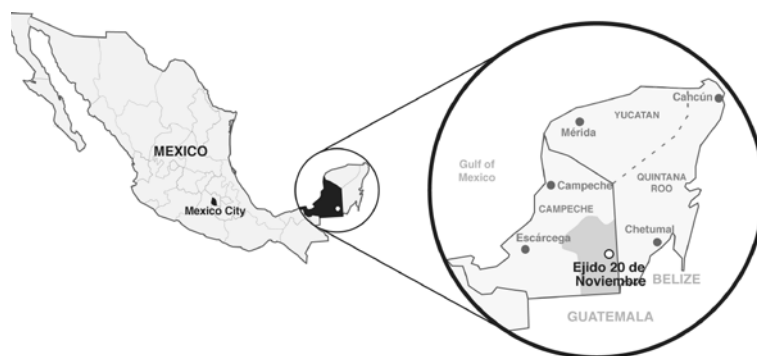


Figure 1. Location of 20 de Noviembre within Mexico and the Yucatan Peninsula. Drawn by Claudia Garduño

Introduction

If we cannot reasonably prove why economic growth is ultimately necessary, which we cannot, then the statement that good design is good business stands on equally unstable grounds. This research seeks to contribute to *defining and practicing a better design*, and proposes that by having deeper and stronger roots and a clear ethical justification, design might do much more than it currently does. This work presents the idea of *Design as Freedom* as a reasoned alternative driving principle for design (which is based on philosophical elaboration). This book offers a concise version of the doctoral dissertation on which it is based (*Design as Freedom*, Garduño, 2017).

Such alternative and reasoned principle can be adopted by those designers who resist practicing design as usual and insist in finding a more honourable way to do it. Designers ought to see themselves as human beings, not as special human beings, and engage in the difficult philosophical debates that have troubled humanity for ages. Thus, the discussion of design and ethics cannot be independent from the study of ethics. Furthermore, those discussions cannot be disassociated from their context; this research argues that in this case, the concept of Sustainability¹ as an ideal cannot be ignored.

Through the understanding that people are diverse, and therefore might value very different things, this research proposes to judge good design based on whether it contributes to making the world a better place. Furthermore, inspired by the work of Amartya Sen (2001 [1999]), this research departs from the statement that if humanity should be concerned about growing *anything* at all, it should be the *freedom to be and to do what one has reason to value*², and it proposes that *one* case of good design is when it contributes to making the world a bit less unjust by growing freedom(s). This work seeks to reply several questions, including: **How might freedom be connected as a guiding principle for design?** How might freedom become the means and end of design? How should freedoms to be enlarged be chosen? What is a suitable unit of study? Design as Freedom implies that the practice of design can be equated with the act of exercising freedom; most precisely, when designing to overcome clear situations of injustice.

The concept of Sustainability, does not fit within Sen's evaluative, anthropocentric and based on the individual 'Capabilities Approach'³. In this case, following the system proposed by Immanuel

1 Since Sustainability is seen as the greatest ideal of our times, in this work it appears capitalized.

2 Instead of adopting the capability approach, this research adopts the essence of Sen's approach: freedom. In fact, what is called freedom herein, is very close to what Sen calls agency.

3 Other proponents of the capability approach have incorporated sustainability (i.e. Scholtes, 2011; Holland, 2011; Heyward, 2011; Watene, 2011; Mathai, 2011). Nevertheless, Sen's own perspective, with high regard for freedom or agency has been criticized (e.g. by Nussbaum 2003, 44) for setting no limits to freedom, even

Kant, freedom is approached as a concept that is inherently related to the concepts of morality and reason; incorporating Sustainability into that system is achieved by borrowing Manuel DeLanda's (2013 [2006]) model of *assemblage*. Assemblage thinking enables broadening the focus of design from humans to composites where humans and non-humans (including other species, non-living things, and tangible and intangible human-made things) are tightly related. The assemblage also helps understanding Gerald MacCallum's (1967) triad, where freedom (or unfreedom) is caused by a configuration where an agent has an intention and there are no elements that act as obstacles for achieving it. Design as Freedom is therefore the act of conceiving a strategy which enables exercising that which was intended but which was not possible in the initial situation (N_0), and, more precisely, where the initial situation is a clear case of injustice (be it the lack of adequate access to the health care system, or the lack of study programs that enable students to explore a sustainable practice, or any other).

Considering that it is a fundamental human capacity to discern the just from the unjust (Rawls, 2009 [1971], 41), and that it is also natural for humans to experience the need to fix a situation of injustice that seems remediable (Sen, 2009, viii), and by taking into account that design is a means to transform a current situation into a preferred one (Findeli, 2001; Simon, 1996), and a set of competences that enables people to deal with wicked problems (Rittel & Webber, 1973); this research argues that if designers turned their backs on solving situations of injustice, especially those that are seen as urgent matters, it would be as if designers were avoiding their moral duty. Moreover, it would be wasting their skills; it would be unhuman (Rawls, 2009 [1971]).

Design as Freedom, is not merely a theoretical research; as it has a strong practice-based component. In fact, this research has been developed in loops, moving constantly from theory to practice. The method through which Design as Freedom is put into practice is what I have called the Aalto LAB meta-framework, which has precisely resulted from the constant loops from theory to practice, and which is the reason why this research pays extensive attention to the freedoms of designers too.

The main case in this research, Aalto LAB Mexico (ALM), is based on the project Aalto LAB Shanghai (ALS), which took place in 2010. The community called 20 de Noviembre (El 20), located in Calakmul, Campeche, Mexico was selected as the location for ALM following the model of ALS. The project participants have been students from Aalto University, Universidad Nacional Autónoma de México (UNAM), and Tecnológico de Monterrey Campus Ciudad de México (Tec). Aalto LAB can be described as an experimental design pedagogy (Garduño, Nousala, and Fuad-Luke, 2014); implying that the Aalto LAB meta-framework evidently includes a pedagogic dimension. Moreover, the Design as Freedom principle was developed in response to what was being observed in El 20 through ALM.

when not all freedoms are good, such as causing environmental depletion.

This research is a case of constructive design research, as coined by Koskinen et al. (2011), which means that knowledge is earned through the *construction* of *something*. This happens at four different levels which also provide four different lenses. The first level corresponds to the construction of the alternative driving principle for design called *Design as Freedom*. The second one refers to the design program in El 20, which consists in the conceptual and tangible construction of three Sustainable Product Service System (S.PSS) type of projects: Eco-hostel, the Water Project, and Artesanía para el Bienestar (eng. Artistry for wellbeing). On the third level, there is the construction and the shaping of ALM as a pedagogical program. The second and third level constructions are integrated in the meta-framework, and enable hypothesizing Design as Freedom as a mutually enabling experience for the people of El 20 and for the (student) design team. The two groups provide each other with suitable conditions for a significant personal learning, and together, they learn to design and implement S.PSS with the specific goal of enlarging freedoms, and thus, reducing injustice. The fourth level corresponds to my personal journey that goes from facing a professional existential crisis, to setting up ALM in order to frame and explore Design as Freedom.

The fourth lens might seem confusing to some readers. Nevertheless, the fact that is that throughout the whole process, I played many different roles, which irremediably made me a subject of research. Moreover, the reader might benefit from knowing how Design as Freedom originated, and it is with that purpose that I weave together my own journey.

Towards making freedom a guiding concept which connects design, philosophy and pedagogy

It all started around the year 2006, with a crisis, my very own existential-professional crisis which originated during my Bachelor's studies in Tecnológico de Monterrey in Mexico City, when I learned that the chosen profession is not precisely sustainable. Regardless of how much its benefits were highlighted, in most cases, design seemed to do more harm than good. That crisis transformed into a genuine need to find a new direction for my profession, and led me to apply for studying the Masters of Arts Programme in Applied Arts and Design in Aalto University School of Arts, Design and Architecture; which I joined in August of 2008.

This exploration was at the core of my MA thesis developed in 2010, and which consisted of a political manifesto type of document, and an art installation. Around 1200 white ceramic somewhat identical faces represented the worst possible future scenario, and the one we seemed to be heading towards: a complete homogenous world, where people lived under the impression of pursuing dreams

of their own, which are actually designed by the market economy; hence, their *unique* dreams are simply everyone else's dreams. Visitors were encouraged to paint on the ceramic faces, and their unique interventions represented *hope*.

Now I know that although that work did not give me many answers, this artistic approach originated many of the questions which detonated this investigation on design and freedom: Why is economic growth so important? **Which is a better guiding principle for design?** How might cultural plurality enable or inspire the emergence of a more just and sustainable world? Do alternative lifestyles still exist? Moreover, that art piece allowed me to physically express what I was not able to describe in words because I was lacking both theoretical and practical knowledge. I could not yet describe 1200 white faces as the absolute hegemony of the Eurocentric paradigm described and criticized by Zea (1990) and Braidotti (2013, 13–54), a scenario to which traditional design practices contributes with segregating and homogenizing forces (not to mention the environmental impact). Back then, I had not found a proper replacement for the term *development*; I had not encountered Amartya Sen, and his proposition of a non-elitist, fairer and more congruous goal for the future of humanity, such as *freedom*, or *the expansion of choices that people have to live the lives they have reason to value*; task to which design should contribute.

At around the same time, I was invited to participate in a project called Aalto LAB Shanghai (ALS). Through ALS, I truly comprehended poverty in the only possible way, by looking at it in the eye (Max-Neef as quoted in Benítez, 2014). With a deep sense of indignation, we realized that there are people in the world who have simply conformed to living lives of limited choices.

The ALS experience in conjunction with the theoretical analysis I had made with the aim of developing my design political manifesto, led to understanding that design is unjust when it is conceived and practiced as an economically and technologically driven activity that only satisfies the needs of users-customers who represent a market. This type of design practice discriminates against everyone who cannot afford to pay for the service. In doing that, design pushes people who do not want to be discriminated into the market economy, which in many cases is also linked to a less environmentally sustainable way of living. Moreover, as more people integrate into the market economy, their former alternative ways of living disappear together with the possibility to know what type of lives different people from different places around the world could possibly dream of. ALS, nonetheless, filled me with hope. Perhaps, design could be practiced differently.

Aalto LAB Shanghai

Aalto LAB Shanghai was an original initiative of Tuuli Sotamaa⁴, who was in charge of making the strategy of the newly constituted Aalto University (2010), visible. The challenge was to do it in an unconventional way; so, instead of publishing ads in magazines, something had to be *made*. Sotamaa recalls reading the inaugural speech by the forthcoming president, Tuula Teeri; the final statement read: “Together our mission is nothing less than to change our wonderful, difficult world”. Sotamaa added “for the better”⁵. In the beginning of 2010, she decided to form an interdisciplinary team of students representing all different schools⁶ and give them the task to collaborate in *making the world a better place*. Then, Aalto LAB was born.

There were several reasons why Shanghai, China set the perfect stage for Aalto University in 2010. First, Tongji University (Shanghai) had become the first academic partner of Aalto University through the signature of a Memorandum of Understanding (MoU). Their first collaborative goal was setting up Design Factory in Tongji, giving birth to Aalto Tongji Design Factory (ATDF). Also that year, Shanghai City was hosting the World Expo, and within that framework, Tongji University was hosting Cumulus Conference; both were forums where to present the project and promote the university. Moreover, IDEO Shanghai were invited to work as facilitators of the design process during the two weeks visit that the Aalto students would make to Shanghai in May. This included a workshop in the Finnish Pavilion “Kirnu”, in the Day of Finland during the World Expo.

The students or as we called ourselves, the labbers, were recruited in February. In March, we met Lou Younqi, the Vice Dean of College of Design & Innovation in Tongji University, who decided that Chongming Project⁷, the project with which Tongji University participates in DESIS Network, would be the basis for Aalto LAB Shanghai. Without further instructions, we spent a couple of months researching and discussing topics which we thought would be relevant for the fieldtrip; unknowingly, throughout our work, we were shaping the Aalto LAB process.

4 In September, 2009, Sotamaa organized a one-week workshop called Pop up Hub Helsinki, which was facilitated by IDEO London, and which was a prototype for Aalto LAB Shanghai. Anni Hapuoja and I were amongst the participants.

5 As told by Tuuli Sotamaa during a small panel discussion held by Aalto LAB Mexico participants that took place in Caisa Cultural Centre in Helsinki, Finland on September 9, 2014.

6 In its beginning, Aalto University was formed by three schools: Art and Design, School of Business and School of Science and Technology.

7 The project was later called Design Harvests, and it had the aim of improving the relationship between the urban and rural areas of Shanghai; Chongming being a rural area. More information about this project can be found here: <http://www.designharvests.politecalab.org/>, <http://chongmingtao.blogspot.mx/>, <http://www.desis-network.org/content/design-harvests-acupuncture-design-approach-towards-sustainability>

Once in Shanghai, we met the labbers from Tongji, who had recently been recruited. The team integrated quickly, through a series of workshops and activities facilitated by five designers from IDEO Shanghai, including Greg Perez and Hei Cheng, who would also facilitate the process in Aalto LAB Mexico in 2012. Next, our very brief immersion in the community (3 days and 2 nights) started, where, following the instructions of our facilitators, we based our process on IDEO's Human Centred Design.

This short visit, however, happened to be sufficient for the team to grasp at least some of the main challenges of the community. Evidently, having had a couple of members from Tongji's permanent research team in Chongming helped very much. We learned that people in rural China have limited choices in their lives due to a special legislation, which made us experience a deep feeling of hopelessness. Despite those difficult conditions, by the end of our visit, we had envisioned at least five different feasible projects (S.PSS) which could be implemented in collaboration with the people of the community, namely, an organic beer, a website for promoting tourism, a community hub, a park for kids, and a sports centre. Although each of these projects tackled specific problematics, we could envision an ideal future for the community through the implementation of all projects.

Perhaps, Sotamaa's initial vision was to establish a Living Lab⁸. However, ALS did not become a living lab. It started with the World Expo and it ceased when the Expo came to an end. Despite its short life, ALS reinforced the enthusiastic belief that design could genuinely change the world for the better, even if just a little bit. In September 2010, I was working on my research proposal for doctoral studies in the Department of Design of Aalto University School of Arts, Design and Architecture, and I was reading Amartya Sen's *Development as Freedom*⁹ (2001 [1999]). This quote stuck in my mind, for it very well explained what we had experienced through Aalto LAB:

If you help a destitute person because his destitution makes you very unhappy, that would be a sympathy-based action. If however, the presence of the destitute does not make you particularly unhappy, but does fill you with determination to change a system that you think is unjust (or more generally, your determination is not fully explainable by the unhappiness that the presence of the destitute creates), then this would be a commitment-based action. (Sen, 2001 [1999], 270.)

⁸ There are more than two hundred innovation milieus within the European Living Lab initiatives. How the labs operate varies, but they share some common characteristics. They all argue that the labs are situated in real world environments, are user-driven, and collaborate with research organizations, companies, and public and civic sectors with the aim to collaboratively develop new services and products. (Björgvinsson, Ehn, and Hillgren, 2010, 42)

⁹ This was a recommendation by one of my MA Thesis evaluators, Kati Reijonen, to whom I am very thankful.

A sense of commitment of that kind motivated me to continue my exploration; but I still needed to understand how freedom could lead a design process like Aalto LAB.

Why to study Design as Freedom by replicating Aalto LAB?

It could be agreed that an Aalto LAB is not the only means to put the Design as Freedom principle into practice; in fact, it is most likely not the best means to achieve that task. Adopting and adapting the Aalto LAB framework for Design as Freedom added certain dimensions, restrictions, and even some controversies to this study. Also, the initial situations of Aalto LAB Shanghai and Aalto LAB Mexico, were nearly diametrically opposed. Aalto LAB Shanghai had been a perfectly staged top-down process, developed on instructions from the President of Aalto University. Aalto LAB Mexico, for its part, has been developed as a bottom-up process; there were no formal collaboration agreements, no “platform project”, and no budget. Moreover, the format of an Aalto LAB can easily be linked to imperialist practices, for it requires Finnish students to travel across the world to intervene a marginalized location.

However, organizing an Aalto LAB in Mexico was becoming the best way in which *I* could observe Design as Freedom in practice, it was leveraging the circumstances and turning them into opportunities (Thorpe and Gamman, 2011, 244). The initial situation of ALM presented a clear advantage over ALS: we had a general idea of a replicable process which enabled us to tackle this type of undefined projects, before, in between, and after the fieldtrips. There also seemed to be ways of developing the project in a non-imperialistic manner. Moreover, some of the pieces needed for the development of an Aalto LAB in Mexico, were falling into place. Several actors within Aalto University supported the idea of having another Aalto LAB, including ENCORE¹⁰, and they agreed that it had to become a permanent program of some sort (posing an additional challenge). Finally, ALM had gained support from the Embassy of Mexico in Finland.

I joined the doctoral programme in January 2011, but things had changed. Tuuli Sotamaa had left Aalto University, and with her, her plans to develop more Aalto LABs in different locations. This news was somewhat devastating for Yang Li Hua (“Emily”, Industrial Design student at Tongji University), Anni Hapuoja (Architecture student in Aalto University), and me. The three, labbers from ALS, had been working in the project’s report for several months, and we decided to finish the task because we believed that sharing our ideas with Chongming Project was the only means to achieve continuation of the ALS projects in the village. Also, we believed that the experience had been worth it, and that it should be shared with a wider audience. Finally, we thought that the project had great potential and that, instead of leaving it in oblivion, more Aalto LAB’s had to be developed.

10 ENCORE is the research team to which I incorporated upon my enrolment to Aalto University as a doctoral student in design. It stands for Engaging Co-design Research.

Anni, Emily, and I, realized that ALS had filled a gap in an educational system that was failing us, and other students like ourselves. ALS had provided us with the choice (and very difficult task) of serving other than the world of ‘businesses’. I can only talk for myself, and I believe that, in the words of John Rawls (2009 [1971]), through ALS, I had for the first time experienced the feeling of exercising my profession according with my own rational plan and my own free will. Throughout such a project, I could make use of my skills to achieve something significant, something that would deliver good to other people or, at the very least, make their living situations a little bit less unjust. ALS opened my mind by taking me to an alternative livelihood¹¹ that coexists with our globalized-urban-western-capitalist-developed-world, and which is extremely difficult to imagine when one was born as has only lived within such a context. We could not impact the community in the way we wished, but the community certainly had an impact on us. *The learning experience had become at least as relevant as the design intervention in a village, especially if the greatest change that the world needs to see if Sustainability is to be achieved, is in the globalized-urban-western-capitalist-developed way of life.*

The ALS final report, was presented in the first seminar organized by ENCORE, “From Empathy to Engagement”, where ALS was well received. I was not consciously aware of it, but through that presentation, I was announcing my will to develop an Aalto LAB in Mexico. When the event finished, Mr. Agustín Gutiérrez Canet, Ambassador of Mexico in Finland, who was among the audience, expressed his will to support the project¹². This was a critical moment within my studies, when rather than observing a project in Mexico¹³, my research plan required starting a project anew. I could fail, but by then, I strongly believed in the words of Russel Ackoff (1999, 427), that “It is much better to do the right thing wrong than the wrong thing right, because when errors are corrected it makes doing the wrong thing wronger, but the right thing righter.”

In fact, exploring Design as Freedom through an Aalto LAB enabled the observation of the (potential) mutual expansion of freedoms, of the participant-end-users, and of the (student) design team. This gave way to the construction of the meta-framework and to the eventual nullification of the term *participatory design* as a description of the collaborative practice in an Aalto LAB. In participatory design, empowerment is generated mainly in the users; this collaborative design practice would also empower the designers; hence, *co-design* was considered a more suitable term. Although the focus has been on documenting and analysing the (potential) effects of the project on members of the

11 The term livelihood appeared in this research program in a workshop with the students of Aalto LAB Mexico 2012, but it gained relevance after a tutorial meeting with Alastair Fuad-Luke in 2013.

12 The Embassy gave its support by the project and was crucial in building relationships with the Embassy of Finland in Mexico also.

13 Already then I proposed it to take place in Mexico for several reasons: in the most personal perspective, I was feeling that it would be far more rewarding to develop this type of projects in my homeland; but it was also the place where I already had connections and where I would be able to find new ones. Furthermore, I was applying for funding to the Mexican National Council of Science and Technology (CONACyT).

community and the students, it can be noted that, in ALM, other members in the network, including teachers, facilitators, experts and documenters have also shared some stories of personal learning.

Recapitulating, by the end of 2011, several pieces had stated to fall into place for the organization of an Aalto LAB in Mexico. However, the most controversial parts of an Aalto LAB process cannot be ignored. Straightforwardly expressed, these are the need to transport a group of European students and teachers across the globe, and the fact that they visit a local community and suggest changes in their lives; which can easily be seen as an unsustainable and imperialistic practice. However, this is also an argument built from a distance, without thoroughly analysing the complexity of the design situation.

This work proposes that the theoretic starting point of Design as Freedom is the identification of a human–non-human *assemblage*, bonded to a particular territory. The idea is to identify all the different natural and cultural elements, and how they relate to each other, as a whole, these groups of intertwined relationships can be, and are commonly called context. In other words, Aalto LAB is fully contextual¹⁴. Since ALM is based on ALS, both locations are classified as poor, rural communities, and they are located within wider territories, which the governments were aiming to transform into “sustainable areas”; finally, both communities had a prior connection with the design department of a local university.

These relevant characteristics will be further explained later, but at this point, the focus will be on the fact that the communities are poor and rural in China and in Mexico, contexts where it would be rare to find professional designers, and where the civil society is not very well organised. In talks with Arch. Oscar Hagerman in 2010 and 2012, he pointed out that it would be difficult to make local people participate, because in general, people in such communities in Mexico are used to being told what to do (by the government)¹⁵. Additionally, he observed that the best choice would evidently be to have local designers tackle the challenges of their own communities; however, given that very few people have access to university education, especially in poor rural communities, this remains a dream.

While the argument presented above justifies the need for external designers, it does not justify the need for Finnish designers, as one could expect that Mexican or Chinese designers could do the job just fine. This is also not completely true. In the case of Mexico, the discipline of design was introduced in universities relatively recently, in 1959 in Universidad Iberoamericana and in 1969 at Universidad Nacional Autónoma de México (UNAM) (Comisarenco, 2006, 167). These early programmes had the goals of improving the quality of products, generating new production means,

¹⁴ This was observed by the researchers involved in Aalto LAB Mexico, and was reported in Garduño, Nousala, and Fuad-Luke (2014).

¹⁵ He especially referred to indigenous communities.

and increasing exports (ibid.); thus, design in Mexico was born as a technically and economically driven activity. In contrast, one of the elements that is much appreciated of Nordic Design, and particularly of Finnish design, on its part, it its *humanist approach* (Comisarenco, 2006, 117–119) which eventually gave rise to participatory design and empathic design. It was the idea of learning from Finland and taking that knowledge back to Mexico that motivated me to leave in the first place. Now I realize that design could really generate a positive impact in contexts like Mexico, if it adopted that humanist approach.

The dimension of the meta-framework to look at is the pedagogic program, from the perspective of the students of Aalto University (and the local universities). I have stated that I went to Finland to learn what I could not learn in Mexico. Nevertheless, what we, the labbers of 2010 learned in China, we could not have learned in Finland, because Finland could not bring us face to face with the type of unfair poverty we met in China or in Mexico, where literally, people cannot afford to get sick. Therefore, by travelling, we were confronted with different paradigms; in this case, the idea is not to reach consensus upon a single new paradigm, but to generate a dialogue and to learn to appreciate diversity (to understand that different paradigms live side by side).

Hence, having *privileged* students traveling to meet victims of injustice is a way to achieving something that has become very difficult in our global world; which is being aware of how our everyday decisions might have an effect on people who live on the other side of the planet (Nussbaum, 2010, 79–80). It is not the same to hypothetically speak of how the poorest people will be the first to suffer the consequences of climate change, as to have met and become friends with someone living in that situation; the latter is, most of the times, a really powerful means to developing a sense of empathy and compassion. Thus, and although many have been or are going through a reformation process, here, the critique is extended to the (design) education systems which have been primarily concerned with preparing their students for the industry. Many highly respected thinkers throughout history, including Immanuel Kant, John Stuart Mill, John Rawls, Martha Nussbaum, and Russell Ackoff, stated that facilitating a moral learning and developing the skill in judging the just and the unjust is more important.

Therefore, it is the paternalist practices, the lack of access to professional education, and the technical-economic approach to designing that justify the participation of a team from Aalto in such communities. On the other hand, it is those contexts that would inspire privileged students (adjective which is referring not only to Aalto students, but also to those from the local universities) to rethink many aspects of their own lives, and possibly, even act accordingly.

Aalto LAB seemed to translate my theoretical inquiries into practice, despite the restrictions it entailed, and despite the controversies it brought about. If on one hand I had the huge task to build the project almost from scratch, on the other hand I gained the opportunity to tune the research program in accordance with my own interests. The actual construction of the case would take a series

of loops between practice and theory (Nousala, Jamsai-Whyte, & Hall, 2010), but eventually, I was able to articulate the definition/hypothesis: *The process of conceptualizing what an assemblage might become and translating that vision into a feasible plan in order to put it into practice is ultimately, Design as Freedom.* Thus, the construction of ALM was in itself, a case of Design as Freedom.



Photo by Jan Ahlstedt



Photo by Jan Ahlstedt

Paradigm shifts

Nowadays, it is nearly obvious that economic growth is an indication of a good economy. Economists explain that if the economy does not grow, or grows too slowly, the efficiency of productivity results in job losses: unemployment. Unemployment reduces buying power, encourages saving, and reduces demand. Low demand increases the cost of public services, which results in the growth of public debt. Ultimately, it is people's well-being that is at risk (Jackson, 2011, 63). However, this neither justifies that economic growth is necessary, nor that it is the right goal to pursue, as acknowledged by some economists, including the Nobel Prize winner Amartya Sen.

In here, it is argued that it is of paramount importance that the notion of economic growth is being challenged, because it is at the core of the current dominant paradigm, which is an intolerant and defective (unsustainable) model. The emergence of the term Sustainability simultaneously demonstrates the will to break with the current dominant paradigm and the determination to build a new one, and it also gives room for the emergence of truly alternative futures inspired by the plurality of existing paradigms. The ethical debate has to regain importance because the new paradigm seeks a more just world amongst human beings, but also in their relationships with other species and with the environment.

This work insists that designers should see themselves as human beings who share responsibilities with all humankind, so that ensuring that designers get involved in ethical and philosophical discussions and cultivate their capacity of making moral judgements is crucial; especially if they expect to act as facilitators of social transformation processes. The construction of the alternative driving principle introduced herein was originally inspired by the central concept in Sen's proposal: freedom. Nonetheless, the decision of adopting freedom as a central concept is supported also with propositions by Aristotle, Immanuel Kant, John Stuart Mill, John Rawls, Amartya Sen, Martha Nussbaum, and Manfred Max-Neef.

Kuhn's paradigms

If one considers that a single generation lived through the energetic transition from coal to oil, two world wars, and the fast development of digital technologies, claiming that we are now living in a breakthrough moment in history is nothing but obnoxious. Nonetheless, many authors, including Russell Ackoff (1973), John Thackara (2006), and John Wood (2013), agree that the peculiarity of the moment is that we seem to be going through the process of understanding the world in a different manner; we seem to be living through a paradigm shift.

Paradigm (paradeigma) is a word which appeared for the first time in the *Timaeus*¹⁶, from Plato's *Dialogues*, it was used to describe the eternal model of the supremely beautiful universe (*Timaeus*, 28a-29b, trans. Waterfield, 2008, 16–17). Paradigm means archetype, pattern, exemplar, or a stable model, but Thomas Samuel Kuhn (2013 [1962]), one of its main proponents, introduced the term paradigm shift to the philosophy of science to refer to the greatest achievement of a scientific revolution.

Kuhn proposed that rather than a linear path towards uncovering the ultimate truth, the history of science collects the different ways in which the world has been looked at or understood. According to him, paradigm conveys the collection of meanings, the set of theories that are established, and the rules that are accepted and that give structure to a particular world view. A scientific revolution is a process that starts with the identification of an anomaly, where something that cannot be explained triggers a crisis which causes the creation of new tools and theories. The development of new instruments enables the observation of new and different things, it is then possible to affirm that scientists respond to a different world (Kuhn, 2013 [1962], 256). The new world will seem incommensurable (or incompatible) with the one they inhabited before (257); sense cannot be made of the world in accordance with the old structure, which does not mean that either paradigm is true (Hacking in Kuhn, 2013 [1962], 48-50).

Despite resistance, paradigms shift; despite intolerance, paradigms co-exist

Some of the big questions explored within this work are: Is economic growth ultimately necessary? Why is design so grounded in it? What if the assumption is wrong? What if it is constraining discussions within our field? What could design do if economic growth was not at its core?

These questions might sound incredibly naïve, and whilst they will be explored more widely in the following sections, it should be stated that at least some economists are also challenging the grounded notion of economic growth by proposing that we would be better off if the economic system served humans rather than having humans serve an economic system. Professor Tim Jackson¹⁷ (2011, 14), states that "... no subsystem of a finite system can grow indefinitely, in physical terms. Economists have to be able to answer the question of how a continually growing economic system can fit within a finite ecological system".

16 It is not common to see the Greek term in English or Spanish translations of Plato's *Dialogues*, which instead use the word model; but the term can be traced through secondary sources, such as Zeyl, 2014.

17 Tim Jackson is also director of the Centre for the Understanding of Sustainable Prosperity (CUSP) in the United Kingdom.

Peter A. Victor (2008), an economist who has specialized on environmental issues, explains that the first thing one has to understand is the idea of *progress*, the “quintessential modern idea”, according to which “history has a direction... towards improvement of human condition” (p6). More precisely, what needs to be understood is that it is an idea which emerged during the Enlightenment and entailed the belief that improvement in several spheres of life, including the arts and social organisation could be achieved through reason and knowledge. It took a while before the industrial revolution (through design) generated items of use that definitely improved people’s living condition. By the 19th century, when the political economy of Adam Smith had become widely spread even in the minds of common people, progress had become merely a synonym of economic growth (Victor, 2008). Once the capitalist system was running, “the shortage of employment [became] more important than the shortage of products”, and rather than having a need to employ people to meet the demand for goods and services, there started to be a need to maintain production growth “simply to keep people employed”¹⁸ (Victor, 2008, 12–13).

Something very similar happened more recently, when with the fall of the USSR, the terms third world and developing world became synonyms (Wolf-Phillips, 1970, 1318) and capitalism was legitimated as the one social, political, and economic model (Kothari, 2005, 50). Originally, third world referred to a group of countries which were not aligned with the first world (capitalist) or with the second (socialist), but in 1978, in its reports, the World Bank¹⁹ started using the terms Third World to refer to poor countries and Fourth World to refer to the poorest ones (World Bank, 2015; Wolf-Phillips, 1987). Simultaneously, during the decolonisation process of the British Empire, colonial officers started with development studies; where, if colonialism was bad, development was and still is promoted as something good.

The philosopher of ideas, Leopoldo Zea (1990), argued that since Roman times, the West has justified the domination of other towns through the idea that barbarians ought to be civilized. The term barbarian (*barbaroi*), was originated in Greece, where it was used to refer to those who could not speak Greek. Zea’s historic revision of such domination process can be synthesised by naming chronological dichotomies: Christian-Pagan, European-Native, Capitalist-Socialist, Developed-Undeveloped, The West-The Rest. Civilizing, therefore, entails turning others into an exact copy of oneself. Rosi Braidotti (2013, 15), adds to this criticism of the Eurocentric paradigm by affirming that it implies the dialectics of self and other, where difference is used pejoratively. The others, with base on their sexuality, race or nationality are seen as inferior beings. The dominant paradigm is intolerant.

18 For that reason, planned obsolescence, promoted as a strategy to keep employment and purchasing power at a maximum; a proposal which originated in the world of design was very welcome in the United States after the crisis of 1929 (Stevens, 1958 quoted in Adamson, 2003).

19 Which was found in 1944 in the United States

Although it is not perfect model, it can be affirmed that the World Wars are crucial events within the paradigm shift, for on the one hand, they advanced technological development, and culminated the establishment of the current economic system; on the other hand, they made some anomalies evident. Excess in production caused objects of use become objects of consumption (Arendt, 1998 [1958], 124, 126, 138), and our need to keep the system running justified the destruction of the environment. The identification of the environmental crisis confirmed humanity's power of destruction, originally made evident by the wars, holocausts, and genocides. Additionally, the generalised need for public admiration and the equation of success with wealth accumulation pushes people to pursue precisely that (56, 108), resulting in "[t]he universal demand for happiness and the widespread unhappiness in our society (134).

Design's paradoxical nature is at the core of the anomaly. Human beings make use of the products of nature in order to create objects of use; while doing so, they construct *their* world, and this is an essential trait of human life (Arendt, 1998 [1958], 135). Nevertheless, the existence of a man-made world, which is traditionally design's greatest concern, is directly tied to the destruction of the natural world (139). In a world where value is understood only in monetary terms, design is as good as the surplus it generates; design is therefore a tool that contributes to boosting economic growth. Traditionally, good design, or a well-designed output (whether product, service, system, etc.) is the result of a complex process that satisfactorily responds to very different requirements. In the end, a potential user acknowledges its value, and the company can set its price at a higher level than its costs, generating a surplus (den Ouden, 2012, 26). Ultimately, by not challenging that economic dimension forcefully enough, design contributes to the Eurocentric paradigm with three negative and interrelated effects:

Environmental Damage: Although many technologic and organizational efforts have been made to reduce its harmful effects, if design is shifting its practice mainly to respond to the service economy of developed contexts, as emphasised e.g. by Meroni and Sangiorgi (2011, 11), and companies maintain the goal of continuously increasing their sales, then all those efforts help to slow down a movement which harms the environment, but they do not ultimately shift its trajectory.

Segregation: Design segregates because a user is defined as an economic being who expresses value in monetary terms, as a price; but most importantly, as someone who is able to pay that price. People who "do not have the economic or political means to generate a formal demand" (Manzini, 2014) do not have a voice because they do not represent a market, and therefore, they are not commonly thought of as users. Their needs and desires remain outside the main interests of the design industry. So, there is the recognition of unfairness in the world, that very few people enjoy the status quo and practise consumerism, and therefore are *overconsumers*, while a great amount of the world's population does not have the means to fulfil their basic needs, hence they are *underconsumers* (Fuad-Luke, 2009, 83, 123).

Homogenisation: When the world's towns and peoples are classified into developed and undeveloped, a lot more is at play: the undeveloped either motivated by their desire to gain access to basic services, or by the external and constant pressure to become more like the developed, or what accounts for less like themselves. But while the developing process homogenises or fades the otherness away (Zea, 1990), why homogenization would be desirable it is not clear. Sometimes when talking about achieving a new lifestyle, it is difficult to distinguish between egalitarianism and intolerance.

If design continues to be grounded on the notion that economic growth is ultimately necessary, it prevents a sustainable future while situations of injustice are worsened. On the other hand, by describing the development process as a linear process from A (developing) to B (developed), humans spread a defective model. So, besides being unsustainable, the dominant paradigm is intolerant; but when being intolerant it at least acknowledges the existence of other paradigms. It can be concluded, therefore, that it is not absolutely dominant, and it is justified that at least for some, the paradigm shift is desirable.

The arguments which sustain that the emergence of the term Sustainability might detonate a paradigm shift are: first, Sustainability contests the idea of progress because rather than expressing improvement exclusively as a positive exponential curve, a vision of a better future is expressed as a curve limited by an asymptote called the carrying capacity. Second, Sustainability challenges the cartesian method and the possibility to understand phenomena in isolation; it advocates for disciplinary collaboration (trans-multi-inter-cross), instead. Third, being a call for global action, at a local level, it opens up for a diversity of different strategies, rather than supporting the universal homogenisation of towns. Finally, the term Sustainability enables the environment and other species to gain relevance, challenging the current paradigm's characteristic anthropocentric approach.

Being at the eye of the storm, with the emergence of the term Sustainability designers encountered the need to find ways in which design could collaborate in achieving the contemporary ideal. In here, it is argued that in order to make it happen, within the field of design it is crucial to raise awareness of these difficult discussions which might not be profitable, but might be much more important (Nussbaum, 2010). By enriching their understanding of complex social problems, designers would be better equipped to make ethical judgements and act as facilitators, provocative proponents, or moderators of processes towards a better future.

Brief historical revision of some moral doctrines

Following the model of paradigm shift, the following section introduces a selection of moral doctrines which belong to different historic moments and from which important considerations are borrowed in order to build the principle of Design as Freedom.

Nicomachean Ethics: In Ancient Greece, unlike what happens in a market economy, not everyone is a jobholder who bases their sustenance on an income earned from performing a job (Arendt, 1998 [1958], 31). Their life was based on the *oikos* (household), the most basic mode of human settlement, where groups of people (mainly family members)²⁰ cohabit, driven by life, which means that they collaborate in daily tasks in order to achieve their own nourishment and survival, as well as that of its other members. Basically, everyone's survival is necessary for sustaining the household (Arendt, 1998 [1958], 30). Their economic system was divided into two different types of practices. The *oikonomía*, or 'the art of household management', encompassed a diversity of domains, from agriculture, crafts, hunting and gathering, mining, or warfare, to the discussion of ethics, aesthetics, meaning, and value; ultimately, *oikonomía* was dedicated to "the art of living and living well" (Cruz, Stahel, and Max-Neef, 2009, 2021). On the other hand, *chrematistics*, "the art of acquisition" (ibid.), could either share the purpose of *oikonomía*, the provision of something necessary for life that the household had failed to produce, or then it could be performed as the 'art of money-making' (ibid.).

In his *Nicomachean Ethics*, Aristotle observed that the impulse to do good is a natural inclination of humankind, from which he deduced that there ought to be a highest end, one that is desired for its own sake, and not for the sake of something else; and moreover, that other things are desired for the sake of that highest end (Kraut, 2014). He also stated that "the life of money-making is one undertaken under compulsion, and wealth is evidently not the good we are seeking; for it is merely useful and for the sake of something else" (Arist. EN I.6, 1096a5-7, trans. Ross, 2009, 7). Aristotle concluded that the highest end, desired by all, was *happiness*, and in accordance with the Greek tradition, he differentiated happiness as pleasure from a superior kind of happiness, directly tied to the notion of *virtues*.

Virtues were the mean, or the exact point between two opposite vices: the excess and the defect. Therefore, courage is a virtue because the courageous stands at the middle point between the cowardly and the rash; in the same way, wise temperance is a virtue, because indulging in every pleasure makes one self-indulgent, while restraining from all pleasures makes one insensible (Arist. EN II.2, 1103b27-1104a26, trans. Ross, 2009, 24–25). He paid special attention to rational virtues, amongst which he highlighted *phronêsis*²¹ (Kraut, 2014), because this virtue enabled discernment between two

20 It should be noted that life in the communities where the Aalto LAB projects have been developed is somewhat similar to life in Ancient Greece.

21 *Phronêsis* has been translated in several ways, including practical judgment, practical wisdom, rational

exact opposites, and therefore, it made all other virtues possible and conduced men to a good life in general.

Kant: When the paradigm shift inspired by the work of René Descartes had taken place, and design had been born as a professional activity through the creation of the spinning jenny (Hargreaves, 1770), emerged one of the most representative thinkers of the Enlightenment, and perhaps “the central figure in modern philosophy” (Rohlf, 2016), Immanuel Kant (1724-1804). Kant introduced a new formula by making use of the existing moral principles (Kant, 2006 [1788], 20). His work posited several highly intricate philosophical debates; his vision of universality is especially controversial. Kant deduced that the moral law is therefore an imperative that categorically commands (Kant, 2006 [1788], 50–51). The categorical imperative is one of Kant’s central concepts, which works as an evaluative system that defines whether it is right or wrong to perform an intended action, and it is a self-imposed a priori proposition that is not founded on any type of intuition, either empirical or pure. It also implies the fundamental law of pure practical reason (Kant, 2006 [1788], 49–50): “Any action is right if it can coexist with everyone’s freedom in accordance with a universal law, or if on its maxim the freedom of choice of each can coexist with everyone’s freedom in accordance with a universal law” (Kant as quoted in Rauscher, 2012)²². In other words, for Kant, morality is driven by reason and detached from all emotional subjectivity, where “his categorical imperative is an articulation of a universal moral code that is applicable at all times and under every conceivable circumstance, independent of the empirical situation²³” (Rifkin, 2009, 175).

In step with Aristotle, Kant (2006 [1788], 42) considered that being happy was desired by every rational being. However, following the Christian tradition, although happiness is always enjoyable, it is not always absolutely good; morality is what makes us worthy of happiness (141–142).

Utilitarianism (John Stuart Mill): Towards the end of the 18th century, some movements against industrialization and rationalization emerged, like romanticism in the arts, and the Arts & Crafts movement in the world of design. Similarly, Utilitarianism, inspired by the Greek hedonism, which contested the view that morality emanated purely from reason, became “the dominant ethical theory” of the 19th century (Sen, 2001 [1999], 58). In this approach, the highest end is identified through introspection. Given that pleasantness is assumed to be an agreeable feeling and the special characteristic of experiences that human beings desire to have and wish to prolong (Rawls, 2009 [1971], 486), the highest good is pleasure.

choice, and prudence. In some Spanish versions, *prudencia* (from the Latin *prudētia*), which means temperance, caution, moderation, sense, and good judgement, and is one of the cardinal virtues that consists of distinguishing good from bad, to either follow it or run away from it (<http://lema.rae.es/drae/?val=prudencia>), is still used. The Oxford dictionary, for its part, defines the English word *prudence* as “a sensible and careful attitude when you make judgements and decisions; behaviour that avoids unnecessary risks”, and clarifies that “Prudence is used particularly in financial contexts”.

22 Note that I am using Raucher’s quote of Kant, given that my original source is in Spanish.

23 My emphasis.

John Stuart Mill (1806-1873), one of its main proponents believed, in step with Kant, that morality originates from human reason. However, it is governed by a universal law which is not completely rigid, and that it leaves room for the agent to act with responsibility and in accordance with the specificity of a given circumstance (Mill, 2014 [1863], 53, 95). He stated that no ethical theory completely disregarded how happiness somewhat influences the determination of at least some parts of the moral. Happiness established the criterion to assess right (cause happiness: pleasure and absence of pain), or wrong (inflict unhappiness: pain and lack of pleasure). Furthermore, in Mill's view, given that men desire happiness, they have the right to be happy and must try to be so.

The utilitarians, like the Epicureans, discern between lower (attached to sensations) and higher pleasures (related to human intellect, feelings, imagination, and moral sentiments) (Mill, 2014 [1863], 61–62). The latter pleasures are more desirable than the former ones, which can be confirmed, as is normal, by those people who have experienced both types (62). Although Mill considered it probable that at least some part of human consciousness can be innate, he was inclined to believe that moral feelings are acquired and can be cultivated (Mill, 2014 [1863], 104).

Perhaps it is because utilitarianism emerged when progress had become a synonym for economic growth that, although *utility* originally meant maximum happiness, eventually, it also meant maximization of profit.

John Rawls: John Rawls (1921-2002) was an American political philosopher whose work would inspire both Sen and Nussbaum. Rawls (2009 [1971], 3) criticised that that by prioritising economic principles, such as efficiency, utilitarianism gives room to injustice; in contrast, he affirmed that freedom is an inalienable right and denies that the greater good shared by others justifies the loss of freedom for some.

Rawls considered that human beings are arbitrarily born in different conditions regarding not only economic circumstances, but also social, and also regarding their set of skills (64), so that different people might need different amounts of goods (among which Rawls includes rights, liberties, opportunities, income, and wealth (2009 [1971], 380) in order to achieve the same goal. Rawls's difference principle of justice states that primary social goods are justly distributed when it is done unequally, if and only if that unequal distribution compensates for the disadvantages of the least advantaged.

Amartya Sen: Concerned not with conceptualising and ideally just society, but with the real possibility of diminishing injustice (Sen, 2009, ix), Amartya Sen, Economic Nobel Prize 1998 laureate, has insisted that human development is about humans, not about economics. While aiming to respond to the question Equality of what?, Sen developed the earliest proposition of the *capability approach* (Robeyns, 2005, 104). Sen's basic notion is that people should have the freedom to choose what type of life to live, and the effective opportunity to do so. Thus, "this approach challenges the fundamental

basis of welfare economics as well as its schematic model of rational economic man” (Alkire, 2005, 126).

Although it differs in many ways, the thinking of Amartya Sen has been greatly influenced by that of John Rawls. Sen sees primary goods as means, rather than ends (Sen, 2003 [1989], 48; 2009, 234). Different people might not necessarily accomplish similar goals when given the same amount of goods, because people have different conversion factors (a bicycle would not become a means to achieve mobility for a person with motor impairment). Sen insists in considering also that people might have different preferences.

“The capability approach is a broad normative framework for the evaluation and assessment of individual well-being and social arrangements, the design of policies, and proposals about social change in society” (Robeyns, 2005, 94). It pays attention to *functionings*, “the various things that a person may value doing or being” (Sen, 2001 [1999], 75), and which might be very elementary (being properly nourished) or very complex (having self-respect). However, it focuses on *capabilities*, “the alternative combinations of functionings that are feasible for her [a person] to achieve” (ibid.). The relevance of the distinction is reflected when comparing starvation due to food deprivation with voluntary fasting (Sen, 2009, 237). “Capability”, says Sen, “is ... the freedom to achieve various lifestyles” (Sen, 2001 [1999], 75).

Martha Nussbaum: Together with Sen, Martha Nussbaum is one of the pioneer proponents of the capability approach. Her main goal is to construct a normative conception of social justice grounded in human dignity and, aligned with the feminist tradition, with consideration for vulnerable groups such as women, children, the elderly, and the disabled (Nussbaum, 2003, 33).

Nussbaum has proposed a “tentative and revisable” list of ten central capabilities in order “to elaborate a partial account of social justice” (Nussbaum, 2003, 36). By focusing on capabilities and not on functionings, so that having those options available does not force anyone to choose them (2003, 49); and her list can potentially accommodate any moral view (Nussbaum, 2003, 42; 2016).

Manfred Max-Neef: The Chilean economist Manfred Max-Neef (1989) contests the Eurocentric Development and proposes Human Scale Development (H-SD), an evaluative approach that promotes participatory practices and considers that “the best development process will be the one that enables improvement in people’s quality of life, allowing people and communities to be coherent with themselves”²⁴ (2022–2023).

²⁴ Which is largely in step with Oscar Hagerman’s observations when working within communities, and which he defines as *harmony*.

Max-Neef's (1989) sees fundamental human needs as finite, few and classifiable²⁵, universal, and relatively static (they change at the pace of the evolution of the human species). However, sets of satisfiers²⁶ are defined by each human society in accordance with itself and its time. Any unsatisfied need causes a form of poverty, so that many types of poverties and richnesses exist in the world. By encouraging oikonomies, H-SD promotes the existence of an intentional third world, enabling poor communities to generate truly alternative futures.

Within Max-Neef's (1989, 80) concepts, attention should be paid to his non-conventional resources, necessary for the autonomy of communities. While conventional resources are those that get exhausted as they get utilised, non-conventional resources, like social consciousness, organisational culture, and popular creativity are lost when they are not in use.

Taking a stand

Nussbaum and Sen (moderately) stand on opposite ends of the paradox commonly addressed as universalism and cultural relativism. Acknowledging the unavoidable tension, they seem to mutually encourage each other to advance their own perspective. Can a single partial moral doctrine act as a module to accommodate all different perspectives globally (in step with Nussbaum)? Or else, should it be simply agreed that we cannot agree (in step with Sen)? It is dubious that this argument will ever be solved; certainly, not within this work. However, these dilemmas were encountered within the Aalto LAB Mexico project.

Sen is interested in the application of justice in practice. Freedom is his key concept because different people can be happy with very different achievements, and so people should be left to decide what kind of life they want to live, and live accordingly. Nussbaum (2003), whose central concept is dignity, argues against Sen's general endorsement of freedom, given that not all freedoms are good (such as freedom to pollute the environment) (44), and because not every citizen necessarily conceives freedom and autonomy as central values (49).

By introducing a thin and narrow conception of value, Nussbaum's list (2015, 70) is potentially universally applicable. Additionally, the list might help preventing the adaptive preferences

25 "Those proposed are at the axiological level (i.e. referring to those things we value): subsistence, protection, affection, understanding, participation, idleness, creation, identity and freedom. The need for transcendence is sometimes included" (Cruz, Stahel, and Max-Neef, 2009, 2023).

26 For analytical purposes, Max-Neef has identified five types of satisfiers: "violating or destructive satisfiers, pseudo-satisfiers, inhibiting satisfiers, singular, and synergic satisfiers, depending on how they relate to the whole needs system." (Cruz, Stahel, and Max-Neef, 2009, 2024)

phenomenon, in which people get used to living in whichever circumstances, including poverty and marginalization. Nevertheless, a consistent argument against universalist perspectives is that they are primarily constructed from a Western perspective, (Hellsten, 2015, 85); thus, they might threaten a truly alternative third world.

Some believe that universally valid values do not exist (i.e. Herder as quoted in Larraín, 2005, 87). Sen (2009, 12–15) illustrates the coexistence of several different and even opposite notions of justice through parable of *Three Children and a Flute*, where three children quarrel over one flute, and the reader should decide which one of the three deserves to get the flute. Anne is the only one who knows how to play the flute. Bob is the poorest amongst the three, and he has no toys of his own. It took Carla several months to complete make the flute by herself. An economic egalitarian would give the flute to Bob, a libertarian would give the flute to Carla, and the utilitarian might give it to Anne. Comparatively, none of them stands out as the best option, for all of them can be solidly justified.

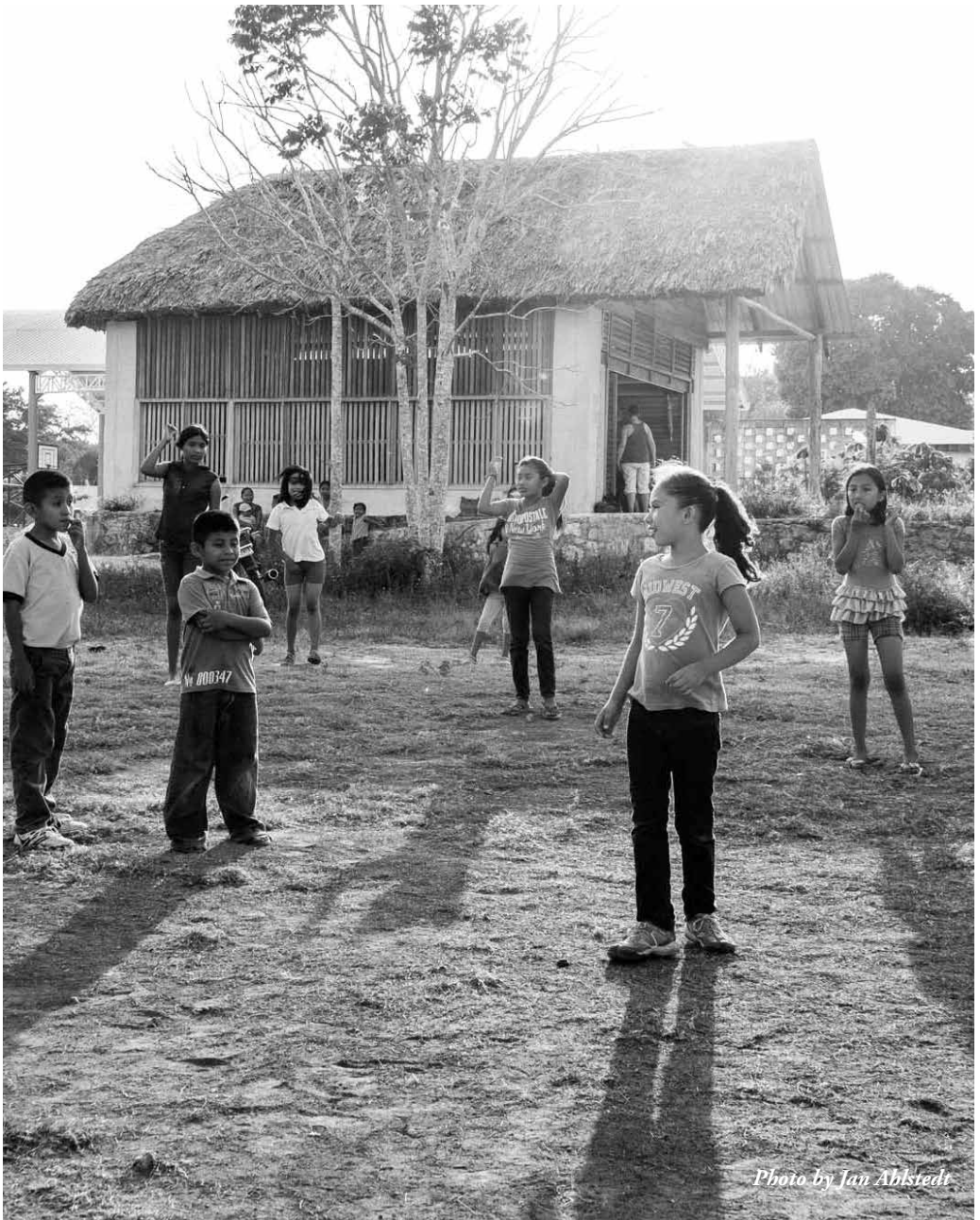
Nonetheless, recent investigations support Nussbaum and her focus on commonalities. It has been discovered that in human beings and in other species, mirror neurons, which control sociability, solidarity, sense of belonging, and empathy (Rifkin, 2009). Elizabeth Baeten (2009) states that the origin of morality can be traced the natural environment from which human beings evolved (72) and that despite cultural differences, “there is also a solid core of stable similarities across cultures and through history.” (73).

Perhaps, Sen accomplishes a partial moral conception better than Nussbaum’s. His notion that people should be left alone to choose which type of life they want to live, includes the freedom to not endorse freedom. Choosing to align with Sen does not disregard the possibility that people will democratically build a list of capabilities identical to that of Nussbaum. The alternative driving principle for design was inspired by the central concept in Sen’s proposal, freedom; nonetheless, there are two direct implications of studying it through Aalto LAB Mexico. First, it can be assumed that the right to self-determination is inherent to indigenous communities (Murphy, 2014; Bockstael and Watene, 2016), and thus the need to see capabilities or freedoms²⁷ in the collective or social dimension. Second, Sustainability is further addressed, showing that freedom cannot be conceived as limitless.

In conclusion, it has been argued that the dominant paradigm is an intolerant and defective model, and that the emergence of the term Sustainability demonstrates both the will to break with it and that of building a new one; additionally, it is assumed that the plurality of existing paradigms might inspire truly alternative futures. From the discussions presented above, several considerations are highlighted. Happiness is very important, but different things might make different people happy;

²⁷ In fact, “Sen’s notion of capabilities implies an ontology of a relational society” (Smith & Seward, 2009, 214), where capabilities (like nourishment) result from the interaction of an individual with a society (agriculture and all logistics implied from the field to that individual’s mouth).

justice implies that every person has the right to decide how to live their lives, and accomplishing it requires their societies to provide the adequate conditions. However, exercising the freedom to live as desired does not justify the hinderance of someone else's freedoms, including other species and the environment; being more prudent or rational is necessary. Taking all of the above into account, the following chapter introduces the principle of design as freedom.



Conceptualising Design as freedom

Sen's proposal of seeing development through the Capabilities Approach, and more specifically as the expansion of the freedom(s) that people have to live the lives they have reason to value, is certainly inspiring. Nevertheless, its anthropocentric construction prevents environmental limits and considerations to be included in the model; paradoxically, this can be achieved if the focus is on freedom. This reasoning is in step with that of Fry (2010), when he explains that sustaining life depends upon the establishment of certain unfreedoms. Nevertheless, this work does not support his view that given that Sustainment cannot be achieved by democratic means (4), a dictatorship of Sustainment must be imposed (124).

This work aligns with those who believe that humans are able to make a reasoned choice and constrain their own actions (e.g. Aristotle, Kant, Mill, Rawls, Sen, Nussbaum). In the past, these discussions have exclusively focused on human-to-human relations. Here, the model of assemblage as proposed mainly by Manuel DeLanda (2013 [2006]) is adopted, in order to cut across the nature-culture divide and enable the serious consideration of setting environmental limitations on the expansion of human freedoms.

Most importantly, this work is a call to celebrate human diversity. Therefore, in order not to fall in contradiction, it should be openly clarified that the framework hereby proposed is neither intended to become a dictating guide nor to disregard the fact that others might value different frameworks (including the existing one). If, in positioning itself, *Design as Freedom* becomes a critique of the current systems, it is very well expecting to receive critique back from the advocates of those systems; thus, the argument is that this work intends nothing except to offer a reasoned alternative.

Kant's scalable formula

The philosophical debate on freedom goes from questioning its mere existence to classifying it into types; it is very frequently linked to other concepts, such as justice, equality, morality, and reason. Most of the great philosophers throughout time have dedicated at least part of their work to talking about freedom. It is not my intention to make a thorough philosophical review or to contest the most brilliant minds in history, but rather to explain to the reader, who is, most likely, a designer, the position where this work stands within the wider freedom debate. The fact that all theories are inevitably contextual makes it very difficult to ground any current work on a single theory.

Nonetheless, and despite it being highly controversial, the philosophical system of Immanuel Kant seems to provide a solid structure to build on. As stated before, he did not introduce a new moral

principle. His actual contribution was generating a new formula that described the interaction of elements that had consistently appeared in the historic philosophical debate about freedom (Kant, 2006 [1778], 20). The time lapse of more than 230 years that holds us apart from Kant's work has been more than sufficient to enable the emergence of new perspectives, including opposite ones that seem to completely refute Kant. However, Kant's formula seems to give room to integrating the concept of sustainability into the debate. Ultimately, and by making use of the metaphor of assemblage, which will be later introduced, this section will explain the notion of Design as Freedom. Throughout his work, Kant presented slightly and sometimes substantially different relationships among three human characteristics: freedom, morality, and reason²⁸. The main confusion is whether he inclined towards human beings being rational and free and therefore moral, or if human beings are moral and free above or before (a priori) being rational. His appreciation of human beings, as both phenomena (members of the sensible world) and noumena (members of the intelligible world) enabled him to portray those three characteristics both as sources and products of the others, as well as innate to human beings (Kant, 2006 [1778], 145). As a matter of fact, Kant's propositions have been extremely influential and are still the focus of philosophical debate.

In *Critique of Practical Reason*, Kant (2006 [1778], 131) derived individual morality from two characteristics that he found to be intrinsic: that of being free and that of being rational. Conversely, Kant saw moral law as a *categorical imperative*, or an a priori proposition, an innate characteristic, and rather than a rational or metaphysical construction, as an immediate feeling that pushes men to unconditionally act according to duty (51).

Throughout his *Perpetual Peace: A Philosophical Sketch* (2012 [1795], 54), Kant seems to portray (in an ideal manner) “the scalability” of his freedom-reason-morality formula. In that, he stated that



achieving perpetual peace depended upon understanding that all men live in relation to one another on three different levels: civil, state, and cosmopolitan. First, the categorical imperative enables the reciprocal relationship amongst two individuals who perform something due to their shared *will*, thus enabling the emergence of the law (63–64). This condition, for its part, allows the emergence of what Kant called the *original contract* (55).

*Figure 2. Men are free and rational; therefore, moral.
Drawn by Claudia Garduño.*

²⁸ Beauty and the sublime are also key elements within Kant's Moral Theory, and they would evidently widen the discussion far beyond its original limits. Those concepts are not part of this investigation, nevertheless, they could be explored in the future.

Kant's original contract is what has led others to refer to him as a contractual (e.g. Rauscher, 2012; Rawls, 2009 [1971]; Sen, 2007). Such a social contract referred to the explicit acknowledgement that I make of others' rights and that others make of mine; therefore, it is the means through which everyone's freedoms coexist (Rauscher, 2012). Furthermore, this original contract legitimated a government; for a group of free individuals who constitute a community agree that they depend upon a single legislature that should treat them as equal citizens (Kant, 2012 [1795], 55). Kant acknowledged that there is evil in human nature (64), for which reason, the main function of the state is to hinder all hindrance to freedom (Rauscher, 2012).

The concept of *property* properly exemplifies how the categorical imperative scales into a social contract, then the state, and finally, the wider global scale. Kant derived individual property rights from reason, explaining that things or objects might be needed to realise free chosen ends (Guyer, 2005). Furthermore, although Kant recognised that the action that precedes official ownership is the empirical appropriation, property is never a unilateral claim, but a mutual obligation (Rauscher, 2012). That civil condition, through which someone's ownership of something is recognised by others, is in fact the first of the two components of the social contract. The second component, as mentioned above, is the justification of the power of the state; the state is granted power (and given the duty) to act as mediator in cases of disagreement, and especially in property matters.

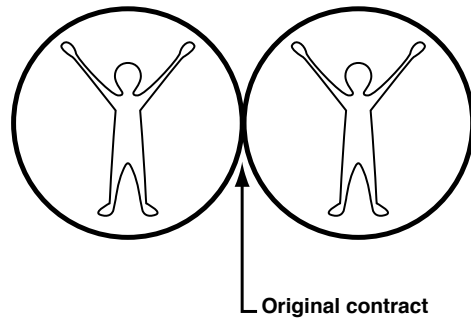


Figure 3. *Original contract*, by Claudia Garduño

Kant extrapolated the discussion on property to the global sphere. There, too, property should not be a unilateral claim. He was critical about lands overseas being invaded by the European nations, as they were already inhabited and therefore somebody's property (Kant, 2012 [1795], 72–73). In *Perpetual Peace: A Philosophical Sketch* (2012 [1795], 63), he proposed a world order as a league of nations. Somehow foreseeing the formation of the United Nations, he argued that this league should be a league of peace that, rather than dominating the states within it, would have the role of securing their freedom. This federation of states would extend through the free association of more states (63–67).

It proves rather contradictory that Kant argues for the need for a power figure to mediate conflicts on both local and global scales. If all individuals were inherently moral (or moral due to a natural order that emerges from being inherently free and rational), and if individuals are able to coexist through the civil condition brought about by the social contract, why would there be any room for disagreement? If it were true that societies were as homogenous as Kant describes, there would be no need to have a mediating figure, such as the state. If the state is needed, it is because not all individuals respect the agreement, the social contract (European Imperialism rightly exemplifies a disobedience to the social contract). “Any wrong doing could only show that an agent is not rational and therefore

not responsible at all” (Sidwick, as quoted in Guyer, 2005). Moreover, Kant’s reasoned scalable formula of universal application can be criticised for promoting global homogenisation, without being able to prove that everyone in the world would equally distinguish right from wrong.

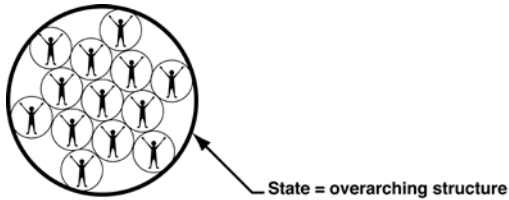


Figure 4. Kant extrapolated the discussion on property to the global sphere. The State as an overarching structure. By Claudia Garduño.

Free Will: Is there reason, morality or freedom at all?

The relation between morality and freedom is one of the most recurrent topics in the history of philosophy, commonly referred to as the existence of a strong free will and the ultimate moral responsibility. Reason is much less frequently incorporated into that debate. Many philosophers, but especially those aligned to the non-freedom (or pessimist) view, would start by arguing that reason is not necessarily an inherent quality of all individuals, that some are more reasonable (respond naturally to rational considerations) than others (Feinberg, 2005), and that in fact, it implies having a certain type of motivational set. Therefore, being reasonable is nothing but matter of luck (or grace). In any case, in order for free will to exist, one would have to be ultimately responsible for what one *does*; following that, one would have to be ultimately responsible for what one *is*.

Kant eventually realised this problem, but got past it by arguing that self-creation takes place; by saying that there are men who, from childhood, develop certain maliciousness, and that even as children, they understand that the accusations made in return are grounded, and they thus remain responsible for their actions. Therefore, even in that case, the condition must be an effect of their free choice (Kant, 2006 [1788], 126). Moreover, Kant states that whoever commits a crime is justly already accepting the punishment that has been morally legislated. That person is therefore willing to sacrifice their own happiness. In this case, there is no longer any maliciousness in the action (58).

Pessimists argue that, in order to be fully responsible for what one is now (N_1), one should have been fully responsible for what one was before (N_0), which is not possible (Strawson, 2005). No one can be *causa sui*. Next, if one cannot be responsible for what one *is*, one cannot be responsible for what one *does*. This extremely powerful logical reasoning is the basis for stating that full moral responsibility cannot exist, which, for its part, implies that a strong free will cannot exist, either. Furthermore, it

logically demonstrates that no punishment can ever be fair, because people act in accordance with what they are, and they cannot be ultimately responsible for such a thing²⁹.

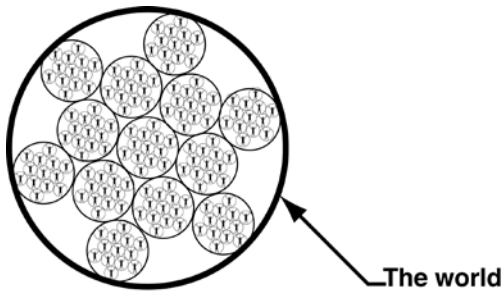


Figure 5. *The world as a league of nations.*
By Claudia Garduño.

The pessimists' argument proves Kant to be irrefutably wrong, and yet the subject keeps on being the focus of philosophical debate. As Strawson (2005, 292) states, this debate is a philosophical roundabout, and probably will be for as long as men can think, because "powerful logical or metaphysical reasons for supposing that we cannot have strong free will keep coming up against equally powerful psychological reasons why we cannot help believing that we

do have it". What he means is that despite the general agreement that the reasons given by the pessimists demonstrate the impossible existence of both a strong free will and an ultimate moral responsibility, the convention is that they actually exist. On one hand, the arguments of the pessimists are irrelevant in real life, where everyone faces situations of choice on a daily basis. On the other hand, juridical institutions exist and function in practice all over the world, while moral responsibility is not questioned over guilt of crime.

We cannot reasonably prove it, but freedom can be taken for granted

The phenomenology of choice accounts for lived experiences of choice, which can in no way be sensed as determined (Strawson, 2005, 292). On a daily basis, one doubts, hesitates, and is aware of the possibility to choose one or another, or not to choose at all; one acknowledges that one of the choices is morally better than others. For as long as someone experiences a "fully explicit self-conscious awareness" (293), one experiences being morally responsible. In response to this view, pessimists argue that this description explains the fervent belief in the possibility of ultimate moral responsibility, but does not demonstrate its existence.

Evidently, this work cannot be anchored in the pessimists' leading argument, or it would have to end right here, concluding, by simple deduction, that freedom cannot be driven through human effort. Hence, design and all the other human disciplines cannot deliver freedom. Since this work does not

²⁹ Personality traits are most likely genetically determined, and some other factors that shape the identity of a person are socially and environmentally influenced. A person can never be fully responsible for those factors. Furthermore, consider that people can sometimes act in unexpected manners because of a chemical unbalance in their bodies.

aim to do what cannot be done – proving the pessimists wrong – it can only take a pragmatic turn and, in step with moral psychology and phenomenology of choice, argue that moral responsibility and free will are, in fact, experienced in real life (if not in their ultimate forms, at least partially).

Therefore, this discussion returns to Kant and his observation that the notion that we should pursue the highest good obliges us to presuppose first, that it is possible to achieve it; but also to assume the possibility of what can neither be proved nor refuted – in his case, God, freedom, and immortality (Kant, 2006 [1788], 173). In a similar manner, even if free will did not exist, believing in it could actually result in good things³⁰.

This work holds that freedom, morality, and reason are interrelated. It also recognises the existence of a priori propositions such as reason, personality, and temperament, which at least partially determine the individual. However, and given that free will is found to be individualistic, this project turns towards those who propose that every human being is born into a social environment, which therefore precedes the individual (e.g. Arendt, Rifkin and Baeten). Notions from evolutionary psychology are borrowed in order to look at free will – the ultimate moral responsibility debate from a different perspective. Rather than observing the matter on the scale of the individual, it is looked at on the scale of the collective. This perspective and the integration of the term sustainability into the discussion disrupt Kant's original propositions, and specifically, his views on property and the social contract.

As expressed by Elizabeth Baeten (2009, 65–66): “Human beings, as products of natural selection, are social animals. Humans did not become social; we became human (as individuals and as a species) within already established patterns of social relations... Evolutionary history does not move from solitude to sociality and an individual's life trajectory does not move from insular to gregarious. These social conditions are necessary preconditions for the development of unique human individuals.”

Social environments could be addressed as an a priori condition into which a person is born. A person is greatly shaped by their social environment; from it, they will learn a language, shape their beliefs (DeLanda, 2013 [2006]), and acquire ways of doing. Society will not fully determine the individual, as stated before; the person's temperament remains merely *a matter of luck*. However, the society into which a person is born is at least partially responsible for the person's moral understanding. Moral systems change through time, so that what people living in one time found to be completely reasonable might no longer make any sense; for example, not too long ago, women were not allowed to vote.

Another example, which is even more alarming, is the phenomenon of slavery. During those times, and within their paradigm, ‘negroes’ were not people (humans), they were merely property objects, and they could be exploited as such within a moral system that made perfect sense to the people who

30 This observation was made by Ossi Naukkarinen.

lived through it. Sadly, even some slaves shared this view (Menand, 2002, 3–22). Individuals who exploited others cannot be blamed now for their lack of awareness. Fortunately, “not only are men a product of history, but history is also a product of men” (Fromm, 1987 [1941], 34). To put it in Strawson’s terms, a generation that acknowledges the practice of an injustice of any kind within their systems is not ultimately responsible for generating the unjust practice (N_0), but it has the means (and responsibility) to make the adjustments towards a more just practice (N_1). The new generation is born under the N_1 paradigm, for which their parents were at least partially (never ultimately) responsible.

If this reasoning was applied to our current times, the structural failure might be called *unsustainability*, following the design theorist Tony Fry (2010). Sustainability is a disruptive concept that not everyone finds convincing; there will be many that will not appreciate an understanding of freedom bound to this concept. However, a growing number of people, including professionals and academics, sum up the idea as being that a lot has to change in our current behaviour if life on the planet (including human) is to subsist for long.

Introducing sustainability into the Kantian formula described above disrupts the relations between freedom, morality, and reason, but also his understanding of concepts like *property* and *original (social) contract*. Kant stated that every object, that is, everything “within human capacity for use” (Rauscher, 2012), should be assumed to be the property of someone. Individuals were entitled to property rights because those objects could be used to perform free-choice actions. The social contract, for its part, delimited where one person’s rights ended and someone else’s started; it delimited one’s own and everyone else’s space for free action. Nevertheless, each geographically and historically situated context has delimiting systems of its own, and it can only be retrospectively assessed that those are not always fair.

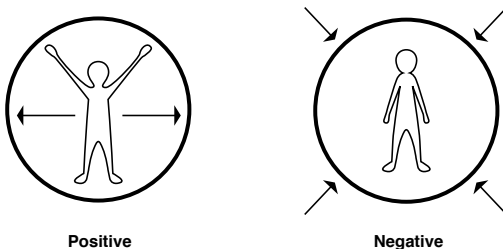
The maxim of sustainable development introduced in the Brundtland Report in 1987, *that living generations should not compromise the possibility for the coming generations to meet their needs*, challenges the conception of both private and common property. Shared ownership with other human beings is not enough in this perspective, which calls for sharing ownership with generations to come. Furthermore, the introduction of environmental laws starts to do what Rawls rendered impossible: extending the notion of a social contract, in so far as human beings should not only respect each other’s rights but also acknowledge the rights of other species and of non-living natural elements (rivers, mountains, etc.).

Hence, sustainability adds to the moral layer of the freedom-moral-reason system. It posits a new boundary to human behaviour: as Tony Fry (2010) states in his book *Design as Politics*, if life is to be preserved, Sustainment ought to become the necessary unfreedom. While Fry is not very positive that humankind will agree to transform their value system voluntarily, herein the hope is that all the time, there will be more people who will resolve to engage in that alternative world view.

Until this point, an account has been made of how the social sphere can be considered an a priori proposition and how it can play an active role in performing an intentional change in the current moral system. The disruption caused by the insertion of the term sustainability into Kant's morality (regarding the concepts of property and social contract) has also been explored. The next step will be to introduce the other great historic-philosophical discussion around the concept of freedom, that of positive and negative freedom, which might have come to a definitive end through Gerald MacCallum's (1967) proposition of a triadic system. This exploration will enable a more comprehensive account of the relation freedom-reason-morality (where morality might include a Sustainability layer), and direct the discussion towards its final phase, in which contemporary thinkers hold different perspectives around that notion of scalability.

Negative and positive freedom

The distinction between positive and negative freedom can be traced back to the times of Jean-Jacques Rousseau, Immanuel Kant, or David Hume. Nevertheless, the difference was first expressed by Isaiah Berlin in 1960 (Feinberg, 2005; Carter, 2012). The main distinction is that those who incline towards a negative conception of freedom say that it implies being free from constraints (the absence of something), where constraints account for actions or policies performed by other human beings, which directly or indirectly obtrude with an individual's intention (Feinberg, 2005); thus, freedom is external to the individual. Those who argue for positive freedom describe it as an internal force of human beings (the presence of something), and describe it as the possibility that one has to act in the way that one desires to. While negative freedom theorists strictly see it from the point of view of the individual, some advocates of positive freedom, like Rousseau³¹, argue that freedom is achieved through the collective (Feinberg, 2005).



*Figure 6. Positive and negative freedom.
By Claudia Garduño.*

Another criterion that sets the advocates of positive and negative freedom apart, is the types and sources of constraints (Feinberg, 2005). From the positive perspective, a disability prevents a person from doing as they wish and therefore makes them unfree. Nonetheless, from the negative perspective, being unable does not necessarily account for being unfree. Political and social philosophers argue that within their fields, freedom is, unlike in medicine

31 In Rousseau's theory, a community that rules itself according to the "general will" is necessary for the achievement of individual freedom, where the individual achieves freedom by participating in the processes (Feinberg 2005).

or engineering, a social relation. Therefore, one is unfree only when someone else prevents one from doing something; to be unable accounts for being unfree if and only if the disability is caused through human deliberation (even indirectly). Feinberg (2005) exemplifies this by describing a person who does not earn enough to make a living because she does not have the skills that an employer would look for, because she did not have access to the required training, because the national system where she lives is unequal, because there is racial segregation dictated by an apartheid government. In that case, to be unable is to be unfree.

On the other hand, there is the example of the slave. In the negative sense, a slave is absolutely unfree. From the positive perspective, being a slave does not necessarily account for being unfree. We might find the case of a contented slave: the one who in fact enjoys being a slave. If this enjoyment is a product of the slave's own free will, then the slave is actually free. Only in the case where the enjoyment is a product of manipulation, in which the slave has reached the point of considering herself not human, is the slave unfree.

The more philosophers deepened the discussion of negative and positive freedom, the blurrier the distinction between the two became. In an article entitled *Negative and Positive Freedom*, Gerald C. MacCallum (1967) introduced the following example: "Consider a man who is not free because, although unguarded, he has been locked in chains. Is he unfree because of the *presence* of the locked chains, or is he unfree because he *lacks* a key?" (321). MacCallum's argument that "the distinction between them [positive and negative freedom] has never been made sufficiently clear, is based in part upon a serious confusion, and has drawn attention away from precisely what needs examining if the differences separating philosophers, ideologies and social movements concerned with freedom are to be understood" (ibid.). He introduced an alternative in which there is just one account of freedom, and in which freedom is understood as a triad. The freedom of a person, subject, or *agent* (what is free?) is always the *freedom from* some constraint, restriction, interference, barrier, or preventive condition (from what?), *to do or become* something intended (to do or become what?) (MacCallum, 1967; Feinberg, 2005; Carter, 2012).

In fact, the capability approach responds to this conflict between positive and negative freedom. Amartya Sen argues against rights that focus on the negative perspective (or control), "imposing constraints on what others are permitted to do". Instead, functionings and capabilities enable rights to be addressed, following a positive perspective (Sen, 1985, 217). Martha Nussbaum, for her part, illustrates this reasoning by comparing the constitution of the United States, written from the negative perspective, and the Indian Constitution, which "typically specifies rights affirmatively" (Nussbaum, 2003, 38). Although the proponents of the capability approach describe themselves as advocates of positive freedom, Ian Carter (2012) describes them as egalitarians because, like MacCallum, they acknowledge that freedom requires both certain abilities and the absence of constraints. Hence, when

following MacCallum's conception of freedom, which prevents syntactic confusion, the language of capabilities becomes redundant³².

Similarly to Kant's formula, therefore, freedom is understood as a series of interrelations, where reason might be just another word for intention, and where morality, thought of as a self-regulatory mechanism, becomes a constraint that can give room for the notion of sustainability. However, it is also understood as forces in tension, in which the role of the barrier is not exclusively played by morality but also by other human and non-human components (such as chains). It could then be argued, as will be further elaborated below, that the intention of the agent is never enough; sometimes the process of being released from constraints also involves interaction with others, including non-humans (the key). Thus, "the locus of agency is always a human-non-human working group" (Bennett, 2010, xvii).

Freedom could then be represented as a sphere of action in which there is room for free choice and in which the individual is sovereign. A slave's sphere of action might be reduced to the slave's own body (or mind), and the slave might be contented with this situation, following the natural human disposition to search for happiness. Nevertheless, that is not the type of freedom that this work would look forward to delivering through the practice of design. This work proposes, and it is one of its main contributions, seeing design as the process through which agents are empowered, and through which new relations are envisioned, so that the agents are able to overcome the constraints that made them unfree³³ (and go from N_0 to N_1 , not too different from Findeli's (2001) conception of design practice).

This section has offered a glimpse into the difficult philosophical discussions that have existed around the concept of freedom, paying special attention to its *systemic* relations with concepts like morality and reason, and its representation as a triad. The following section introduces the concept of *assemblage*, a model that is borrowed from Manuel DeLanda (2013 [2006])), and that is useful in the process of conceptualising Design as Freedom.

Assemblage

Designing to enlarge the capabilities (freedoms) of people while minimising the negative environmental impact brought within implies turning externalities into internalities, which could

32 I have chosen to follow MacCallum's conception of freedom, so, although in the book I reference several proponents of the capability approach, I deliberately favour the term freedom over capability.

33 If people in El 20 lack access to an adequate healthcare system, the western-urban-industrial-capitalist way of living also brings constraints, about which it could be said, for instance, that survival is dependent on constant visits to the supermarket.

not be achieved by studying either humans or the environment in isolation. Therefore, this task has to be approached through systems thinking. Moreover, it also requires a new *unit of analysis* that goes beyond anthropocentrism, and so cuts across human-centred design, co-design (or participatory design), and sustainable design, since both natural cycles and socio-cultural patterns are given high relevance. The designer needs to understand the ecology of a community: the relations and interactions among its people, and the natural and built environments, so that new relations can be

envisioned, for instance as sustainable product service systems. The economic dimension maintains a certain relevance, but as a type of system that is put at the service of humanity, and not the other way around. Ultimately, the proposal herein is to adapt ‘assemblage thinking’ to the design discipline as a framework to explain and understand the intricate relationship between humans and non-humans, and furthermore, to enable new possible relations to be imagined.

Among practising designers, the word *assemblage* is most likely heavily associated with mechanics, simply because it is used as a synonym for the word *joint*. Most designs, especially the ones that are planned for industrial production, have to deal with designing parts and the joints or assemblages between them. In addition, one could think of any factory’s assembly line. However, *assemblage* is a word of French origin that means “gathering” and that has been widely used in history to convey a variety of things and events. Within governments and organisations, it can be related to the concept of assembly, as a formal meeting or as a board of members; in art, the assemblage has been used as a metaphorical resource associated with collage (Phillips, 2006; Marcus & Saka, 2006); in the architecture and literary spheres, specifically as the “academic interdisciplinary writing during the 1980s” (Marcus & Saka, 2006, 103). In music, it can relate to an ensemble, as “a group of two or more musicians who perform instrumental or vocal music...” (Princeton University in Katula, 2014).

Regardless of all its different connotations, assemblage has one clear denotation. An assemblage entails putting together several parts (which are wholes in themselves) to form a new whole. This whole is non-permanent because the quality of being assemble-able is inseparable from the possibility of being disassembled.

Here, the term is used in a similar fashion to when, in the seventies, assemblage emerged in the field of philosophy of science, alongside concepts like chaos, complexity, indeterminacy, or fractals, according to Couze Venn (2006). In the account of Marcus and Saka (2006), it is a term that bears great similarity to Bruno Latour’s *Actor Network Theory (ANT)*. John Phillips (2006), for his part, makes an account of how the term was coined in an accidental manner, since the actual term

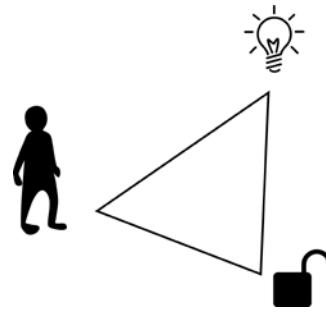


Figure 7. MacCallum's (1967) freedom triad, where freedom occurs when an agent has an intention and is free of constraints to do what is intended. Drawn by Claudia Garduño.

introduced by Deleuze and Guattari in *A thousand plateaus* (1980) was *agencement*, a French word with no direct translation into English. Phillips explains that assemblage is a more rigid concept than *agencement*, and that the latter describes the manner in which concepts acquire a sense because of their connections with other concepts. The new sense in which a concept is used is greater than the original concepts because the relationships amongst them have caused them to change, and also because, altogether, they are part of something else. Despite the inadequacy of the translation, the word assemblage seems to have been used in a similar fashion to the French *agencement*.

Marcus and Saka (2006), in step with Venn (2006), emphasise that assemblage is a term that encompasses a tension between concepts commonly conceived as opposed. Assemblage enables the co-relation of different types of phenomena but encounters a theoretical problem of referring to the structured and the undetermined within a single theoretical framework (Venn 2006). Marcus and Saka (2006, 102), for their part, see “assemblage [as] ... a resource ... to address ... the modernist problem of the heterogeneous within the ephemeral, while preserving some concept of the structural so embedded ... in social science research... It offers an odd, irregular, time-limited object for contemplation.” They also acknowledge that “whoever employs it does so with a certain tension, balancing, and tentativeness where the contradictions between the ephemeral and the structural, and between the structural and the unstably heterogeneous create almost a nervous condition for analytic reason” (Markus & Saka, 2006, 102). The tension is necessary because although some order exists in social life, the conditions of the present are always emergent, as they result from the intersection of two or more open systems (Markus & Saka, 2006, 103).

Manuel DeLanda (2013 [2006]) states that the theory created by Gilles Deleuze has realistic credentials based on “the fact that it cuts across the nature-culture divide” (3). However, he also acknowledges that the very few pages that Deleuze and Guattari dedicated to developing this theory cannot account for a sufficiently grounded theory. DeLanda takes over the task of further developing assemblage theory as a non-reductionist approach in which wholes are characterised by relations of exteriority. So, a whole acquires an identity and properties through the interactions among its parts and, very importantly, a whole cannot be reduced to the properties of its components. The theory is basically applicable to all heterogeneous wholes because everything, from atoms to ecosystems, can be treated as assemblages. In fact, throughout the book, DeLanda conducts assemblage analysis on social entities of different scales, from persons to networks and all the way to cities and nations. His argumentation is that while “every social entity is shown to emerge from the interactions among entities operating at a smaller scale” (118), “each level of scale retains a relative autonomy and can therefore be a legitimate unit of analysis” (119).

The matter of scale is treated by DeLanda (2013 [2006]) in a space-temporal manner, and it is in those two senses that he approaches the tension between stability and change within an assemblage. Assemblages are “entities that are products of historical processes” (3), and they are not permanent.

Species are also treated as products of historical processes that change over a much longer time-span than a full human life. Therefore, their fixity is but apparent, an ‘optical illusion’ (49).

In every assemblage on any given scale, DeLanda distinguishes two types of components: those that play a material role and those that play an expressive role; and two types of processes: those that give stability (territorialisation) and those that destabilise (deterritorialisation) (12). Furthermore, he adds a third dimension of processes that either rigidify the identity of the assemblage or make its operation more flexible by making use of specific mechanisms such as genes and language; he refers to these as processes of coding and decoding (15). When thinking of a person as an assemblage, the physical body plays a material role, while passions and emotions play an expressive role. Habitual repetition is a process that gives stability and the acquisition of new skills destabilises the assemblage (learning new skills enables a child to experience new impressions and generate new ideas, thus, while shaping a personal identity, this process also breaks with what that child used to be). Finally, it would be through language that a person’s beliefs get shaped. When analysing networks, governments, and organisations, DeLanda acknowledges that communication technologies have enabled those assemblages to exist while being detached from a physical location, except when, for example, a government’s or organisation’s headquarters is tied to a specific building within a city. Bondage to a territory, explains DeLanda, is a characteristic of the following scale, which corresponds to cities and nations. When an assemblage is delimited by a territory, all the available resources contained within that territory, both natural and demographic, are its components.

DeLanda also states that his work is constructed from a western perspective, so he might be missing what is noted by Bauman (as quoted in Larraín, 2005, 75), that “the world elite, the owners of capital, the globalized intellectuals become extraterritorial, detached from the local communities which stay marginalized and confined to their own space³⁴”. Small, rural, local communities in the world might not reach the scale of a nation, but when treated as an assemblage, all the resources that exist within their territory can be treated as their components.

It is based on this rationale that this research proposes to see a local community as an assemblage, or as the intersection between the nature that is found within a specific geographic location and the socio-cultural patterns of the people that live within it. This assemblage is evidently not stable, but it has acquired an identity and an individuality resulting from the interaction amongst its natural and cultural components. Then, the environment as such disappears, given that all its elements are understood as components within the assemblage (Bennett 2010). This observation is highly relevant in this work, given that the connection to place is seen as a strong and reasonable argument why a community would agree to pose limits on itself in favour of other living species and non-living elements within their *assemblage*. Moreover, this is the main reason why this type of human settlement might inspire alternative desirable futures in the *developed* world, too.

34 My own translation from Spanish

It is important to keep in mind that assemblages do not exist as such; “assemblage is a mode of thinking ... rearticulating the way we see, understand and thus live the world” (Dewsbury, 2011, 148). Assemblage is a paradigmatic shift, it is a “veritable invention” (Deleuze & Guattari, 1987 as quoted in McCann, 2011, 143), an arbitrary selection. Deleuze and Guattari expressed that “the assemblage is less about what it is ... and more about what it can do, what it can affect and bring about” (as quoted in Dewsbury, 2011, 150); and it is in this manner that the term has previously been used in the field of design. Following the propositions of Latour and Reckwitz, Matt Kiem (2011) claims that design has a necessary role in shaping society, given that every society contains “bodies, minds, or (designed) artefacts” (2). He sees design as “the practice that conditions material and expressive effects, and therefore the means by which connections are made, stabilised or dispersed, the act of designing becomes a crucial element in the formation and effect of assemblages” (3), hence the “social significance of design” (ibid.)³⁵.

In fact, when a design-led process starts, it necessarily already encounters an assemblage, as humans and non-humans are necessarily interconnected. The potential of encountering an assemblage, that is, identifying its parts and highlighting certain relations or interactions amongst its components, relies on being able to envision new relations among those components and, given the case, even bring new components into the assemblage. In the end, design has generated a new assemblage.

Assemblage thinking (like Actor Network Theory), proves very attractive for designers. Perhaps rather than lying in their propositions regarding knowledge creation, their charm lies in how they elevate the human-made (human-designed) world to a much higher rank as actors within social networks. As stated above, Jane Bennett, who specialises in political theory and ecological philosophy (amongst other fields), claims that “the locus of agency is always a human-nonhuman working group” (Bennett, 2010, xvii). The central example of Bennett’s (2010) proposition of the distribution of agency throughout the assemblage, in *Vibrant Matter a political ecology of things*, is the power blackout that occurred in North America on 14 August 2003. It was a massive failure that no one could have foreseen and “the end point of a cascade – of voltage collapses, self-protective withdrawals from the grid, and human decisions and omissions” (Bennett, 2010, 25). Her interpretation of the original term of Deleuze and Guattari is that:

Assemblages are ad hoc groupings of diverse elements, of vibrant materials of all sorts. Assemblages are *living, throbbing confederations that are able to function despite the persistent presence of energies that confound them from within*. They have uneven topographies, because some of the points at which the various affects and bodies cross paths are more heavily trafficked

³⁵ In fact, many design researchers have made use of this type of thinking, mainly by adopting ANT. There are two particular applications that are worth describing at this point: those that have linked ANT to design and the capability approach (i.e. Oosterlaken, 2009; 2013; 2015; Kullman & Lee, 2012; Grimshaw & Janssen, 2012), and those that have applied it in the field of participatory design for social innovation (i.e. in Malmö Living Labs since 2008; Manzini & Rizzo, 2011).

than others, and so *power is not distributed equally across its surface*. Assemblages are *not governed by any central head*: no one materiality or type of material has sufficient competence to determine consistently the trajectory or impact of the group. *The effects generated by an assemblage are*, rather, *emergent properties*, emergent in that their ability to make something happen (a newly inflected materialism, a blackout, a hurricane, a war on terror) is distinct from the sum of the vital force of each materiality considered alone. *Each member and proto-member of the assemblage has a certain vital force, but there is also* an effectively proper to the grouping as such: *an agency of the assemblage*. And precisely because each member-actant maintains an energetic pulse slightly “off” from that of the assemblage, an assemblage is never a stolid block but *an open-ended collective, a “non-totalizable sum”* (term by Patrick Hayden in Gilles Deleuze and Naturalism). An assemblage thus not only has a distinctive history of formation but a *finite life span* (Bennett, 2010, 23–24).

Bennett’s claim cannot be disregarded in this work, which deals with freedoms and with design - a discipline traditionally dedicated to the ecology of a human-designed and -made world. In fact, it is this argument that makes the assemblage such an appropriate lens through which to look at Design as Freedom. Bennett points out that the distributed agency within the assemblage shows that having the intention to do something is never enough; making something happen requires the alignment of certain components outside the person (agent), besides the person’s intention. Laws and regulations can play a central role either as enablers or as constraints, but the same can happen to elements within the human-made world, which could act as a connecting bridge or as a splitting wall. Moreover, it can be pointed out that Bennett’s description is very much in step with MacCallum’s description of freedom as a triadic system, where freedom is exercised only if the agent’s intention can be performed due to having the means to achieve it and a lack of obstacles to its realisation.

Bennett’s perspective of a distributed agency, however, entails a difficult moral implication. While no individual could be rendered as responsible for the power blackout in North America, following the same rationale when judging a person who has committed a crime might lead us to conclude that the person cannot be considered to be fully responsible for what their actions provoked. Distributing agency distributes responsibility. However, even if the agency can be reasonably proved to be distributed throughout an assemblage, it can still be argued that only a person can be an agent and thus have an intention that can be judged within an ethical framework.

Following the pragmatic tradition, the intention is not to make a perfect world out of the ever-changing assemblages; the hope is that they can be used as tools that would help designers to make



Figure 8. Assemblage, a new unit of analysis. By Claudia Garduño.

the world a bit *better* (more responsive, adaptive, flexible, open to possibilities³⁶...). Assemblages might enable designers to identify actual freedoms and unfreedoms, and more importantly, to envision how new freedoms might be achieved when aligning the human and non-human worlds through new relations.

The concept of Design as freedom

This research project seeks to contribute to morally grounding design. It has been argued that such a task cannot be detached from the philosophical debates on ethics and morals that have troubled humanity for centuries. From the present-day debates, it can be concluded that agreement has been reached upon one thing and one thing only: that the world could be much better than it currently is. Here, both the environmental crisis (in step with the advocates of Sustainability) and the prevailing injustice of social systems (in step with Amartya Sen) are considered priorities.

From Sen, this work appropriates the thorough criticism of the centrality that economic growth plays in the current paradigm, and his notion that freedom is a better main goal to focus on. Thus, the belief is that design could do much more if it released itself from the notion that good design necessarily contributes to money making, and if it went beyond judging good design in terms of the attributes of a design outcome. Good design might contribute to freedom and justice-making.

Stating that freedom is the means to fight injustice accounts for admitting that this work sees the worst injustice in the hindrance of freedom. The worst injustice, then, accounts for being prevented from being and doing what one has reason to value, like when the way of living of the unsustainable-urban-industrialised-developed-western-nations is imposed all over the world. For that reason, the current paradigm is criticised for being unjust; hence, the insistent call to challenge it.

Besides being very critical of the current paradigm, Design as Freedom is in the need for a very open mind and to acknowledge plurality – that the world is very diverse, where different people might value different things. People might desire different lifestyles, and this ought to be considered a positive thing. The reader is asked to leave conventions behind and to think also of local rural communities (like the ones where the Aalto LAB projects have been developed) as places with much potential, where true alternatives can be generated. Furthermore, this work pleads for acknowledgement of the world's poor as worthy potential beneficiaries of design practice.

A growing number of design theorists see great potential in design as a sustainable, complex, collaborative and empathic practice, and very specially in designers' ability to imagine a better future

36 These are suggestions by Alastair Fuad-Luke

(Garduño, 2017). Now, Sen has stated that “if someone has the power to make a change that he or she can see will reduce injustice in the world, then there is a strong social argument for doing just that” (Sen, 2009, 205). Therefore, if designers can foresee a reduction of injustice, they are socially (morally) obliged to act accordingly.

Hypothetically, at times, designing can be equated to the act of exercising freedom, which relates to Max-Neef’s idea of non-conventional resources, those which only come into existence when they are used. In such cases, the exercise of freedom (designing) results in the expansion of freedom(s). Thus, here, as in Frediani and Boano (2012), both the design process and product are relevant dimensions of the same discussion. In addition, design might be seen as a central capability, given that design is the means for expanding many other freedoms (Nichols and Dong, 2012, 193-194). Ultimately, by increasing freedom, design contributes to making the world more just, or at the very least, a little less unjust.

Freedom in this research project is not conceived as limitless. The Kantian system that tightly links the concept of *freedom* to the concepts of *morality* and *reason* is followed instead. Furthermore, Design as Freedom considers *Sustainability* to be the current moral ideal, for which reason the contractual model proposed by Kant is amplified to include the elements from the natural environment. People are not forced to act morally; they are considered rational beings capable of moral judgment. Therefore, it is expected that while design can expand the freedoms of those who need it most, the process might also influence overconsumers to choose to live with less (something which, according to Crocker (2008, Chapter 7), has been addressed by the Spanish philosopher, Adela Cortina).

Selecting the unit of analysis is a moral choice (Crocker following Ravallion, 2008, 386). In this case, the high relevance of Sustainability could not be avoided for various reasons, including the researcher’s personal interest, the values of an Aalto LAB, and more especially, because the unit of analysis responds to what was learned in the field. Thus, it had to give room to valuing the environment intrinsically. This does not mean that elements other than human beings become agents with intentions, but it enables the consideration that natural resources that provide ecosystem services should not be consumed at a faster pace than they can repair themselves. The selected unit of analysis, which is presumed to allow all these, is an assemblage. An assemblage cuts across the social and natural realms. However, the most interesting part of understanding the world in assemblages is not their descriptive nature, but their potential to bring about something new, something *better*.

Besides the Kantian interpretation of freedom, this research follows MacCallum’s rationale. In this case, freedoms and unfreedoms result from the relationships between the different elements within the assemblage. Freedom is achieved when an *agent* has an *intention* and is *free from constraints*, which is also how Sen defines *capabilities*. Nonetheless, since the term capability was conceived to overcome the debate between positive and negative freedom, which is altogether disregarded through MacCallum’s proposition, this research has opted to adopt MacCallum’s triad.

Within the assemblage, there is a human society. Following (1) Baeten's perspective that the social precedes the individual, (2) Rawls's conception of a society as "a more or less self-sufficient association of persons who in their relations to one another recognize certain rules of conduct as binding and who for the most part act in accordance to them" (2009 [1971], 4), (3) Smith and Seward's notion of a relational society, and (4) Nichol's (2015, 85-87) perspective that societies and not individuals are the ultimate units of moral concern, Design as Freedom conceives both freedom and morality on the scale of the community, which ought to be defined through democratic deliberation (Crocker, 2008). Inspired by Strawson, any given society living within an assemblage (N_0) can either modify some relationships within its elements, or introduce new elements into the assemblage, grow certain freedoms, and consequently overcome some clear cases of injustice. The process of conceptualising what an assemblage (N_x) might become (N_{x+1}), translating that vision into a feasible plan, and later putting it into practice is ultimately Design as Freedom.

Poor rural communities can be framed as assemblages with a connection to a place, within which humans and non-humans (including the built environment and the social norms) coexist and establish relations of all kinds. It is through those relationships that people achieve their *livelihoods*, which rather than being economic practices, are very similar to the *oikonomy* of the Greek household. While these communities achieve a certain subsistence, there might also be relations within their own assemblage, or within a larger one (the state or country where they are located), which prevent them from living the lives that they have reason to value. In fact, those constraints might be causing a situation of injustice, and, in allusion to the story told in the prologue, a child cannot get medical attention simply because the nearest hospital and her home are situated in different states.

Conceiving communities as assemblages that include the natural and human realms could enlarge freedom by encouraging people to develop in harmony or in coherence with who they are. Constructing freedom on a social scale, however, does not undermine individual freedom, at least ideally. "One of a person's natural wants is that there should be harmony between his feelings and those of his fellow citizens. He desires to know that his aims and theirs are not in opposition, that he is not setting himself against their good but is furthering what they really wish for" (Rawls, 2009 [1971], 439).

Design as Freedom is, therefore, a complex task that deals with wicked problems. Koskinen et al. (2011, 17) point out that the way in which design approaches those problems is by understanding that they are problems "of creativity and critique, imagining something better than what exists...". In fact, Sen (2009) himself acknowledges that limited imagination prevents us from going beyond the world as we experience it (170), ploughing the land for design's greatest contribution. If Sen's parable of the three children and a flute, introduced in the previous chapter, is approached from a design perspective, the first thing to be contested is that the only possibility to solve this situation of injustice is by giving the flute to one of the kids. Design as Freedom would acknowledge that the poorest of the three is Bob, not because he does not own toys of his own, but because in addition to

that, he has neither the skills to make a flute, like Carla, nor the skills to play the flute, like Anna. In addition, the three actors in the story are children; children like playing, and they enjoy playing together, which opens several possibilities. Carla can teach Bob and Anna how to make a flute, while Anna can teach Carla and Bob how to play a flute. In the best scenario, given that there is enough wood in their surroundings, and even if several months must pass by (remember that it takes Carla several months to make a flute), rather than having three children quarrelling over a flute, there would be three children making music. Such is the spirit of Design as Freedom.



Photo by Jan Ablstedt



Photo by Jan Ahlstedt

Exploring practice as Design as freedom: Aalto LAB

The discussion so far has enabled the theoretical framing of Design as Freedom, an alternative driving principle for design, which is based on philosophical elaboration, where freedom is the ultimate end or outcome of design, and where the practice of design is equated with the act of exercising freedom. Within this type of practice, designers engage with other human beings and socially commit to making the world less unjust. Designers understand that the initial stage of a design process will hardly ever precede the existence of a human–non-human assemblage.

Designers tend to generate knowledge by following practices that very much resemble the design process, designers research through practice (i.e. Koskinen et al., 2011; Dorst, 2008; Bang et al, 2012; Buchanan, 2001b; and Lee, 2013). Whether they research in a lab, a field or in a showroom, designers commonly construct *something*, either an object, a scenario, a mock-up, a concept, a system, a space, or media, which “takes the key means in constructing knowledge” (Koskinen et al., 2011, 55, 69, 89). This type of design research, was named *constructive design research* (ibid., 2011, 5–6), a process in which design skills and capacities enable designers to produce knowledge (Bang et al., 2012, 2). Moreover, throughout the method-making process, designers are already framing the design outcome, for the method is the “externalization of a designer’s initial interpretation of users and possible solution spaces” (Lee, 2013, 107). Additionally, when designers adjust a method to serve a particular context, they generate knowledge that is relevant for that design situation (ibid., 101).

As the researcher, I had the opportunity to build the case from scratch, but I was constrained by a series of factors such as time (constrained by my study grant), network of contacts (considerably more robust in Mexico), language (Spanish and English), power relations (affiliation: doctoral student), knowledge (MA in Applied Arts and Design), experience (based on ALS), and financial resources (basically, none). Therefore, I was not completely free to design just any case to fit my research interests (it is rarely the case that anyone can do that). It was necessary to leverage contingencies, and turn them into opportunities (Thorpe and Gamman, 2011, 224). I decided to take Aalto LAB Shanghai (2010) as a model to be iterated; in 2012, I initiated Aalto LAB Mexico (ALM) so that it would become a means to explore Design as Freedom in practice. While looking for support within Aalto University, several actors consistently insisted on finding a way to turn Aalto LAB into a permanent programme of some sort within the university, adding a pedagogic component to the case. Therefore, the participants had to be observed in their role of students, and the design process was to be developed throughout a pedagogic framework, giving origin to the ALM meta-framework.

As a result, in this work, constructive design research has been developed on multiple levels. Four different but intertwined constructions can be observed throughout this research project: (1) the construction of the Design as Freedom principle, (2) the design process as the means to expand the

freedoms in the community, (3) the learning framework as the means to expand the freedoms of the students and other external participants, and (4) my personal history in shaping ALM.

Methods for Design as freedom

Stating that studying Design as Freedom through an Aalto LAB is a case of constructive design research accounts for acknowledging that innovative design methods lack the rigour of other fields (Keinonen, 2009, 283). In fact, the lack of rigour is desirable, given that innovative design methods have the primary function of informing and inspiring the creative process. Turkka Keinonen (2009) states that such innovative methods can be looked at from different angles, so that the same method can be assessed as completely suitable for a particular research project when looked at from a particular focus, and it can be determined to be totally unsuitable, if looked at from a different perspective. In order to make his point, Keinonen explores three different conceptualisations of design method, namely, instrument, agenda, and competence, and concludes that by playing with the method conceptualizing frames, truly innovative design methods might be created (289).

Kees Dorst (2008, 5), for his part, speaks not of innovative design research methods, but of design itself as a complex creative activity. In order to deal with that complexity, he proposes a descriptive framework formed by four elements: *object*, *process*, *actor*, and *context*.

Going back to Lee's (2013) observation that method making is similar to the process of designing, a design method can be understood as a complex creative activity that could therefore be described through a framework that enables its observation through several perspectives in a simultaneous manner. Therefore, rather than selecting the most suitable frame, the method for putting into practice Design as Freedom will be looked at from the perspective of four different conceptualising frames, generating not a rigorous, but a thick description.

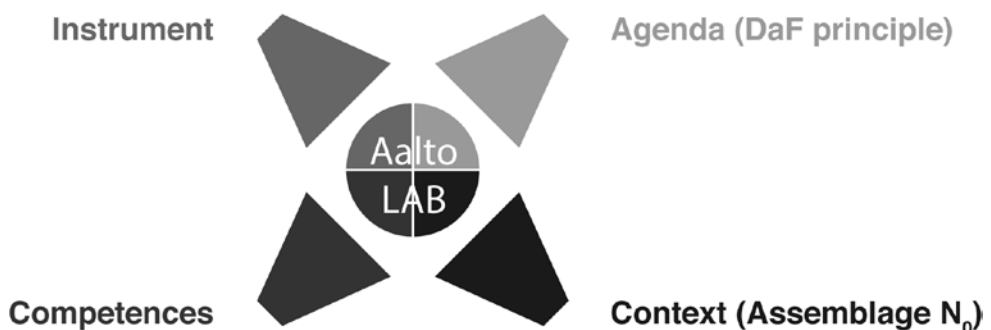


Figure 9. Visualization of the description of Aalto LAB; which is looked at from the perspective of four different conceptualizing frames. Drawn by Claudia Garduño.

- The principles of Design as Freedom (agenda)
- The initial assemblage N_0 (context)
- The competencies of the different actors
- The instruments

The agenda-conceptualising frame is discussed first, because it is the most relevant in a study primarily concerned with ethics. In this case, what is designed is not as relevant as what it is designed for; moreover, Design as Freedom is translated into a specific type of collaborative practice that evolves over time. Next, the discussion turns to the context, or the initial assemblage (N_0), as conceptually defined within this research: the original source around which everything else is developed (the opportunity areas for the constructions of freedoms and the competencies of the design team are defined, the instruments are selected and adapted). The following discussion corresponds to the conceptualising frame of the competencies that are required and developed throughout the process, including general competences and focusing especially on design competences of all participants. Finally, the discussion on instruments describes a series of well-known tools within the discipline of design, which have been applied at different stages of the Aalto LAB processes.

The distinction between the different conceptualising frames is not always evident, so a certain overlap cannot be avoided. Nevertheless, the following is a multidimensional description of a design method that puts Design as Freedom into practice regardless of the pedagogic framework. After that, the discussion turns towards the pedagogic dimension.

The principle of Design as freedom (agenda)

Keinonen (2009, 287) argues that the most fundamental angle to method evaluation might be the agenda, because instead of focusing only on the sought results, it focuses on what designers should do, and so, it clearly positions the objectives of design and designing. Given that the intention is to put the Design as Freedom principle into practice, the agenda is definitely the main driver of this process. Design as Freedom is translated into a longitudinal co-design process which aims for the mutual empowerment of participant-end-users and of designers. While empowerment emerged naturally from the interactions generated during the collaborative process, collaboration³⁷ was hypothesised as a fundamental element of Design as Freedom because of multiple and intertwined reasons.

On the practical side, ALS had set a precedent, participation of local people would be crucial; the theoretical exploration added several arguments which sustained the notion that this had to be a collaborative design practice. The first thing to be encountered was that those who explicitly focus on Sustainability have identified the existence of creative communities; that is, groups of people who are deeply rooted in a place and who, by making good use of the local resources, promote new ways of social

37 Participation will also be discussed below, from the perspective of competencies conceptual framework.

exchange. They conclude that there is great potential in generating peer-to-peer collaborations among designers and non-designers and other stakeholders, such as experts from different fields, enterprises, non-profit organisations, the public sector, and global organisations (Manzini, et al., 2008).

Within other design fields, promoting the active participation of users and other stakeholders in the design process was also a natural step. Participatory design (PD) originated in Scandinavia in the 1970s, with the aim of inserting the ideal of democracy into the workplace context (Ehn, 1993, 41, 42), and ultimately, challenge the existing power relations (Greenbaum, 1993, 28). Although the main focus was the development of computer systems, Sustainability could not be ignored; nowadays, PD maintains its goal of contributing to empowerment and to generating alternatives in participation and democratisation (Björgvinsson, et al., 49), and further than dealing with functional and innovative products, it can now be seen as “a process for radical change in developing services, systems and environments, which support more sustainable lifestyles and consumption habits” (ibid.).

Another path towards collaboration can be traced within industrial design and the study of human factors³⁸. Through the rise of human–computer interaction (HCI), what had started in the 1950’s as ergonomic studies concerned mainly with physical and mechanical properties (Flinchum, 1997), turned towards cognition and behaviour. By the end of the 1990s, innovation in research methods was made necessary. Around the world, practicing designers and design researchers were feeling constrained by the cognitive models that design was using to assess UCD and (HCD), for although they were very useful for solving problems, they were not for the crafting of wicked problems with which design was already dealing (Mattelmäki, et al., 2014, 67, 68; Koskinen, 2003, 7). Additionally, traditional methods could not “address aspects of product desirability, pleasurable interactions, and emotional resonance”, (Hanington, 2003, 10), nor other factors with which design is concerned, such as sensitivity; and this was crucial because research methods in design should do more than lead to a thorough understanding of the matter of study, they are also means of inspiration of innovative ideas (Mattelmäki et al., 2014, 68). Thus, empathic design was born.

From this work’s perspective, as will be further explained later, the best reasoning about the relevance of empathic design was made by Jane Fulton Suri (2003, 52). She explained that designers can fail to understand their users in two opposite ways: either by assuming that everyone else is just like themselves, or by assuming that everyone else is too different from themselves. As observed within this research, this paradoxical situation is not unique to the world of design; in fact, the tension between universalism and cultural relativism is one of the most difficult matters that humankind deals with³⁹ (both in theory and in practice). Nevertheless, Fulton Suri observed that empathic design is about

38 The process within industrial design from ergonomics to co-design did not happen in a generalized manner globally, but it took place within the design department of the School of Arts, Design and Architecture or Aalto University. Encore (Engaging co-design research), the research group to which I belonged during my doctoral studies focused on co-design.

39 As shown by the work of Martha Nussbaum and Amartya Sen.

navigating that difficult paradoxical situation; its innovative methods including diaries, pictures, collages, *Design Probes* (Mattelmäki, 2006), *Design Games* (Vaajakallio, 2012), and context mapping (Sleeswijk Visser, et al., 2005), became means for making sense of what people felt and thought (Fulton Suri, 2003, 53–55; Mattelmäki, et al., 2013, 68), because “people are seen and understood from where they stand, not as test subjects but as persons with feelings” (Mattelmäki, 2006, 124).

The following step in better understanding (potential) final users was to involve them in the design process, *co-design*, which would recurrently generate questions around the roles of designers and non-designers when boundaries blur and everybody designs; also about the type and degree of participation which account for a co-design process. Designers can assist with the visualisation of scenarios, but they can also be provocative proponents, so that the participants take their discussion beyond their original limits (Manzini, 2011, 4–5). So, designers can be facilitators, triggers, members of a co-design team, and design activists (Manzini & Rizzo, 2011). Additionally, participants might be creative on different levels, and designers can provide different levels of facilitation accordingly: leading, guiding, providing scaffolds, or offering a clean slate (Sanders & Stappers, 2008). Mattelmäki and Sleeswijk Visser (2011, 4–5), for their part, explain that the level of engagement of the user in the design process might vary in four different (not necessarily sequential) directions; for as long as the voices of the ‘end-users’ are included in the design process, and for as long as the aim of the experiment is generating proposals that improve the existing situation, it can be considered that the experiment or practice belongs to the co-design field.

Based on everything above, it can be said that describing Design as Freedom as a complex, empathetic, and sustainable process naturally implies that it is also a collaborative practice (Garduño, 2017). The key features of participatory design, democracy and empowerment, are also desirable characteristics of Design as Freedom. In practice, it could be said that design has achieved the goal of empowering the users when a product, service or system has expanded people’s freedoms. However, a much higher degree of empowerment would be achieved if people acquired the capability to design (Dong, 2008; Nichols and Dong, 2012; Dong, Nichols and Kvan, 2013). Achieving design capability depends upon the proper alignment of a series of elements within an assemblage. Following MacCallum (1967), agents must be free of constraints in order to be able to achieve what they intend; thus, acquiring the capacity (ability or skill) to design is just one factor within an assemblage (N_x), which also includes a solid network of stakeholders and certain social policies. Nonetheless, the development of design skills is fundamental because it potentially enables people to live and act as agents, and it is assumed that design skills can be gained by participating in design processes.

Oosterlaken (2009, 100) observes that participation and deliberation (democracy), the means proposed by Sen for defining a community’s own capability set, can and should be linked to participatory design. In fact, the basic idea of participation in development is that “persons and groups should make their own decisions” (Crocker [based on Denis Goulet], 2008, 339), that “[p]opular participation is a way in which people manifest their inherent worth”, and that “[t]o respect

and promote such participation is to respect the dignity of hitherto neglected or despised people” (ibid., 340).

In ALS and ALM, the designers have been required to design for and with those who are not traditionally affected by design practice. *Participant end-users*, people who live in local communities and are marginalised from the global world where design normally functions have been included in the process. Additionally, the process has included representatives of a diversity of disciplines (from natural to social sciences, business, and engineering) and sectors (public, private, third sector). In Design as Freedom, empowerment happens in reciprocity and as the result of a dynamic relationship between the design team and the participant end-users. Naming our collaborative design practice ‘participatory design’ might seem patronising, for which reason, we have described it as co- design (Garduño, Nousala, and Fuad-Luke, 2014).

As mentioned above, Mattelmäki and Sleeswijk Visser (2011, 4–5) identified four different, non sequential *directions* of co-design:

- The voices of people are heard, but designers maintain their design roles.
- Methods and tools are developed to ease the users’ expression of their ideas.
- Designers and users collaborate in the mutual exchange of ideas.
- Users are not that much emphasised, because a wider range of people are invited to “brainstorm and learn together”.

Nonetheless, from this work’s perspective, and based on the Aalto LAB experiences, it has been observed that when a research programme is developed over a long period, these dimensions can become sequential. The level of engagement of non-designers increases with time, mainly because it depends upon the construction of trusting relationships. Therefore, if the full process was understood as a series of photo frames, and each frame depicted a particular assemblage, in the beginning, when the voices of the participants can only be collected through interviews, it looks more like HCD than co-design. Theoretically, the *perfect* co-design moment can be described as an assemblage in which designers, participant end-users, and other stakeholders participate equally in the ideation phases of the design process.

Paradoxically, the perfect co-design moment is not the ultimate goal in Design as Freedom, but reaching the point where all the different actors have the effective opportunity to design in order to expand their own freedoms and tackle their own situations of injustice. Or, as expressed by Nichols and Dong (2012, 194), that everyone has acquired the central capability to design. Therefore, it would be expected that, over time, the level of engagement of community members would increase, and that more permanent relationships would be developed with other stakeholders. The design team, on the other hand, will eventually not be needed in the community, and at least those who are

not part of the stable network of stakeholders will be able to *exit the field* (borrowing a term from anthropology).

The (context) initial assemblage (N_0)

The two locations that have hosted the Aalto LAB experiments deliberately share some characteristics: both were classified as rural poor communities; they were located within wider territories, which the governments were aiming to transform into “sustainable areas”; and finally, both communities had a prior connection with the design department of a local university. And whilst some SPSS’s that were generated as strategies towards achieving the best desirable future for each location might touch upon similar topics (tourism, architecture), each of those is distinct; they were designed to fit the specificities of each community. Therefore, based on experience, it can be said that Design as Freedom is fully contextual⁴⁰.

Earlier in this work, it was discussed that while context is a generally agreed term, it is somewhat inaccurate because it pushes some elements into the background. The theoretical starting point of Design as Freedom (N_0) is the identification of a human–non-human assemblage, bonded to a territory. The idea is to identify different natural and cultural elements, and how they relate to each other; and very specifically, to be able to identify the relationships that are preventing the enjoyment of a specific freedom and the ones that are causing clear cases of injustice.

The identification of the initial assemblage enables the identification of areas of opportunity that will be turned into concepts of projects. Similarly, the design team that visits the community will also identify knowledge gaps, and the types of actors and relationships required for the implementation of projects. New elements are integrated, and the initial assemblage is transformed (N_x) and continues to be iterated (N_{x+n})

Competencies of the design team in Aalto LAB

When the method is considered as “something a specific agent is capable of performing” (Keinonen, 2009, 285), it is seen as competence. An Aalto LAB was originally described (by Sotamaa in 2010) as an interdisciplinary collaboration, implying that the team is formed by a group of agents with specific capabilities (knowledge and skills). It has been observed that high diversity (cultural and disciplinary) is especially relevant for the development of a comprehensive diagnosis during the fuzzy front end of an Aalto LAB. While appropriate sub-projects (SPSS) are created for the context, specific competencies for their continuation are identified.

⁴⁰ This was observed by the researchers involved in Aalto LAB Mexico, and was reported in Garduño, Nousala, and Fuad-Luke (2014).

Additionally, it has been observed that all the participants develop both general and design-specific competencies. General competencies are those that are required from every participant, and that have to do more with social sensibility, *empathy* and *humility*. Paradoxically, these are the same competencies that are most strongly developed throughout the process. In this work, design-specific competencies refer to developing the ability to imagine a better future and to define a strategy to get there.

Although the team is interdisciplinary, the collaboration is led by design, which means that expert designers with specific design skills direct the whole process. Moreover, designers (professionals and students) are spread throughout the network in order to work agglutinatively, enabling the smooth flow of design processes and their assimilation by all participants.

In step with Nichols and Dong (2012, 199), design is seen as a central freedom because it is the basis of other freedoms. In Nussbaum's terms, design capability is a combined capability that requires internal capabilities (design skills) and also certain external conditions (e.g. social policy). For this reason, although it is not the only one, having all stakeholders developing their capacity to design is a crucial step in achieving the freedom to design.

General competencies of the design team: Outsiders have a role to play. While immersed in one's own context, it might be difficult to identify different choices and areas of opportunity. The members of the design team are not blinded by familiarity and can describe those choices to insiders. Outsiders are there to help insiders help themselves, and they stay only until people have awoken (Crocker, 2008, 341). However, "participation is sometimes merely used as a tool for achieving pre-set objectives" (Frediani, 2007, 8). Thus, it is very important to highlight how co-design that results in empowerment requires certain competencies from the members of the design team; they cannot be arrogant or have a know-it-all attitude (Crocker, 2008, 347 based on Alkire).

Empathy: *Empathic sensibility* can be framed as a fundamental design competence, given that it consists of "being able to understand users and to develop sensitivity with their needs" (Keinonen, 2009, 288). Moreover, design empathy is especially relevant in a mutually empowering practice such as Design as Freedom, where it is crucial that "people are seen and understood from where they stand, not as test subjects but as persons with feelings" (Mattelmäki, 2006, 123–124).

While empathic sensibility is required throughout the whole process, its application in the early phases is determinant because it is then when the directions of the design processes are set. Thus, it is then when an empathic understanding might produce the most inspiring result (Mattelmäki, 2006; Mattelmäki & Sleeswijk Visser, 2011). In this work, empathy becomes the key for engaging individuals with very different backgrounds in true dialogue, in which they "acknowledge each other as equals and work in an environment of shared respect" (Garduño, 2015, 122), which is valuable in itself but also enables mutual empowerment and mutual learning. In the words of Jeremy Rifkin (2009, 160):

Empathic extension is the only human expression that creates true equality between people. When one empathizes with another, distinctions begin to melt away. The very act of identifying with another's struggle as if it were one's own is the ultimate expression of a sense of equality. One can't really empathize unless one's being is on the same emotional plane as another. If someone feels superior or inferior in status to another and therefore different and alien, it becomes difficult to experience their plight or joy as one's own. One might feel sympathetic to others or feel sorry for them or take pity on them, but to experience real empathy for another requires feeling and responding "as if" you "are" that person. In an empathic moment, there is no "mine" and "thine", but only "I" and "thou". Empathy is a communion of kindred spirits, and it's elicited in a temporal and spatial zone that transcends distinctions based on social status.

Allegedly, human beings and other living beings (Rifkin, 2009) are capable of experiencing empathy; perhaps, rather than being the natural way in which we relate, it is the reason why we are able to relate, as stated by Baeten (2009). Here, it is not important to know if all human beings in the world can agree on a single moral doctrine, but rather the fact that the members of the design team and the members of the community are naturally capable of relating to one another, and empathic design methods have been developed to accompany them in navigating that paradox, as raised by Jane Fulton Suri (2003, 52). Nowadays, empathic design "addresses the new kinds of collaborations with the design team and partners to promote shared visions" (Mattelmäki & Sleeswijk Visser, 2011, 1). So that the above is relevant also for the interactions within the design team, which is formed by students belonging to different fields of study, at different universities, and in different countries, mentored by experts working in various sectors (public, private, and NGOs, and academia). Therefore, empathy is primary in an Aalto LAB, because it enables interdisciplinary, intercultural, and intersectorial collaboration. Additionally, while an empathic sensibility is required for participation in these type of processes, it is also one of the competencies that is strongly developed through them.

Humility: Oscar Hagerman has spent most of his lifetime, and he is over 80 years old, working as an architect and a designer within different communities all around Mexico. Based on his experience, he fully agrees with the need to develop an empathic sensibility and the need to involve users actively in the design process. He adds that communities should be approached with *humility*. Hagerman uses no academic language, but he has created his own design vocabulary. He explains that the first thing that a designer should do is to *learn* from "people who will live the design" and about "their world". If whatever gets designed does not fit them and their world, it will be rejected, or a long time will have to pass before they find a manner to adapt that design to their culture or to adapt their culture to that design.

Design competencies: A question that is not easy to answer is how a collaborative design workshop differs from a collaborative workshop led by any other field. The question is especially difficult to answer as the boundaries between professionally trained designers and other participants get blurred because all participants become designers, and because designers might start developing roles that are

not design specific. Additionally, design is no longer concerned with the material world only, and it engages with disciplines and matters with which it did not engage before.

Design competencies of designers: As mentioned above, with the purpose of ensuring that the process is driven by design, expert designers lead the processes which means that they guide the team through the different stages, indicating when it is time to diverge by generating a large number of insights or ideas, and when it is time to converge, synthesize, and make decisions. Additionally, designers are spread throughout the network, at all different levels of participation (e.g. in ALM, students, experts, researchers), so that the design processes flow with ease. Since designers are trained to deal with complex matters and wicked problems, they assist the team, for instance, by highlighting the findings that should be brought to the forefront of the process. In addition, designers become provocative proponents.

So, rather than following a set of rigid guidelines, the facilitators are the carriers of the methods as their very own internalized skill (Keinonen, 2009, 285), which is extremely relevant when working in interdisciplinary teams and in collaboration with communities. People are unpredictable, and activities can only be generally planned. Thus, in these situations, the ability to improvise to adapt and apply a design method (as an instrument or tool) is especially valued (see page 69).

Design competencies of non-designers: Professional design facilitators carry the methods within them while other designers in the team work agglutinatively. Participant end-users are acknowledged to be experts on their own lives, and the non-designer members of the team are considered experts in their own fields and regarded for their own competencies. Identifying the specific mix of expertise that will be needed, with the purpose of developing an appropriate sub-project, and adjusting the team accordingly is an iterative process that is fully dependent upon the continuous exploration of the assemblage.

Because of this interdisciplinary collaboration, the people engaged gain knowledge, skills, and understanding from fields that are not their own. As mentioned above, on the agenda, it is a primary concern that all the different stakeholders become empowered by having an effective choice of designing in order to expand their own freedoms and tackle their own situations of injustice. Developing design competencies, or acquiring the capacity of designing, is crucial in the construction of design capability. It is assumed that design competencies can be acquired by participating in a longitudinal co-design processes guided by expert designers.

Instruments applied in an Aalto LAB

“[A] design method can be seen as a generic procedure, series of well-defined steps conducted in a specific manner and/or order, that can be transferred across contexts and circumstances with relatively small variations”; when a method is independent from those who apply it, it can be understood as an instrument or a tool (Keinonen, 2009, 284). From this point of view, co-design can be seen as “a

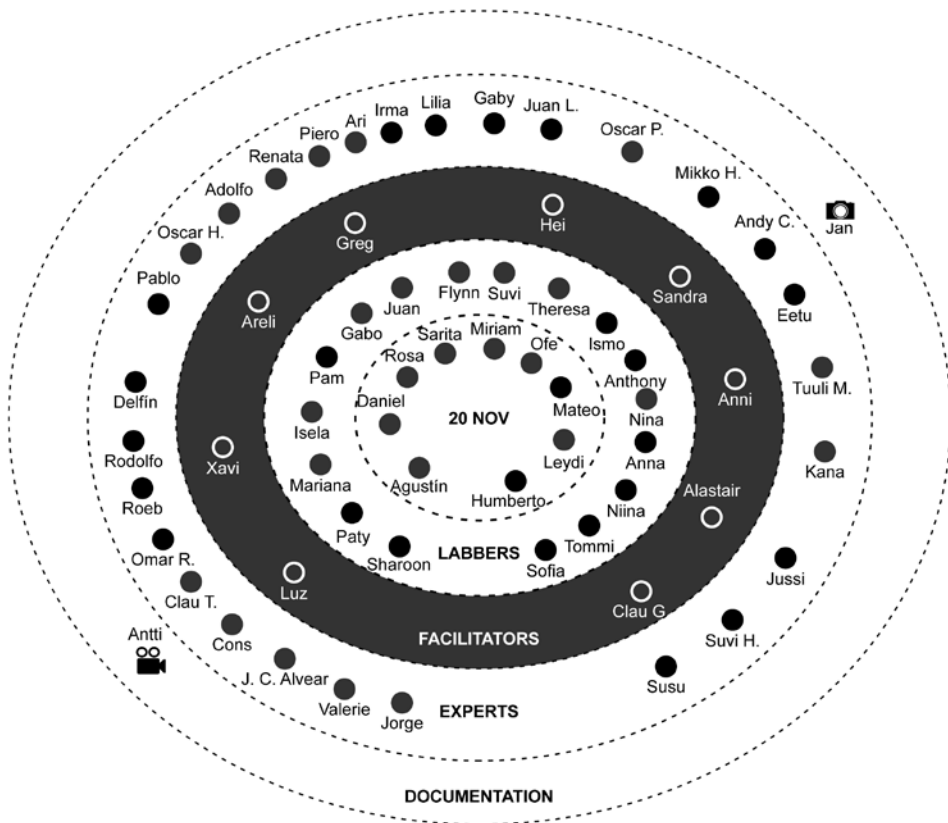


Figure 10. Design competencies of non-designers

set of tools”; which might include collage, design probes, or design games (Mattelmäki & Sleeswijk Visser, 2011, 3)

ALS and ALM have made use of a series of design tools, including IDEO’s Human Centred Design toolkit, co-design workshops, Design Capitalia, and design probes (these tools will be described in the following chapter). In fact, the participants have also applied tools that were generated outside the design discipline, such as project-based learning, SCRUM, and Edward de Bono’s Six Thinking Hats. Up to this point, and based on past experiences, it has been possible to identify which processes are most suitable for a specific phase within the overall design process.

Design Probes: Probes, originally described by William Gaver (2001), emerged from the need to achieve an empathic understanding that could not be achieved by traditional means (Mattelmäki, 2006, 42). Designers needed “to be designers even when conducting a user study”, but they wanted to simultaneously truly meet the needs and wishes of future users (ibid.).

Mattelmäki’s (2006) research focused mainly on describing what probes are, and analysing different ways in which they had been applied. From this, she drew reasons for applying them (11). Formally,

probes are a collection of tasks that are given to the users, who become active documenters of their own lives (40). Additionally, probes focus on “the user’s personal context and perceptions”, including the social, cultural, and aesthetic environments, but also the user’s values, feelings, needs and attitudes (ibid.). Finally, probes are exploratory in character; they assist the problem-crafting process by exploring and finding something that, in the beginning, we do not even know we are looking for (ibid.). Self-documentation is achieved through a process in which the designer hands a probe kit to the user. The probe kit is commonly formed both by tangible objects (which can range from notebooks and cards to cameras) and a series of tasks (which can range from writing and drawing to taking pictures or making a collage) (41–42).

Mattelmäki concludes that there are four different reasons for applying probes: (1) inspiration (of designers), (2) information (about the users), (3) participation (of users in the ideation process), and (4) dialogue (between designers or between users and designers) (58). Moreover, she illustrates that regardless of the specific reason to apply them, probes can bring benefits to user-centred design. Each in their own way might contribute to advancing the process from understanding and specifying the context of use, to generating design solutions (63).

Design Capitalia: Given that design is nearly inseparable from making use of resources, Design Capitalia emerged as a tool for thinking about and questioning what and why we design, and speculating whether there is a better way to do it. This framework confronts designers with the task of determining what things are valued, in order to make better decisions (Fuad-Luke et al., 2012b, 3).

Capital is a word with many denotations. Already in *Design Activism*, Fuad-Luke (2009) described various types of capital, or stocks. By 2012, he had identified 29 different types of capital, six of which were key types and were classified into two domains. Thus, within Natural capital, there were biotic and abiotic; within Anthropocentric capital, there were human, social, public, and commercial. A series of types of sub-capital were identified for each key capital, some of which were applicable to more than one. For example, the political was a sub-capital of the social, public, and commercial key types of capital within the Anthropocentric domain⁴¹. Many types of capital can be involved within a single design project, as Fuad-Luke had confirmed by asking some designers to assess their projects retrospectively. It was possible to reasonably deduce that the growth of one capital could result in either the depletion or growth of another. The framework was synthesized as a deck of cards with colour-coded capital types. Additionally, a guide to using the cards, which suggested users to start from the key capital types, continue with the sub-capital types, and end by building a model, was also written. The set that was launched in the Open Knowledge Festival in Helsinki 2012 was described as follows:

⁴¹The full description can be found here (Retrieved June 11, 2016): https://window874.files.wordpress.com/2012/09/design_capitalia_leaflet_for_okf_final-afl-190912-v2.pdf

designCAPITALIA is “a framework for individually and/or collectively making informed decisions about how to change our present, and so co-future by considering which ‘capitals’ we wish to grow, nourish, protect, conserve or use less. A ‘capital’ is a ‘stock’ of something. Like all stocks it can increase or decrease, in which case it is subject to an inward or outward ‘flow’, or it can remain stable with no net inward or outward flow.” (Fuad-Luke et al., 2012b, 2)

Aalto LAB meta-framework

What follows is a description of the Aalto LAB meta-framework, an instrument in itself, given that it is assumed that the *agenda* might remain intact (the expansion of the freedoms of people through co-design), and be applied to different *assemblages* by different *teams*. The meta-framework divides the design process into four phases: diagnosis, conceptualisation, implementation, and evaluation. Each of those phases is developed during a learning cycle of the pedagogic programme, which lasts approximately six months, and which is divided into three periods: preparation, fieldtrip, and reflection. Additionally, the meta-framework suggests different specific design *tools* that can be applied at different moments of the design process. However, an Aalto LAB is a highly organic process, and in many cases, design facilitators have to improvise and adapt a design tool. Therefore, the meta-framework must not be understood as a rigid set of guidelines.

The phases of the design process

A design process can be described in different manners, and designers might choose to conceptually divide it into different numbers of phases. Here, the design process is described as a four-phase process: diagnosis, conceptualisation, implementation, and evaluation. This division into phases enables the development of a design process through a pedagogic programme, in which a team of students is in charge of developing only one phase during a six-month learning cycle. Unlike a design process developed in industry, milestones are not determined by time or budget limits, but achieved when specific objectives have been reached.

Design Phase	Objective/Output
Diagnosis	Project ideas
Conceptualisation	Project plan
Implementation	Construction/prototype
Evaluation	Conditions to exit the field

Table 1. Objectives that mark the completion of a phase within a design process

The diagnosis corresponds to the fuzzy front end of the design process, when the labbers (students) deal with a highly undetermined project, and problematizing begins. Given that is the first time that the team visits them, the participation of members of the community might be limited to the development of interviews. Nonetheless, it is extremely relevant that the design team hears their voices. The diagnosis phase, thus, is finalised when clear ideas of feasible projects have been envisioned. If this goal is not reached, the next batch of labbers would need to continue developing the diagnosis.

The following phase is the conceptualisation. In this case, the labbers start with a project brief based on the project ideas generated in the diagnosis phase. By this point, the team would have visited the community at least once before, so it is expected that the community will show the progress in the co-design process, and the labbers are given the instruction to think of ways to get the community members more actively engaged. The conceptualisation phase ends when a project plan has been conceived with the community, which means that a clear goal has been established and that a budget and time-frame can be estimated. If this goal is not reached, the next batch of students could be asked to either develop a more thorough diagnosis or to carry on with the conceptualisation phase.

The project plan and fundraising strategy give birth to the implementation phase. In this case, the design team might need to work on the design details, but they will also need to be in close communication with the community and its authorities, to clearly define different roles and time-frames. The implementation phase, in turn, ends when the project is up and running, which could give room for a last phase, an evaluation⁴².

Aalto LAB as a pedagogic program

The pedagogic component within this research project might at first seem restrictive. However, when the construction of freedoms is seen through an assemblage, it becomes evident that a wide range of actors have roles to play. Institutions of higher education have the possibility to design programmes in which students can acquire the knowledge and skills required to become transformative agents; thus, they can directly affect the development of a more just society (Walker et al., 2009). Hence the opportunity and major relevance of transforming an Aalto LAB into a permanent programme within Aalto University⁴³.

Arguably, the Aalto LAB process can be applied to every type of context. Nevertheless, the locations where the two experiments have taken place have caused the pedagogic programme to deal with topics from the field of development education; and one of the fiercest criticisms of development

⁴² So far, within ALM, the sub-project that has been developed the furthest, the Eco-Hostel, has started the implementation phase. It might take several more years to make it run fully, and it might need to run for some time before it is possible to evaluate its outcomes.

⁴³ Also in the other universities, which has not been accomplished.

work is the one that links it to colonialist or imperialist practices. Based on the work of the Spanish philosopher Adela Cortina⁴⁴, David Crocker (2012b) argues for development work that is tightly linked to ethical discussion, in which much is to be done not only in the poorest regions, but also in the affluent ones. Crocker (2012, 380) states that the global North/South dichotomy is being replaced by an elite/contented/marginalised trichotomy across the North and the South.

Based on that distinction, the labbers, are most likely amongst those who are better off. In step with Crocker (2012), they are seen as national and global citizens with moral obligations towards their fellow citizens and the natural environment. If world citizens acquired a more *prudent* consumption pattern, both ends of the spectrum would benefit. Underconsumers could get what they were missing in order to live the types of life they have reason to value, but overconsumers would also earn the chance to overcome their own *unadaptable preferences* phenomenon, as characterised by a frustrating cycle of working to spend and consume without ever being contented. If, as Cortina states, “ethical conviction is the best motor” (cited in Crocker 2012, 241), everyone would gain the effective opportunity to be responsible for themselves; and the possibility to change the world for the better might be genuine.

An Aalto LAB is structured in learning cycles; a learning cycle is dedicated to developing one design phase (diagnosis, conceptualisation, implementation, evaluation). Every Aalto LAB learning cycle has had an estimated duration of 6 months (24 weeks), divided into a preparation period (11 weeks), a fieldwork period (2 weeks), and a reflection period (11 weeks). During that time, the labbers have the objective of advancing the project(s), and if possible, they should deliver the desired output of the design phase they are working on (e.g. diagnosis – project idea). That deliverable will be the starting point of the following learning cycle.

In the first part of this chapter, the discussion about competencies focused on those that are required and developed by the participants of an Aalto LAB in the design process. Here, the discussion on competencies is about those required and developed by the participants of an Aalto LAB in the pedagogic program. An Aalto LAB kind of project does not deny the possibility that all types of students could benefit from participating in this type of uncommon pedagogic programme (Boni & Perez-Foguet, 2008, 350), but in step with Sen, the free choice of students (and local people) to participate in the project is valued intrinsically; especially because these are meant to become significant learning experiences in the participants’ lives.

In ALM, the recruitment of labbers through an open application process has been encouraged. The experiences of ALM and ALS show that in general, the students who are attracted to participate in the project are those whom I earlier called *the children of Brundtland* (Garduño, 2017), who already

⁴⁴ Mainly, her book of 2002 titled *Por una ética del consumo* (For an ethic of consumption)

are aware about many issues such as poverty, inequality, and environmental crisis. Many of them also show a natural inclination towards altruistic behaviour (Boni, MacDonald, and Peris, 2012, 181).

The experience has been especially significant for students who participate for a period longer than a year. On the one hand, the continuation of the project is made smoother when people in the community see familiar faces, which could also be a slight gesture of promises kept, and trust building. On the other hand, the process of sharing knowledge with new members is especially difficult. Nonetheless, it has been observed that students who join later in the process (in the second or third year), or participate only for a short time, can also contribute to the overall process, and they can also benefit greatly from the experience.

The next chapters present a detailed description of the ALM 2012-2014 experiences, as well as the design process in the community, which is structured in learning cycles.

Visualisation of the meta-framework

In an Aalto LAB, the design process is iterative and consists of four main phases (diagnosis, conceptualisation, implementation, and evaluation), each of which is completed when specific goals are reached. Therefore, a diagnosis ends with concepts for feasible projects, the conceptualisation generates a project plan, and the implementation finishes with a prototype. Within an Aalto LAB, these phases are not limited by time because the matters to be dealt with in a community can vary in complexity, and because the sub-projects are developed as part of a pedagogic programme structured in periods that last several months.

The experiences of ALS and ALM show that the earliest diagnosis generates more than one concept for feasible projects. These projects might tackle different problems, or the same problems from different fronts. Altogether they represent a comprehensive strategy by which a desirable future could be reached. In the end, each sub-project is carried on with a time-frame of its own, so that one sub-project may have reached the implementation phase while another requires a third round of diagnosis.

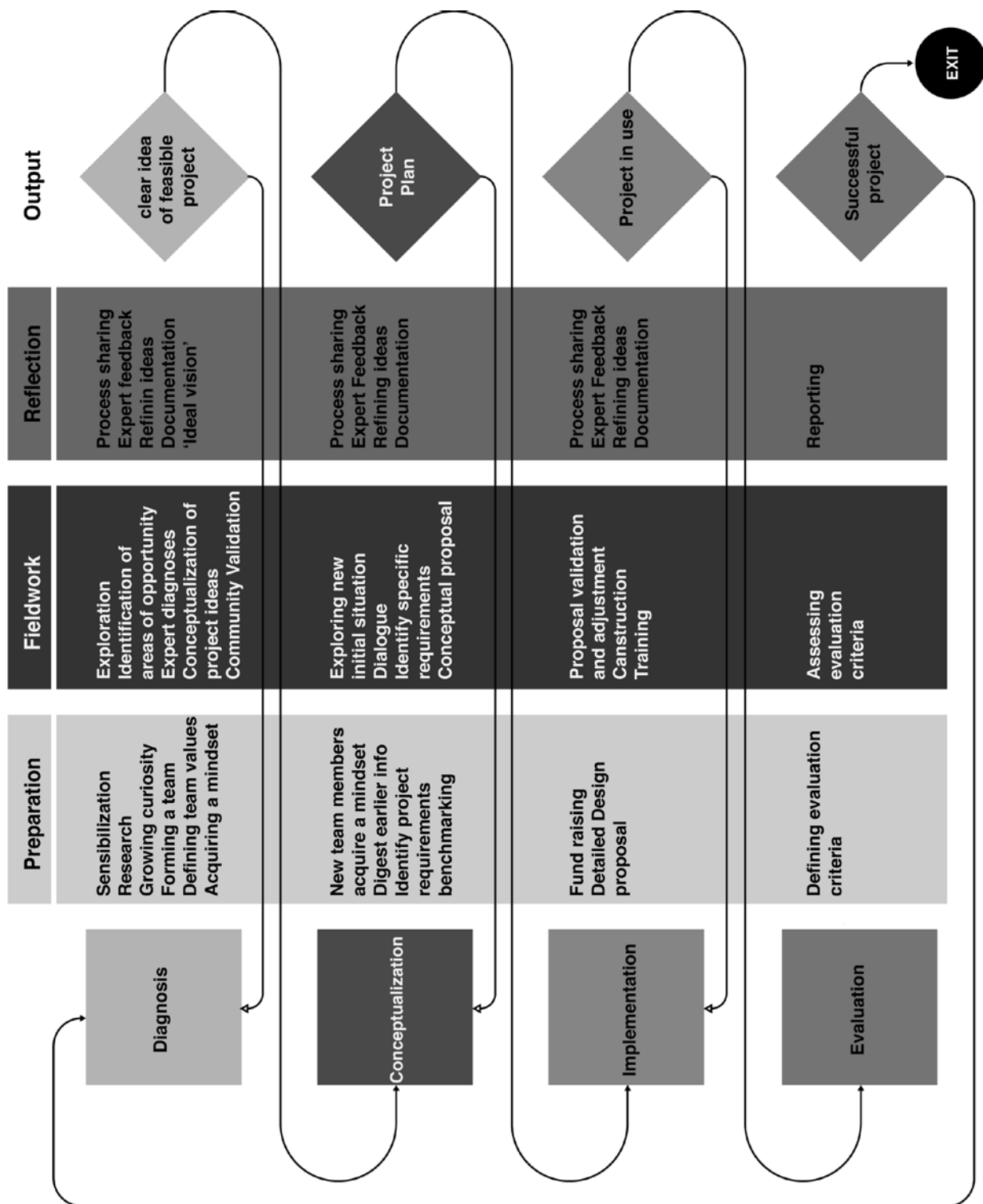


Figure 11. Visualization of the overall process of Aalto LAB. Each sub-project advances at its own rhythm, which might take several years. Drawn by Claudia Garduño García.



Photo by Jan Ahlstedt

Setting up the initial assemblage N_0

This section of the book is dedicated to reflecting on how Design as Freedom takes place in practice, through the story of Aalto LAB Mexico from its beginning in 2012, to 2014.

Arguably, clear cases of injustice can be identified anywhere in the world, and with sufficient imagination, all are potentially remediable. However, the starting point of Design as Freedom is an assemblage (N_0); and in practice, this means selecting a *fertile* location with traits which might potentiate change towards a better future, as well as building a network and having sufficient motivation.

My motivation to take Aalto LAB to Mexico emerged from acknowledging my privileged position, the strong feeling of a moral obligation to pay my *social mortgage*⁴⁵, and the certainty that design interventions could actually make the world a better place. I belong to the 16.7% of Mexican women who have the opportunity to study for a university degree (INEGI, 2010), and to the 0.005% of the economically active population who graduate from a doctoral programme (CONACyT, 2013, 56). Additionally, on the practical side, I personally had better chances to take Aalto LAB to Mexico than to any other location.

Finding a location

In ALS, we learned that even a very poor community could have *something* that could inspire a brighter and feasible future. In Chongming Island, the barley fields, together with an old glass factory and the shipping docks, suggested the potential for the production of a local organic beer to be distributed along China's coastline, and while doing so, generate a sense of identity among its inhabitants. Thus, those types of places where people live *alternative lifestyles* are propitious for exploring the propositions of Sen, Max-Neef, or Rosling, for whom well-being and a better life are not necessarily or completely constrained by economic growth.

The process of finding a location for Aalto LAB Mexico started by differentiating amongst different degrees of poverty. In Mexico, a total of 640,000 people, the majority of whom were indigenous distributed within 54 municipalities located in 9 different states (Oaxaca, Chiapas, Guerrero, Veracruz, Puebla, Jalisco, Nayarit, Chihuahua, and Durango) had an equal or even a lesser human development index than Haiti, as reported by a piece of news published by REFORMA on February

⁴⁵ Term coined by David Noel Ramírez Padilla, rector of Tecnológico de Monterrey.

1, 2010, just some weeks after an earthquake had severely hit the island. When the Public Institution of Social Assistance (DIF) visited those communities while collecting aid for Haiti, people begged the Haitians for forgiveness, but they truly had nothing to give, since they were equally poor. The only difference, as noted by a 15-year-old lad, was that they did not fight each other for food because they grew corn and beans, and when that ran out, they could eat herbs from the hills or then small animals” (Garduño & Rea, 2010). His statement could be contrasted with pictures published by Reuters, which showed Haitians making cookies out of mud by mixing dirt, salt, and vegetable fat, one of their few choices already before the earthquake (Elkington, 2010). Definitely, those ought to be different types of poverties.

It can be argued that working in communities living in the highest level of poverty would have been a nobler task; however, when Design as Freedom is put in practice through a pedagogic experiment like Aalto LAB, other factors should also be considered. When the project is built from scratch and as a bottom-up process, limitations must be acknowledged (power, knowledge, resources). With the aim of maximising the chances to develop the full meta-framework and generating a change in the community, a *fertile* location must be found; that is, where the situation of injustice has the greatest potential to be overcome.

In the beginning, through Tec de Monterrey, there was the possibility to work in Huisuchi, a small Rarámuri⁴⁶ village in Batopilas, in the northwestern state of Chihuahua; and through UNAM’s Research Centre in Industrial Design (CIDI) and their yearly *Mayan Winter Workshop*, it was possible to work in either of three different communities where their workshop takes place (Zoh-Laguna, Xpujil, and 20 de Noviembre) in Calakmul, in the southeastern state of Campeche. Ultimately, Calakmul was preferred over Batopilas for a single reason, the violence generated by the war against drug traffic was considerably more severe in Chihuahua than in Campeche (SNSP, 2011). Risking a group of students is not debatable, but it could be argued that a violent context like Chihuahua would be a perfect context to make use of design to generate new choices for people to live their lives. However, a place infiltrated with drug traffic would hardly be a fertile location for the sole reason that the common discourse denotes a terrible (non-monetary) poverty; people join the drug gangs simply *had no choice*⁴⁷.

Additionally, in ALS it was observed that the relationships that two of the labbers, Li Hua and Mingji had previously constructed with the people of Xian Qiao through Design Harvests project (a collaboration between Tongji University and Studio Tao), were possibly the only reason why we had

46 Rarámuri or Tarahumara is the name given to a large indigenous group that lives scattered in the mountains of the state of Chihuahua, famous runners, winners of ultramarathons in Mexico and in Europe.

47 This observation comes from an informal talk I had in Urique, Chihuahua, where children want to become *sicarios* (drug cartels’ assassins) when they grow up. It made me think that the society was sick; in their madness they had lost the human sense of value. Rather than living difficult lives of hard work and small satisfactions, they were willing to risk it all and work for the drug cartels to become very rich and deadly feared, even if for the briefest time. They knew that the chances of getting killed were high; but *they had no choice*.

such easy access to the community. The ALS team saw in the Tongji, Tao and Xian Qiao relationship, one of the most valuable *capitals* of the community. Evidently, the labbers can only observe the community with them inside, and at the same time, the presence of the team inevitably has an effect on the community and distorts their observation, preventing it from being completely objective or neutral. Nonetheless, what happens is that the labbers see themselves and their universities as part of a larger network which might potentially collaborate to improve the living conditions of the community; therefore, the team is unavoidably part of the initial assemblage (N_0).

Finally, something crucial for the development of an Aalto LAB is getting permission from the community. Nothing can be done without the community's authorisation. So, there has to be an official meeting with the local authorities in order to share the working plan with them. Care must be taken not to promise what cannot be fulfilled. Although what is sought is co-design, understood as the mutual empowerment of the community and the team, the first step is having the team members learn from the community, becoming more socially and environmentally aware. Additionally, there is the possibility that the process will generate innovative ideas that the community approves of; in which case, formalizing the collaboration should be considered.

What follows is a brief description of the Ejido 20 de Noviembre which will help the reader understand the decisions made in ALM.

Ejido 20 de Noviembre (El 20), Calakmul, Campeche, México

The Ejido 20 de Noviembre is located in the State of Campeche, in the Municipality of Calakmul, which was officially created in 1996 (Gob. De Calakmul, n.d. b) through the integration of 82 lowly populated communities (H. Ayuntamiento de Calakmul, 2012). As described by Baltazar González, who served as the municipal president of Calakmul in the period 2012-2014, these communities were settled mainly because of the agrarian reformations and land distribution that took place between the 1940s and 1970s, which attracted migrants from 24 different states within Mexico. Since it was established in the fifties, until the forest was nearly exhausted towards the end of the eighties, the Polish company called Mexican Mahogany was another reason to establish in the area.

Calakmul is also the name given to the largest protected area of the state of Campeche, a biosphere that extends over 723,000 hectares and that is listed as UNESCO Natural Heritage site (UNESCO, n.d.) and produces 13% of the oxygen on the planet (Gob. De Calakmul, n.d. a). Calakmul is the name given to an ancient Mayan city discovered by Cyrus Longworth Lundell in 1931. It means two adjacent mountains, which are in fact, pyramids (INAH, 2010). In 2014, UNESCO registered Calakmul as a Mixed Site on its World Heritage list (Hernández, 2014a), becoming the first of its kind in Mexico.

The town of Xpujil, which is located 26 km from the border that divides the states of Campeche and Quintana Roo functions as the capital of Calakmul, and is the middle point in the road that connects the cities of Escárcega and Chetumal, one of the two routes to Cancun, the main tourist destination within Mexico. The reserve and the archaeological site attract tourists, but also researchers and NGOs.

The community '20 de Noviembre', or "El 20", as its inhabitants refer to it, is located within the buffer zone of the reserve, and only 15 km away from Xpujil. It was settled in 1971 by a group of families who migrated from the Mayan town of Dzitbalché, (Calkiní, Campeche). For this reason, the inhabitants of El 20 say that their village was founded by Mayan families; according to Eng. González, out of 82, El 20 is the only Mayan community in Calakmul, although nowadays non-Mayan and mixed families also live in the community.

Being completely honest, I was very hesitant to select El 20 as a location for ALM. I never thought that a university degree was a certificate for deliberately affecting centuries of cultural tradition. Nonetheless, the fact that El 20 is an indigenous community placed us (the whole team) face to face with one of the most intricate and complex topics that Mexico has dealt with, which until that moment we (the Mexican part of the team), like most non-indigenous Mexicans, had simply learned to ignore. So, El 20 is a marginalised, rural and indigenous community, and what needs to be understood first is what those adjectives imply. It might be impossible to fully comprehend it, but in order to achieve at least certain understanding, the exploration of at least some historic facts is necessary.

Within Mexico, vast inequality prevails. Despite being the 14th largest global economy (World Bank, 2013) and therefore belongs to the G20, 46% of its population, which accounts for nearly 52 million people, live in poverty (CONEVAL, 2010). Despite its rich natural and cultural diversity, the Mexican assessment of poverty from 2012 shows that the state of Campeche is considered an area of high marginalization. Additionally, 85.8% of the total population of the Municipality of Calakmul live in poverty, while 46.1% live in extreme poverty (CONEVAL, 2010). The numbers are worrying because for the Mexican government, the term marginalisation has been used in order to observe poverty in reference to a geographic region. Marginalisation indicates "the degree of exclusion from the enjoyment of economic development experienced by regions (states, municipalities and towns)" (Cárdenas, 2010, 41). Furthermore, in order to measure marginalisation, the government observes deprivations in relation to the satisfaction of basic needs to which all Mexicans are entitled by constitutional right (44). If, on one hand, it is comforting to learn that the government is concerned with designing and directing social policies and programmes for those who need them most, on the other hand, it is shocking to learn that great part of the population does not enjoy their basic rights, a clear case of injustice. The enormous inequality, however is a highly complex problem with multiple cultural, geographic and historic causes.

Mexico is culturally isolated from its geographic region (North America) and geographically isolated from its cultural region (Latin America). Additionally, its multiple mountain ranges, isolate Mexicans

from one another (Tannenbaum, 1968 [1951], 3), but they also divide its territory into multiple climates, enabling the existence of a wide range of biodiversity, making Mexico the home of 12% of all known species in the planet, and thus the fifth most diverse country in the world (CONABIO, 2008). As a result, Mexico is also highly culturally diverse; within its territory, at least 52 different indigenous languages (CDI, 2010) are still spoken. As a result, most Mexican communities, including El 20, are somewhat unique.

Mexican History can be generally classified as follows:

(1600 BC-1521) Pre-Columbian Mexico (the time before the Spanish Conquest)

(1521-1821) New Spain (the time Mexico was a Spanish Colony)

(1821-to date) Independent Mexico

The Spanish episode is fundamental, not only because it divided history, but because of the cultural heritage that persists and because it originated an identity crisis that prevails. During colonial times, Spain established a rigid, racist, and oppressive caste system that gave absolute privilege to the Peninsular Spanish (those born in Spain). Everyone else's rights were limited, including the Criollos (Spanish who had been born in colonial lands), the Indians (as native people were called when Columbus thought he had arrived in India), and the Blacks (people who had been kidnapped in Africa and taken to the new world as slaves). The mixtures among those races originated other casts, the Mestizo (Spanish + Indian) have to be highlighted because they would eventually become a romantic symbol that would allow the reinterpretation of that era of subjugation. According to that (official) positive version of history, Mexico was born "from the clash of two cultures", and the mestizo are "both the unconscious carrier of European culture to Indians and the natural link between the racial and linguistic groups in Mexico" (Tannenbaum, 1968 [1951], 15).

The Mexican independence movement included causes like the abolition of slavery and equality of all, however, arguably, the fight for the rights of the indigenous started only with the Revolution of 1910. More specifically, through the agrarian movement of Emiliano Zapata who fought against the landowner system and coined the motto "The land belongs to those who work it" ("La tierra es de quien la trabaja"), regarding the right of peasants to own land. Although not all peasants were indigenous, most indigenous were peasants. Zapata's ideals were not precisely materialised; at least not immediately⁴⁸, but they were imprinted in murals, on the walls of public buildings.

Between 1957 and 1991, Mexico followed the global trend that aimed to integrate the indigenous and non-indigenous populations by developing social policies. The idea that through the mestizaje

48 Several agrarian reformations took place after the Mexican revolution, one of which gave place to the foundation of El 20. Peasants who did not own any, were given a piece of land under the figure of "ejido", a form of organisation and property based on prehispanic practices, similar to communal.

process, Mexico would become the home of a homogenous mestiza and Spanish speaking population practically consigned the indigenous (the 52 groups) to marginalisation and oblivion. In order to prevent them from being marginalised, some indigenous people chose not to be acknowledged as such (Duquenoy, 2011). Spanish became the only official language even in schools (INALI, 2013), as a consequence, the existence of many native languages was endangered, because this motivated indigenous families to talk to their children exclusively in Spanish.

This situation together with the signature of the North American Free Trade Agreement (NAFTA), motivated the start of an armed conflict through the Ejército Zapatista de Liberación Nacional⁴⁹ (EZLN) (Volpi, 2004; Legorreta, 2007). The Zapatist fight for their right to self-determination; that is, their right to constitute themselves within the country as a different alternative (Marcos in Scherer, 2014 [2001]). They walk against “the world that hegemoni-zes and homogenises not only the country, but the whole world”⁵⁰ (ibid.). They are against private property and the money economy because they have kept alive their traditions of common property, barter, and non-mechanised agricultural systems; and because of that, it is impossible for them to achieve what the NAFTA agreement required them to do: to compete with big transnational producers (Volpi 2004).

Sub-commandant Marcos, leader of the EZLN, sent a series of letters directed to the government and the intellectuals. At first, Marcos was not taken seriously, but over time he earned their respect (Volpi, 2004). Carlos Fuentes (1928-2012) wrote back in gratitude after Marcos sent what has been pointed out as his most eloquent text, *What are we to be pardoned for?*; the Zapatists had reminded him that there were two different Mexicos, and that the idea of progress or modernity in this country could only be complete by including the perspective of its indigenous towns. The indigenous towns might be destined to disappear through the mestizaje process, but while that happened, Mexicans should respect the cultures and values that live within them (Volpi, 2004, 366–367).

Unfortunately, although the Zapatist message was neatly transmitted to the intellectuals, it did not get across equally to the whole of the Mexican population. Two decades later, the situation of the indigenous towns has not changed dramatically. Through ALM, we reached out to the indigenous for the first time, it is with embarrassment that we realise that with our passiveness, we too had chosen to keep them in oblivion. How could indigenous people who fight economic liberalism and homogenisation fit in global development perspectives? Could it be affirmed that they adapt their preferences, that rather than being happy with their lives, people have conformed to poor living standards? Would a contented slave be willing to die to defend their lifestyle? Perhaps, what (we) Mexicans need to understand is that what makes all humans equal is precisely, diversity; we are all equally diverse (Zea, 1990, 19). And perhaps it is true that Mexico’s best possible future will emerge from a philosophy of small things for its communities (Tannenbaum, 1968 [1951]), communities like El 20.

⁴⁹ Zapatist Army of National Liberation

⁵⁰ My own translation

Evidently, the best way to understand life in El 20, is by visiting it. Through my visits, I managed to gather relevant information. When being there, I discovered that when the community was founded, within their primary rules, they established the conservation of 'the jungle' by defining an *urban* area, where they built their houses, and by limiting the amount of agricultural land⁵¹. In principle, and in step with the revolutionary ideals, each ejdatario (head of the family, typically a man) could possess as much agricultural land as he could work. The voluntary preservation they made of their jungle would later allow them to become part of the national forest preservation programs run by the National Forestry Commission (CONAFOR), and to work closely with the Commission for the Natural Protected Areas (CONANP).

A recently elaborated territorial sorting analysis of Calakmul (Arreola et al., n.d.) shows what Julia Carabias (2012) points out, that the designation of forests as agricultural lands was a terrible mistake. Traditionally, families who practice subsistence agriculture in Mexico, alternate agricultural lands, so that part of the land that has just produced a crop is burned down and left to rest. However, with every generation, land gets divided and redistributed to the point where there is no chance to let any piece of land rest. In the jungle area, farmers would need to cut down parts of the forest to be used as agricultural land, which causes depletion and erosion. The new programmes for the protection of the forests do not allow the farmers to extend their agricultural land and also restrict livestock activities. Nonetheless, when farmers live from what they grow, restricting agricultural lands puts their food security at risk. For that reason, the territorial sorting analysis aims to define the best locations for existing cultural-economic activities, such as the extraction of gum and apiculture, as well as creating new activities (Arreola et al., n.d.).

Since my first visit to El 20, during the Mayan Design Workshop 2012, I have been hosted by the family formed by Ofelia Cahuich and Mateo Marín (who was the head of El 20's governing body at that time and until May 2014). In fact, these gatekeepers have facilitated access to the community and assisted at every stage since that moment. It was through conversations with them, that I started perceiving that El 20 was a positive location for ALM. In my first visit, I told Mateo that we were within an incredible landscape; he replied that they knew it, and that unlike what everyone thinks, they are not poor; they are rich because they have everything they need. That short conversation with Mr. Mateo forcefully echoed the thinking of Max Neef, yet he did not speak of this idea as a fresh new perspective on development, but as common sense or embedded local wisdom.

On my second visit to El 20, I continued that conversation, this time with the whole Cahuich Marín Family, in order to record⁵² the starting point of ALM. I wanted to know what they thought about

51 Back in 1971, when those first settlers arrived, they agreed to leave the jungle as it was, "because it smelled beautiful". During one of our conversations, Ofelia recalled this story she heard from her mother.

52 Besides being my first ethnographic visit, it was then when I asked permission from El 20 Government body to develop ALM 2012 in their community.

the term *marginalisation*, situation in which they lived, according to the government's studies. Being marginalised, stated Mateo, is lacking the benefits of the city. The State of Campeche, he continued, is catalogued as an indigenous state, and therefore marginalised. Ofelia pointed out that they are marginalised because they do not have access to communication services like telephone or healthcare, because although there is a health centre in the community, there are no doctors. Or piped water, added Mateo.

Next, I asked them to define *development*. Mateo explained that development is when those benefits are acquired, the streets in El 20 were a sign of a development process. Ofelia, after thinking for a moment, shared that she had thought about that before and decided that she would not like development. She explained that if they suddenly had piped water, the service would imply a cost, and they, as farmers, have no means to pay for it. Furthermore, they *already had* water. Some things, like transportation, communication, and healthcare are basic, but other things would make *her world* fall apart. She concluded that having all services would be fine, but only if they were managed by the community. Finally, Sayuri, their teenage daughter added that in a *normal* town, one can live a calmer and happier life than in a city, because you can go out at any time without taking the risk of being robbed.

Then we talked about what they valued most. I asked them that if everything else was to change in their lives, what they would choose to keep. At first, Ofelia thought of her home. She did not want another intervention by any government programme that would not work in the end (although she acknowledged that some had been useful, like the cement floor and the water tanks). When Sayuri mentioned the "monte", Ofelia exclaimed: "That, I would not change for anything in the world! Although it has mosquitos and bugs, I would not change it! –Sigh– You go there and breath, sit in the shade... I would not change it for anything!" Finally, Sayuri added that she would not change the people either.

The second last topic was evidently *freedom*. Ofelia immediately replied that freedom is what she was living at that very moment. As they all thought out loud, they ended up repeating the same words at the same time: living in the way you want to. Freedom is now, emphasised Ofelia. Morning breaks, said Mateo, and if you feel like working, you work; otherwise, no one forces you to, that is the freedom we have. When I asked them to distinguish between individual freedom and the freedom of El 20, Mateo stated that the freedom of the community was very important, and that he believed that the unity of El 20, which is based on the fact that all of them belong to the same culture (Mayan), is the reason why they are able to keep order and to make quick agreements.

Finally, as a suggestion by Alastair Fuad-Luke, I asked about the term *design*, if there was a Mayan word, and what that would mean in Spanish. To design, in Mayan *jeelbésik* or *tumbeenrúnsik*, means to change, to adapt, to renovate, or to renew.

In conclusion, a combination of elements made El 20 a very promising location for studying Design as Freedom through an Aalto LAB. Although it has been nationally assessed as a region that lives in poverty, my brief but intimate conversation with my hosts helped me understand that their vision of a better future is not quite the same as that the government seems to propose. It was striking to realise that they find that the concept of marginalisation is too closely linked to the concept of indigenous. I learned that they were well aware of being deprived from some services that are tightly related to the achievement of basic rights (such as education). However, the community shares the perspective that there are different kinds of poverties and also different types of richness. Evidently, they appreciated their own ways of doing and living very much; from their own extensive areas of land, they obtain many natural resources, which allow them to maintain several economic activities. I found it revealing that they called their own town *normal*, as this confirmed that I was in a place that held an alternative world view. In *their world* that co-exists with ours, perhaps as part of their indigenous identity, they especially valued their vast nature and the autonomy that derived from it. In their desirable future, deprivations had to be overcome, but their most treasured values had to remain unchanged.

Building a network

Building a network is a long process which requires tenaciousness, patience and being tolerant to frustration. Very likely, many doors will be knocked, and many meetings and presentations will take place before finding people who are interested or in conditions of collaborating. Additionally, based on the ALM experience, the network of actors is constantly transforming while the pedagogic program and the design projects get developed. The first relationships that have to be established in an Aalto LAB, are among universities. ALM demonstrates that signing a collaboration agreement, as it happened in ALS, is not absolutely necessary; finding committed individuals within the universities might be sufficient. The right person might be a teacher in charge of a very flexible course or the head of a programme; due to the interdisciplinarity of the project, it is convenient to count with representatives of various programs, disciplines or specialities within each university.

A prior investigation of the site might help defining the areas of knowledge that require to be represented by the labbers and the experts, although the highest diversity might generate the most unexpected observations during the diagnosis. In the beginning of ALM in 2012, the participation of students from the following programmes was ensured: all schools from Aalto University, and in Mexico, the Postgraduate Unit in Industrial Design (PDI) and the Research Centre in Industrial Design (CIDI) of the Universidad Nacional Autónoma de México (UNAM)⁵³, as well as the programmes of Industrial Design, Engineering in Sustainable Development, Journalism and Media,

⁵³ National Autonomous University of Mexico

Humanities and Social Science, as well as the Social Community Service⁵⁴ department of Tecnológico de Monterrey Campus Ciudad de México.

A project like Aalto LAB is highly expensive. Nonetheless, if labbers had to cover all their expenses, the project could become elitist, as the participants would be those who could afford it, and not necessarily the genuinely interested ones. For that reason, sponsorships are recommended. In the beginning of an Aalto LAB, a sponsorship from the private industry might be counterproductive, because their interests might bias the diagnosis. An Aalto LAB seeks to generate any kind of project, rather than projects that relate to what its sponsors sell. Therefore, the universities are considered the most neutral partners when the project starts. When the initial diagnosis is concluded, the ideas of feasible projects help identifying potential sponsors; so that there is a match between the needs and values of the community and the sponsors.

Having participants that represent several departments within the universities is also a good financing strategy. For instance, in 2012, ALM got sponsorships within Aalto University from: Aalto Service Factory, Aalto International Relations, Aalto ARTS International Affairs, Aalto Design Factory and Aalto Global Impact. From Tec de Monterrey, sponsorship was received from Eurocentro and Relaciones Empresariales. Some sponsors might also contribute with in-kind donations, including working spaces, equipment or coffee services and snacks. Moreover, counting on the moral support of entities such as the embassies make the project serious and legitimate, and it also contributes with a public-sector perspective.

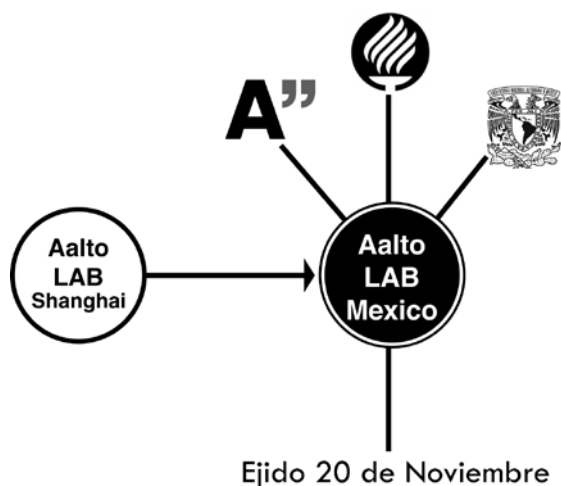


Figure 12. Following the model of Aalto LAB Shanghai, the main partners of Aalto LAB Mexico are the community (20 de Noviembre), Aalto University, and the local universities: Tecnológico de Monterrey and Universidad Nacional Autónoma de México.

54 In Mexico, all undergraduate students have to complete 480 hours of social community service.

Aalto LAB Mexico 2012

Forming the ALM 2012 (design) team

The recruiting process for Aalto LAB Mexico commenced in August 2012. Following the lessons learnt from ALS, rather than looking for the best students from each field, ALM was looking for students who were genuinely socially concerned and very proactive persons who were able to work in teams, and who belonged to the fields of art and design, economics and business, as well as mechanical engineering and information technologies. Additionally, given that a deeper understanding of the indigenous people could be required, it was important to open positions for students in the fields of humanities and social sciences. Although the process was meant to be standardised, in some cases, it occurred in a different manner, especially when there was only one applicant or when there were none. The best candidates were selected with help from the labbers of ALS. The structure of the team was adapted to the candidates. Finally, the team of labbers of ALM 2012 was the following:

Name	University	Field	Nationality
Anthony Michael	Aalto University	Mechanical Engineering	Finnish/British
Niina Gromov	Aalto University	ICT	Finnish
Nina Martin	Aalto University	Media	German
Anna Asikainen	Aalto University	Business Administration	Finnish
Tommi Simel	Aalto University	ICT	Finnish
Sofia Ziessler	Aalto University / University of Helsinki	ICT/ Anthropology	Finnish/German
Gabriel Calvillo	UNAM	Industrial Design	Mexican
Juan Vértiz	UNAM	Industrial Design	Mexican
Mariana Cestellos	Tec de Monterrey	Industrial Design	Mexican
Sharoon Negrete	Tec de Monterrey	Humanities and Social Sciences	Mexican
Patricia Soto	Tec de Monterrey	Journalism	Mexican
Pamela Chantiri	Tec de Monterrey	Engineering in Sustainable Development	Mexican

Table 2. List of labbers of Aalto LAB Mexico 2012.

Before starting, a working program was drafted, according to which there would be some face-to-face meetings in each country, and some virtual sessions where every now and then there would be an invited expert who would introduce a topic and discuss with the labbers. In parallel to the development of investigations, new experts would be invited, and new activities would be planned (i.e. Niina and Anna organised a visit to an exhibition about the Mayan in the Didrichsen Museum). At the same time, the team of experts, facilitators and documenters who would travel with the labbers to Calakmul was put together.

Name	Institution	Field	Role	Nationality
Greg Perez	IDEO Shanghai	Communication / Project lead	Main facilitator	American
Hei Cheng	IDEO San Francisco	Communication	Main facilitator	Chinese
Rodolfo Alvarado	Yectlahuilli	Clean energy	Expert	Mexican
Omar Rojas	Tec de Monterrey	Engineering in Sustainable Development/ Biology	Expert	Mexican
Jan Ahlstedt	Freelance	Photography	Documentation	Finnish
Antti Seppänen	Freelance	Film making	Documentation	Finnish
Susu Nousala	Aalto University	Social Complex Adaptive Systems	Teacher/Research	Australian
Xaviera Sánchez de la Barquera	UNAM	Industrial Design	Facilitation assistant/ documentation/ research	Mexican
Anni Hapuoja	Aalto University / Muotohiomo	Architecture	Facilitation assistant	Finnish
Claudia Garduño	Aalto University	Design	Facilitation assistant/ documentation/ research	Mexican

Table 3. List of experts and facilitators of Aalto LAB Mexico 2012. All of them went to the trip to Calakmul.

Preparation period: the fuzziest front end

The first (virtual) meeting took place on Saturday, 1 September 2012, at 18:00 Finnish time and 10:00 according to the time in Mexico City. Through an imperfect connection, the rules of the game were revealed: they were “to make the world a better place” and focus on the Mayan community called 20 de Noviembre, located in Calakmul, Campeche. The team from Aalto

University would spend two weeks of November in Mexico, and within that period, the whole team would spend one week in Calakmul. This meant that the labbers had two months to get themselves ready to visit the community. They were encouraged to develop individual research and collective discussions, to meet every week with their own units and to conduct virtual meetings every two weeks. It was strictly forbidden to make any decisions before visiting 20 de Noviembre and meeting its inhabitants.

No one could really tell what would happen in 20 de Noviembre, but by approaching the challenge as project-based learning (PBL), the labbers had the opportunity to propose research questions that they found significant and investigate them (Blumenfeld, 1991, 369). They also had the opportunity to act as experts of their own fields at different scales (e.g. Pam looked at the *Territorial Sorting Analysis of Calakmul*, while Sofia investigated the *Mayan identity*, Anna introduced the *Mexican Economy*, and Patricia investigated *Development*). Some labbers dared to explore topics that were alien to them (e.g. Tommi conducted research on the *Modern Maya*, and Gabriel explored *How ejidos work in Mexico*)

In both ALS and ALM, the preparation period has been generally perceived by the labbers as a messy process. However, the labbers experience it in different ways; while these might simply be a matter of personality, it has been observed that, in general, designers find it inspirational, while labbers from the fields of engineering and business suffer from it and find it frustrating⁵⁵. Perhaps not surprisingly, Mexican students seemed to cope more easily with uncertainty than Finnish students. However, it must be acknowledged that multiple complications with the funding caused a greater stress to the students from Aalto⁵⁶.

Acquiring knowledge is important; however, the most important goal of this period is to cultivate in the labbers the attitude and the competencies that will enable them to engage with the people from the community as equals. The labbers have to try to gain awareness of their own prejudices and lack of understanding, so that they ultimately understand why it is crucial to visit the community before *designing* anything.

55 Nonetheless, in the end, as will be discussed later, all seemed to find it significant.

56 First, some sponsors announced that their contributions would be paid retroactively. Second, some potential sponsors finally refused to support the project. Third, there were problems with electronic transferances. Fourth, a sponsorship from Tec de Monterrey would be given on the condition that an agreement would be signed between them and Aalto, an overly complicated process. Although all those events did not have a direct impact on the development of the visit, the participation of some students was severely affected before and after the visit.

Dealing with difficult topics

The Mexican labbers dedicated several personal investigations to indigenous topics. Most of them were doing this for the first time, so that the experts in the team, the students from the field of the humanities acted as facilitators. While researching the meaning of indigenous, Juan found out that nowadays such distinction is rather difficult, as it cannot be reduced to race or language and that it is anyways important in Mexico, because the indigenous are entitled to some social programs. Additionally, he encountered the paradoxical mission of integrating the indigenous towns without modifying their ways of life. His research gave him more questions than answers. His last slide read:

What does indigenous mean? I don't know!

Sharoon stated that according to the constitution, the most important criterion to determine if someone is indigenous is self-awareness about the indigenous identity. Additionally, she warned the group that a romantic vision of the indigenous groups should be avoided, no town or village in Mexico is the same it was in 1500s. The way they see themselves highly depends on the religious groups that evangelised the area; their traditions, languages, and clothing have changed; they might have cell phones, and drink Coca Cola. Additionally, they do not only exist in a collective manner; but also as individuals with dreams and thoughts of their own.

Gabo picked another very difficult topic, the *ejidos*. He understood that this type of common property has been affected by many agrarian reformations over the years, so nowadays they are managed in many ways. Nonetheless, the reformation that preceded the signature of (NAFTA) especially benefitted the most privileged while it harmed the smallest producers.

The team was starting to consider that even our most grounded notions could be terribly biased. Later on, during an interview, Gabo stated that during this period, they understood that they should not impose anything on the community; that it was crucial to visit them understand if they needed help, what type of help, and if ALM could provide it. Furthermore, he recalled getting very curious and even anxious to see what the LAB would result in.

Instruments that develop competencies

On 9 October 2012, Tuuli Mattelmäki met the part of the team from Aalto University in Design Factory, and communicated virtually and imperfectly with the Mexican labbers, who were in Tec de Monterrey, through Skype to talk about *Design Probes*. By this moment, the labbers were well aware that whatever they proposed to do in El 20 would only succeed if it happened to be what the community really needed and desired. Design probes were an instrument, but learning that there were instruments that could help them understand the users better made them confident,

while, learning that the reason that these instruments were created in the first place was to make the process as empathic as possible, built on their competencies. After Tuuli's presentation, nearly all of them had it clear that in El 20, it would be crucial to act as receivers of messages, because the most valuable inputs would be drawn from the words of the local people.

The last virtual session took place on October 22, 2012, when Design Capitalia was introduced with two main goals: to widen the labbers' perspective on Sustainability, and to use the tool to define the values of the team. By using the cards, the labbers identified their core values and finally created the following motto:

“Committed to collaborating and co-creating with love, respect, and critical thinking”.

Here, as with design probes, the session introduced a tool or instrument, but it also built on the agenda of the project and the competencies of the team. Regardless of whether they made use of it or not, they had been exposed to a way of thinking that acknowledges that design can grow many things, and not only money. Additionally, they acknowledged the different ways in which different capitals relate, and how a design decision could endanger the subsistence of certain capital, for which reason, it is important to observe the wider picture. Within the overall Aalto LAB goal of “making the world a better place”, this design team defined their particular approach. In their final report, Nina noted that “...previous exercises such as the Design Capitalia session linked us to the same value proposition so that empathy was a constant in our entire process, whether consciously or not. These shared understandings are crucial for effective co-working.”

Final adjustments

The first activity to take place once the whole team was in Mexico City, was the seminar called “Designing for Social Sustainability, a Polydisciplinary Approach”, which took place on 1-2 November at Tec de Monterrey. The event was part of the funding negotiation with Tec, and it also enabled the ALM to share their experience with a wider audience. The seminar gathered representatives from the fields of architecture, design, biology, mechanical and electrical engineering, social sciences, and complex systems. The most memorable talk for the team was, perhaps, the one given by Oscar Hagerman. In his very touching style, he showed several of his projects with the aim of encouraging our team before their fieldtrip. He concluded by saying: “I have walked a long road; somehow I am reaching the finish line; I am very glad, I have been a very fortunate person, I have worked the way I like, with people, in the communities”.

At the end of the first day of the seminar, facilitators, experts, and documenters met to define the work plan for Calakmul, which was based on ALS and on the IDEO's HCD toolkit. Greg and Hei would be the main facilitators, and they would be assisted by Anni and Susu. Rodolfo and Omar would work as experts, mentoring two teams each. Xaviera and myself, as researchers, became

observers and documenters, one would be accompanied by Antti and the other one by Jan. These were the teams:

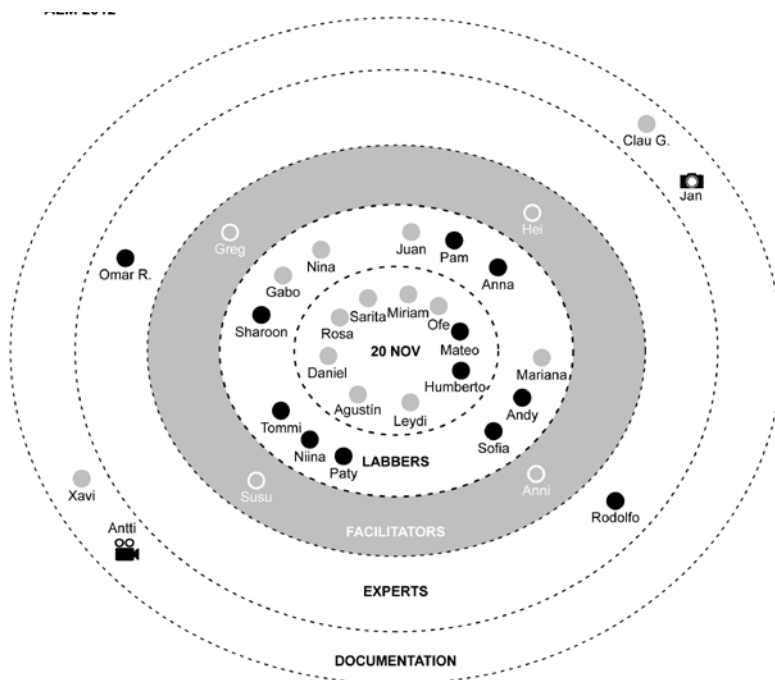


Figure 13. ALM 2012 network. Designers are shown in gray. The only experts that travelled to the site are Rodolfo Alvarado, Omar Rojas, and Susu Nousala (also a teacher and researcher). By Claudia Garduño García.

The overall process was:

- Hopes and Fears
- What do we want to learn?
- Split into groups
- Observation
- Download
- What do we want to solve?
- Synthesis
- Insights and opportunities
- Present learnings

When the seminar finished, Greg and Hei took over the task of conducting the first brainstorming session with the whole team (hopes and fears). Each participant (labbers, teachers, experts, and facilitators) was given a bunch of Post-it notes and a pen, and was given a few minutes to think of their greatest fears concerning the project and the trip to Calakmul. Based on their similarity,

these can be grouped in four categories: fears related to visiting the jungle, fear of not being welcome by the community, fear of failing, and fear of the team dynamics. Next, Greg asked the team to brainstorm their greatest hopes. Their greatest hopes can be classified in the expectation of a good experience, the dream of ‘being successful’, and finally, those related to learning. Greg and Hei picked up from the participants’ will to learn and reaffirmed that the world or El 20 cannot be changed in just a few days; before doing anything else, the team had to learn from the community, and that ought to be their greatest concern.

That was the end of the preparation period. The labbers actively built their knowledge, and started to work as a team. Most importantly, they developed the competencies and acquired the right *mindset* before visiting El 20.

Visiting Calakmul: Fieldtrip

The day after the seminar, the whole team flew to the city of Chetumal, and from there, they took a bus to Calakmul. Most nights, the team stayed in a hostel in Zoh-Laguna. Besides visiting El 20, the team visited three other communities in Calakmul that are developing interesting projects: 20 de Junio, Nueva Vida, and Centauros del Norte. Additionally, Bacalar, the archaeological site of Calakmul, and a bat cave were visited. As a whole, these visits enabled the team to gain a bigger picture of the region.

Before visiting El 20, Greg and Hei gave pieces of advice to the labbers on how to conduct interviews, such as, what types of questions to ask (“can you describe your daily routine?”), and not to ask (“are you happy with your life?”). Additionally, the team met relevant actors such as Eng. Baltazar González, municipal president of Calakmul and former director of Calakmul Biosphere.

Exploring El 20: “Living the dream”⁵⁷

The team experienced life in El 20, even if briefly. Between November 5 and 7, the team slept in hammocks (and suffered cold and loud nights in the jungle), ate food prepared with products from the local crops, suffered from the high temperatures and the burning sun, showered with rainwater harvested in buckets and heated with wood, flushed toilets by carrying water from wells, were bitten by many mosquitoes, and were constantly vigilant for snakes (we did not find any snakes, though).

⁵⁷ This is how the labbers referred to this moment of the project when creating their presentation.

During the brief deep dive, the sub-teams spent their time walking around the community, observing and conducting informal interviews with people from different demographic groups. They took pictures and notes. The full team would gather three times a day to share meals, and these moments were used by Greg and Hei to facilitate casual debriefing sessions, share plans, reports, and reflections.

The day we arrived, as a lucky strike, we were allowed to observe a meeting that the artisans would hold with a lady representing the municipality's Ministry of Tourism, which was crucial because it enabled the team to make many connections very quickly. When the meeting finished, the team was able to talk to several artisans and to arrange meetings with the head of each artisan group. Towards the night, the team had learned that all adult women know how to weave hammocks and embroider clothes, and that most of them are active makers and are organised in artisan groups. Additionally, a group of women started making soap from the honey of an endemic bee (melipona), and two groups that included men had been working wood for the previous five years.

Several artisans from El 20 have won prizes at local, state, and even national craft fairs. However, the team was surprised to consistently hear the same story from most of the artisans: that their craft-making was not a meaningful source of income; that what they got from their sales was mostly used to buy materials with which to keep the craft-making process alive. The team also learned that there were certified tourist guides in the community who would take tourist groups to visit archaeological sites, and to visit El 20 to eat lunch and buy crafts. Additionally, a large group of people from El 20 had formed a cooperative to develop an eco-tourism project.

At first sight, it seemed like the people of El 20 lived happy lives, and there was no need for us to come and try to change that⁵⁸. Nevertheless, in accordance with the adaptive preferences phenomenon reported by Sen and Nussbaum, people who live in a condition of marginalisation find happiness and satisfaction in little things. One of the most memorable stories from the fieldtrip is that of Andy repairing a car; and which is very useful for this reflection. This is how he recalls it⁵⁹:

Andy: "As a freshman, we start studying Mechanical Engineering, our professor says, okay guys, now that you start studying mechanical engineering, now everyone around you, all your relatives and everybody will expect that now you suddenly know how to repair a washing machine and a car. And I thought yeah... I guess that's how it goes, but then I thought nothing more about it."

58 As reported by the labbers in the interviews conducted in Calakmul.

59 As he described it in the discussion panel that took place on 9 September 2014 at Caisa Cultural Centre, Helsinki, Finland, during the 'Crossing Boundaries Exhibition'

But the first thing we arrive in 20 de Noviembre, Claudia comes, hey, Andy, there's this washing machine that's broken, and we had a look at it and there was not much we could do about it at the time and then I can't remember if it was that same day or the day after and a car breaks down and Andy, come on, there is a car, and it was really fun. Luckily there was, uh, what's his name, electricity?

Claudia: Rodolfo

Andy: Rodolfo! From one of the Mexican universities, and we had a look at it and we found out what the problem was and then we found a spare piece from another village or something and well, we didn't find it, there was loads of people helping, but we managed to get the car running, it was, yeah, something. Interesting.

In an interview that took place in El 20, Mariana built on Andy's story. While Andy and Rodolfo were fixing the car, Mariana was translating the conversation for Sayuri, Ofelia's daughter; therefore, she witnessed the whole event. She recalled finding it hard to hold back her tears, as it was precisely at that moment that she noticed that people in El 20 might actually need very little help and their lives would be much easier, but we normally do not give, even that little.

Later on, while in Zoh-Laguna, I complimented Andy for having helped the community with that small fixture, and I also told him it had been very touching for Mariana. Rather than being pleased with the compliment, Andy shared a reflection through which he happened to synthesise the most difficult problem Aalto LAB Mexico would deal with. He pointed out that expecting outside help was not a very sustainable practice. He would instead appreciate it if some local people would learn to do the job themselves. In fact, after fixing that car, he told the kids around him that they could learn themselves, hoping to get them inspired.

Without Andy and Rodolfo, the car would have been stopped for months, as no one in the community could fix it, and taking it to Xpujil was simply too expensive. If they learned to fix it, their lives would be easier, which can be seen as an expansion of capabilities. The main problem was that no one seemed curious enough to learn. Andy had friends who learned to fix cars as kids, and it was hard for him to believe that something similar had not happened in El 20. Perhaps people in the community did not always have cars, or the parts are not sold nearby, or they do not have the money to buy them; but it is also possible that this is showing the effects of a life of marginalisation and limited choices and a paternalistic state: a case of adaptive preferences. Sustainability, in this case, was very much about inspiring the people of El 20 to tackle their issues by themselves.

This very simple task for Andy was the first thing that we, the visitors, could do for our hosts; it was our first kept promise. And as small as it was, it was sufficient to make Mariana notice a remediable situation of injustice. Mariana and Andy were living experiences that cultivated their

capacity for noble feelings, to quote John Stuart Mill (2014 [1863]), or their sense of justice, to quote John Rawls (2009 [1971], 41).

Conceptualisation: synthesis, ideation, visualisation

The process continued in Zoh-Laguna⁶⁰. With the aim of answering the question *what do we want to solve?* Greg asked the labbers to brainstorm *areas of opportunity*; basically, what they thought could be improved in the community. These were listed as broad topics, like: ecosystem, safety, resources, generations, administration, and empowerment, amongst others.

Next, in relation to those areas of opportunity, Greg asked the labbers to generate *how might we* (HMW) questions (IDEO, 2011, 114). Hundreds of HMW questions were generated, so the following step was to cluster those that were similar. Finally, everyone voted for those that better synthesised the ‘design challenges’, and that needed to be at the same time desirable, feasible, and viable. The HMW questions with the most votes were separated from the rest and clustered by similarity, and Greg and Hei drew some insights that would help the team justify the relevance of each of the questions. These were the selected questions and the insights that justify them:

- I. Insight: El 20 is one community, but it is made up of several micro-communities that aren’t well connected to each other.

How might we bring together the needs of the community to enable acting out as one?

2. Insight: Neither the community of El 20 nor the municipal administration know how to best articulate some of the communities’ key needs.

How might we increase knowledge in market relations, value of labour and goods, and technology?

3. Insight: The craft-based focus of El 20 has very little to do with “ecotourism” but it is mostly dependent on tourism to sell their goods.

How might we unify both the story, history, and methods of their products to create a unique experience for El 20?

4. Insight: The creativity and product innovation are unique to El 20, but they are possessed by individuals who do not document their methods

How might we establish a culture of knowledge sharing?

⁶⁰ All these process summaries were taken from the ALM 2013 presentation made by the labbers at the end of their fieldtrip, and from Greg Perez’s notes from the workshop in Calakmul. For a more detailed description, see Garduño, 2007, 251–252.

During the *ideation* phase, it was concluded that 20 de Noviembre could:

- a) **Increase the extent of sharing knowledge and learning**
- b) **Create a unified way of working together and internalise a unique community identity to invite small-scale ecological tourism**

Through more concrete actions like:

- Creating a El 20 *cultural brand*

This proposal aimed to empower El 20's identity, and differentiate it from other artisan communities in the area. If all their crafts were sold under the same brand and with the same logo, whichever product that was sold would be advertising the rest. Besides marketing possibilities, sharing a brand could also mean sharing logistics and saving some money (e.g. get some wholesale price), ease the access to government programmes, seek certifications (e.g. Fair Trade), and create a common fund (e.g. for health and education). Besides the brand and logo, the labbers proposed the installation of points of purchase and the creation of mixed products that would require several artisan techniques.⁶¹

- Promoting themselves as a *community tourism* destination (rather than ecological tourism)

The labbers proposed offering tourism based on the human capital of El 20. Visitors are already attracted by the archaeological sites nearby, but the crafts and the local gastronomy could be offered to visitors as part of an experience.

- Generating physical platforms and spaces for *knowledge sharing*

The labbers identified valuable skills in both the youngsters (operating phones and computers) and the elderly (traditional crafts), so, they proposed ways in which people in El 20 could share their knowledge with one another. The Comisaría Ejidal (Government house) could become a meeting centre for all which could have a board to keep track of meetings, and would make interaction amongst groups easier. The relationship with the universities was acknowledged as a big asset, and the most should be made of it.

61 Although this was a very solid idea, it was a very traditional western solution. There was the risk that it would transform the value of money from instrumental to intrinsic. Before starting ALM 2013, I constructed a design brief that would maintain the instrumental value of money (for the sake of something else).

While the labbers were busy ideating and visualising their proposals in order to present them to the community to be validated, Xaviera and I conducted personal interviews with the labbers. At that moment, all of them appreciated the interdisciplinarity of the team and acknowledged that its value relies on bringing in various different perspectives that enable a broader analysis and perhaps a better understanding (e.g. the engineering students realised that sometimes ‘problems’ are not fully determined, while students in the fields of the humanities acknowledged the value of design and engineering minds, which are oriented to action). Additionally, they were able to understand 20 de Noviembre and its challenges a little better. They knew that they could not change anything in two days; However, all the labbers felt privileged and grateful to the people of El 20. While being treated with kindness, the labbers grew in humility.

Most of them described the moment in the community as a reciprocal relationship, where all parts brought in something special and learned from one another. The value of the labbers as visitors was that of bringing an outsider’s perspective, as a consultant or even a psychologist (as described by the labbers), which helps the locals make sense of the current situations that might have become *obvious* to them. At the same time, the labbers got to reflect on their own ways of living (i.e. on how unsustainable they are), and (the Finnish students) even started thinking that developing an Aalto LAB type of project in their own country could be, in fact, useful. Ultimately, the labbers had gained a great sense of commitment: they wanted to pay it back to the community in the form of concepts that they would find genuinely useful. They hoped to inspire at least one person to take over the task of continuing the projects.

Validation

The team returned to El 20 to present their work on 9 November. Around 25 persons attended the presentation; mainly artisans who had been interviewed, and mainly women, who decorated the space with some of their products. Eng. González, arrived towards the end of the presentation.

The presentation took place in Spanish and consisted of:

Welcome words (Claudia)

Introduction (Hei / translation: Claudia)

Team Cultural Brand (Pam and Gabo)

Team Community Tourism (Marianna and Sharoon)

Team Knowledge Sharing (Paty)

For the welcome words, I integrated the views and feelings of some of the labbers, I told them that the team was very grateful for their hospitality and that in return, we wanted to give them some concepts of projects which could potentially improve life in the community. We were no sure that they would agree with our ideas, so we invited them to be very critical. Hei

showed a drawing of three concentric circles; the core represented an individual, the second ring was dedicated to the family, and the third ring represented the community. The government and the market were represented as two external elements that needed to be bridged. So, the community should collaborate more closely, and that together, they should look for better means to collaborate with the external entities (modifying existing relationships, and creating a new assemblage). Pam and Gabo introduced the slogan “Juntos somos uno” (Together, we are one). They talked about several possibilities in which different artisans could collaborate with each other at different levels, from sharing a marketplace, to sharing a brand and logo that would help them share the stories behind the products. Humberto, who oversaw tourism within El 20, commented that this idea was very much in step with their plans. Mariana and Sharoon introduced the idea that rather than aiming at ecological tourism, El 20 had great potential to develop its community tourism. They stated that if El 20 constructed a sense of community and if they could communicate that to the outside world, there would be no need for the artisans to travel to Xpujil to sell their products; tourists would visit them instead. They proposed installing a map which could show where different families and artisans lived, and a tourism centre either in an old or a new construction. Ofelia liked that vision of the community, and she emphasised that reaching that vision depended upon implementing everything that was being suggested. Finally, Paty introduced the concept of knowledge sharing. Through a dialogue with the audience, she made the point that the people of El 20 would largely benefit from receiving training on different skills, such as repairing cars. Some of the means for exchanging knowledge included a community centre, a bookshelf, a tools library, and a bulletin board.

The municipal president arrived in the middle of Paty’s presentation, and after a brief update he gave a message to the artisans. He said that in the past, many of those proposals had been in their hands, but nothing was accomplished because of ego and lack of organisation. Evidently, when the artisans felt attacked by the government, they united. They raised their voices to argue that although in the past they had failed, time had passed, and they had learned. They thought it was time for the government to give them another chance. Then, they pointed at the “Together we are one” slogan.

It is possible that the artisans were just being polite to us, or that they were looking for governmental support, and thus their declarations of willingness to work together. We also could not be sure that the people of El 20 had completely understood the proposals of the labbers, but we let them know that upon our return to Mexico City, we would present the project to potential stakeholders who could help us in continuing the project. They replied that they expected us to return to El 20, and as a proof of faith, they decided to keep the labbers’ drawings there, at the Comisaría Ejidal.

After the presentation, one of the leaders of the artisans, Leydi invited us over to her place, she had a surprise for us. She woke up one morning at 4 to make a birthday cake for one of our team!

While we were eating the cake, Humberto (Leydi's brother) sang us a song in Mayan, which, he said, meant that they were happy that we came, and they wanted us to go back and work with them again.⁶² It was a true gesture of kindness that filled us with certainty that the community had appreciated our visit and wanted us to give continuity to our work. Then, I was comfortable with asking the labbers to prepare a presentation that would share their learning experiences, but that would also persuade the authorities from the universities, the embassies, and the municipal government of Calakmul to help us keep our promises and give continuation to Aalto LAB Mexico.

Reflecting, refining, re-briefing

Back in Mexico City, the labbers had the weekend to get ready for the presentation directed (virtually) to Ambassador Agustín Gutiérrez Canet and (face-to-face) to Ambassador Anne Lammila, the municipal president of Calakmul, authorities and students of UNAM and Tec de Monterrey and the general public. To the presentation they gave in El 20, the labbers added collaboration proposals between El 20 and education institutions, government, NGOs, and private institutions in Mexico and Finland. Their presentation was applauded by the audience, the ambassadors expressed their appreciation and support, and the representatives of the universities expressed their wish to give continuation to the project.

After the presentation, the process continued mainly in Mexico, where a couple of workshops were run in order to integrate the reports of our experts, Omar and Rodolfo, but also the expert observations of the labbers, into the ALM 2012 report. We had not been able to gather all the relevant information by making use of the HCD methods, given that people were simply unaware of some issues (i.e. technical matters, like their electric installations being unsafe). Furthermore, the engagement of stakeholders gained in their presentation at UNAM actually enabled ALM to make bigger plans for long-term collaboration.

We worked in visualizing what El 20 might become once all the different proposals had been implemented. Then, we generated diagrams that showed that vision on three different scales (The big picture: The whole community, The creative identity: All artisan groups, and Livelihood: Each household), and which described ideal systems as closed cycles (sustainable) showing the status of each system (existing, partially existing, or non-existent).

62 Which can be seen in the film by Antti Seppänen, here: <http://acs.aalto.fi/2012/aalto-lab-mexico-video/>

Understanding El 20, rethinking poverties

The labbers had studied neither the Greek household nor the Greek oikonomy, but they had observed an alternative way of living that is not based on the money economy. Unlike what happens in the city, the people of El 20 largely live from what they produce. corn, beans, and squash (most times, also chili). Some of them also have livestock. Their diet is complemented with other crops, including fruits and vegetables that are grown in their parcels or in their home yards, where they also have chickens and turkeys that provide them mainly with eggs and, on more special occasions, with meat. Furthermore, they are allowed to hunt if they find prey on their own lands, which means that on a lucky day, they might eat deer, pheasant, or other local species. Most of the water they use is harvested from the rain; otherwise, it is extracted from the wells or, in the case of drought, it is distributed by the municipality. Rather than speaking of this as a subsistence farming community, we could talk about it as a self-sufficient one, at least to a certain extent, and especially if the weather is benevolent.

However, the people of El 20 enjoy certain public services (e.g. electricity) that have to be paid for with money, and here is where a mismatch is identified. Everyone in the community has a series of strategies for making money. Livestock⁶³, is a currency that helps them pay big debts. The apiculturists, gather the production of several families and sell it to a single buyer, then they distribute the earnings. Through the forest preservation programmes, the government pays some money to the ejido, which is later distributed amongst the families of the ejidatarios; from the latter, they do not earn much; moreover, this is a type of practice that Max-Neef (1989) would criticise for promoting dependency rather than reinforcing autonomy. With the money they earn, they struggle to pay their taxes and the fees charged by their services providers (predial and electricity)⁶⁴. The junior high school, high school, and the nearest basic hospital, are located in Xpujil, (15 km away from El 20), to get there, people have to either make use of their own vehicles or then take a taxi, which charges 60 pesos for a single ride (in Mexico City, a single ride in the metro costs 5 pesos). Additionally, often the services that are offered in Xpujil are insufficient (like in the medical emergency described at the beginning of this work), which requires people to travel further away or even obtain them from the private sector. Hence, not having a salary results in them being marginalised, because it prevents them from enjoying certain services. For most people, it might be more than obvious that if they do not pay taxes, they do not enjoy any benefits from the state. However, what is less obvious is that the two systems or paradigms within which their lives develop are incommensurable.

63 Livestock is a delicate topic though, since although it is profitable, it is one of the most unsustainable practices in the region, and one of those that is being discouraged by environmental programmes, including the Territorial Sorting Analysis of Calakmul (Arreola et al. n.d.).

64 Mobile phone bills were not mentioned as one of their main expenses, but we can see their use is growing; however, they use prepaid services.

The government would not grant a salary to all subsistence farmers in the country, and so grant them access to the healthcare and social security systems, at least not in the near future. However, there could be some way in which the community could actively participate in counteracting the situation of marginalisation in which they live and ultimately achieve the expansion of their capabilities.

Mexicans in Finland, another way of building a team

The greatest achievement of ALM 2012 was guaranteeing the continuation of the project. By request of Susu Nousala and a decision by Tiina Laurila, ALM was incorporated as a project to the Creative Sustainability Programme of Aalto ARTS. This was the first time that we were faced with the possibility to turn the project into a longitudinal one.

The opportunity to organise a summer workshop in Finland which could work as the recruitment process for ALM 2013 emerged at the beginning of the year; during two weeks, the students would meet each other and we would have the opportunity to observe them working together. From 3 June to 14 June 2013, Susu Nousala hosted a summer course called “Challenging the Mindset” for 18 students who came from Aalto University, Tec de Monterrey, and UNAM. The main topics of the workshop were water and governance, which would be tackled throughout various short workshops that took place at Aalto Service Factory, Aalto Design Factory, Aalto Media Factory, and in Suomenlinna. The workshops counted with the kind participation of teachers and researchers of all schools in Aalto, and it was documented by Antti Seppänen, Jan Ahlstedt, and Roman Lihhavgshuk⁶⁵.

⁶⁵ The video filmed and edited by Roman can be seen here: <http://acs.aalto.fi/category/cs-experience/?filter=challenging-the-mindset>

Aalto LAB México 2013-2014

This was the first time that an Aalto LAB had *continuation*. With help of the labbers, it was determined that an Aalto LAB would not only refer to a diagnosis, but to the whole process. Thus, the design process continued through a second learning cycle.

This time, I had the task of providing the labbers with partially defined project briefs, which was possible because we had a clearer understanding of El 20, and we had three concepts generated by the labbers of 2012 (the cultural brand, knowledge sharing, and community tourism); also, we had got expert recommendations by Rodolfo (infrastructure) and Omar (water). Additionally, we had integrated all that in an ideal scenario for El 20.

I tried to respect the work of the labbers as much as possible when cutting the ideal scenario into three new briefs. Knowledge exchange and community tourism included designing a space, which opened the possibility to develop some architectural experiments that would include Rodolfo's observations, as well as those of the architects and designers. The cultural brand project had the noble goal of uniting the community; but I was concerned about the possibility of conveying an intrinsic value of money. In their presentation in the community, the labbers had mentioned the possibility of using the extra money for very necessary matters, such as medical emergencies. By using the Design Capitalia framework to analyse the story presented in the preface, I concluded that better access to the healthcare system was a priority. Finally, although I did not understand the relevance of studying water, I trusted Omar's expert opinion.

We would soon encounter the difficult problem of integrating new labbers after the design process has already started⁶⁶. It seems to be easier to spread the attitude than to transfer (practical) knowledge; these types of projects cannot be advanced without visiting the site. Nevertheless, new labbers help the team to maintain the scepticism about their previous findings.

The ALM 2013 (design) team

Some of the labbers of 2013 were directly invited given their performance in the summer workshop, and others wrote an essay as an application, as it happened in 2012. Finally, this was the team:

⁶⁶ We dedicated an article to the subject. See: Berg, Kajamaa, and Garduño, 2014.

Name	University	Field	Nationality
Ismo Sutela	Aalto University	Bioproduct Technology	Finnish
Suvi Kajamaa	Aalto University	Creative Sustainability/ Design	Finnish
Theresa Berg	Aalto University	International Design Business Management/ Design	Finnish/Swedish
Flynn	Lewer	Creative Sustainability/ Architecture	New Zealander
Gabriel Calvillo*	UNAM	Industrial Design	Mexican
Juan Vértiz*	UNAM	Industrial Design	Mexican
Isela Ramírez	Tec de Monterrey	Industrial Design	Mexican
Pamela Chantiri*	Tec de Monterrey	Engineering in Sustainable Development	Mexican

Table 4. The labbers of ALM 2013. * Participated in AML 2012.

The overall structure changed as well; this time, three teams were created, each of them would develop one out of three briefs for three subprojects. Each team had its own facilitator (Xaviera, Areli, and Lucero) and an interdisciplinary group of experts ranging from law to architecture, biology, and engineering. In this chapter, the stories of each project are told independently, but the following paragraphs tell general stories, relevant to all. After visiting El 20 in 2012, some youngsters from the community got in touch with the ALM team through Facebook. Through that means, ALM 2013 was challenged to a football match, an activity that added to the reciprocal relationship between locals and visitors; and it helped the team act ‘as a team’. Moreover, by showing ourselves to be silly and vulnerable (evidently, ALM lost the match), we managed to overcome some initial barriers and perhaps lost the quality of ‘strangers’⁶⁷.

Most days were spent in El 20 (we also visited the archaeological site of Calakmul), and all nights were spent in Zoh-Laguna (apart from one night when *the guys*, Juan, Ismo, Flynn, stayed in El 20, where the team had time to reflect on and discuss what had happened through the day,

⁶⁷ It is relevant to point out that while a trusting relationship started to be built in 2012, there were many new faces in 2013, and especially the ones who were in EL 20 for the first time truly appreciated the experience as an activity that efficiently bridged locals and visitors. A fun review of the match by Alastair can be read here: <https://aaltolabmexico.wordpress.com/2013/11/13/friday-november-1st-by-alastair-fuad-luke/>

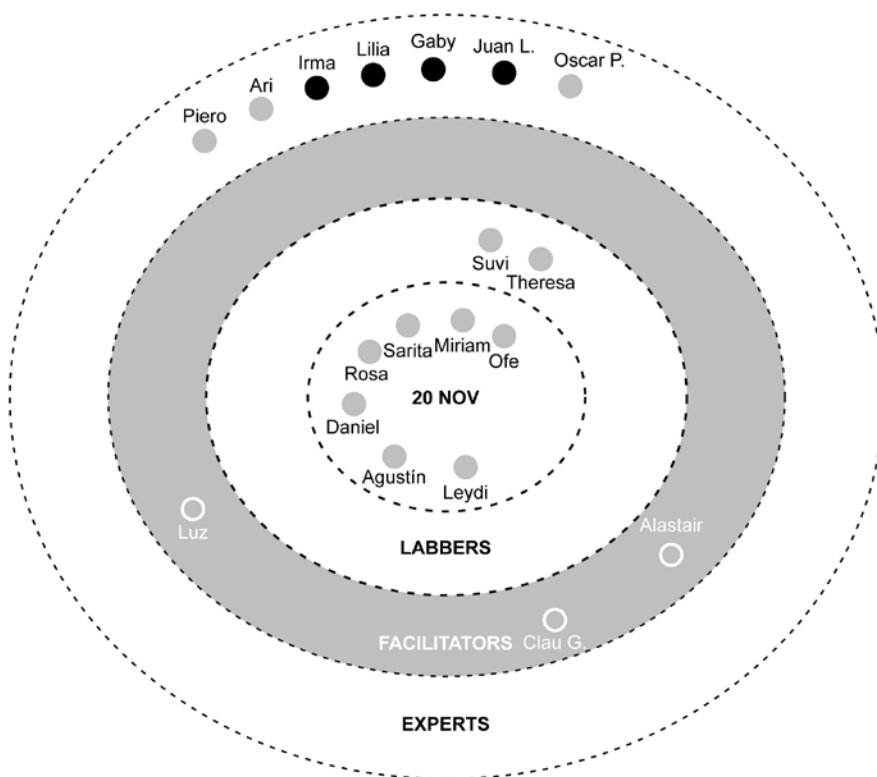


Figure 14. Full network ALM 2013- Artesanía para el Bienestar. By Claudia Garduño.

and to build their team spirit, of course. The most heated discussion took place on the night of Monday 4 November, after ALM's fourth visit to El 20, and which can be summarized as:

Why are we here?

The new labbers were concerned that they did not notice that any of the ALM 2012 proposals had been implemented; however, there were some small changes. For instance, Agustín, the master hammock-maker who was unable to teach workshops with support from the government because he could not read or write, had already imparted a workshop; he had shared his technique with women and with some elderly men. Rosa had taken a loan and bought a large amount of thread for weaving hammocks, which she was also selling to other women in the community. Those actions might or might not have been inspired by ALM 2012, but they definitely bear a resemblance to the concepts of *knowledge sharing* and *cultural brand*.

These small changes were invisible also in the eyes of the community, since in their talks with the local people, they perceived that the community was unaware of the motive for our visits. Juan recalled his conversation while walking with Victor, a teenager who seemed very puzzled

by our visit and directly asked why we were there. Juan could only reply that we wanted to see how they did stuff; he had no clear answer to give. As they continued walking, Juan picked up a stone that caught his eye, and asked Victor what it was. It was limestone, but Victor could not understand what could be special about it, until Juan said it was really beautiful. As they continued walking, Victor helped Juan to find more of those stones⁶⁸. While reflecting on this story, we arrived at the conclusion that ALM's greatest contribution to the community, as had somehow been discussed already in 2012, was to function as a mirror and "reflect the positive qualities that the community had but did not see as valuable" (Berg, Kajamaa, & Garduño, 2014). So, if Victor planned to leave El 20 when growing up, perhaps he was reflecting on the identity of the community and even feeling proud to belong to it. Even if he left, hopefully, he could be released from any feeling of shame, speaking in an ideal manner.

The visit to the community ended with an open presentation to the community. There was also a presentation hosted by the Embassy of Finland, which guaranteed the neutrality of the event⁶⁹. Additionally, this time we had the opportunity to submit a project to the crowdfunding platform *Transformadora Ciel* (run by Coca Cola).

Water project

The head of the reserve in the Biosphere of Calakmul, José Alberto Zúñiga Morales, pointed out that their research indicated that "the water resource is being compromised owing to current changes in the region's climate conditions" (Chantiri et al., 2014). Life in El 20 is dependent on their crops, and their crops are dependent on the rain; therefore, a drought might simultaneously leave them without water and food. Its high dependence on ecosystem services (elements the environment provides through its natural processes) makes El 20 highly vulnerable to climate change (ibid.).

In the city of Campeche, there is a statue of a man and his donkey, which carries a barrel that contains rainwater for sale; proving that people from the region, are used to consuming rainwater. This practice can be justified by the soil's extreme richness in calcium, for which reason ground water is not considered suitable for drinking or for irrigation (Government of Campeche, 2005, in Arreola et al., n.d., 13). Due to the suspicion that hardness in water in the long run, may cause kidney and bladder stones, people have been discouraged from drinking

68 This was the object that Juan brought to the "Lo que amamos del 20 de Noviembre" (What we love of El 20), which will be described in Cultural Brand project section.

69 UNAM and Tec de Monterrey are the two best universities in the county and are not used to collaborating; hosting the event at neither of their facilities guaranteed neutrality.

well water, and rainwater harvesting systems have been encouraged, including 12000-litres-tanks made of concrete, which were installed between 2011 and 2012 by the Commission for Indigenous Towns, and the Secretariat of Social Development on collaboration with NGO's.

The rainwater harvesting systems were installed in a period through which rain levels were particularly high and the rain seasons extraordinarily long; so, whether their capacity would be enough during a long drought period, was a question that remained unanswered. Most strikingly, we did not know the quality of the water that they drink in El 20. Therefore, their human right to water (UNDESA, 2010) was possibly being violated. These were the indeterminate circumstances in which the water project started.

Preparation period

The labbers selected for this project were Pamela Chantiri (Engineering in Sustainable Development), Ismo Sutela (School of Chemical Technology), and Isela Ramírez (Industrial Design). The facilitator was Xaviera Sánchez de la Barquera, and the experts were Omar Rojas, Fernando Méndez (UAM / MX), Jussi Alaputto (Business Professionals Group/ FIN), Renata Fenton and Hiram García (Isla Urbana/ MX), and Pablo Monterrubio (Proyecto Tierra / MX).

A few days after the kick-off session, Omar and I visited El 20 with the main purpose of collecting water samples which would be tested in Mexico City. Knowing the water quality was crucial, however, the analyses would take a few weeks⁷⁰. Based on the first-hand experience of Xavi and Pam, the team started by discussing issues like limestone in the soil, organisms in water (like dengue), and water harvesting systems. Early in the process, the team agreed to map the water system and deliver a water management plan for El 20. Pam suggested to investigate: *Where does the water come from? How is it collected? How is it transported? What is it used for? What is the water quality? How is it disposed of? Can it be reused?*

The results of the analyses were interpreted with help of Pablo Monterrubio. The water quality was not terrible, but it could definitely be improved. The hardness of the water, which was found in all the tests, continued to puzzle the whole team. Maybe the dust had generated sediment on the rooftops, or the plastic containers could be dirty; or that there could be some type of error when taking the samples. In any case, purifying hard water that also contains microorganisms is not simple or cheap. If water is boiled, microorganisms are killed, but the water gets even harder. There was at least one unidentified element in the assemblage that was preventing people in the community from enjoying a basic human right. Two feasible alternatives were chlorine and UV filtering.

⁷⁰ Fernando Méndez González, from Universidad Autónoma Metropolitana (UAM) helped us with these analyses.

Before travelling to Calakmul, the team decided that they would first conduct a workshop to understand the situation; next, they wanted to observe and participate in the process. Finally, they would make sense of what they learned and deliver a manual.

Visit to El 20

The first thing that this team did in the community was conducting a workshop with 7 women, at which they asked about the water sources and its uses in El 20. Later, they visited some families and asked for permission to collaborate in washing the dishes, which was difficult for the people of El 20, who are not used to allow their hosts to participate in the daily chores, and it was especially strange to see a man doing it (Ismo)⁷¹.

The exploration made the team confused because the information they researched before their visit was not news in the community, but existing knowledge. However, they found that the practices varied from house to house, they wanted to know more, and they did not have much time, so they developed a rustic probing system. They made ‘cards’ representing users and uses, and they also depicted the sources. Then they asked people to place the cards in accordance with their practices. They concluded that most people do not have preventive sanitary practices, for which reason, they were lacking a basic human right (Chantiri et al., 2014).

Before leaving the community, the labbers built the prototype of a rack to hold bottles at the right angle for UV filtration, a probable alternative for purifying water which would kill microorganisms without making the water harder and without changing its flavour⁷².

After the visit to El 20

The partial results of the Water project of ALM were synthesised in *Aalto LAB Mexico: Co-designing to Maintain Ecosystem Services* (Chantiri et al., 2014), which was presented at the conference “Design for Sustainable Well-being and Empowerment”, in June, 2014. In this paper, environmental scientists acknowledge the role of designers in a collaborative project with the local people, while designers acknowledge the role of environmental experts in a sustainable project. Rather than declaring the end of the project, it states that continuation is necessary and desirable.

71 Activities in El 20 are greatly gendered. Women take care of household chores.

72 Although the labbers explained to the community members that water bottles could not be too thick, and therefore preferred certain PET format, in the final presentation, they were warned that PET is a permeable material (it has tiny holes) which could collect bacteria, for which reason, when following up with this project, this information should also be shared with people in El 20.

Between August and September 2014, it was agreed with the Sustainable Global Technologies (run by the research programme in Water and Environmental Engineering in Aalto University), coordinated by Matleena Muhonen, that Aalto LAB Mexico would become one of the case studies within the programme. At the beginning of September 2014, a funding application was submitted to the Ministry of Foreign Affairs of Finland through Aalto Global Impact, which was signed by the dean of the School of Business, Ingmar Björkman, which turned out positive. Having the Water project as its main topic, ALM 2015 was granted nearly 28,000 euros.



Figure 15. Design probes (Mattelmäki 2006) were developed as a tool to fasten the interview process. In each household, the inhabitants could relate the different sources with the users and with the uses. Photo by Jan Ahlstedt

From Cultural Brand to Artesanía para el Bienestar

The second project was based on the Cultural Brand (CB) concept that was generated by the labbers of 2012. This concept had the main goal of uniting the community, while making them stronger. By working together, they could reduce costs and have more money available for whenever it was needed. Although the proposal was very noble, it was too *western* because it valued money intrinsically (as an end), rather than valuing it instrumentally (as a means).

However, by imagining an ideal scenario for El 20, we were able to envision relationships which potentially helped the community to overcome some of its greatest challenges, including

access to the health care system, high level education, and communication systems. In this ideal scenario, their craft production was seen as bridge towards those services. Additionally, we knew that the Mexican Healthcare System is extremely complicated, but we assumed that some special healthcare programs for rural and indigenous populations should exist already. Therefore, the challenge was to find opportunities in the Mexican legislation system and to design a strategy through which the people of El 20 could gain access to healthcare services⁷³ in Mexico, by making use of the cultural brand concept.

Preparation period

The team was formed by Suvi Kajamaa (Creative Sustainability/Design), and Theresa Berg (International Design Business Management/Design) as labbers. Lucero De la Huerta, worked as a facilitator-labber⁷⁴. The experts were Gabriela Yáñez (doctoral student in Public Policy / Tec CCM), Lilia Alonzo (White & Case/ MX), Juan Ledón (Ecosite/ MX), Irma Uribe (Fundación Idea/ MX), Oscar Person (Aalto IDBM/ FIN), and Ariadna Stamatio and Piero Torio (Peek Toys/ MX).

The first explorations, guided by the experts were dedicated to understanding the Mexican Healthcare System with the aim of identifying the possibilities that, within it, an indigenous community has. The task was especially difficult for Suvi and Theresa, from whose *Nordic* perspective, the fact that a national healthcare system is not universal does not make much sense. It could be said that Suvi and Theresa played the role of an *impartial spectator* (term coined by Adam Smith, and used by Sen); they enabled us to say that a national healthcare system that is not universal, although legal, is unjust. The challenge, therefore, was to *design* a strategy that would make the situation less unjust.

After reviewing the concept of cultural brand, they concluded that it would most probably not be very beneficial to integrate all the artisans in a single brand (especially not for the best ones). They redefined the challenge by aiming at increasing profits rather than that to reducing costs, and they decided to focus on wellbeing and not specifically on health. However, they were concerned about the possibility that their proposal could affect the role of money in the community and push them towards consumerism. They understood that this was a difficult and complex task and that it required them to understand the community and the culture of El 20 well enough.

In Mexico, with help of Irma Uribe, we learned that besides Seguro Popular, there was a new possibility to be affiliated to the IMSS by paying a voluntary yearly fee. However, the best

⁷³ Health was determined to be a priority over education or communication.

⁷⁴ Unfortunately, for external reasons, the Mexican members of the team quit the project.

coverage was achieved by a combination of both. We concluded that a *health stamp* could be the means by which the artisans could increase their profits and gain access to the healthcare system, as well as the start of a long-term strategy.

The team planned to start their visit to El 20 with an exploration. Next, they would organise a collective exhibition ‘What we love about 20 de Noviembre’ or ‘Objects of love’, where the labbers and people from the community would be asked to bring their favourite item from El 20, and share a common experience. Finally, they would explore the health route in the community and develop a co-design workshop with the artisans. Their final remarks would be delivered to the community on the last day, during the presentations.

Visit to El 20

After the football match, the labbers walked around the community inviting everyone to participate in ‘Lo que amamos del 20 de Noviembre’ the following morning. On Saturday, November 2nd, several women and children showed up in the Comisaría Ejidal with their objects. Most of the women brought products they had made themselves, perhaps with the intention to sell; but many of them showed their objects with a sense of pride. The labbers, had brought craft pieces they had bought from the artisans, but also elements from the surroundings, like flowers. Every time a labber introduced an object, their role as a mirror was put into practice, highlighting the vibrant colours, the nature, their craft-making, their autonomy, or their quality as football players.

The exhibition brought different artisan groups together, which allowed the team to meet different artisans and schedule visits to their workshops. For the sake of communicating the story of their process they classified the artisans into three groups. *Passionate artisans*, were those whose living does not depend on the sale of crafts, but they enjoy the process; like Rosa, who weaves hammocks to *leave all her sorrows behind*. Others are *more organised* and keep healthy relationships with external stakeholders, they have a leader, workers, a workshop and a store; which is the case of Sarita, who has the largest textile workshop, or Ofelia, the head of the wood artisans. Finally, there are those *designers*, who are visionaries and who enjoy inventing new things, like Miriam (wood craft), Agustín (hammocks), and Daniel (furniture). From their observations, the team inferred that there were different perspectives around the value of money, so it would be more indispensable for single mothers than for large families where several men worked together on the family harvests.

The team also identified another opportunity in the artisans sharing with their clients the stories behind their products, narratives that made them unique. For instance, the wood used by the artisans is collected with the support of the National Forestry Commission (CONAFOR), where only fallen trees can be collected, which is also the manner in which the forests are cleaned in



Photo by Jan Ahlstedt



Figure 16. A variety of crafts are made in El 20, fom furniture and small wooden objects to cloth embroidery, hammock weaving, jewellery, and painting. Photos by Jan Ahlstedt.



Figure 17. Logotypes for “Artesanía para el Bienestar”

order to prevent forest fires. Those narratives could increase the price of their products and raise their profits, which would enable them to create a communal fund.

Their investigation of the healthcare route was made possible through the coincidental monthly visit of Dr. Claudia Mena, who explained that the geographic location of El 20 on the border between two states, made it especially complicated. Unfortunately, Alastair suffered an accident and broke his collar bone, but his experience provided the team with a user's perspective into that route. The x-ray machine was broken in Xpujil; so, he had to be taken to Chetumal. The trip plus service cost nearly 5000 pesos. We learned that a serious health issue in the community is a huge financial and logistical challenge.

On 7 November 2013, due to the trusting relationship that had been created through their stay in the community, Suvi and Theresa were able to develop a co-design workshop with artisans, where they introduced some *business and design thinking*. They also gathered material from the workshop, and finalised the strategy of the health stamp, according to which, the prices of their products could be increased through storytelling, and for a good reason. Additionally, there was the possibility to label some of their products with the health stamp, which would make them more expensive, but the extra amount would be saved in a common fund for healthcare emergencies. The first goal within the long-term strategy was to raise enough money to cover an emergency, but eventually, they could raise enough money to pay the voluntary fees for IMSS.

Upon our return to Mexico City, Theresa and Suvi continued to be dissatisfied with the name of their project. Cultural Brand was not descriptive anymore. So, after much deliberation, they decided to rename the project 'Artesanía para el Bienestar' (Artistry/Craft for Well-being), a process that empowers the community to be the owners of their future development (Berg, Kajamaa, & Garduño, 2014).

After the visit to El 20

After the ALM 2013 presentation in Mexico City, Ariadna Stamatios and Piero Torio expressed their willingness to help ALM prototype Artesanía para el Bienestar. The process continued slowly, mainly because everyone was based in a different location. However, at the beginning of 2014, Theresa and Suvi created a small set with instructions for Ofelia and Miriam, where they were asked to think of a symbol for health or well-being in El 20, and to draw some sketches to design the stamp. During the trip to El 20 that took place in April 2014, Theresa and Suvi's guide was delivered Miriam and Ofelia, who quickly concluded that the symbol had to be a young ceiba tree (with spines). During a brief drawing session, Miriam sketched a tree. Later on, Theresa digitalised the drawings and Peek Toys printed some stamps to help us prototype the incipient service in ALM 2015.

Additionally, determined to share what they had learned from the visit to EL 20, the following article was developed: *Benefits of Design Practice in Fieldwork: How “Artesanía para el Bienestar” (Artistry for Well-being) emerged in the field as a concept to improve access to healthcare in a Mayan community in Campeche, Mexico* (Berg, Kajamaa, & Garduño, 2014), which was presented at the conference “Relating Systems and Design Research 3”, which took place in Oslo, in October 2014.

Eco-hostel

In general, each household in El 20 is built within a piece of land of 20 x 40 metres; approximately half of the land is left unbuilt and works as a yard, where people keep fowl, and edible plants. The houses, are formed by several buildings which mix: walls made from vertical wood sticks (bamboo-like) and rooftops made from palm leaves, walls made from wooden planks and rooftops made from corrugated tin, and walls made from bricks and rooftops made from corrugated cardboard. The floors are made of polished cement, and the roofs, regardless of the material they are made from, are gabled and high. The eclecticism of El 20 puzzles architects and designers.

Entering a typical house, the first space one encounters is a common area that works as a living room and which is furnished with wooden chairs, sofas, and hammocks; also, televisions and

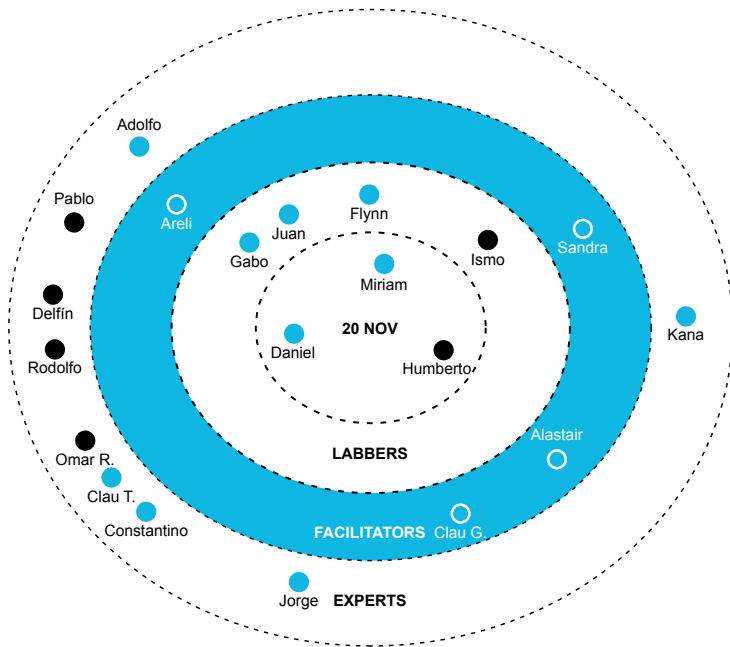


Figure 18. ALM 2012- Ecobotel full network.

sound systems showcased in display cabinets made from solid wood. Other spaces within the house are divided with short wooden walls that do not reach the ceiling; commonly, hanging cloths work as doors. Some bedrooms have beds, but all have hammocks, which are preferred by the people of El 20, especially in the hottest seasons. The houses might have latrines or flush-toilets that are flushed with water that is collected from concrete tanks or from wells using buckets. Those bathrooms also have a designated space for washing, an activity for which they also need to carry water in a bucket. In the hot season, this water is not warmed up, but in winter time, a pot of water is heated on an outdoor fire or on the kitchen stove. The kitchens, are more intimate spaces than the living rooms, where families gather. The kitchens are typically built from wood and have direct access to the yard, and are furnished with big tables, numerous chairs, and a hammock. They might have up to three stoves: a gas burner, one built by the Ministry of Social Development (SEDESOL), and the original ones built by the villagers, which could be described as a box of 100 cm x 100 cm x 30 cm with legs, so that the tallest point reaches some 80 cm in height; the box is filled with tightly compressed ash, on top of which a pair of twigs are lit from the tip. The latter continue to be the ones they prefer. It is also common for them to have refrigerators and washing machines, but these are not commonly placed in the kitchen.

Ofé's shop is built in the traditional Mayan style, like the ones from Dzitbalché, and like the one that is exhibited in the Ethnography room at the National Museum of Anthropology in Mexico City. Mayan houses can be square, but in El 20, as in the museum, the shape results from the intersection of three figures: two tangent circles and a square inscribed between its touching halves (Rivas Gutiérrez, 2012). The main structure, which carries the roof, is made from the hardest woods they can find in the jungle, for example, zapote. The roof is built with a skeleton made from thin logs into which between 10 and 20 guanos (a palm leaf) per metre are woven. The only wall is made of bamboo-like sticks, called *tulum*, which are placed vertically covering the full perimeter except for the door space. The tulum sticks are held together with a mixture of mud and hay on the bottom part (which covers around a metre and a half of the height) and the upper edges are woven with thin twigs.

Similar structures can be found around El 20, but always agglomerated with structures built in either of the other two styles. The eclectic style of El 20 might have resulted from a historic process; however, when architects and designers visit El 20, there is a shared concern that the traditional Mayan style is at risk of disappearing.

The second generation of houses, seems to have been influenced by the ones that Polish migrants who operated the company by the name of Caobas Mexicanas (Mexican Mahogany), between 1950's and 1980's, built in Zoh-Laguna; they have four gable roofs and the walls are made from mahogany planks. The thermal qualities of the Polish high ceilings, designed for cold weather, kept these houses in Calakmul fresh; nonetheless, making them lower in order to make them cheaper caused the original design to lose its thermal properties.

Other elements, such as the cement floor, were introduced in more recent times, through the implementation of government programmes for the development of *the most highly marginalised* regions in the country. Calakmul is within the most highly marginalised municipalities in Mexico (CONEVAL, 2010), and therefore a beneficiary of those programmes. Among the different criteria that are measured before concluding that a population lives in poverty condition, two relate to the topic of housing: access to basic services and quality of living spaces. In accordance with those indicators, many homes in El 20, including the Mayan house are poor because they use wells as water sources, they have no draining system, they cook with wood, and their walls are made from bamboo and mud.

The new constructions in El 20 were built as part of a programme to tackle poverty, a collaboration between the Federal Government, the State Government, and construction agencies, under the modality of assisted self-construction on one's own land (Gobierno de Campeche, 2010). The model that was introduced in El 20 is described as ecological and the result of a participatory process; however, it was designed for Xpujil and it does not satisfy the needs of a Mayan community⁷⁵. Thus, these new constructions did not replace the original structures of El 20; instead, they were added to the intricate and eclectic complexes, and many times, they remain empty.

The exact same phenomenon can be observed in El 20, and in Guatemala; the Mayan traditional house, which was totally adapted to that weather, a construction of low environmental impact and easy maintenance, and furthermore, a construction that was *designed* by these people (Rivas, 2012), is nowadays *the house of the poor*, and therefore undesirable (Davidson, 2002). No one wants to be stigmatised as poor; people want houses of (industrially manufactured) material(s), even if the spaces will not be used. Hence, they are merely symbols of status.

ALM noticed that the government did not have a comprehensive or holistic enough perspective of the region (or perhaps, the country). No coordination seemed to exist among environmental and social programmes. It might just not be suitable for a country that is as environmentally and culturally diverse as Mexico to measure poverty with very specific indicators. In fact, it seems that great potential gets wasted when designing for the development of indigenous towns without inviting them to be part of that process; for they are not only experts on their own lives, but they also know their ecosystems very well. It might even happen that we would suddenly envision a very alternative and sustainable future.

The third challenge of ALM 2013 was to design an archetype of a sustainable household for El 20, which could become a construction model and a living experiment which might inspire people to build in that way. It had to take into consideration both climatic conditions and

⁷⁵ Remember that the Municipality of Calakmul was settled by migrants from over 20 states within Mexico, and out of 82 communities which are part of it, El 20 is the only Mayan one.



Figure 19. Gabo, Juan and Flynn interviewing the community's construction expert. Photo by Jan Ahlstedt.

locally available materials, and also the community's cultural heritage; thus, it had to pay respect to the local wisdom and rescue the elements that make the Mayan house so suitable for that environment and its climate. Additionally, it could add new elements such as a water collection system or clean energy. The archetype would be common property; following the proposals of ALM 2012, it had to be dedicated to strengthening the touristic industry of El 20.

Preparation period

The labbers for the Eco-hostel project were Juan Vértiz (industrial design), Gabriel Calvillo (industrial design), and Flynn Lewer (architecture). Areli Maciel was the facilitator and the consulted experts were Arch. Jorge Calvillo (Universidad Iberoamericana / MX), Adolfo Balfre (CIDI-UNAM), engineer Rodolfo Alvarado (Yectlahuilli/ MX), Pablo Monterrubio and Antonio Jacintos (Proyecto Tierra/MX), M.A. Kana Nakanishi (Solar Decathlon, 2010), and Delfín Montañana (biologist/ MX).

Flynn was very active in conducting individual research. For instance, he found an article (Davidson, 2002), which criticised a humanitarian project in Guatemala, for which was insensitive and inappropriate to the local communities as a result of being defined by western values⁷⁶. In Mexico, Juan and Gabo, mentored by the experts determined that they would need

⁷⁶ Read the full text here: <https://aaltolabmexico.wordpress.com/2013/09/24/impact-of-western-cultural-values-on-traditional-mayan-housing>

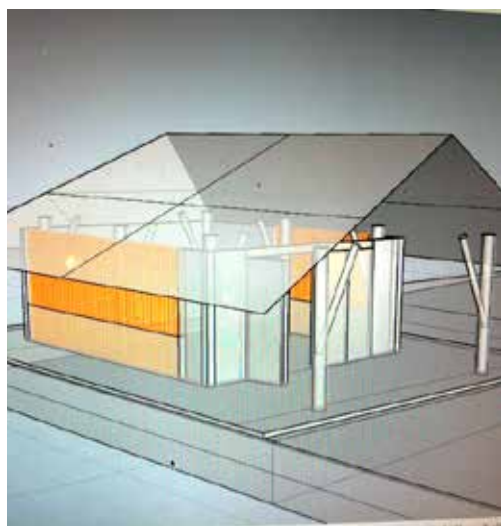


Figure 20. 3D-model by Gabriel Calvillo and mock-up by Juan. Photo by Juan Vértiz.

to get to know the place, make a catalogue of local materials, and a catalogue of technologies. Additionally, they framed two possible concepts for the Eco-hostel, a completely new building, or conceptualising the whole community of El 20 as a hostel by making use of the existing infrastructure and services. They also identified the need to connect the community and the tourists to internet. Moreover, if tourism was to be truly ecological, the internal capacity of the community to receive visitors had to be estimated, it had to be energetically self-sufficient and have lowest-possible carbon footprint. Later, they envisioned that the space could be used for *knowledge sharing*. Metaphorically, the community could be seen as a seed and ecotourism would become the water that would help it bloom.

For the visit to El 20, this team planned to first talk to the people involved in tourism and visit the existing infrastructure. Later on, they hoped to role-play tourists with people from the community, and finish by mapping the tourist's experience.

Visit to El 20

Once in El 20, the team asked to see everything related to tourism. Between half-built-huts which are reached by walking a kilometre along a muddy road and the top of a mountain, from where the smoke of the kitchens warmly welcomed them, the labbers, as tourists would prefer to stay in the latter, which is also within the community. Coincidentally, an NGO was visiting El 20 at the same time, looking for a project to finance with some exceeding funds. Humberto, who oversaw tourism in El 20, told them about their plans to build a tourist information centre and craft shop, a concept which was very much in step with ours. So, we expressed our interest to join efforts and support that construction with our work and crowdfunding campaign.

Next, they spoke with key persons in the construction field, Daniel and his brothers, some other young men, and with Miriam. Then, they were able to identify the advantages and disadvantages of each material (e.g. palm rooftops are fresher and easier to maintain and replace but can get burnt accidentally, while metallic rooftops are better for harvesting rainwater and are ‘fire proof’).

With the aim of identifying what tourists would require, and what was still missing, as well as imagining what the space would be used for when there were no tourists, they invited people to join them in some brainstorming sessions where cards that illustrated services and attractions were used. Although only a couple of elderly people participated in this session, key matters were defined. The team determined that they were designing a unifying element with the potential to bring different groups and industries together. The hostel would follow the current disaggregated model, but it would have a reception and management centre, with computers and internet connection, enabling children to do their homework⁷⁷.

Flynn was very concerned about imposing his ideas, but he finally got encouraged to draw the top and frontal drawings of a house that integrated the preferences of the people of El 20. During the presentation, these drawings were used to start a conversation and ask people their opinion.

Crowdfunding the Eco-hostel

Mauricio Luna, from the crowdfunding platform *Transformadora Ciel*, expressed his belief that Aalto LAB Mexico was a suitable project for their platform, but we were not sure that asking for money from Coca Cola was the right thing to do. Ariadna and Piero encouraged us to apply, for this platform offered the advantage of covering half of the initial sum. We finally decided that if the company was making a profit in the community, it seemed fair to have it sponsor a project that would actually benefit its people. We decided to submit the Eco-hostel project because it was the most tangible amongst the three. We were given a month and a half to raise the money, 100,000.00 MXN, in exchange for crafts and pictures, in order to get a total of 200,000.00. The goal was reached just one hour before the deadline, becoming the first joint accomplishment of ALM and El 20.

The unexpected happened while designing

In January 2014, the process for the architectural design finally started. The participants were Pam, Isela, Juan, and Gabo. The process was supervised by the architects Jorge Calvillo, Claudia Tamayo (Tec de Monterrey), Juan Carlos Alvear (Tec de Monterrey), and Valerie Auvinet (Universidad Iberoamericana).

⁷⁷ This was especially relevant for those attending junior high school and high school, who do and send their homework from Xpujil, which is costly and worrying for the mothers for the dark freeway is of course, a real risk.



Figure 21. (right) Only César (with the pick) was helpful in the construction site. Picture by Jan Ahlstedt.



Figure 22. (left) The rest of us worked in solving design details. Picture by Jan Ahlstedt.

Figure 23. Petal of a flower given by a girl, and quote by Juan Carlos Alvear. Picture by Jan Ahlstedt.

Figure 24. (below) A night meeting with Daniel and Rogelio, to check the design of the Eco-hostel. Photo by Jan Ahlstedt.





Photo by Jan Ablstedt

After working for several months, we received a message from El 20, letting us know that the local NGO with which we were supposed to collaborate, had been subjected to much pressure by a group of people in the community, and the construction was starting without our design. Evidently, this made all the labbers feel very discouraged, but they were reminded that they were designing an archetype, and we could find alternatives for its implementation. The next step was to organise an extraordinary visit to the community.

Learning the politics of El 20

Juan, Gabo, and I left for El 20 to meet the governing body of El 20. These men reported that the construction that had been started would be used as a store; however, they were extremely interested in the proposal of having computers for the children. We finally agreed to generate alternatives.

One choice was to continue the construction that had been started. However, its quality could be very poor, as it was built without drawings or plans. Groups formed by four men would take daily turns on the construction site, and what gets made one day can be unmade the following day. They had used the money to pay *fajinas*⁷⁸, and for buying materials; by then, they had run out of it. Our best choice was to build somewhere else.

While planning our following presentation for the governing body of El 20, we realised that we had not learned the political language and manners in El 20. In order to serve everyone in El 20, we had to use the word community, as ejido specifically refers to those with decision-making power. So, our proposal needed to include these sayings:

- ALM manages the construction (by contract⁷⁹).
- Women of the community will manage the project when the construction is finished.
- The community should give the project (Eco-hostel unifying element) time for it to work properly.
- Finally, the ejidatarios granted ALM a much larger space, an old and broken 150 m³ water collector and a 900 m² water harvesting platform.

Redefining the Eco-hostel in a week

Instead of postponing our following trip to El 20, we decided to rush the design process and start the construction on the date originally established. We wanted to keep our word with the

⁷⁸ *Fajina* is a word used in the Yucatan Peninsula to describe work that is shared by the members of the community and that is performed for the benefit of the community.

⁷⁹ By contract meant that we could choose who in the community would develop the construction; that it would not be built through *fajinas*. Evidently, we would make a contract with Daniel, the construction expert.

community and respect our contract with Coca-Cola. Additionally, all travel arrangements had been made for the documentation team, Antti and Jan.

It was determined that the best use of our resources was to start by making use of one corner of the platform, to designing a self-standing and functional structure that could later be extended. With help of Alvear, Auvinet, and Alvarado, we identified that the (unknown) conditions of the platform could put the construction at risk; and although potential solutions were found, we knew that we could fail.

Co-designing the Eco-hostel

In the middle of April, the ALM team had its longest stay in El 20 (two weeks). The labbers were Isela, Gabo, and Juan. For some days, we got assistance from Cesar Corral (Welltec / MX), and documentation by Annti and Jan. I was there as a facilitator/researcher.

As early as possible, we visited Daniel and we showed him the Eco-hostel's design from a computer; right after, we went to see the platform. Daniel and his team made some holes and concluded that deeper holes needed to be excavated for the foundations and that a layer of stones would need to be removed to be mixed with cement (just as it was predicted by Auvinet). While we tried to help in cleaning the platform from plants, we had to admit that we would be more helpful if we dedicated our time to doing what we knew best.

So, during the day his team worked on the platform while Daniel looked for the best trees for the structure⁸⁰. We spent the day planning the details of the structure, from windows to hinges. We spent the afternoons playing with the kids and accompanying Jan to deliver pictures from previous visits⁸¹ and take new ones. Every night, the team met Daniel and his brother, Rogelio⁸² to check progress, identify problems, and solve them collaboratively.

Juan remembered keeping in his notebook a flower given to him by the kids. A couple of days later, he noticed that he had placed the flower right under a phrase told by Alvear with reference to our short visit to El 20, "turn hours into flowers". At that moment, when we were finally

80 We also learned that the process of extracting the wood is not simple, for both cultural and practical reasons. The local belief is that wood has to be cut during moonlight to prevent it from carrying insects; and it is just impossible to drag it out of the forest if it has been raining, due to the mud in the road.

81 In fact, more people started inviting him over to their places to have pictures taken, which granted ALM access to various homes we had not visited before.

82 Sometimes, they laughed at mistakes made by the labbers, like when the ventilation holes were so big that a child could easily crawl through them.

reaching the implementation phase through a *perfect co-design*⁸³, in Juan's eyes, two years of work were becoming a big flower.

Before we left El 20, I conducted personal and group interviews with the labbers, as well as a group interview with some members of the community and the labbers while the whole team sat around the dining table. In the latter, The labbers were the first ones to speak and to express their gratitude for having being received in El 20, and for enabling them to learn so much.

The people of El 20 replied by expressing their gratitude that ALM had chosen to work in 20 de Noviembre and to conduct a project that would benefit the whole community; and they were grateful that the team had been there during the whole process. Daniel especially appreciated the existence of the drawings and the importance of showing the people that it is possible to plan a project before implementing it.

Nonetheless, the locals had clearly not appropriated the projects. Ofelia recalled discussing the need to build a community house with Gabo and some other labbers, but she felt that the people in the community had their arms crossed, and lacked the commitment to turn ideas into projects. The labbers affirmed that without their consent, nothing would have happened, and those needs would have not been identified. Without their support and advice, the political problem could not have been solved and there would have been no project at all. The crucial input of the locals was much more evident to the visitors.

Miriam, who is generally very reserved, summarised the relationship between the labbers and the community with a single word: friendship. This is especially touching if one has John Rawls's words in mind: "Among persons who never acted in accordance with their duty of justice except as reasons of self-interest and expediency dictated there would be no bonds of friendship and mutual trust" (Rawls, 2009 [1971], 427).

When this interview finished, we walked back to our hammocks, where the labbers carried on with the conversation, very touched by what they had just listened. They were astonished to realise that ALM was making an impact in the lives of the people, but also by their observation that the community did not feel they had contributed much.

Juan, Gabo, and Isela, who were not earning any credits for that extraordinary trip to El 20; expressed their determination to see the construction finished and the project running. They felt committed to being involved in it until that happened, and to intervene in the future, after

⁸³ Only the construction experts of El 20 participated in this stage of the process, which did cause us to worry because before this moment, we had collected the opinions of many more people, and according to Sanders and Stappers (2008, 12), not all people are equally creative and become designers in the process.

they had graduated, if it seemed like the project was dying. They were unable to explain why they had become the most committed labbers, but they were certain that interculturality and interdisciplinarity had been crucial, and they would have liked to have their fellow labbers with them all the way to the end.

Through their participation in ALM, they witnessed that difficult does not mean impossible, and they had become self-confident to start new things. Juan, for example, believed that it would be possible to replicate the LAB in another place.

I finally asked them if the freedom of the community was growing through ALM. They hesitated. Isela thought that perhaps freedom was not the right word. ALM was helping them to start something new, and to implement it and take care of it; the community was becoming more *courageous* by expressing their needs, proposing solutions, and fighting to make them happen. Juan and Gabo believed that enlarging freedom in the community could take much longer than two years, and that it would depend upon the close collaboration between different members of the community. In their ideal vision, every artisan starts collaborating to finish the project. In order to prevent influencing them, I never shared with the labbers my research about freedom. Nevertheless, Isela used the concept *courageous*, one of Aristotle's virtues or excellences; which is also used by Sen (2009, 283) with relation to the adaptive preferences phenomenon. According to him, people who live in marginalization lack the *courage* to desire any radical change, and thus, adjust their expectations. Furthermore, Isela's description of being courageous is very close to my take on Design as Freedom, in which design is a means of exercising one's freedom to build the life one has reason to value.

Juan and Gabo were right in stating that the goals had not yet been achieved. Going back to Andy's story of fixing a car, the projects were still very dependent on us, outsiders. Nevertheless, this did not mean that the project had failed; this simply indicated that the project had not yet finished. ALM would need to reach the point where the level of engagement of the community was larger than that of the *visitors*, when the community took full control of the projects.

By the end of our visit, practically all the design details had been solved, and the drawings had been given to Daniel; foundation holes had been excavated and all the guano leaves for the rooftop had been cut. Most of the materials had been bought, and a bank account was opened for Daniel, so that he could take care of buying what might still be needed.

Building the Eco-hostel

Starting on Saturday, 26 April 2014, Daniel took full responsibility for the construction process, but he kept us constantly informed by sending questions and pictures through WhatsApp. Miriam also documented the construction process and sent pictures through Facebook.

One of these brief conversations I had with Daniel would become one of the most memorable moments of the whole experience:

Daniel: Have you seen the status of your construction?

Claudia: My construction? YOUR construction!

Daniel: Ours, we are a team!

By the end of 2014, all that was missing was the installation of the solar panels. On the first week of February 2015, I travelled to El 20 with Rodolfo Alvarado and Raúl Hernández to install an experimental photovoltaic system which used aluminium cables (not copper) and which was divided in two circuits: direct current (for the LED lamps), and alternating current for the rest. Additionally, they implemented an idea generated by the labbers, a movable device for the batteries, which could work also as an emergency plant. Although they worked night and day, the installation could not be concluded because one indispensable piece was missing. The sponsor, SOLAR ACT kindly agreed to sponsor the piece and another trip for the experts.

At that moment, ALM 2015 had already started through Sustainable Global Technologies. The new team was advancing the Water project; by having the broken water collector in mind. The team focused on water quality and availability, but also on integrating technologies like high-quality dry toilets, and a shower space that ritualised the bucket shower practice of El 20. We determined that Rodolfo and Raul should join the team in their visit to El 20.



Figure 25. Pictures taken by Miriam Cabuich at different stages of the construction. Published in Garduño 2015 (121).



Photo by Jan Ahlstedt

Conclusions and final remarks

This final chapter summarises, discusses, and interprets the main findings and contributions of this research project by confronting the main theoretical elements with empirical data and by looking at those confrontations through the four different lenses of this research (the alternative driving principle for design based on philosophical elaboration, the design process in El 20, the pedagogic programme, and the researcher's own experience).

In step with Sen, Nussbaum, Max-Neef, Jackson, Victor, Hillgren, and Fuad-Luke, amongst others, this research has contributed to strengthening the stance that there is not enough justification for keeping the goal of economic growth at the core of design (where good design is good business), or more generally, at the core of human life. This research promotes the notion that although design is transforming itself and is already achieving incredibly much from being complex, collaborative, empathic, and sustainable, if the design discipline does not challenge the relevance of economic growth, it remains constrained by it. Moreover, it seeks to evaluate good design by analysing if it is doing the right thing. This argumentation has been largely based on a historical analysis of relevant moral doctrines; additionally, since the centrality of economic growth is significantly spread worldwide, it was assumed that exploring *what* design could deliver in practice, which would be more valuable than monetary capital, depended upon finding people living in an alternative paradigm. Advocating for an alternative paradigms accounts for advocating for plurality, defending the belief that people should be allowed to be who they are, and to live how they want (for instance, the life that Sayuri, as a teenager in El 20, considered to be *normal*).

The Design as Freedom principle was constructed in response to what was being observed in practice through the development of ALM. Therefore, not only freedom, but a very specific conception of freedom is presented as a guiding principle for design. In Design as Freedom, advancing, growing, or nourishing human freedoms without hindering the freedoms of others (including other species and non-living elements) is seen as a key means to reduce injustice (an idea borrowed from Sen and expressed in Fuad-Luke's terms). The specific understanding of the concept of freedom was generated through a historical exploration of the philosophical debates on the topic, along with the development of ALM. Such understanding borrows the *centrality of freedom* from Amartya Sen, its interconnectedness with the concepts of *morality* and *reason* from Immanuel Kant, and its triadic construction *agent-intention-lack of constraints*, from Gerald MacCallum (1967). Additionally, Manuel de Landa's (2013 [2006]) *assemblage thinking* is applied as a means of navigating two seemingly contradictory paradigms, *human freedoms* and *Sustainability*. Thus, this is not a limitless type of freedom, but one that is rationally self-constrained by individuals who acknowledge the freedoms of others, in accordance with the moral

codes defined democratically by their society. Moreover, Sustainability plays a major role, setting a moral limit to human freedoms that is not merely anthropocentric.

Indigenous-local-rural communities are characterised by their high (direct) dependence on natural resources and ecosystem services. In fact, their right of self-determination is highly linked to the autonomous management of such resources and services. For the people of El 20, as for many other indigenous communities around the world, the environment has an intrinsic value. This observation directly contributed to the high regard that Design as Freedom has for Sustainability. However, although El 20 is an indigenous community, and the people also highly regard their own culture, they do not live in total isolation. Centuries have passed while they have been adopting elements from the dominant paradigm (religion, embroidery, televisions, mobile phones), so that these are also valued elements within their lives. In contrast, there are also some human constructs from the prevailing paradigm that have a direct negative impact in their lives, causing marginalisation (laws, social programmes, taxes).

The model of assemblage has been a very useful unit of study. It cuts across the natural and social realms, enabling the assignation of certain *rights* to elements that normally do not have them, such as culture and those belonging to the natural environment (biotic and abiotic). Moreover, it also enables the visualisation of constraints that prevent people from achieving their intended lifestyles. Thus, the assemblage enables the integration of Kant's and MacCallum's conception of freedom. It could be argued, nonetheless, that if our fellow (global) citizens value their natural environments for their own sake, and instrumentally because their lives depend upon their ecosystem services, practising the characteristic overconsumption (tightly linked to environmental depletion) of the dominant paradigm is nothing but a terrible injustice. This last remark will be of central importance below, where the discussion turns to the implications of the ALM as a pedagogic programme.

Now that the main elements of freedom, as understood within this research, have been discussed, what follows is a discussion of the notion of *Design* as Freedom. When design is described as the process that takes a system from an initial situation N_0 to a more desirable situation N_1 (Findeli (2001) expressed in the terms of Strawson (2005)), it is very close to the description of freedom that integrates Kant's system and MacCallum's triad. The concept of reason, rationality, or intention, which is a capacity that belongs to human beings in so far as only they can act as agents, is comparable to the process of designing. When designing, one goes from identifying what is needed and/or desired (making a diagnosis), to finding the manner to accomplish it (conceptualising a strategy), to putting it into practice (implementing it). Moreover, through designing, one is enabled to do something and/or released from the constraints that prevented one from doing it. Therefore, design can be seen as exercising freedom.

Through design, one can expand other freedoms; virtually any other freedom. Therefore, in step with Dong and Nichols (2012), design can be described as a basic capability, or perhaps even as a

meta-freedom. Moreover, following John Rawls's suggestion that a sense of justice is fundamental to human beings, and that "... one who lacks a sense of justice lacks certain fundamental attitudes and capacities included under the notions of humanity" (Rawls, 2009 [1971], 428), and by considering that one of a designer's greatest skill is precisely an ability to imagine what does not exist yet, it can be concluded that designers can and must acknowledge their duty to contribute to the expansion of freedoms and the reduction of injustice in the world.

If design is a *meta-freedom*, it is of paramount importance to grow this freedom in as many communities and individuals as possible, and since normally there are no trained designers living in the most marginalised communities in the world, the natural strategy is to engage these people in collaborative design processes. Moreover, although the capacity to design is crucial, it is not sufficient for exercising Design as Freedom. Within its collaborative processes, Design as Freedom requires the generation of relationships with different stakeholders who commit to doing their parts, becoming part of the assemblage, and allowing things to happen.

The design process is seen as the creation of new relationships among humans and non-humans in order to achieve something that was not possible before. An assemblage is the beginning state of the system. The assemblage, however, is not stable; as it constantly changes, conditions within the community change, social policies and regulations change, and the design team, which becomes part of the assemblage, is adjusted accordingly. It is possible that eventually, the community will generate stable relationships with members of the design team or within a wider network; the idea is that throughout the process, the community will have constructed the (somewhat stable) assemblage needed for the achievement of certain freedoms.

Given that it was the only effective opportunity that was available, Design as Freedom was observed in practice through an Aalto LAB in Mexico. Nonetheless, what originally seemed to be a big constraint ended up generating what might be the greatest contribution of this research: the Aalto LAB meta-framework. By also paying extensive attention to the expansion of freedoms of the designers who visit a local community, the pedagogic dimension of ALM enabled the observation of what we have called *the double-sided mirror perspective* (Berg, Kajamaa, and Garduño, 2014), which refers to how the different groups learn about themselves by looking at each other. Ultimately, the co-design process, which originally aimed to empower the people from the community, was framed as a process that also enables the empowerment of the designers. Having observed this, it can be assumed that Design as Freedom would be a mutually empowering experience even if the pedagogic component was disregarded (that is, if it did not involve students, but experts only).

Universities proved to be neutral actors when developing the initial diagnosis in the community. If a private company had sponsored ALM 2012, this would have very likely affected the conceptualisation of the sub-projects. The collaboration with companies is not undesirable, but ALM has shown that it is more suitable to integrate them in later phases, when clearly defined projects might match their

interests. Hence, the specific projects define the types of companies that must be contacted, and not the other way around. Second, what is encountered in the field through an Aalto LAB are interesting research challenges that are in the need of very specific sets of skills and knowledge (i.e. how to purify hard water in the simplest manner, if possible, by making use of resources existing in the site). Those challenges, in combination with a meaningful cause, are not terribly difficult to fund. Third, in step with Walker et al. (2009), it can be stated that through these types of projects, universities have the effective possibility to be shaping agents of change, and the effective opportunity to contribute to the growth of global justice.

Pedagogic projects like ALM have a controversial side. Having a group of the most privileged global citizens visiting a highly marginalised indigenous community can easily become an imperialist practice. However, in this case, it was a means to counteract the effects of the current world dynamics, in which caring about the latter is nearly impossible if they remain an abstract concept in the minds of the former. This encounter led us towards a highly difficult philosophical debate. People should be enabled to live the lives they have reason to value, which implies that different people might value different lives; however, people living in conditions of marginalisation might claim to be contented while suffering from a situation of adaptive preferences.

However, further to exploring whether there should be a universal list of capabilities, the double-sided mirror perspective faced the labbers with the possibility that global-urban-industrial-western societies lack the capacity to be contented. They realised that they could benefit from adopting some of the practices that are kept alive in the community, which could inspire more sustainable behaviours, and which is a reason to support the continuation of the Aalto LAB (i.e. an organic diet, fewer belongings, frequently playing football with members of one's own community). Furthermore, rather than concluding that the people of El 20 are deprived but contented, they realised that these people have good reasons to be satisfied with their own lives. It can be argued that if their living standards are not dignified, it is because the current world dynamics have caused them to be excluded from some social systems; but they live their lives with dignity and integrity, since they have not been untruthful to themselves and have not been responsible for being socially excluded.

The co-design process by which Design as Freedom is put into practice is necessarily a longitudinal process for various reasons, including the fact that a lot of research is required. Most importantly, the project can be developed only if trust is built within the groups (Garduño, Nousala, & Fuad-Luke, 2014), which seems to be directly related to the level of engagement of participant end-users, and which is constructed little by little through all types of activities, such as playing football.

In this work, the term co-design is used to convey a longitudinal process in which designers and participant end-users acknowledge each other as equals, enabling the emergence of reciprocal relationships, causing both parties to learn from each other. In this empowering co-design process, participant end-users start the project as future users who provide inspiration and information

(Mattelmäki & Sleeswijk Visser, 2011); thus, in its beginning, the design intervention is closer to human-centred design. While the project is being developed, and trust is built, the level of engagement of participant end-users grows, and eventually they match the level of engagement of the design team in what has been described as a perfect co-design moment. However, co-design aiming at empowerment is fulfilled not when all stakeholders participate in an equal manner, but when the participant end-users become the designers of their own projects.

What can be learned from this story is that a shared experience or a collaborative effort to achieve a common goal is a means towards building a shared sets of values, despite the diverse origins of the individuals involved. The designers and the participant end-users shared both authorship and responsibility⁹⁸, and they also enabled each other. Both groups acknowledged that the process had demonstrated that, although it was not easy, it was possible to develop a project such as ALM, and that it would not have been possible without each other. At the very least, they gained courage and would be willing to start something similar anew.

In my view, co-design gives room for participative democracy. The elements in the assemblage are identified through design processes that tend to be as collaborative as possible, and human centred, at the very least. The design team is highly pluralist (intercultural, interdisciplinary, intersectorial, interinstitutional), and there are different voices within the community, too. When all these different experts deliberate, they uncover causal links that might not be very evident in a more homogenous group of people.

The exploration of Design as Freedom through Aalto LAB Mexico is not fully measurable nor quantifiable, perhaps this is not even desirable. Nevertheless, at least some descriptions by the participants indicate that it has been a powerful experience that has somehow transformed them. No one might understand them better than myself. I have spent my reflection periods contrasting the rich experiences in the communities with some masterpieces from great philosophers. ALM has changed my life. My process started with the honest need to find a way in which the design discipline could collaborate in making the world a better place. I was fully aware that what I dreamed about sounded incredibly naïve. However, this feeling was too strong to be ignored. I believed that this was the *right* thing to do.

Before ALM started, I did not want to develop it in an indigenous community. This might be the most difficult part to convey to readers who are not from Mexico, but it all comes down to admitting that I was afraid of the unknown. I used to think that leaving them alone to live their lives amounted to paying them respect; but now I think that I was wrong, because doing nothing was politically stating that I supported their marginalisation. This impression started to change when I visited El 20 for the first time. While the project advanced, the distinction was no longer scary; it became as natural

⁹⁸ This is an observation of Alastair Fuad-Luke.

as noting that one labber was an engineering student and another one was studying business. So they, in El 20, are Mayan; we are Mexican, Finnish, German, Chinese, New Zealanders, Americans ... we are diverse, we are human.

Through ALM, I have been able to define and exercise my very own rational plan, and I am convinced that design can do much for and with people who, unjustly, live in conditions of marginalisation (of all kinds). It has been worth so much that I am convinced that this is to what I want to dedicate my professional life. I am confident in stating that it is important for the design community to release design practice from the tight constraints imposed by the capitalist economy, and to explore contributions that might not be economically profitable but might ultimately be more meaningful. Moreover, it can be said that design schools around the world have the opportunity and the duty to shape their students into agents of change. Even when the labbers end up working in industries or in government, rather than in NGOs, they will most certainly do it with a developed empathic sensibility and humility. However controversial projects like ALM might be, because of their implicit imperialistic nature, if they are developed with care and respect and over a long period, it is likely that the local people will become active participants and that there will be a point where external design teams will no longer be needed. Maybe then, the world will be a little less unjust.



Photo by Jan Ahlstedt

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