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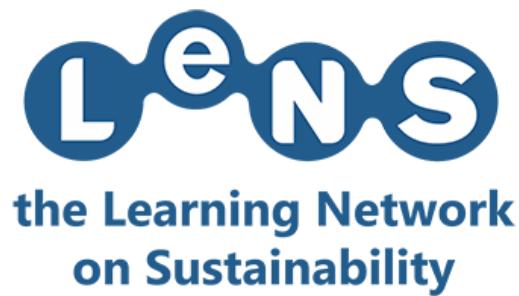
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## DESIGN AND TRANSITION MANAGEMENT: VALUE OF SYNERGY FOR SUSTAINABILITY

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### ABSTRACT

This paper aims to understand the value of synergy between the field of design and that of transition management for sustainability. Six potential values of synergy are identified: (1) enriched methods of retrieving knowledge of current objects and current systems; (2) providing boundary objects in transition arenas beyond language games; (3) actively envisioning the effect of design things during and beyond their lifetime; (4) intensified reflexivity in design practices and projects; (5) more prototyping activities to leave traces of transition activities in everyday life; (6) greater focus on building interactions through a broader range of co-creation activities. The paper also identifies four possible pitfalls of synergy between the two practices. The paper is grounded in literature but is meant to be a stepping stone towards experimentation in practice; where knowledge, approaches, methods and experience of both fields are combined to intensify the impact on sustainability.

**KEYWORDS:** Sustainability, Transition management, Design methods, Co-creation

## 1. INTRODUCTION

We are at a moment in time that design for sustainability and transition management, coming from different academic and practice backgrounds, have gone through similar stages of development and arrived at the mutual interest of sustainability and transitioning towards that goal. Design for sustainability and transition management both deal with complexity and sustainability in research and practice, they are concerned with changes in society and the factors that shape our future. The challenge of systemic change is recognized and tackled in both fields. However, the practices and approaches of the two fields differ due to their specific roots and historical backgrounds. Transition management is a governance approach developed in the field of transition studies. Recently, institutional structures are being developed for transition studies and this institutionalization of the field signals a new phase for the transition community (Markard, Raven & Truffer, 2012). This is believed to create opportunities for more intense collaboration and contributing to the legitimization of the field. This paper gives an idea of how to extend the invitation for collaboration to the field of design. Within the field of design, different movements are emerging and maturing that place sustainability central to their processes, often gathered under the general term design for sustainability. For a comprehensive overview of the evolution of the different approaches of design for sustainability see Ceschin and Gaziulusoy (2016). The field of design for sustainability is rooted in both design engineering and the applied arts while transition management has its origin in complex systems theory and evolutionary theory (Sengers, Wieczorek & Raven, 2016). In these roots one can already identify a fundamental difference. Where design is often cornered as well as praised for being solution oriented, transition management is understood as using goals while not aiming to control the future (Kemp, Loorbach & Rotmans, 2007, p.87).

The goal of this paper is to recognise the overlap and differences between the two fields and identify possible values of synergy in practice. Hereby adding to the young and emerging field of transition design (Irwin, Kossoff, Tonkwise & Scupelli, 2015) that also recognises the potential combined value of both fields. In this field the ideas of transitions (not transition management specifically) and design (not only design for sustainability) are coming together but are not necessarily combined in their practices. Some efforts have been made to identify roles of designers in sustainability transitions (Gaziulusoy & Ryan, 2017). But, it is found that the in literature envisioned coordinating and strategic role of designers is not always realised in practice (Sumter, Bakker and Balkenende, 2017). Therefore, this paper aims to understand how to combine both practices to maximise the combined value towards sustainability, rather than re-inventing a new practice all together. The aim is to enrich both fields with the presented insights, to ultimately inspire and support all of those working on sustainability transitions. The paper is based on literature but is meant to be a stepping stone towards experimentation in practice where knowledge, methods and experience of both fields are combined.

Up next, a short overview of both fields, their main challenges and their practices. The discussion section of this paper then presents six potential values and four pitfalls of potential synergy. Last, in the conclusions, some initial recommendations are given of how to establish this synergy in practice. The paper is by far from complete in its understanding of the differences and overlap nor does it try to be. It is set up to provide enough background to understand the possible value of synergy.

## 2. DESIGN FOR SUSTAINABILITY

In the works of frontrunners in the field of design today, ideas of both design for sustainability and design thinking are coming together. With these future forward thinkers, it is hard to distinguish between design and design for sustainability because they are implicitly or explicitly assumed inseparable. These include the emerging fields of transition design and systemic design (Ryan, 2014; Jones & Kijima, 2018) as well as the frontrunners in the field of participatory design (Bjögvinsson, Hillgren & Ehn, 2012) or DesignX (Norman & Stappers, 2015). In all these, complexity is embraced instead of dealt with, the focus is on societal challenges and the aim is to create societal impact through systemic change (Mulder & Loorbach, 2018). Designers are then the ones who shape systems or infrastructures for others to design their own (sustainable) futures, referred to as design after design (Redstrom, 2008), framing (Dorst, 2011), emerging design (Manzini, 2016), infrastructuring or staging (Bjögvinsson et al., 2012). This means that design faces the challenge of being continuous while anticipating or envisioning potential design that takes place during use. This means indeterminacy and incompleteness have to be deliberately designed into the infrastructure, leaving space free for unanticipated events yet to be (Bjögvinsson et al., 2012). Next to that, human needs and desires are no longer the central focus point of design but systems are, also referred to as socio-material assemblies. Systemic design is a developing field that addresses both challenges of infrastructuring and designing for systems. Still, a large part of the design community has not yet moved from designing objects to designing socio-material assemblies and regards the design process as closed-ended with a fixed solution at the end. This top-down perspective “hinders adaptation to changing conditions, the hierarchical structure adverts “legitimate” participation, and the specifications become inflexible” (Bjögvinsson et al., 2012, p.104).

Today, designers work in very diverse fields, they apply their methods and ways of thinking to a wider variety of subjects and blend and complement their knowledge with that from other fields. Design methods are catered to collaborative and multidisciplinary ways of working because the process includes various people at different

moments in time, in participation and co-creation. This makes the design practice rather diverse. Still, it is mostly diffused through design education, by experiencing the process and acting out the role of designer in small projects (Cross, 1982, p.222). The design process consists of different diverging and converging steps, that traditionally have names like “analysis,” “design,” “construction” and “implementation” (Björgvinsson et al., 20012). The latter making it an interventionist and transformative discipline (Dalsgaard, 2014). During these steps, different possible frames or solutions are modelled, constructed and experimented with, often from human-centred perspective. The process is often steered by problem-solving, while dealing with ambiguity and uncertainty (Shah & Millsap, 2012; Lewis & Bonollo, 2002). It is a co-evolution or a gradual process of the ill-structured problem and design solution, regarded as pattern synthesis, rather than pattern recognition (Dorst & Cross, 2001). The solution is not simply lying there among the data; it has to be actively constructed by the designer’s own efforts (Cross, 1982, p.224). This makes that a design process is also characterised by the designer and its attitude or mindset, next to the more traditional design skills, such as visualizing, sketching and reading and writing in ‘object languages’ (Cross, 1982).

### 3. TRANSITION MANAGEMENT

Transition management (introduced by Rotmans, Kemp and Van Asselt (2001) and further developed by Loorbach (2007)) is a governance approach to sustainable development and recognized as one of the key frameworks in the field of transition studies. It is based on notions of complex systems theory, such as variation and selection, emergence, coevolution, and self-organization (Rotmans & Loorbach, 2009). It deals with persistent problems, the superlative form of what Rittel and Webber (1973, p.160) refer to as “wicked problems”. Persistent problems are related to system failures in our societal systems and that, contrary to market failures, cannot be corrected by the market or current policies (Rotmans & Loorbach, 2009). The aim of transition management is to create space for short-term innovation and develop long-term sustainability visions linked to desired societal transitions (Loorbach, 2010). In the context of complexity theory, this means influencing the process of change of a complex, adaptive system from one state to another. In the process new products, services, business models, and organizations emerge, partly complementing and partly substituting existing ones (Markard et al., 2012, p.956). Managing such a transition process means using disequilibria rather than equilibria (Rotmans & Loorbach, 2009, p188). It is understood as guided by a paradox derived from complexity theory: radical change in incremental steps. The idea is that structural change is needed to obliterate the existing deep structure of a system (in the field referred to as the incumbent regime) and ultimately break it down. Not disrupting the system, to avoid a backlash because of its resilience, but allowing the system to adjust and build towards new structures that fit the new configuration (Rotmans & Loorbach, 2009, p.189). The difference with previous work on niche experiments is that transition management is not limited to technological change or environmental sustainability (Van den Bosch, 2010). However, the challenges are similar. Experiments are often isolated events that slowly become forgotten without any effects on current structures (Hoogma et al., 2002). When there are low levels of government support some states might get lost in a labyrinth of experimental paths (Sengers et al., 2016, p.9). Also, the question is raised whether experimentation naturally occurring in our modern society can be modulated, let alone steered, in a sustainable direction (Schot & Rip, 1997). Last, some say that in the practice of transition management too little attention is given to change associated with everyday life, and that it lacks the conceptual resources to do so (Shove & Walker 2007).

The practice of transition management explores alternative social trajectories in an adaptive and anticipatory manner (Kemp, Loorbach & Rotmans, 2007). The first step in such a process is an integrated system analysis and selecting actors. This makes that it has a rather steered and defined starting point but the intention is to be co-creative in the accomplishment. It consists of four different clusters of activities: strategic, tactical, operational and reflexive. These activities can be considered the practices of transition management. They are acted out by transition scholars together with the frontrunners of specific systems. *Strategic activities* take place in a transition arena. Arenas are temporary constructs where frontrunners are brought together around a certain transition topic. The inclusion of frontrunners is deliberate. It is believed that to generate emergent structures certain competencies are needed, such as a creative mind, strategic qualities and visionary capacity as well as not depending on the structures, cultures and practices of the current system (Rotmans and Loorbach, 2009, p.189). People can be part of different arenas, also at the same time. A sustainability vision is developed and pathways derived. Generic principles are translated into specific concrete settings and captured in transition images and a transition agenda. *Tactical activities* are about finding new attractors for the system as well as creating coalitions and new networks around the transition agenda. The goal is to guide niche development and stimulate the formation of niche regimes. *Operational activities* mostly consist of transition experiments, set out to create diversity. These specific type of innovation projects are inclusive, practice-based and challenge-led. The aim is to pro-actively explore new ways to meet societal needs and promote system innovation through social learning under conditions of uncertainty and ambiguity (Sengers et al., 2016, p.9). *Reflexive activities* of monitoring and evaluation are needed to develop an adaptive strategy while the system is changing, anticipating on future trends and development. Hereby complying to sustainable development as redirecting development and not as an identifiable end-state (Kemp et al., 2007).

## 4. DISCUSSION: THE VALUE OF SYNERGY FOR SUSTAINABILITY

The background, challenges and practices of both design for sustainability and transition management were discussed. Six potential values of synergy are identified.

### 4.1 Enriched methods of retrieving knowledge of current objects and current systems.

Design has its own distinct 'things to know, ways of knowing them, and ways of finding out about them' (Cross, 1982). Through different design methods, such as contextual inquiry or context mapping (Sleeswijk-Visser et al., 2005), designers can add knowledge of current objects, of current systems to transition arenas.

### 4.2 Providing boundary objects in transition arenas beyond language games

Transition arenas rely heavily on words and discussions but also aim to produce images of futures, something designers are equipped to do. Designers can also bring it beyond images, towards an evolving boundary object, such as a mock-up, prototype, or design game. These could bind the different language games, often entangled with different perspectives, together and allow for transference and commonality while acknowledging that different stakeholders might at the same time hold very different views (Björgvinsson et al., 2012).

### 4.3 Actively envisioning the effect of design things during and beyond their lifetime

Connecting design to practices of transition management would allow for more heavily embedded practices of envisioning the future and anticipation of future trends and development. Transition management principles can help designers to think about and really be part of a transition as well as realizing the power they have of shaping the future (so also the potentially negative power they might have if they use their power wrong). Hereby possibly advertising the danger of "optimizing the "wrong" systems by not fundamentally questioning the need for certain industrial production or the levels of consumption associated with these systems" (McDonough & Braungart, 2002).

### 4.4 Intensified reflexivity in design practices and projects

Embedding transition management activities of monitoring and evaluation in design processes can help designers reflect on their practices, their experiences and ways of working during their main way of learning: experiencing the process. This reflexivity could stimulate the maturation of the transition design practice and formulating as well as understanding the new role of the designer.

### 4.5 More prototyping activities to leave traces of transition activities in everyday life

Professional designers can be understood as leaving traces, obstacles, objects, and potentially public things for users to "enact" in their everyday activities (Björgvinsson et al., p.107). Following this understanding, design could add value to transition strategies, not only through the apparent value in operational activities during experimentation but also in strategic and tactical activities; leaving traces for people, beyond frontrunners, to enact in their everyday activities.

### 4.6 Greater focus on building interactions through a broader range of co-creation activities.

Both in design and transition management there is emphasis on co-creation and participation, the two fields could learn from the diverse methods and experiences of the other. In participatory design, the focus is traditionally on envisioning use before use but moving towards design after design where other people will have to act. In this, there is much to learn from the tactical activities of transition management where the focus is on creating interactions and coalitions.

### 4.7 Possible pitfalls of synergy between design and transition management

Besides the promising values, there are pitfalls not to be overlooked. First, the role of design could be dumbed down. Designers can be treated as the visualizers of visions of transition managers and not involved in the higher-level abstract thinking. Similarly, design could be only used for generating new ideas in the experimentation phase (the most obvious role for design) and not throughout the whole process. This will not result in cross over learning: designers will not learn from practices of creating a long-term future vision and interactions for it, nor will transition managers benefit learning from boundary objects and leaving traces in connecting to every-day life. On the other hand, the synergy could result in transition management being overly focused on every-day life and operational activities. This would make it too concrete, losing some of the ideology of the long-term future visions. Also, when there is a greater focus on experimentation, transition management could be criticized too much on the execution part, because too much is being expected from the experimentation in the preceding transition arena. Disappointment of the level of experimentation or implementation reached in a later phase might then spur disbelief in the transition path all together.

## 5. CONCLUSIONS

In short, the potential value of combining the practices of design and transition management is promising, but joint practices need yet to be established and experimented with. The emerging field of transition design also sprung from seeing this potential. To be able to fully understand the joint value, collaborative projects need to be set-up to



experiment with different combinations of methods; the processes and outcomes of joint and separate projects need thorough evaluation; and, more cross overs need to be established between education programs as well as joint programs developed. Last, the developments in transition design and other movements of design for sustainability are carving out a sort of meta-field, requiring meta-skills and meta-thinking, as in overarching. A question that needs to be addressed is whether this shift is not attributing too much power (and responsibility) to designers and the field of design. It could lead to a framing of designers as almost impossible omnipotent human beings, that no other can match. This is rather daring. Other fields have equally valuable contributions to make to sustainability, such as transition management; claiming rather similar qualities, addressing similar issues and in some ways using similar methods as design for sustainability. Therefore, this paper is both a reminder of humility for designers as well as advocating the use of design for sustainability transitions.

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