

3.2. Transformative practices

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3.2.1. Design research and innovation framework for Transformative Practices

Current times call for addressing a variety of societal challenges, such as bridging social divides, making communities safe and sustainable, and ensuring healthy and fulfilling lives. There is a need for new paradigms, i.e. new shared beliefs, values, models and exemplars to guide a community of practitioners and theorists (Kuhn, 1970), that support building sustainable futures. Over the last 40-50 years, several types of societies and underlying paradigms have been articulated in the Western world. Among others, the circular economy (Pearce and Turner, 1989), the transformation society and economy (Pine and Gilmore, 1998; Brand and Rocchi, 2011) and the purpose economy (Hurst, 2017) have been proposed as possible responses to our societal challenges.

In this chapter, the concept of Transformative Practices is introduced, i.e. shared relative steady ways of living and working with others (Wittgenstein, 1993), including specific configurations of actions, norms and knowledge (Freeman et al., 2011) and related tools and environments, focused at addressing our societal challenges, by transforming (elevating) our personal and social ethics and related behaviour through designing new ways of interaction with each other and the world. Through design research and innovation within these practices, we work together towards social-culturally, environmentally and economically sustainable communities.

In order to design for Transformative Practices, we developed a framework to support teams in this process. This framework is called: DRIVING (Design Research and Innovation) framework for Transformative Practices (in short: TP framework). It aims at helping multi-stakeholder teams to research, design and innovate Transformative Practices to tackle societal challenges, which are inherently wicked and systemic. TP operates within the paradigm of the transformation economy, where societal challenges are addressed locally, though taking into account their systemic complexity, through multi-stakeholder collaborations (Rocchi et al., 2018).

TP overcomes the limitations of linear transformation processes, e.g. Design Thinking, by shifting the focus of design activities towards a human driven and systemic approach, where social transformations and repercussions are thoroughly taken into account and aim at tackling complex social challenges.

In this chapter, the TP framework will be explained at three levels. 1) a zoomed out version focusing at change; 2) a more detailed version, that shows the main components necessary to support this change, and 3) a very detailed version, that helps on a practical level to design for Transformative Practices.

3.2.2. First level: Change

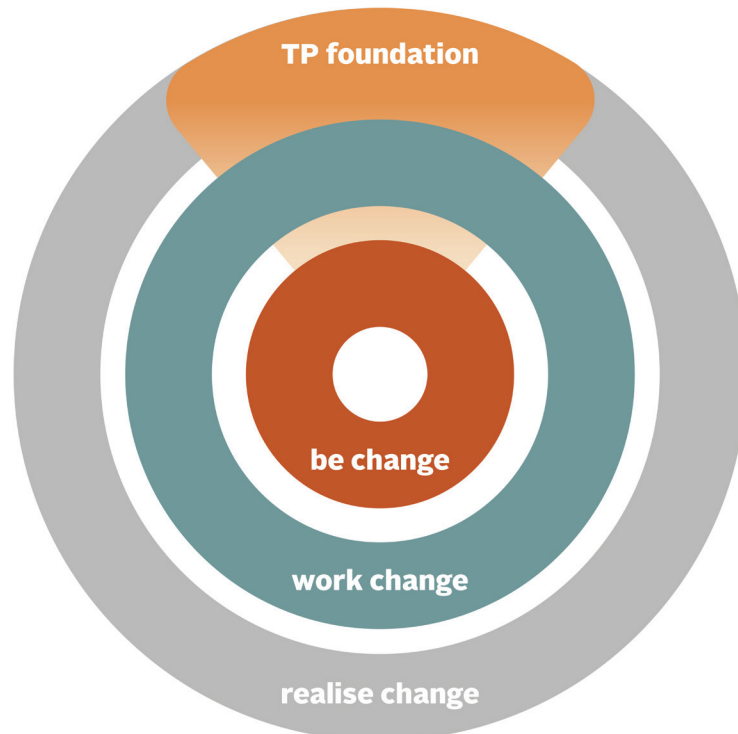


Figure 1. TP framework level 1: change

The TP framework revolves around change. By “change”, we do not mean any kind of change, but irreversible or long-lasting change, i.e. transformation. Transformation is an often-used word referring to change. However, the character of this change can be different, depending on the field one is in. According to the Merriam-Webster dictionary, transformation occurs when one configuration is converted or changed into another, whereby the change is major or complete. In general, transformation is associated with both reversible and irreversible changes. In our framework, we use the term to indicate **irreversible or long-lasting change of values, ethics, and related behaviour of a person, a group or a society**, triggered by the need of tackling a specific societal challenge. Through the transformation, their way of (inter)acting, perceiving, feeling and thinking has been changed and long-lastingly embodied and incorporated in their everyday living.

In the TP framework, we discern three types of change: realise change, work change and be change.

Realise change focuses on the elements necessary to create not merely one design proposal, but even landscapes of designs, that can offer the conditions for people to transform.

Work change focuses on the ways of working towards change. It offers a process for the development team to become competent in the transformation economy and paradigm, and design and research activities to realise designs for transformation.

Be change is about embodying the transformation. Feeling the change, living it and being it. It refers to the people we are designing with and for, to enabling them to transform, to be changed. This will relate to the specific societal challenge we are designing for, but it also relates to general change. Next to this, be change also refers to the members of the development team; to incorporate change, live it, be it and embody the values related to the underlying transformation paradigm.

The TP framework, including the three types of change, is based upon our TP foundation, which stems from the transformation economy paradigm as explained in the previous chapter. On the third, detailed level, we will explain this foundation in more detail.

3.2.3. Second level: Main components towards change

When zooming in, the TP framework shows what the three types of change entail.

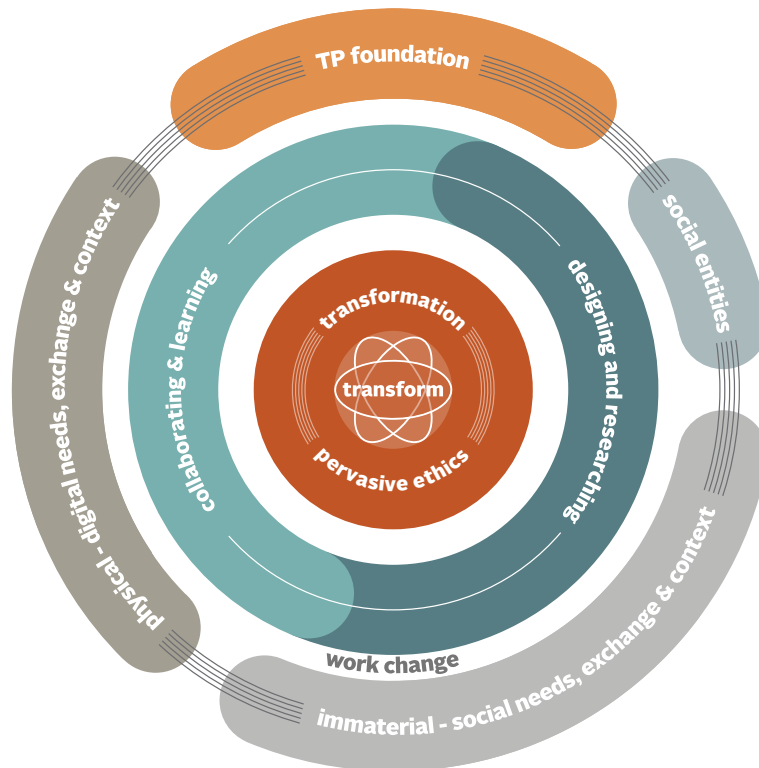


Figure 2. TP framework level 2: main components towards change

Be change The middle circle and overall goal of the designs that are developed is transformation. It is about feeling change, living it and embodying it. It is about **being change**: changing ones' values, related behaviour, whether it is a person, a community or a society.

With the DRIVING (Design Research and Innovation) framework for Transformative Practices we aim at tackling wicked problems and complex challenges, by enabling people, communities and society to transform with the help of design. In the end, we aim at pervasive ethics: *“a social praxis aimed at justice and freedom, which pervades society in a capillary way, becoming a universal attitude that makes people aware of their own rights, able and willing to contribute to seeing their own rights and those of all people fulfilled”* (Trotto, 2011). So, we consider it important to start with values and ethics and act accordingly.

“Be change” is not only required to the practice of people we are designing with and for; with and for whom we want to tackle a complex challenge and enable to embody and live this change. It also applies to development teams during their design research and innovation processes. They also have to embrace change, live the new paradigm, and reflect upon their own values. When working towards Transformative Practices it is necessary to take a first-person perspective along the process, to get personally engaged and to take responsibility. One has to practice what one preaches and be change oneself.

Work change The TP framework is designed to support design research and innovation teams with new ways of *working towards change* and transformation. It consists of a dedicated process, based on a holistic and systemic approach suitable for transformation. This process has two main categories of activities. Firstly, the process entails **design and research activities aimed at the creation of design propositions**, as most design processes do. Due to the wicked and systemic character of the societal challenges that the TP framework addresses, it is necessary to highlight that the activities proposed by the TP framework are effective for processes of research and development that have a mid or long term horizon. To complement these activities and make them suitable for transformation, the TP process also includes activities focused on **collaborating and developing** together; activities focused on learning how to be change, and learning how to develop Transformative Practices together. So, “work change” is all about the way of working in realising Transformative Practices and fitting the underlying transformation para-

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digm. It relates to the way to create design propositions, and the way to support personal and team development towards transformation, so making sure people have tools and can mature their skills to actually practice what they preach.

Realise change How can we design meaningful context-specific propositions, built around long-lasting, profitable, ethical, and fair business practices, and based on multiple stakeholder collaboration and value sharing (Brand & Rocchi, 2011). We see the key in creating and realising design and value proposition landscapes, thus **realising the conditions for change**, for Transformative Practices and for people to be change. Instead of focusing on traditional designs, we emphasise the systemic, holistic and dynamic perspective of transformation, therefore calling it design and value proposition landscapes. We discern three types of elements to construct such a landscape:

1. Social entities: who are or should be connected to or involved in realising change and being change?
2. Immaterial social needs, exchange & context: which immaterial elements are, can or should be exchanged between these social entities?
3. Material (physical-digital) needs, exchange & context: which material elements can or are necessary to support the creation of these design and value proposition?

Scales When talking about transformation and change, especially when looking at 'be change' and 'realise change', we look at different scales and the interaction between them. We consider the transformations of our societies, by dealing with major societal issues. But we also address local challenges for social resilience, or individual banal activities of the everyday. Our propositions target and deal with different audiences. So, we interweave the *micro scale* (the small-scale setting of a person/a small group of people within its direct environment), with the *meso scale* (medium scale setting at the level of a community or region) and if possible also with the *macro*, large cultural and societal scale.

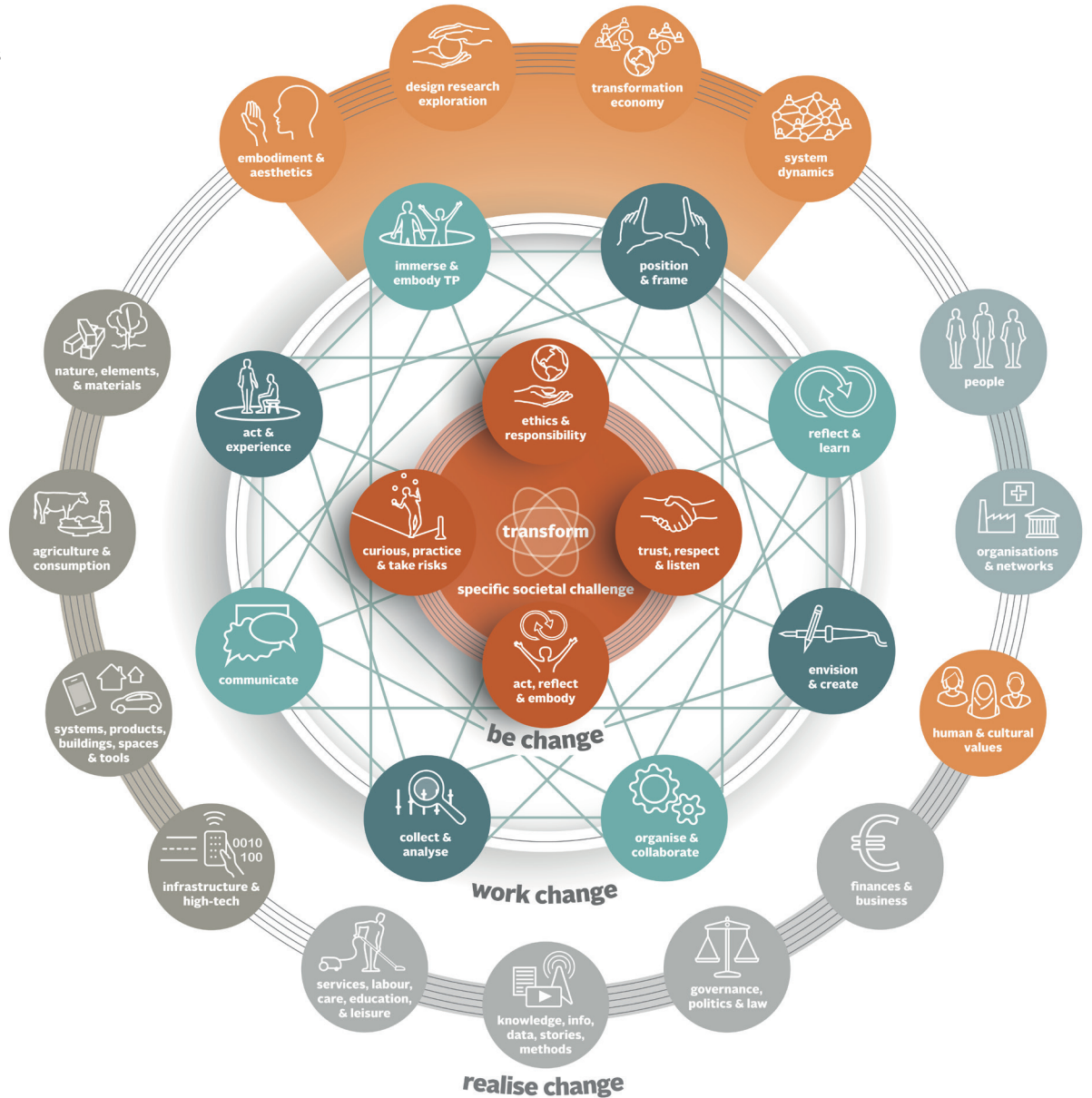
Moreover, in a holistic, dynamic and systemic approach, time plays an important factor. Consequently, we explicitly added the *chrono scale*, which refers to transformation over time, e.g. long-lasting change, lifetime development, or longitudinal reflection to be aware of your own change. This scale is practically important during the 'work change' phase, since the development team has to make various choices regarding time frames while designing for and researching.

Next to these four scales necessary to realise and be change, we incorporated a fifth and final *meta* scale. This entails that the *be change* and *realise change* elements are also incorporated on the *work change* level, so in the design process. The developer has to *be change*, so embody the underlying paradigm, during the design process. Moreover, the elements needed to design the value landscape are also necessary during the design process itself. One also has to ask oneself, who the social entities are that should be involved, which immaterial social exchange takes place or should be organised, and which material (physical-digital) context is necessary for design Transformative Practices. So, the development team should create its own landscape for development. These 5 different scales are represented in the model by the thin black circular lines.

3.2.4. Third level: detailed activities and elements supporting TP

When zooming in 1 step closer, the TP framework shows all the detailed activities and elements needed to realise transformation, which we will explain in this section.

Figure 3. TP framework level 3: detailed activities and elements supporting TP



Transformation Practices foundation (orange)

Before we describe the three types of change in detail, let us first explain the positioning of the entire framework. The paradigm in which we position our work constitutes of three elements. Firstly, we place our work within the Transformation economy, theorised by Rocchi and Brand at Philips Design (Rocchi et al., 2018). They foresee a paradigm build on top of our current paradigms. Our major societal challenges are leading to a growing discomfort and a desire for balance. Consequently, people are looking for ways to move towards a sustainable world. However, true sustainability and wellbeing cannot be created on an individual level only, it requires behavioural change on a societal level too, where the collective is at least as or even more important than the individual. In such a transformation paradigm, stakeholders will work together on local solutions for local issues that stem from greater global issues (Hummels, 2012; Gardien et al., 2014).

Secondly, we embrace system dynamics including complexity theories. As said above, our societal challenges push us towards finding systemic solutions. According to Ball (2012) and Vermeer (2014), this asks for a new kind of science where scientists from different disciplines can address the core of complex systems, including emergent collective behaviour, transitions between system states, and resilient complex systems that can handle external shocks or disruptions. Consequently, we embrace the characteristics of complex systems such as self-organisation, non-linearity, chaos, connectivity, autonomy, adaptation and emergence. The interconnectivity of our global value chains, our communication systems, and other technologies can present challenges, but they also provide an opportunity for new and successful societal interventions Vermeer (2014). According to the World Economic Forum we need interdisciplinary collaboration to understand and tackle the underlying principles of the complexity in our world in order to face our societal challenges like poverty and climate change (Barabasi et al., 2013).

Thirdly, we adopt embodiment and related aesthetics as a necessary notion in all steps of the design and design research process. Based on theories of ecological psychology (Gibson, 1979), phenomenology (Merleau-Ponty, 1962), pragmatism

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(Dewey, 1938) and various forms of embodied cognition (Van Dijk et al., 2014; Suchman, 2007; Varela, 1991), we assume that humans' understanding of the world is conditioned by their being and acting in it. According to how the sensible is designed, different opportunities for meaning to arise in interaction can be produced. So, meaning is not inside our minds, it is not outside in the world, but it is in-between us human beings and the world. We perceive the world in terms of what we can do with it, and by physically interacting with it we access and express this meaning. To cope skillfully in the world from day to day, we do not need a mental representation of our goals: our body is simply solicited by the situation to find the right balance in order to gain a maximum grip on the situation. (Merleau-Ponty, 1962).

Fourthly and last, we start from a design and research perspective. One of the strength of designing is the ability to create potential futures through prototypes, thus letting people experience and discuss their goals, aspirations, visions and type of interactions. Through prototypes, designers enable people to have access to and express meaning. The wickedness and the systemic character of our challenges, approach and propositions, benefit from the ability of designing to open up the abstract to the sensorial, to connect the intuitive to the analytical, imagination to reason, and making (synthesise and concretise) to thinking (analyse and abstract) (Hummels, 2012). By reflection in and on action during the design process, the team creates insight and knowledge (Dewey, 1938; Schön, 1983). Or, as Schön (1983) suggests, by entering into an experience without judgment, responding to surprises through reflection, people learn from their actions, which can facilitate the search towards transformation. Within the TP process, we make do not merely make use of design, but also of research through design. RtD can be seen as a process in which scientific knowledge is generated through a sequence of

cycles of designing, building, and experimentally testing wealthy experiential prototypes in everyday life settings. RtD aims at studying effects in possible futures and does not focus on understanding the world, as is the objective of traditional science (Stappers, 2007).

Be change

In the core, we have situated the transformation we like to achieve, which can be on a micro, meso or macro level, i.e. a personal, community or societal level. This transformation focuses on a specific societal challenge, which can be downscaled to the individual or group level. To realise such transformation we see four elements regarding focus and attitude.

Ethics and responsibility Social transformation has obvious connections to ethics. If we are transforming the way that people relate and behave to each other and towards the context surrounding them, what is the direction that leads this transformation, what is the new or renewed set of value that we are eliciting to emerge? What are the consequences that people will have to face? How much control on such consequences can we claim? These are many more questions arise.

When a team of people defines a societal challenge and decides to tackle it, ethical questioning needs to be an underlying recurring exercise along the whole process. At the core of Transformative Practices are ethics, values and our responsibility towards each other as human beings, but also towards all living organisms constituting the ecosystem that we live in. Each human lives in a community or ecology, in which she or he has culturally specific and situated practices that constitute the ecosystem's ethics. All these practices take place in landscape of values, where values feed our norms and attitudes in specific situations (Schwartz, 2012). Through common practices, humans within a community determine what is done and accepted, in opposition to what is not done and is unacceptable. In short, this is about what is considered the norm or "normal" by the individuals performing these practices, within a community. Values are materialised in norms, attitudes, and beliefs of such community. These define what people are used to, what their patterns of behaviour are, and also what they can tolerate. Differently from a pre-industrial and pre-digitalised era, in our intercon-

nected and globalised worlds, practices of local communities have repercussions on a global scale.

Within Transformative Practices, we see the urge of the people within a community to take responsibility for our societal challenges such as unhealthy lifestyles, exclusion, poverty, pollution and global warming. TP relates to values such as responsibility, equality, honesty, meaning in life and a world of beauty.

As said before, our work in Transformative Practices, is grounded in design and design research and therefore deals with the transformation of practices through an intervention on the physical and digital context that we are dealing with. Through TP, we hack the very essence of the aesthetics of politics, which is what Rancière defines as

“the distribution of the sensible”, i.e. the system of self-evident facts of sense perception that simultaneously discloses the existence of something in common and the delimitations that define the respective parts and positions within it.”

(Rancière, 2004)

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The form of the world surrounding us, embodies, elicits and supports these situated practices. By form we mean both the physical and the dynamic form (Redström, 2013): the way we interact with each other through material (e.g. our offices and furniture) and non-material artifacts (e.g. facebook). Through the design of this form, we can influence the practices. Through intervening on the “distribution of the sensible” we set the divisions between what is visible and invisible, what can be said and what cannot, what can be heard and what is unheard, what can be understood and what cannot be understood.

Trust, respect and ability to listen Transformation is done in a systemic setting, requiring an entire setting or context to realise the change. It is impossible for an individual to tackle our societal challenges, even if that should not diminish the importance of the role of the individual. As said earlier, one can also change as an individual and consequently influence one's surroundings. Within Transformative Practices, the field of action is a dynamic system, in all its complexity, where the only way to address the societal challenge at hand is to collaborate with all relevant stakeholders. This asks for trust and respect for other people's perspectives. It asks for collaboration, by listening to these others and jointly finding ways to tackle the (societal) challenges. It asks for communication, where *"communication [...] is not the transmission of information but rather the co-ordination of behaviour between living organisms through mutual structural coupling"* (Capra, 2002, p. 46). It requires dialogue and dialogical skills, so TP can be seen as *"systems of co-present human beings engaged in interactivity that bring forth situated behavioural coordination (or a communicative, structural coupling). [...] they co-ordinate with each other, they co-adapt to each other, and they co-regulate their co-ordination and co-adaptation."* (Steffensen, 2012). Or as Sennett (2012) frames it, in dialogic conversations, curiosity and empathy are the main drivers for cooperation and exchange of ideas. In order to understand someone else, the listener has to get out of his/her own perspective, and through dialogue and social coordination become more aware of his/herself, the other and the situation. So, a discussion does not simply resolve itself by finding common ground, it is a social coordination process, where trust, respect and listening are crucial elements.

Curiosity and empathy
are the main drivers
for cooperation and
exchange of ideas.

Curiosity, practice and ability to take risks Curiosity is not only important for collaboration and dialogue, it is also an essential trait in addressing societal challenges, with the goal of finding new opportunities and solutions. To be able to transform, people benefit from being curious, willing to explore and trying things out. Having to swim in waters of complexity, where the systems that are to be transformed are complicated, unpredictable and everchanging, requires a certain amount of restlessness and daring to take risks. All these qualities benefit cooperation, craftsmanship as well as innovation. Sennett illustrates in his books *"The Craftsman"* (2008)

Transformation asks for practice, experimentation and iterations.

and “Together”(2012) as mixture of characteristics of which Transformative Practices can benefit also benefit, including experimenting a lot and practicing hands-on, playing with ambiguities which requires rehearsal, working with resistance, trusting and daring to fail, being curious, using one’s intuition, having a desire for quality, being committed and having vocation, playing with rhythm and rituals, being empathic, and practicing everyday diplomacy. Since transformation is a dynamic systemic setting and therefore intrinsically complex, mastering the Transformative Practices means having been trained to navigate this complexity and to embody the above-mentioned characteristics.

Act, reflect and embody Transformation is not something that simply happens in a flash moment. As said, it asks for practice, experimentation and iterations. When, as human beings, we take actions in the world that surrounds us, we create insight and knowledge for ourselves, especially when we use the mechanism of reflection in and on our actions (Dewey, 1938; Schön, 1983). Or, as Schön (1983) and Merleau-Ponty suggest, we learn from our actions when we enter into an experience, without pre-judgment, and respond to surprises through reflection.

In order to transform, the change should be based on (the reflection upon ones’) values, which are transferred to new attitudes, beliefs, norms and behaviour. Since we define transformation as an irreversible or long-lasting change, it requires a loop of action and reflection, where the transformation is entirely incorporated and adopted by the person, group or society. For example, when someone wants to change his/her unhealthy lifestyle, in order to really transform, the person has to continuously reflect on his/her values, attitudes, beliefs, norms and behaviour, and act upon the preferred values, attitudes, beliefs, norms and behaviour.

Work change

Around the core of ‘*be change*’, gravitate the activities that are necessary to design and produce a transformative practice related to a specific societal challenge. Such activities constitute the process, which has two faces. On the one hand, the process includes activities focused on **designing and researching** propositions to enable transformation. On the other hand, the process includes activities related to **collaborating and developing**, as a person or as a team, towards transformation; so, activities focused on learning how to ‘*be change*’, and learning how to develop Transformative Practices together. The two sides of the process have each four groups of activities:

The activities related to design and research are:

1. Position and frame
2. Envision and create
3. Act and experience
4. Collect and analyse

The activities related to collaborating and developing are:

1. Immerse and embody TP
2. Reflect and learn
3. Communicate
4. Organise and collaborate

These 8 activities, that are gravitating around the core, are connected to each other. They activities can be carried out more than once and in any order, although we normally start from the 2 activities above: “position and frame” and “immerse and embody TP”. The pace of jumping from one activity to another multiple times can be determined by the team, although a high pace is recommended, especially during the early phases of the design process, since that gives insights into the challenges and opportunities that the assignment has (Hummels and Frens, 2011). But also during the later phases of the design process, a high pace can still be beneficial, to stimulate the process of reflection in and -on action, which produces new knowledge relevant both for the specific project, but for the development of skills and experience in Transformative

There are two kinds of activities that are necessary to produce a transformative practice: one kind is about designing and researching propositions to enable transformation; the other includes activities related to collaborating and developing, as a person or as a team.

Practices. The activities can be approached from a 1st, 2nd or 3rd person perspective. A 1st person perspective approach means that the participants of the team address their work from their personal experience, in relation to the challenge at hand. A 2nd person perspective is where designers work instead with tools that leverage empathy with people that have a direct experience with the challenge at hand. A 3rd person perspective attempts to take an objective approach towards the challenge, using more traditional both quantitative and qualitative approaches, in analysing the situation constituting the challenge.

Changing from one activity to another is necessary to develop propositions that might achieve a transformation, and learn how to transform oneself and to transform as a team, while learning how to develop Transformative Practices together. Let us first explain the two activities that often kick-off the TP process.

Position and frame The project has a goal: to tackle a specific challenge that has some kind of societal relevance. At the kick-off of the project, it is necessary to (re-)frame this challenge: what is the context surrounding such challenge, what are the elements that form the ecosystem that is affected by such challenge? What are values and drives of the people within the practices and ecosystem we like to transform? What kind of information, knowledge and expertise are needed? Who are the contributing stakeholders, what do they offer and what do they need? What are the drivers and values of these stakeholders and how are they equipped to contribute in the innovation process? How does this project relate to other existing projects, both related and unrelated to the stakeholders' experience?

This activity produces thus a (re)framing of the question that the project tackles. Such framing is not a one-time activity, on the contrary it is ongoing, it is iterative and will

evolve in time, as the affected ecosystem becomes apparent and evolves. That is necessary since these societal challenges can be seen as wicked problems, in which both the problem itself and the solution are explored and developed (Rittel and Webber, 1973). This ongoing process of focusing on the scope and the boundaries of the ecosystem

where these challenges and design proposals can have effects, entails as well the necessity of a continuous redefinition of the stakeholders to involve.

Creating the awareness and developing the sensitivity to activities such as empathise, connect, be comfortable to be vulnerable, be comfortable with staying in the question, be comfortable with not being in control, not knowing and being outside of one's area of expertise or ease.

Immerse and empower Having an attitude that boosts cooperation and innovation for Transformative Practices, as described above, is not always a natural behaviour. It requires an education. In DRIVING Transformative Practices, the practitioners are trained to be and embody change. By practitioners here we refer to both the innovation team members, as well as all other potential users and stakeholders. All people involved in the process, need to be activated and empowered towards transformation. This educational process is done through very many embodied activities, aiming at creating the awareness and developing the sensitivity to activities such as empathise, connect, be comfortable to be vulnerable, be comfortable with staying in the question, be comfortable with not being in control, not knowing and being outside of one's area of expertise or ease. Participants are pushed out of their usual roles, where they are act according to (traditional) norms, according to what is normally done and not done. The aim is to create an open explorative canvas, a shared space, where people can engage from a 1st, 2nd and 3rd person perspective.

All other six activities can be performed in random order, as long as they are iterated in time. They are:

Envision and create Through creating and building design proposals, new opportunities that address the challenge can be envisioned and experienced. While designing and materialising these new propositions, we build on the concept of technological mediation¹: everything that is in our environment, mediates the way that we perceive and act upon such environment. Designers are able to operate a material synthesis. Design produces new forms and manifestations that, with their intentions, influence our perception and understanding. Consequently, design enables to explore alternative ways of embodying values, triggering attitudes, changing behaviours and even norms. Design operates in a propositional way, rather than in an analytic way. Thus design can address our societal challenges in another way than for instance, social scientists or change managers do.

This activity can be considered the trademark, which distinguish DRIVING TP to most of the existing processes addressing change.

Act and experience Another element that characterises DRIVING TP is the “let’s get our hands dirty” part of it. Transformative Practices have been designed with a goal of addressing societal challenges in a way that it elevates people’s ethics and, somehow, improving their life. Transformative Practices are not planned in an ivory tower, but rather in the field, in a context where one gets to care about the actual consequences.

¹ The concept of “*technological mediation*” was coined by Peter-Paul Verbeek (2006), indicating that our designed world influences and co-shapes people as actors in the world. When a person interacts with or through a product or system, this product/system changes the way (s)he behaves. This ‘translation of behaviour’ through technology (in its broadest sense) has a structure of invitation and inhibition, by stimulating certain behaviours and discouraging other behaviours. Next to translating our behaviour, technology also changes our perception when interacting with or through a product or system, by amplifying and reducing specific aspects of reality. Ihde stresses that technology is “*intentional*”, i.e. it aims at specific functionality by amplifying and reducing specific aspects of reality. These intentions are never fixed properties of the technology, but their meaning and concrete use are dependent on the context of use; meaning is created in interaction. These technological intentionalities are so-called “*multistable*” (Verbeek, 2006; Ihde, 1990).

It is therefore important to experience the context, observe who else perceives the situation and from there, try out design propositions. These activities can all be done through a 1st perspective, 2nd person perspective or 3rd perspective². All participating stakeholders, including users, document their own experience. The dialogue with all these stakeholders opens up terrain for exploring and creating new design proposals.

Collect and analyse During the design process, insights into the situation and overall context are acquired, as well as insights into the behaviour of people involved and their experiences. This is done through qualitative and quantitative methods. Conducting empirical and experimental field studies with design interventions is at the core of this activity. By experiencing these propositions in context, in fact, it is possible to study and describe their impact and potential for transformation.

However, observations can also be carried out without interventions and through descriptive and desk research. Research is done by all participating stakeholders, including users. Since we are dealing with complex socio-technical systems, even if we prioritise direct experiences, it is necessary to carry out analysis, to spot hidden patterns and opportunities. Through this activity of collecting and analysing, new perspectives are exposed, which open up new design opportunities for transformation.

Reflect and learn Our design process makes use of reflective practice. We learn and grow along the process, reflecting in and on action, on an individual level, on a team level, on a stakeholder level, on the process etc. Reflections trigger the refinement and readjustment of the challenge over time, but they can also urge adaption of the organisation necessary for the project to continue (evolving the governance, adapting the organisation, develop the business model). Due to the intrinsically systemic and dynamic character of societal challenges, which are addressed during the process, it is necessary that all people involved step into a learning curve. This requires respect for each other competences. Since, the transformation paradigm is still in its infancy,

²As explained before: as a developer, you can experience the situation yourself (1st pp), you can empathise with people and try to get as close as possible to their experience (2nd pp) or you can 'objectively' observe people acting and experiencing (3rd pp)

since the transformation paradigm is still in its infancy, we need new formal educational formats and approaches to support these learning processes

we need new formal educational formats and approaches to support these learning processes (Hummels, 2017).

Communicate Since there are so many different stakeholders and consequently expertise around the table, it is important to understand each other's "language". Therefore, the process uses multiple channels of communication, to cover the differences among stakeholders. It is a way to connect all stakeholders, and enable people to participate in an equal way, using the communication skills that they are comfortable with. Moreover, it is also a way to create empathy. Using more frequencies and media (vlog, interviews, prototypes, documentaries, exhibitions) increases the chance of successful broadcasting and receiving. And in doing that, new and rich opportunities can be created together.

Organise and collaborate Running these activities that focus on design for change within the transformation paradigm, requires us to rethink the way of organising these complex collaborations. During the entire process, various assets are offered to support all stakeholders, such as tools, methods, a variety of expertise etc. These assets can be diverse from time to time, since the ecosystems of people involved differ with respect to engagement, competences, needs, contribution, organisational structure etc. The complexity of the challenge, requires a multiple loop process. This entails focusing on developing new design proposals to address the challenge, develop at the same time new approaches and tools to support this design process, involving a variety of expertise and stakeholders to really realise transformation, as well as questioning why it is important to tackle this challenge.

Realise change

The outer circle (realise change) shows all the elements that need to be in place in order to design proposals aiming at a transformation. These elements include:

1. all the stakeholders that are involved or related, i.e., the so-called social entities,
2. the immaterial social needs, exchange between these entities and the context of this challenge, and
3. the material, both physical and digital, needs, exchanges and context related to this challenge.

These elements too, can be approached from a micro, meso or macro level, i.e. a personal, community or societal level, as well as a chrono level and a meta level. The latter means that during the design process itself, one also has to ask who the social entities are that should be involved, which immaterial social exchange takes place or should be organised, and which material (physical-digital) context and exchanges are necessary for designing Transformative Practices. So, the development team should create its own landscape for development. This meta-level is tightly coupled to the last described activity 'organise and collaborate'.

These three categories that contribute to building a value landscape, contain various elements:

Social entities

1. People
2. Organisations & networks

Social (immaterial) needs, exchange and context

1. Human and cultural values
2. Finances and business
3. Governance, politics, law and order
4. Knowledge, information, data stories and methods
5. Services, labour, care, education and leisure

Physical-digital (material) needs, exchange and context

1. Infrastructure and high tech
2. Products, systems, building, tools and art
3. Agriculture and consumption
4. Nature, elements and materials

These 11 elements are connected to each other and are necessary ingredients to form a value landscape for the envisioned transformation. During the value creation process, the relationships between these different elements are determined and made specific, in order to develop designs that can lead to transformation. Let us explain all elements.

Social entities

People When addressing the challenge, it is important to explore who are all the relevant stakeholders that are related to the challenge and the potential transformation. Depending if one looks at a micro, meso or macro level, the term people can refer to individuals, a family, friends, a small group of people, a neighbourhood, a village, city, region, a country, continent or even a culture. What are their important physical/physiological, cognitive, emotional and social characteristics, skills, behaviours and condition? What comprises their identity, their position in and perspective on the world? What drives them and what are their needs?

Organisations & networks A community of people can also refer to specific organisations with their own identity, ways of working, norms, strategy, vision etc. For example, organisations can refer to businesses, industries, universities and schools, governmental organisations, NGOs, NPOs, health care institution, etc.. Next to single organisations, it becomes more and more important in a transformation paradigm to work with networks of stakeholders and organisations, who can have their own identity, attitudes, norms, strategy, vision etc... Similar questions as addressed with people can be asked for organisations and networks.

Social (immaterial) needs, exchange and context

Human and cultural values Ethical value exchange is positioned at the core of the transformation economy. Consequently, we consider values essential for creating the value landscape and developing propositions. Schwartz (2012) defines values as beliefs that refer to desirable goals and which transcends specific actions and situations, thus distinguishing them from norms and attitudes which do refer to specific actions, objects, or situations. Values serve as standards or criteria. People act upon the relative ordered importance of various values. We base our framework on the work of Shalom Schwartz

(1992, 2006, 2017), who created a refined theory and model for human values. . To create the value landscape for a societal challenge, it is important to address the specific values that are or are envisioned to be underlying the interaction between the different stakeholders. It is necessary to reflect, along the process on who values what and which values are expected to underlie the interaction and cooperation among stakeholders

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Finances and business In order to realise change that is irreversible or long-lasting, the value landscape and propositions need to be financially sustainable. Contributing to societal challenges such as described in the Sustainable Development Goals (SDG), doesn't mean that related business models can be weak or superficial. They should be sound as any other business (Hummels, 2018). However, since the transformation will generally be realised by a network of different stakeholders, it will probably require new business models. Such models will build on networks where the investments are not necessarily done by the same partners as those that will benefit from the return of investment. This requires respect, trust and a clear overview of anyone's contribu-

tion and benefits, as well as the set up of dynamic agreements along the process, concerning terms of collaboration and terms of financial distribution. This demands an increased number of insights and an improved understanding of the worth of different contributions, both material and immaterial, and their relationships. Emerson (2003) emphasises, for instance the importance of 'blended value' propositions where both financial and social returns are taken into account. According to the International B Corps network, this approach requires at least social and environmental performance, accountability and transparency, next to their financial counterpart (B-corp, 2018).

Governance, politics, law and order These surface on all levels: on a micro level, they appear in our everyday acting in the world; on a macro level, they manifest in our policies, laws and governance. Habermas (1984) makes the distinction in his Theory of Communicative Action between the System and Lifeworld. On the one hand he positions System, constituted by our regulated environments, such our governing bodies and our institutional laws and judicial system. Lifeworld on the other hand, is our everyday living in and dealing with the world, in between these regulated structures. It relates to our complex social interactions and embraces pluralism (Jaasma, 2018). Realising transformation generally requires change within both System and Lifeworld. Besides, all participating stakeholders have to scrutinise their own way of working and their organisations with their norms, attitudes, procedures and regulations. Would it require alterations or even major changes of working to realise change. And who are the stakeholders necessary to make those steps within the organisation, or would the project first run outside of the traditional system?

Knowledge, information, data, stories and methods People consciously and subconsciously share knowledge, information, data and stories. When designing for and with people, we like to have an understanding of their lives, what matters and what they find important, for which the collection and the dynamic development of stories and information is valuable. Our Transformative Practices approach is based on continuous research, trying to grasp the emerging interaction with the world, the shift towards the targeted challenge, and the interaction with the designs we are developing. In the framework, this research approach focused at collecting information and reflection on

it, is captured under the activities ‘collect and analyse’ and ‘reflect and learn’. Moreover, ‘communicate’ also plays an important role for sharing this information and stories.

All these aspects, Knowledge, information, data, stories and methods, are resources to assist the design of propositions themselves. Part of the design that aims at transformation can collect e.g. data that informs the user about his status, behaviour or goals; the design can visualise information and stories via various media to support people in their transformation. Due the systemic character of our challenge, also the media context in which the societal challenge is situated has to be scrutinised.

Services, labour, care, education and leisure The last element in the value landscape that relates to immaterial social needs of and exchange between people and organisations is related to our actions. Which services do we provide each other, and what do we require to enable transformation? What is the importance for people of having work, contributing to society and reaching transformation? In which way do we take care for ourselves and other? And how does that relate to transformation? How do we educate ourselves and others? And what is the role of leisure activities for our wellbeing and transformation?

Physical-digital (material) needs, exchange and context

Infrastructure and high tech Technologies emerge and evolve over time, and in combination with sociocultural forces that change people’s perception of what constitutes value, and that reflect and fit the Zeitgeist. (Gardien et al., 2014). Emerging high technology is ubiquitous in our society, it influences our everyday living and can also support transformation. When creating design proposals, the team has to explore the role of high tech in the addressed (societal) challenge and its potential in shaping new propositions for transformation. With this we mainly refer to core technologies, such contextual sensors, smart materials, internet of things, but also to main infrastructures such as power grids, glass fiber cables and public transport lines and roads.

Products, systems, building and tools When describing the activity ‘envision and create’, we introduced the notion of technological mediation, stating that everything

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in our environment, mediates the way that we perceive and act upon the world that we live in. We keep this notion into great account when working to achieve a transformation. In what way can contextual elements such as products, systems, houses, environments, tools, expression of arts etc. support our values, address the challenge at hand and create opportunities for transformation? Particularly, how can the aesthetic and functional qualities embedded in the materiality and in the interactive qualities of these contextual elements, elevate (transform) personal and social ethics and related behaviour? These elements can incorporate high tech (the previous element) and can support along the process of creating propositions for transformation.

Agriculture and consumption Our core-needs as human beings, are connected to to our physiology, as in the necessity of water and food (Maslow, 1943). This is essential for our survival, but in our current society, no longer only connected to our survival. We can have dinner simply to keep our motor burning, but we can also have dinner for social engagement, bonding and pleasure. In some parts of the world, the abundance and highly processed and manufactured food, contributes to major issues related to eating habits and health. Which at points we try to tackle medicines and other refined food. When creating the value landscape, the team can explore if and how agriculture and consumption play a role in the challenge and somehow influence the potential propositions.

Nature, elements and materials Our ecology is under pressure, stimulating developments, attitudes and methodologies such as sustainability, green footprints and cradle to cradle (c2c). When creating the value landscape, the team can explore in which way the selected challenge relates to our natural environment and conditions, to our (limited) natural resources or our climate. Moreover, when creating propositions, even when the challenge is not directly connected to nature and sustainability, it is necessary to make an effort to predict consequences and impact on the natural environment and its biodiversity.