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REGENERATIVE PLACE-MAKING

Making places for collective life and a common future

SIGRID LAUREL ÖSTLUND

Department of Architecture and Civil Engineering
CHALMERS UNIVERSITY OF TECHNOLOGY
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Sigrid Laurel Östlund
Department of Architecture and Civil Engineering
Chalmers University of Technology

Abstract

Increased population and movement in the age of unsettlement affects local cultural institutions, ecological constitutions and the ontological sense of belonging. These conditions are arguably influenced by the mounting waste produced by the throw-away culture of the age of the ephemeral. In these times of hypercomplex eco-socio-spatial relationships, there is a growing call to move beyond mainstream sustainability. It asks for a redevelopment of the understanding, and a new narrative, of the relationship between humans, nonhumans and ecologies. Cognitive sciences and narrative studies indicate that embodied experiences of physical environments, i.e. places, are crucial to how we understand, communicate and form relationships to other humans and nonhuman beings and things. This implies that there is a need for more and new types of places for new relationships and lived experiences in these hypercomplex times.

Spatial designers influence the formation of places and use methods and expressions that have been correlated to narrative development. This study, therefore, aims to understand and develop a designerly interpretation of 'beyond sustainability'. It does so through a theoretical and practical exploration of the implication of regenerative design principles for place-making. As a testing ground for this mode of working, it explores proto-regenerative places with public access. More specifically: place-making practices that try to make sense of, and adjust, people's relationship to waste-making practices.

To explore how waste-resource relationships could be of value for intersubjectively lived experiences of places, the study also develops a method, the directed dérive, to explore emergent phenomena of place. The study combines this exploration with a theoretical inquiry of regenerative theory. Results are the identification of possible characteristics and narrative elements of regenerative public places, as well as core principles and strategies of regenerative placemaking: regenerative eco-socio-techne; situated nonmodern narratives; empowering change. These, in turn, suggest a designerly approach to moving beyond sustainability.

***Key words**: regenerative design, beyond sustainability, place-making, collective public life, designerly thinking, spatial design, waste-resource cycles, nonmodern narratives, schema, dérive*

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Chapter 1

Origins & Approach

1.1 Intentions & motivations

Navigating the implications and developments of the complex notion of sustainability and its relation to the practices of spatial design is not an easy task. Let alone addressing this in relation to the growing call to move 'beyond sustainability' (Jamieson, 1998). However, it is a task that must be dealt with as built environments expand in times of unprecedented challenges and complexity. As the planet faces expanding urbanization and globalization, there is pressure to re-evaluate the roles of built environments and human activities in the health of ecosystems that we and other species depend upon. An important part of this challenge is to address the potential role of place and spatial design in the paradigm shift that is necessary for changing current and future circumstances.

This challenge is too monumental to be resolved by any one person or discipline, and yet they lie at the heart of the motivation for all that is written here. My strategy has been to contribute to the larger story through a smaller story: one about the potential relationships between *place-making, regeneration* and *designerly thinking*. To study this, I look more specifically at the potential for combining perspectival and actual transformations of *space-into-place* and *waste-into-resource*. The logic behind these focalizations and terms is discussed further elsewhere in this licentiate[1], but to help clarify the motivations and intentions of this tale I will summarize my position here as briefly as I can.

Drawing upon Agnew's (1987, 2011) discourse on place, I define place as a space which has become meaningful and valuable to how we emotionally connect with and make sense of our surroundings. Drawing on Strasser's (1999) discourse on the age of the ephemeral as well as on Lyle's (1994) concept of regenerative systems, I define waste as a resource whose value and purpose in daily life and making processes is either depleted or unrealized.

The study is staged in numerous settings, all of which attempt to understand how *spaces* shared by a broader *public* can become *places* for the creation and enactment of "our common future" (WCED, 1987). A vision for our common future arguably needs to understand how our common needs and responsibilities affect the spaces

[1] See sections 4.2

that we have in common. In this sense, the study will be addressing issues that are related to public space.[2] Public space has been argued to be "an essential ingredient in the sustainability of cities" (Tonnelat, 2010, p.1), however, its traditional definition and forms have been challenged by modern shifts in urban settlement norms and patterns. To remain focused on the shared aspect of public space, the study leans on Tonnelat's argument that public spaces are, today, best defined as spaces that are publicly accessible (Tonnelat, 2010). This study, therefore, focuses on places that are accessible to, and shared by, the public.

A primary focus lies on discovering aspects of place that cause them to be nodes of meaning in collective life and can help to shift towards an equitable common future. It does so primarily through looking for experiences of 'sense-of-place' (Agnew, 2011) that contribute the notion of belonging in place. By focusing on how shared spaces with regenerative uses of resources contribute to a sense-of-place, the study also explores aspects of sense-making that can contribute to our shared narratives on humanity's role in, and potential contribution to, the well-being of life on earth.

Through this exploration, insights are sought on how design influenced narratives might help inform attitudes, practices and methods that reach beyond sustainability towards regeneration. This in turn can contribute to a clarification and development of the theory and practice of spatial design beyond sustainability which, in turn, also relates to the larger questions of "what...we mean by city" and "what...we mean by sustainability" (From, 2011, p.17) in the age of unsettlement (Fry, 2009) and the age of ephemerality (Strasser, 1999).

1.11 Searching beyond sustainability

In the spirit of providing an understanding of the background of this work, I would like to devote a moment to explain how I came to first develop the notion of regenerative design; only to subsequently discover that others had already done so using logic similar to my own. As I embarked upon my master's thesis (Flygare & Östlund, 2010), there were a number of incongruities and problems with

[2] Further discussed in section 4.23

sustainability that were on my mind. My primary concern lay in the sense that there were incongruities between sustainability, as it was most commonly defined, and the basic practices and motivations behind spatial design.

In the mission to find out where the problem, and potential solution, lay considered the linguistic implication of the term sustainability[3], how it was interpreted, and how that interacted with design thinking and acts. The verb 'to sustain' implies maintaining things as they are or, even worse, maintaining life at a state of basic survival. While life systems do need to be maintained, shouldn't we instead embrace change that allows life to thrive and evolve? Can we motivate excitement for a concept that implies only maintaining basic necessities and potentially implies a denial of the opportunity to thrive? I therefore set up a thought experiment to find a word which could express some essential and common aspect of ecology, society and design. The following is a brief outline of my logic:

Design is commonly focused on *envisioning, creating* and *developing possibilities* (not merely maintaining or improving what exists). Like Groat & Wang (2013), I concluded that one of the most common "characterizations [used] to describe design is embodied in one word—*generative*" (Groat & Wang, 2013, p.25). This inherent designerly drive 'to generate' change conflicts with the notion of maintaining things as they are suggested in the verb 'to sustain'.

While the notion of sustaining life as we know it is a worthy goal, it did not express my understanding of the mechanisms underlying the way nature and societies come into existence and/or persist over time. Ecological and social systems are upheld through systems of transformation, adaptation and evolution (Bohm, 1980). The apparent stability of ecological or societal situation is created by continuous acts that uphold the existence of a system or phenomena (Bohm, 1980; Murdoch, 2006).[4] In other words, life systems and situations persist through a continuous *regeneration* of effects and situations.

Through the linguistic and etymological similarity between generation and regeneration, I reasoned that the changes needed in the design practice could be more effective through focusing on a shift from a generative into a ***re***-generative

[3] This is discussed further in section 3.4
[4] This is discussed further in section 2.3

mode and thinking. Systems and designs need to act *regeneratively* in order to *sustain* life, living and livelihoods.

In seeking for other uses of the term 'regenerative design', I discovered John T. Lyle (1994) had used the term in his book "Regenerative Design for Sustainable Development" (Lyle, 1994). I subsequently found several others who have expanded upon Lyle's original definition, concepts and principles[5]. Fortunately, these authors' arguments aligned well with my own in terms of the relationships between sustainability, regeneration and designerly thinking.

Regenerative design theory problematizes the prevailing, i.e. mainstream, notions of sustainability in its tendency to measure successes of being "less bad" (Cole, 2012b; McDonough & Braungart, 2002) and perpetuating antagonistic relationships between humanity and nature. It argues that these notions are not enough to guide and inspire the design and use of a built environment that foster life enhancing conditions. It insists that our goal for the future must entail an understanding of human activity as a potentially positive and integrated force of nature. Besides fostering regenerative material and energy cycles that mimic and include ecosystems, it is also argued (du Plessis, 2012; Mang & Reed, 2012) that this entails a reconstruction of the stories that form and express the relationships between people, creatures and things in the world. The major difference, however, between these authors has been in the ways they address (or do not address) the complex notion of place, in particular the question of public/common/collective space. By investigating questions related to the public and meaning-making aspects of regenerative place, this licentiate endeavors to contribute to regenerative theory discourse on place and moving beyond sustainability.

1.2 A PROSPECTIVE APPROACH

This licentiate traverses the expanses and intersections of broad topics with the intention to understand and approach current and future eco-socio-spatial conditions from a designerly perspective. The qualities and character of design

[5] Discussed further in section 3.4

problems lies in the relationships between a number of measurable and immeasurable aspects of the physical world and our non-physical values and perceptions. Designers have therefore developed ways to work with situations where the information is so vast and complex that it is impossible, or impractical, to gather all the related data and generate knowledge through deductive reasoning.

This is particularly true in situations where values must be combined with facts from multiple, often conflicting, perspectives and disciplinary needs in order to make sense of a situation and devise possible syntheses and solutions (Groat & Wang, 2013; Janssens, 2012). To work with and understand the interstitial realms of a myriad of specialist fields, the designer often approaches topics broadly and connectively, with the belief that depth can be achieved through breadth and correlation. Common activities in this inquiry is redefining task constraints and restructuring problems by questioning and re-framing assumptions and 'givens' (Paton & Dorst) which may be the product of dogmas and paradigms. These skills and activities enables designers or researchers to discover latent potential or problems in complex situations, which is an effective method for developing unforeseeable results (Paton & Dorst).

In scientific research the inductive and deductive processes are often stated as the dominant methods of knowledge production, however, they are in fact only part of the story of how knowledge is created and found. Inductive reasoning can predict the *probable* nature of things and situations and is a useful part of design thinking. (Groat & Wang, 2013) However, designers are particularly interested in - and skilled at - looking at the *possible* nature of things and situations; a type of reasoning more akin to *abductive* reasoning.

Abduction is associated with intuition, idea formation and concept generation; it is immanently tied up with the realm of possibilities and is therefore a crucial element of designerly thinking and working with the realm of the unknowable (Groat & Wang, 2013). However, while abduction typically forms a hypothesis or theory from facts and experiences in the present about the present, designers include values and visions of, and for, the future in their reasoning (Groat & Wang, 2013; Janssens, 2012). Designerly thinking could therefore also be called a type of

prospective reasoning, i.e. a reasoning which is "relating to or effective in the future" (Merriam-Webster, 2016).

Grappling with the problem of defining and working towards an equitable and just "common future" (WCED, 1987) involves a complex intermingling of multidisciplinary, and at times contradictory, ontological visions and values of present and future scenarios. The future is informed by the present, however the present is also influenced by visions of the future. Changing present conditions through envisioning a specific future can be an effective way of operating when present conditions are part of the problem we wish to avoid (Holmberg & Robert, 2000). To be able to inspire work towards a future vision, one needs ways to define, derive and test its qualities, particularly when one's goals seem utopian from the perspective of present conditions. One then requires prospective methods of testing of possible futures. Designers do this through generating proposals, interventions, concepts and things (Groat & Wang, 2013; Lawson & Dorst, 2013; Paton & Dorst). Nel Janssens (2012) refers to these actions using the terms 'projection' and 'proflection', which could be summarized by *projecting* alternative futures through the *projects* and *reflecting* on their *prospective* merits.

Designerly thinking in research is, then, a generative and prospective means of inquiry which approaches its topic from multiple perspectives and disciplines. The results of design and design research build upon a future oriented tapestry of probability and possibilities of explorative interventions, driven by values, inspired by visions and contingent upon multiple perspectives in an eternally variable context. Results are often products of overlapping multiple theories and projects "all circling around a same issue but approaching it from different angles and with different emphases" (Janssens, 2012, p.149).

John Law's description of "method assemblages" (Law, 2004, p.14) parallels aspects of a designerly approach to research. He explains it as an approach which "works in and 'knows' multiplicity, indefiniteness, and flux" (Law, 2004, p.14). The expression and representation of findings are not precise or definite because the reality they are studying does not lend itself to an orderly and simplified organization. The approach to the studied topic, or situation, and the account of what is found "is the process of enacting or crafting bundles of ramifying relations

that condense presence and (therefore also) generate absence by shaping, mediating and separating these" (Law, 2004, p.122). It is not a method of revealing all the 'facts', but rather of revealing relations of facts and values, i.e. how we make sense of things.

> "method assemblages…detect, resonate with, and amplify particular patterns of relations in the excessive and overwhelming fluxes of the real…[they are] a combination of reality detector and reality amplifier" (Law, 2004, p.14).

This study embarks upon an exploration of a type of messy reality: the realities of place-making, waste-making and world-making through a designerly perspective. It uses designerly thinking and prospective reasoning to both understand and influence multiple concurrent circumstances and assemblages that could reveal and amplify potential for positive change in eco-socio-spatial conditions.

1.3 Navigation & narration

My process has been to outline a realm, a lacuna,[6] into which I have delved seeking the boundaries and depths of ways that regenerative theory and places can contribute to the issues facing humanity and the practice of spatial design. This lacuna is defined by intersecting of core concerns of our times and of spatial design.

This licentiate is derived from a reasoning and understanding which is more broadly connective and proflective (i.e. prospective reflection), as described in the previous section, than it is narrow and conclusive. My intentions have been to understand and create, not dissect and delimit. I have explored different contexts in search of possibilities for creative inspiration and further exploration. The results are as prospective and hybrid as my process has been.

The paths traveled have unfolded expansively and progressively, each step leading organically to the next. However, in difference to a journey where each step creates a linear path, the steps have been taken from multiple directions. While some steps have followed the next, they have often been taken in a lateral manner, i.e. once

[6] See section 4.1

I have looked at the lacuna from one direction I metaphorically take a step to the left or right and start a new path with the intention of gaining another perspective on the topic.

1.31 Devising a good story

I once heard that "a good study must result in a good story" (Czarniawska, 2016). I have, therefore, sought to communicate through a voice and structure that is joyful to write and read without compromising on academic quality. I have attempted to do so by allowing moments of what Gaston Bachelard calls "insignificant confidences...[and]...recollections" (Bachelard, 1958, p.71) in the hope of achieving what he identifies as their ability to portray "intimate meanings that establish spiritual understanding between writer and reader" (Bachelard, 1958, p.71).

The study has had a layered approach rather than a consecutive one, a multiplicity of paths converging and diverging; yet a text must have a beginning and an end, with a logical sequence of thought. This logical sequence is presented in the index and is an attenuation of the logic of the academic formula: *introduction-method-results-analysis-discussion*. Connections between topics are not linear. To express some of this non-linearity, footnotes are placed to help show the relations between different sections and allow the reader to read in a less linear manner if they wish to do so.

1.32 Narration & interpretation

Each of us are receptors and creators of stories and have particular ways of dealing with the interplay of subjectivity and objectivity. Research narratives, in a strive for absolute objectivity, often obfuscate the narrator's position and values. However, post-structuralists[7] have challenged this obfuscation, arguing that the narrator's background and their relationship to the area of study is as essential to divulge as any other element that has gone into form a study. There is no doubt in my mind that the story (or stories) contained in this licentiate exist as a result of my

[7] Particularly in gender and post-colonial studies.

background, interests and biases for which I wish to take full responsibility for and expose here:

> I have an inter/multi-cultural personal and professional background. Perhaps my rooted-rootlessness, with its hybrid identity and thoughts, can be sensed in the text before you. My hybrid background has left me fascinated by how identities and attitudes are formed and influenced by the places, language and social norms we encounter and use.
>
> I was an environmentalist before I was an architect, and chose this profession knowing that the built environment was one of the largest contributors to energy and material consumption in society. I reasoned that perhaps I could more effectively change things 'from the inside'.
>
> The initial impetus for this work can be said to lie in my first encounter with Gaston Bachelard's seminal work on the "poetics of space" (1958). The embodied experiences of built and 'natural' spaces are, for me, undoubtedly poetic. A driving force has, therefore, been to find a theory, language and approach to sustainable spatial design that could express and advance the poetic aspects of lived experiences. It would not be an exaggeration to say that this licentiate is ultimately about understanding, discovering and creating ***a poetics of sustainability***.
>
> Professionally I am most influenced by the years I have enjoyed practicing design and planning for 'sustainability' in poor communities, being a craftsman and designer of spatially related objects, and educating young architects. When I have considered how to use what I have learned in the doctoral process, it is in these types of project settings that I have imagined them.

These experiences and values are what brought me to the field of architecture and subsequently to the formation of this study and text. I have therefore entered into this study with an underlying hypothesis that space and objects influence identity formation which in turn could be directed to foster socio-ecological equity in the world. This text is similarly directed at a reader who is interested in what role socio-spatial constructs can play in the effort to develop eco-social equity in the world. It could also be interesting for those involved in the education of spatial designers and the development of professional practices in the mission to secure and improve "our common future" (WCED, 1987).

Chapter 2

A Hypercomplex Context

When we speak of 'our times', we often speak of the 'age' or 'epoch' we are living in. This is not only a way of creating a headline for ongoing trends and associated occurrences, it is a way of describing the underlying forces that govern these trends. The name of an age is the theme of an ongoing story, the one which we are living and building. In the following section I use the identification of an age to help understand what is influencing and being influenced by reigning paradigms in society which in turn affect individual schemata[8] which are the frames used for understanding and making the world in which we live. The following chapter therefore illustrates the context and leads to the point(s) of departure for this study.

2.1 The age of hypercomplexity

The conditions and problems of our day are often said to be hypercomplex, and while hypercomplexity is often referred to, it is seldom defined. This undoubtedly is due to the clarity of its component words. A dictionary search offers the definitions of the prefix *hyper-* as "over, above, beyond" and often implying "exceedingly, to excess" (Merriam-Webster, 2016), and *complex* as "a whole made up of complicated or interrelated parts" (Merriam-Webster, 2016). In other words, the complexity of today exceeds what we have previously encountered, and dealt with, in the world and is primarily accredited to the increasingly globalized network of intensified interdependencies and relationships.

Sacha Kagan (2010) defines our condition of hypercomplexity in relation to the challenge of sustainability as a situation "where challenges of increasingly globalizing economic exchanges as well as cultural exchanges are combining with the challenge of interconnected global and local ecological and social crises." (Kagan, 2010, p.1094). Hypercomplex situations such as sustainability, also called 'wicked problems' (Frame, 2008), are not only complex in the way they manifest themselves in the world, but are also often ill-defined and difficult to pin to any single cause.

This is exemplified in Erwan Lagadec's (2017) study on leadership in crises situations he identifies as unique to our times. Lagadec explains hypercomplexity as

[8] See section 3.31

the globalized conditions that make many modern day events "which by themselves would seem mundane...and indeed would have remained so in the recent past...now trigger unforeseen snowball effects and lead to considerable systemic destabilizations" (Lagadec, 2007, p.15). He observes that hypercomplexity complicates the mapping of constituent parts and consequences of a catastrophic event and challenges our traditional mechanisms for gathering information, determining its validity and taking action.

> "In the face of hypercomplexity, over-reliance on scientific reasoning can in fact turn into a liability" (Lagadec, 2007, p.29).

The environmental threats to our world, including - but not limited to - climate change, threatens to unleash a cascade of the unconventional crises studied by Lagadec. He concludes that in facing these challenge our accustomed modes of understanding and action leaving us in a situation he likens to sailing to 'the edge of the world' without navigational charts (Lagadec, 2007, p.29). Leaders in these situations must be able "to synthesize and organize complex responses out-of-the-box" (Lagadec, 2007, p.23). While Lagadec's study regards disasters, i.e. moments of high stress and extreme disorder, it is not unreasonable to extrapolate that dealing with a slowly unfolding unconventional crisis in eco-socio-spatial relationships will also need leaders and professionals with similar skills.

Nel Janssens (2012) argues that designerly thinking can help us move forward in these types of conditions. The condition of uncertainty that Lagadec relates to sailing in unchartered waters, she relates to Irit Rogoff's (2003) condition of 'without':

> "A state of simultaneously knowing and being unable to know....as having a lot of knowledge and data available but the frame needed to make sense of the data, the paradigm, is distorted and hence it becomes difficult to see the future that is emerging" (Janssens, 2012, p.12).

Aspects of how designerly thinking can be used in times of uncertainty were touched upon earlier[9] and will be addressed further[10]. Before discussing the potential roles of design and designerly thinking, let us review aspects of our hypercomplex

[9] See section 1.2
[10] See chapter 3

times relevant to eco-socio-spatial relationships, namely: unsettlement, ephemerality and ecology.

2.2 The age of unsettlement

The world as we know it is changing rapidly, and is likely to continue to do so for generations to come. Many of these changes suggest that we are well on our way towards what Tony Fry (2009) identifies as the age of unsettlement. It is a time of shift in our ways of inhabiting the earth and our psycho-social relations brought on by the "combination of geophysical *and* geopolitical impacts of climate change" (Fry, 2011, p.434). Fry's main point is that all of this leads to mass migration and an unsettled relationship with the physical landscapes we live in and how we settle upon them.

Many of the crises Fry uses to illustrate the time of unsettlement parallel the ones that Lagadec studies in his evaluation of leadership in catastrophic crises. This study not only illustrates the difficulties we face of dealing with events that contribute to the age of unsettlement, it also implies that the age of unsettlement is upon us; it is not merely a future effect of climatic changes which have yet to occur. The implication that the condition of unsettlement is upon us is reinforced by studies on migration. The UN predicts the already high and complex condition of international and internal migratory patterns will increase (UNDESA). Migration from rural areas is also one of the factors of the rapid urbanization which is soon to be predominant form of human settlement and habitat of the planet (Tacoli, McGranahan, & Satterthwaite, 2014).

The condition of unsettlement does not only refer to actual changes in the conditions of human settlements; it is also a psychological and existential condition produced by the changing eco-socio-spatial conditions of our times. While one can study, measure and predict the physical shifts underway, is also important that we question how this affects the way we make sense of being in the world. Being unsettled in unsettled times connotes both a physical condition as well as an existential one.

2.21 The unsettling of place

John Thackara (2005) observes that the hyperconnectivity of the information age coupled with today's hypermobility of travel and migration patterns are reconfiguring cultural and individual relationships to places at an unprecedented speed (Thackara, 2005, p.100). Nel Janssens (2012, p.11) suggests that we must also consider the way that new modes of communication contributes to our unsettled condition through new ways of practicing democracy[11] (Janssens, 2012, p.11).

Hypermobility reinforces "what philosophers call our ontological alienation, a sense of rootlessness and anxiety, of not quite being real, of being lost in space" (Thackara, 2005, p.100). There is a clear parallel between this ontological alienation and the psycho-social condition of unsettlement defined by shifting relations to place and institutions. Increased mobility caused by rapid economic growth and competition are accused of threatening individual and communal associations to sense of place and the political enactments of social and ecological solidarity (Baber, 2004). This rootless condition can make it difficult for some people to find a meaningful role and identity in the geographical location they are living in, and is argued to also be a condition of modern/postmodern times (Pearse, 2005).

This has led to a discussion on the changing nature of place, community and our relationship to them through the alternate temporal and spatial conditions of our times. The nature of this discussion is addressed in subsequent sections.[12] For now, it is sufficient to say that there are those who hold that hypermobility and hyperconnectivity have removed place from the traditional relationship it had with political acts and communal belonging in the "golden age of placehood" (Agnew, Shelley, & Pringle, 2003, p.611). This ongoing debate over the role and nature of place in hypercomplex times, is a sign of how the perception and importance of place is affected by conditions of unsettlement.

[11] Janssens refers to internet movements such as 'the Arab spring' and 'occupy'. More recently, the influence of the information age on democracy can be seen through the proliferation of 'alternative facts' (Smith, 2017-01-23) and hacking of government agencies.
[12] See section 3.3 and 3.4

2.3 The age of the ephemeral

The age of the ephemeral refers to a psycho-social and existential condition caused by our "modern relationship to the material world" (Strasser, 1999, p.199). Though the age of ephemerality is driven by the perceived and actual *rate of entropy*[13] of objects and resources, it also adds to the sense of temporal acceleration discussed in relation to the age of unsettlement. It is an age dominated by fleeting relationships to material objects, whims of fashion and experiences which dissipate as quickly as they arise; a 'throwaway culture' (Strasser, 1999) driven by 'designed obsolescence' and 'conspicuous consumption' (Veblen, 1899) fueled by human desires of "self-interest, novelty seeking and social ambition" (Whybrow, 2009, p.113). The biological triggers that evolved to reward us when we desire, seek and take advantage of times of abundance have gone array. Behavioral neuroscientists have found "that when the brain's reward circuits are overloaded or unconstrained …desire can turn to craving and to an addictive greed that co-opts executive analysis and commonsense" (Whybrow, 2009, p.113).

Our world is and has always been full of ephemeral experiences. The enjoyable experiences of space and place are also ephemeral, lasting only a moment in time, intangible and irreproducible (Pallasmaa, 2012). Nothing is permanent in the physical or social realms; all is transitory if you expand the temporal gaze far enough. Theoretical and quantum physicist David Bohm (1980) argues that the nature of reality *is* process. Bohm describes this process not in terms of a linear sequence of events, but rather as a field of *flux*.

> "Not only is everything changing, but all is in flux. That is to say, *what is* is in the process of becoming itself, while all objects, events, entities, conditions, structures, etc., are forms that can be abstracted from this process" (Bohm, 1980, p.61).

In other words, all things which we interpret as enduring and unchanging only appears so relative to the life-span of humans and civilizations. Mountains shift,

[13] Entropy is the second law of thermodynamics, and means (Merriam-Webster, 2016):
1: the degree of disorder or uncertainty in a system
2a: the degradation of matter and energy in the universe to an ultimate state of inert uniformity
2b: a process of degradation or running down or a trend to disorder

ecosystems change, stars are born and eventually die, and yet the presence of these things are permanent fixtures from an anthropocentric view of time. Scientific discourse states that "persistence and equilibrium are not the natural state of things but require explanation, which must be sought in the actions of opposing forces" (Kitcher, Levins, & Lewontin, 1989). A system "perpetuates itself through circular and cumulative causation" (Harvey, 1996, p.92) and it is this continuous movement which gives the impression of stability and allows the system to persist, i.e. sustain itself. What at first seems to be stable, is in fact our *phenomenological experiences* of *relative permanence* in the natural processes of a changing universe.

This hearkens back to the ancient[14] debate on whether reality lies in *Being* (that which does not change) or *Becoming* (continuous change). Stephen Moore (2001), however, argues that we can cross this historically dialectical divide of Becoming (favored by modernists) and Being (favored by post-modernists) once and for all. Building on insights from social ecologists[15], he argues for a "dialogic naturalism" which recognizes that "the flow of life is a process where Being *is* Becoming" (Moore, 2001, p.19).[16] In other words, one does not necessarily exclude the other.

What is it then that makes our age more 'ephemeral' than others? The difference lies exactly within the temporal gaze; more precisely in the rhythm of change over time in relation to the duration of an individual's life and generation: the rhythm of the new. The rhythm of the new has accelerated since the 1950s when "every indicator of human activity underwent a sharp increase in rate" (Steffen, Grinevald, Crutzen, & McNeill, 2011, p.849), which they illustrate through charting a series of changing conditions since the industrial revolution (see figure 1a & b).

[14] Western philosophy tends to date this discussion back to Heraclitus (500 B.C.E.). However, other cultures have been discussing this question for far longer, e.g. Buddhism which in turn inherited it from the ancient Indian belief systems that later were to become amalgamated into Hinduism.
[15] Primarily Murray Bookchin's work.
[16] Emphasis by original author.

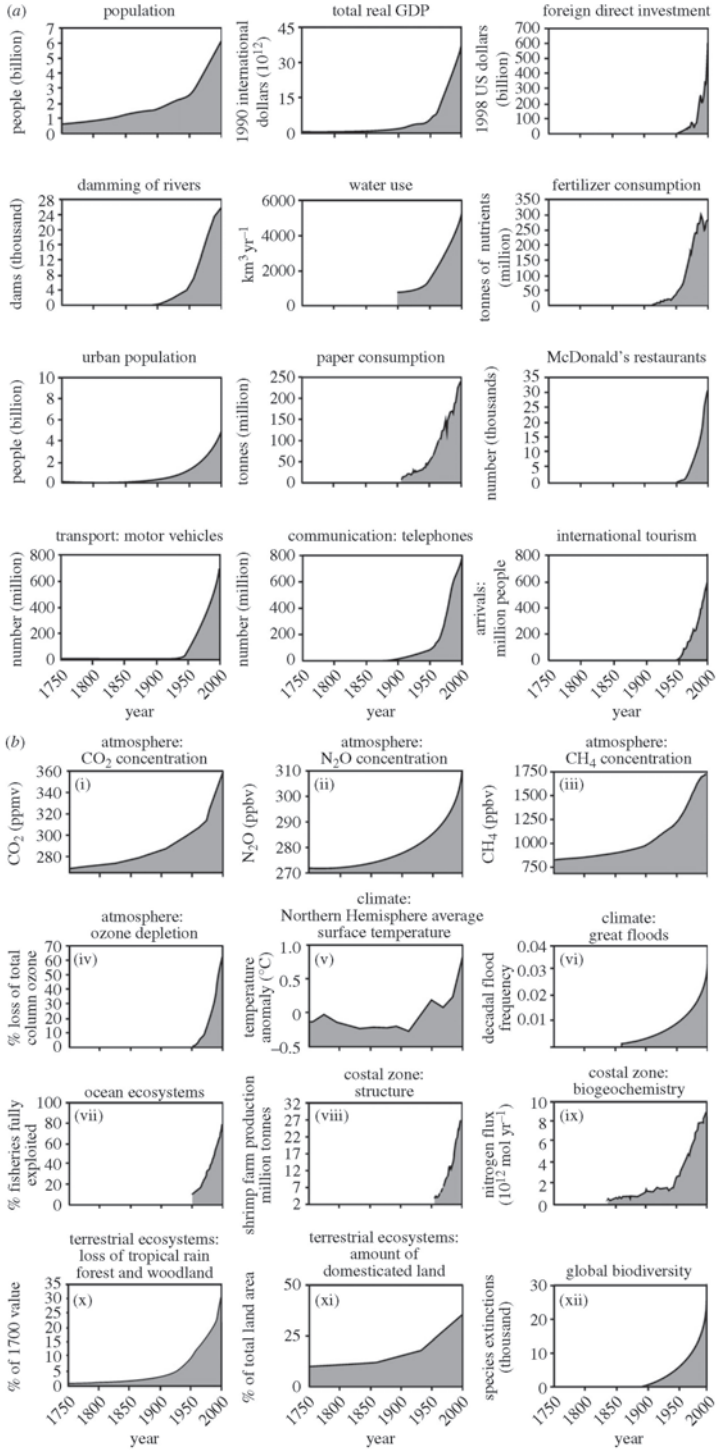


Figure 1 (a-b). Statistics that define 'the great acceleration' (Steffen et al., 2011, p.851-852).

This heightened rate of entropy in our relation to the material world influences our state of mind which transfers itself into the world of images, ideas, of experience, understanding. As this rhythm has increased, it has replaced a sense of solidity in our experience and relationship to the world and fomented a sense of surfing on an endless surge of 'the new'; giving rise to Guy Debord's (1967) identification of "the society of the spectacle":

> "the spectacle is both the result and the goal of the dominant mode of production. It is not a mere decoration added to the real world. It is the very heart of this real society's unreality. In all its particular manifestations — news, propaganda, advertising, entertainment — the spectacle represents the dominant model of life. It is the omnipresent affirmation of the choices that *have already been made* in the sphere of production and in the consumption implied by that production" (Debord, 1967, 1:6)[17].

These are the very same psycho-social effects of the throwaway culture indicative of the age of the ephemeral (Strasser, 1999). Debord's reaction to how the predominant modes of production and consumption of the 1960s had become part of the way humans communicated and lived, was a reaction to effects of a mature state of the great acceleration and the age of the ephemeral. The impetus for their mutual emergence and began however much earlier.

2.31 The rise of waste-making

Waste was an important part of household and industrial economies up until the early 1900s (Strasser, 1999). Recovering waste from household for industrial use, as well as repairing broken items for household use was a service which provided an important income for many. However, in the 1930s two concepts came into being that would shape the waste-resource relationship into what it is today. Bernard London (London, 1932) introduced the notion of 'planned obsolescence' as the solution to the economic depression of the time. The concept was to crate flaws in a product so that it would break and have to be replaced sooner, which in turn would

[17] Emphasis by original author.

create new jobs and increased wealth. He and other proponents openly discussed what the temporal limits of deterioration were for keeping a customer loyal and so they would keep buying products from the same company. In 1930 Christine and J. George Frederick introduced the concept of 'progressive obsolescence' which advocated the fomentation of a *desire* to replace something before it actually *had* to be replaced, i.e. a *perceived obsolescence*. The argument was that technology, designers, workers and consumers alike would benefit by the rapid rejection of the old for the fascination of the new (Strasser, 1999, pp.197-198).

Both philosophies of obsolescence were eagerly advocated in engineering and product design. I suggest a co-joining of the terms into one term: *designed obsolescence*. Design connotes both the planning that is required to determine how long a thing should *function* (planned obsolescence) and the visual *perception* of progress that is achieved by making an older model seem 'out-of-date' or 'out-of-fashion' (progressive, or perceived, obsolescence). It also points out the role design has had in the development of the throwaway cultural paradigm, and the potential role it has in changing it (Fry, 2011; Papanek, 1971; Thackara, 2005).

The roots of the consumer culture can be traced back to Veblen's identification of 'conspicuous consumption' (Veblen, 1899). However, it came into full bloom with the advent of designed obsolescence. The confluence of these processes laid the foundations for the age of the ephemeral and the great acceleration. The perception and understanding of waste and its role in society underwent a dramatic shift.

> "The consumer culture changed ideas about throwing things away, creating a way of life that incorporated technological advances, organizational changes, and new perspectives, a lifestyle that linked products made for one-time use, municipal trash collection, and the association of traditional reuse and recycling with poverty and backwardness. Packaging taught people the throwaway habit, and new ideals of cleanliness emphasized swift and complete disposal" (Strasser, 1999, p.200).

Debord (1967) is remarking on the effect of the culmination of these shifts in our relationship to the material world. He identifies the time of his writing, the time of the spectacle, as the historical moment at which the commodity completes its colonization of social life (Debord, 1967, 42). The economics of conspicuous

consumption matures into a "degradation of *being* into *having*…and a shift from *having* to *appearing*" (Debord, 1967, 17)[18].

Initially pioneered in the auto, product and fashion industries, designed obsolescence eventually also influenced architectural and interior design. Houses became catalog items, an increase in the demand for redecorating and remodeling, and the expected durability of buildings reduced from centuries to decades (Knox, 1987).

Aspects of the age of the ephemeral is criticized by many, however some also claim it to be a liberator and benefactor. Proponents of designed obsolescence argue that it supports social well-being through jobs and a prosperous economy. Fashion has been credited in philosophical circles for enabling the liberation of the individual through opportunities for self-expression and being a representation of and contributor to "progress and civilization" (Gonzalez, 2010, pp.72-73). Though often held in contempt, the influence of fashion in the discourses on politics, metaphysics, culture and "the shaping of social space" (Gonzalez, 2010, p.70) is recognized in philosophy.

Philosophy's interest in fashion's "ever-changing spectacle" (Gonzalez, 2010, pp.72-73) is quite logical as it exemplifies many of the essential questions of the philosopher, i.e. those relating to: being and changing, identity and flux, reality and appearance. She adds that fashion is "not merely a coercive fact that imposes its law on the most reluctant individuals; rather, in its apparent superficiality, it implies a deeper dynamic, rooted at the very heart of human life (from which it is extremely difficult to escape precisely because we are social beings). It implies a dynamic of social assimilation and distinction, which, for want of other references, could be postulated as a guiding criterion that determines our very identity" (Gonzalez, 2010, p.66). However, cognitive sciences suggests that the insatiable desire and craving triggered by fashion and designed obsolescence is just as likely to create insecurity and loss of identity (Whybrow, 2009). If we are filled with desire and craving, we cannot rest in who we are at this moment and are instead caught chasing dopamine kick from the acquisition of 'the new'.

[18] Emphasis by original author.

Though the consumption of products may at first seem to be merely a question of resources it is also a question which relates to place and social conditions such as power, identity and the perception of our times. The ability to discard things in places "where material shortage is the norm,…is a notorious way of demonstrating power" (Lynch, 1990, p.31) and "both underscores and creates social differences based on economic status" (Strasser, 1999, p.9).

> "Trash varies from person to person, it differs from place to place, and it changes over time. The categories of objects we use and throw out are fluid and socially defined" (Strasser, 1999, p.8).

The contradictory but related acts of waste-making and place-making could be studied further. In many locations in the developing world waste is a persistent, even dominant, presence in all available outdoor spaces including public spaces. In fact, the inability to manage waste has been recognized as a reliable indicator of whether or not a nation's government is dysfunctional on a whole (Hoornweg & Bhada-Tata, 2012).

2.32 A time of waste

The age of the ephemeral is quickly becoming an acute socio-ecological crisis. This is caused by the discrepancy it foments between the time needed to build resources and the rate of the perceived and actual entropy of resources due to consumptive patterns. The World Bank warns that in our rapidly urbanizing world "the amount of municipal solid waste (MSW) [is] one of the most important by-products of an urban lifestyle [and] is growing even faster than the rate of urbanization" (Hoornweg & Bhada-Tata, 2012).They also warn that current data indicates that urban rubbish generation will nearly double by 2025 from the 2012 levels, and that urban populations of 2050 will be equal to that of the whole world's population in 2000.

Waste generation is a growing problem on par with, and contributing to, climate change. Multiple studies indicate "that municipal solid waste (MSW) has been an important contributor to greenhouse gas (GHG) emissions…Carbon dioxide, methane and nitrous oxide emitted in MSW transportation and operation processes

[are] considered the principal components contributing to global warming" (He, Huang, & Lu, 2011, p.112). While they may at first seem to be separate issues, these finding show that improvements in how we consume and discard resources can help to combat climate change and the age of unsettlement which it contributes to.

All levels of society must take responsibility and seek solutions that alleviate the coming barrage of waste. No profession can claim to not operate outside systems of resource use and waste disposal and must each take responsibility. Besides our mutual responsibility, the World Bank predicts scale and ubiquity of the problem will require an 'all hands on deck' approach if we are to address it affectively.

> "Citizens and corporations will likely need to assume more responsibility for waste generation and disposal, specifically, product design and waste separation. Also likely to emerge will be a greater emphasis on 'urban mining' as the largest source of materials like metal and paper may be found in cities" (Hoornweg & Bhada-Tata, 2012, p.3).

The EU has been conducting several studies to discover the status and character of recycling and landfilling conditions in member countries. Standards and categorical definitions vary so greatly that the overall picture is still imprecise, but progress is being made. To encourage higher levels of recycling and reuse, the EU formulated a 'Waste Framework Directive' for all member states with the goal to increase re-use and recycling by 2020:

> "50%...of certain waste materials from households and other origins similar to households, and 70% preparing for re-use, recycling and other recovery of construction and demolition waste" (*Waste framework directive,* 2008).

The EU refers to Ad Lansink's (1979) definition of the hierarchy for better ways to manage waste as the guiding principle for the union (van Rooijen, 2012) and requires all member states to develop programs for waste prevention as a part of waste management plans (see figure 2). In this stair, reuse and prevention are presented as key factors in both reducing consumption of virgin materials and to reducing number of items that go to recycling, incineration and landfill.

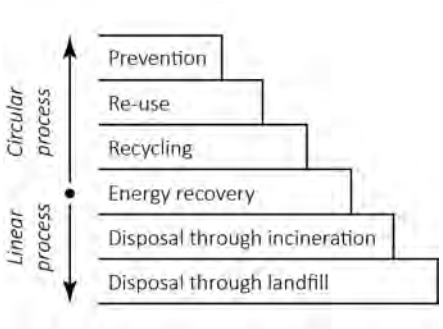


Figure 2. Lansink's ladder is a standard reference for EU waste management goals. Member states are required to have programs that prioritize prevention, re-use and recycling (Waste framework directive, 2008).

While Sweden is a leader in landfill reduction (only 5% of all waste is landfilled), it is highly dependent on the combustion of waste (i.e. energy recovery) as means of reducing landfill numbers and contributing to municipal heating systems, and is for that reason far from meeting the goals of the EU directive (Naturvårdsverket, 2014). Sweden does however, show progress with municipally supported re-use and prevention programs. A pilot project in Sweden (Alelyckan[19] in Göteborg) has proven that pro-active programs for preventing re-usable objects from being include in the lower levels of Lansink's ladder can make significant contributions to CO^2 reduction (Avfallsverige, 2011a). The key factor in preventing items from falling to the recycling and incineration bins at Alelyckan was found to lie in the visitor's personal interaction with engaged and motivated personnel in a specific place designed to facilitate and provide information on how and what to donate for reuse .

The issue of waste is not completely ignored in the field of design. Many argue that art and design have an important role to play in the production, use and awareness of 'waste' (Dartel & Nigten; Hoornweg & Bhada-Tata, 2012; Lynch, 1990; Strasser, 1999; Whiteley, 1987). However, its consideration in design practice and spatial form remains far from mainstream. While resource use and disposal patterns cannot be solved purely by architectural means, design decisions can contribute to the problem, or solution, through spatial configuration, programming and material use. As waste is integral to life, we must also consider it in the design of spaces for living.

[19] Alelyckan is presented in section 6.1

2.4 The age of ecological awareness & (in)action

While the 'age of unsettlement' highlights the eco-socio-spatial conditions of our time, and the age of ephemerality our relationship to the material world and consumption, 'the age of ecology' highlights the rise in awareness and willingness to address the existential threats these conditions pose. 'The age of ecology' has been called one of the most significant paradigm shifts in the history of (hu)man-kind (Sessions, 1987). This age is underpinned by a move towards a more hybrid and systems understanding of the world influenced by scientific discoveries of the 20th century (Dobson, 2001). It is a time of increased popular understanding of the role ecological systems play in the health and well-being of humans and non-humans, coupled with a growing recognition of the adverse effects that industrial and post-industrial consumerist societies have had on the ability of ecologies to support life as we know it.

The age is said to have begun with the spread of the mounting evidence of threats to the health of ecologies in the 1960s (Sessions, 1987). It has given rise to the terms 'environmentalism', 'sustainability' and, ultimately, 'sustainable development'. These three terms are at times referred to as 'ecologism' to connote their conjoined role as a larger movement of political activism for improved socio-ecological conditions. However, the modern roots of these environmental concerns and political movement is credited with beginning a century earlier with the conservation movement in the late 1800s (Appleton, 2006).

In an 'age of ecology', one would expect to see a society that is driven by ecologically centered decisions and actions. There have been many actions that could be celebrated towards this end. One of these is how sustainability can now be considered 'mainstream' and that we can begin to consider what directions need to be taken beyond it. However, the overwhelming characteristic of the age has been a state of insufficient action, or *inaction,* in the face of mounting existential threats. For this reason, I wish to amend the title of this age so that it may reflect more accurately its reigning conditions: ***The age of ecological awareness and (in)action.***

2.41 Eco-anxiety & cognitive dissonance

In the age of ecology, one is encouraged to act individually and collectively to address our social and environmental issues. Lack of knowledge of what needs to change is not always the problem leading to inaction. Glenn Albrecht (2011) identifies a range of 'psychoterratic' syndromes (Albrecht, 2011) coupled to the threat and experience of "chronic environmental change" (Albrecht, 2011) in home environments. In similarity with Fry's (2011) discussion of the age of unsettlement, Albrecht warns that these are likely to increase as changes to our climate increase, and affect the poor as well as the wealthy, though in different manners. One of the syndromes he mentions connected to the knowledge of looming environmental crisis in the future is 'eco-anxiety' which can lead people into a type of helplessness or paralysis. It is not that people in this condition do not want to act, they simply do not know how to "translate their concerns into meaningful action" (Albrecht, 2011, p.48). Eco-anxiety is not a mental disorder, but has become a popular term (Hewitt) to describe "a chronic concern over environmental issues…and a general feeling of helplessness in how to 'fix' it" (EcoWho, 2015).

An overview of research conducted on psychological impacts of climate change made by the American Psychological Association (APA), predicts climate related anxiety to rise as climate related disasters increase (Clayton, Manning, & Hodge, 2014). APA supports findings from other studies (Moser & Dilling, 2007) that people are more likely to overcome negative emotions, such as anxiety, denial and passivity, if presented with "specific, actionable ideas about what they can do to move toward solutions in their everyday lives" (Clayton et al., 2014, p.32). The report also concludes that in order to encourage action and reduce paralyzing negative emotions, one must emphasize possible "positive co-benefits, like economic prosperity, reduced risk, and stronger communities" (Clayton et al., 2014, p.33). The report emphasizes that "local, place-based impacts may help also overcome political polarization" (Clayton et al., 2014, p.34).

A psychological term that can help explain the distressed state of eco-anxiety, is 'cognitive dissonance' (Festinger, 1957). When our cognitive consonance (or consistency) is disrupted by conflicting thoughts or situations (dissonance), an inner

discomfort is produced and we are driven to adjust our thinking or actions in order to recreate cognitive consistency. This can explain why some reject ecologism when it contradicts how they are used to acting in the world. Understanding the mechanisms of cognitive dissonance, one can see how increased awareness of ecological responsibilities coupled with a built environment and societal system that make appropriate actions cumbersome can cause psychological unrest in an individual.

It is, then, reasonable to assume that built environments that include a variety of opportunities for people to engage in acts that benefit socio-ecological relationships can help to reduce climate and eco-related anxieties. The APA concludes their report with a proposal that places such as these can also encourage local communities and cities to become "a forum where people can share what they are doing, and learn about what others are doing [which in turn] can lead to a positive feedback loop in which actions inspire other actions and support the creation of new social norms" (Clayton et al., 2014, p.34). Physical places create lived experiences through bodily senses and emotions and are silent partners to the intellectual and visual information that predominate society. Bodily senses are integral to how humans intellectually and emotionally interpret and interact with their surroundings and make sense of them[20] and how new experiences become emotionally meaningful in everyday life. These physical forums, i.e. places, are important not just as sources of intellectual and visual information, but also through their invisible and ephemeral effects on senses and emotions (Falkheden, 1999, ch.5).

2.42 A historical prospective

There are many interesting stories and intricacies of the development of the discourses of ecologism which we could trace, and yet the expanses of literature on sustainability is so great that a full analysis is impractical (Kidd, 1992). The descriptions which follow is a historical prospective rather than retrospective on past events which no longer have any bearing on the future; it is a review of past visions for the future which have yet come into being and which continue to influence the

[20] Further discussed in section 3.31

present. The different notions and approaches to ecologism over time have reacted to, and been influenced by, that time's ontological notions of how to relate to not only that which is human, but also which types of humans and human acts are deemed meaningful and desirable. Each movement is not a denial of the past but a renewal and modification; an adjustment to fit the times.

The brevity I have used to illustrate the following strands of thought in ecologism undoubtedly creates the appearance of a linear procession of distinct 'movements' which transition from one to the next either through gradual or revolutionary ideas or events. This is, however, rarely the case in the evolution of ideas. If I were to proceed with a more detailed view we would notice that the ideas and events which relate to ecologism emerge, interweave, overlap, extend and morph through time in complicated networks (Latour, 2005; Law, 1992) and assemblages[21] of "matter and thought" (Dewsbury, 2011, p.148). While reality may be a diffuse mess of overlapping notions in minute detail, a certain amount of zooming out, abstraction and distillation of core values and events of the leading arguments of the time can help us to understand distinctions between ways of understanding and affecting the world.

In the following sections, I will briefly outline the inceptions, implications and uses of key terms that have led up to the call for moving beyond sustainability to which regenerative design responds. In this literature review, I have found that art, images and story-telling have played significant roles in the ability for people to relate and adhere to concerns to for the health of non-humans and ecosystems.[22] Kidd also points out that in the development leading up to sustainability "reactions to different views of the future of the world are influenced as much by the fundamentally optimistic or pessimistic personalities of prominent authors as they are by facts and objective analyses" (Kidd, 1992, p.4).

Spatial design, in particular architecture, has long been discussed as a form of language (Forty, 2000), and the design process as a form of narrative building and story-telling (Ampatzidou & Molenda, 2014).[23] The practice is also often referred to

[21] Dewsbury is here referring to the 'Delueuze-Guattarian assemblage' (Dewsbury, 2011)
[22] See also Demos (2006) who argues this and traces the influence ecological awareness and ecologism in art and architectural movements and exhibits.
[23] See section 3.3

as an art form (Demos, 2006) whose focus lies on the creation of visual and embodied experiences of places. Understanding the role of stories and art could then be an indicator for the potential role of spatial design in the challenging times before us.

What role can spatial design's particular type of story-telling and artistic expression play in a shifting beyond sustainability? As spatial designers are co-authors of places, this also begs the question of what stories current places support, and which stories they *could* support in order to push our world beyond sustainability. Can, or do, places have "optimistic or pessimistic personalities" (Kidd, 1992, p.4) in regards to our current and future predicaments?

Before venturing into these questions on place and spatial design, I wish present roles that art and story-telling have played in past developments of ecologism. More investigation could be done on this relationship. However, for this thesis it is sufficient to point out the main aspects of the historical developments and key narrative elements and mediums that I have found referred to repeatedly in my literature review on the development of ecological awareness and leading to the call for moving beyond sustainability.

Conservationism & Preservationism

Admonishments to care for our relationship with non-humans and the earth are not new and can be found in ancient and early modern thought (Dobson, 2001; Mebratu, 1998; Richardson, 1986; Trosper, 2009). While these have at times influenced the modern and post-modern discourse on socio-ecological relationships, the roots of ecologism in our age is often attributed to the conservation movement, or preservation movement as it is also called (Kidd, 1992). Conservationism began in the 1850s in the United States, and was part of the progressive movement which heralded social regulations and laws to reform conditions of child labor, women's suffrage, and food and drug safety (LOC, 2016).

The conservationist-preservationist movement began in a narrow sphere of influence, that pushed a technology and science driven view of efficient resource management (Hays, 1999). Conservationism's early tendency towards "enlightened self-interest" (Robinson, 2004, p.371), primarily centered on securing land an

resources for future human use, is contrasted by a more "romantic or spiritual" (Robinson, 2004, p.371) meaning of preservationism as it became a popular movement in America and Europe. Preservationism held that natural areas and humans have a value beyond human uses and that our own existential well-being lie in the connection with nature away from the ills of industrialization and urban centers. It was a type of a "wild premise" (Oelschlaeger, 2000, p.4) that went beyond the utilitarian views of resource conservation.

Driving forces in the spread of this second meaning were stories of personal experiences of nature. Henry David Thoreau, John Muir, Ernest Thompson and other adventurers encouraged people to travel into the wilderness and identify with 'the wild' (LOC, 2016; Oelschlaeger, 2016). Many of these books included illustrations and photographs which allowed readers to experience these worlds even if they could not physically travel there. Inspired by philosophical works by Ralph Waldo Emerson, a group of painters called the Hudson River School depicted landscapes as well as themes on the relation between nature and man. A common theme in these paintings is the grandeur of untouched wilderness. Within this grandeur, miniscule figures of humans often appear. Their scale and postures simultaneously communicate a subordination and belonging to the wilderness around them. Figure 3 and 4 are two examples of this movement.

Figure 3. "Kindred Spirits" by Asher Durand (1849). Reprinted per public domain.

Figure 4. "Cliffs by Green River" by Thomas Moran (1874). Reprinted per public domain.

Through the works of these authors and artists, an important part of the American national identity became associated with 'wild' things and places. This, in turn, laid the foundation for the most ambitious nature conservation-preservation

efforts made by any country to date (Oelschlaeger). As conservation-preservation emerged in other countries, government policies and activist groups used its premises for the development of a number of national parks in countries around the world.[24]

Environmentalism & Ecologism

By the 1950s, conservation-preservationism was an international phenomenon present in public policies and engaging small and dwindling groups of activists (McConnell, 1954). In the 1960s the movement was invigorated and transformed with developments in scientific understanding expressed through storytelling in popular science, art and images (Kidd, 1992). By this time scientists had begun to understand that things of the world were less divisible than previously thought. The identity and function of a thing was not only related to the identity and function of another; things were also what they were *because* of their interaction with other things in systems of relative permanence and fluidity (Dobson, 2001). Gradually, an overwhelming amount of scientific evidence indicated "that the distinction between human and natural ecology is tenuous, at best" (Oelschlaeger, 2000, p.4), giving rise to new fields of science such as systems ecology and social ecology.

A new term was needed to represent the expansion of the conservationist-preservationist movement beyond the conservation of resources and preservation of habitat and wildlife. It needed to encompass the new understanding of systems ecology and the damage that pollution posed to the well-being of humans and non-humans alike (Robinson, 2004). It also needed to address the increased concern over consumer culture, designed obsolescence and waste production (i.e. the age of ephemerality). Eventually, the term environmentalism came into common use. This is credited with being the onset of 'the age of ecology' and is also the progenitor of the term *ecologism* which is often used interchangeably with the term environmentalism in academic texts. Ecologism can, however, also be used to denote the *entire* development of political action for environmental health since the 1800s, as is done in this licentiate.

[24] Conservationism was an active policy in British colonies, and has been criticized for having been negligent of local cultural needs. Leading some to call it 'green colonialism' (Kwashirai, 2009).

Rachel Carson's book "Silent Spring" (1962) and Garret Hardin's essay "The tragedy of the commons" (1968) are two highly influential texts which use fictional stories to illustrate systemic interrelations between the ability of the planet to support life and the actions of our modern society. They are often credited with being some of the most influential texts in bringing these relationships into popular, political and scientific debate. Carson uses a fictional narrative to introduce her argument that environmental concerns extend beyond land conservation and that we must concern ourselves with the chemical consequences of man-made products in ecologies and communities (Bishop & Lindblom, 2012; Carson, 1962).

"'The tragedy of the commons" uses a story of sheep grazing on commonly held land to illustrate problems in the unregulated use of 'the commons' (Hardin, 1968), i.e. shared spaces and resources, on a planet with a growing population. Hardin's text has become a cornerstone in ecologist literature (Burger & Gochfeld, 1998; Feeny, Berkses, McCay, & Acheson, 1990). While there are other influential books at the time, including Thoreau's story of Walden pond (Child, 2009; Oelschlaeger, 2000; Thoreau, 1854), Carson and Hardin are the narratives most often credited as key factors that shifted conservation-preservationism into a newer form of ecologism: the environmental movement of the 60s and 70s.

The new environmental movement and systemic view of our relationship to ecology influenced many artists into seeing and expressing nature in new ways (Demos, 2006). However, the most influential images of the time seem to have been pictures of the earth taken from the Apollo mission to the moon. Particularly two images, "Earthrise" (figure 5) and "Blue Marble" (figure 6), are mentioned as having affected the growth and purpose of the environmental movement (McKie, 2008). They have been accredited with bringing into common consciousness how small, fragile, uniqueness and lonely our world is in the vast universe. Its loneliness in the black void emphasized that our planet as a limited and connected unit, and if we damage it there is no where else to go, no one else out there who will help us if we are in trouble. It was home, a home for a global community.

Figure 5. "Earth Rise" from the Apollo 8 (1968) mission to the moon. Reprinted per public domain.

Figure 6. "Blue Marble" from the Apollo 17 (1972) mission to the moon. Reprinted per public domain

.The idea of acting for the well-being of a 'blue marble' in the black void is perhaps best expressed in the rallying slogan of the time: 'Think Globally, Act Locally' (Darier & Schüle, 1999). While it is not a long story, a slogan is arguably a condensed version of the core theme, or schema[25], of the common narratives of this movement at the time, which is a call for a 'glocal' consciousness. The 'glocal' *is* a term used to describe how the local intermingles with the global and creates a new

[25] See section 3.31

whole. The term 'glocal' and derivatives such as 'glocalization' and 'glocality' appeared in the early 1980s (Swyngedouw, 2004). Its initial use was to denote business practices that aimed to relate local values with more far reaching values of nations and their global relations, but was later used in social sciences and other areas of study, particularly in relation to environmentalism and the emerging notion of sustainability.

Sustainability & Sustainable Development

The gradual shift from the term environmentalism to sustainability reflects other influential publications and events in the 1970s: the publication of "Limits to Growth" (Meadows, Meadows, Randers, & Behrens, 1972) and the oil and energy crisis of the time (Cohen, Demeritt, Robinson, & Rothman, 1998). These statements and events both highlighted the global issues of resource distribution, depletion and environmental threats in relation to economies and the power of nations. Sustainability emerged as a term to reflect this broader political and social agenda. This less eco-centric term helped to emphasize the fact that concerns regarding the future of human civilization is integral to environmental concerns. Sustainability was first was used in the 1970s "in the field of resource use [to represent] the highest level of exploitation consistent with maintaining a steady flow of resources from a forest or fishery" (Norton, 1992, p.97). This meaning grew as it was gradually adopted by environmentalists, and came to represent "a number of equally valid strains of thought that are not only widely diverse but also incompatible" (Kidd, 1992, p.3).

As more people realized that the problems we are facing were not limited by national boarders or sectoral domains, it became paramount to achieve mainstream acceptance of sustainability across sectors, countries and cultures. In other words, the concept had to move from the hands of academics and activists into the boardrooms of politicians, businesses and infiltrate all sectors of societies across the globe. In this spirit the UN organized a Conference on the Human Environment in Stockholm (1972) where "one of the most encouraging outcomes...had been the emergence of a new synthesis between development and environment" (UNEP, 1972, p.36) which emerged from the concerns from developing nations and stated

that "environmental factors must be an integral part of development strateg[ies]" (UNEP, 1972, p.36). This concept matured and culminated in what is popularly called 'the Brundtland report', i.e. "Our Common Future" (WCED, 1987), which defined and popularized the term 'sustainable development'. This term is credited with constructing a bridge between the opposing arguments for human development, on the one hand, and arguments against the ecological impact of that development, on the other, through an outright "rejection of the notion that environmental conservation necessarily constrains development or that development necessarily means environmental pollution" (Baker, Kousis, Richardson, & Young, 1997, p.36).[26] It is impressive to reflect upon how the combination of these two words can suggest such an impressive story of meeting and reconciliation.

The slogan of 'think globally, act locally' was now accompanied by the Brundtland definition of sustainability: "to meet the needs and aspirations of the present without compromising the ability to meet those of the future" (WCED, 1987). The flexibility built into the Brundtland definition of sustainability and sustainable development (two terms it uses quite interchangeably) has arguably had farther reaching consequences then any other definition to date (Graf, 1992; Mebratu, 1998; Murphy & Drexhage, 2010; Sneddon, Howarth, & Norgaard, 2006; Zaccai, 2012). The definition alone tells a story of temporal equity and justice, and within the report this is tied again and again to the sharing of space and resources for socio-economic equity and development. Many have made a point to distinguish between sustainability and sustainable development since then. This indicates that the flexibility and loose use of the two terms in the Brundtland report has also been a problem.

Accompanying these narratives, is the diagram of the three pillars (figure 8) approach: a simple image of three circles that represent "the intersection of social, economic and ecological interests and initiatives" (Gibson, 2006). It is sometimes also depicted as a three-legged stool (figure 7), however less commonly so. While it is merely a diagram, it is arguably the most influential image associated with sustainability. Its story-telling ability can be seen through the criticisms it has

[26] See also Lélé (1991), McCloskey (1999), Robinson (2004).

received for portraying a faulty understanding of world interdependencies (Gibson, 2006) and "cosmic" relationships (Mebratu, 1998).[27]

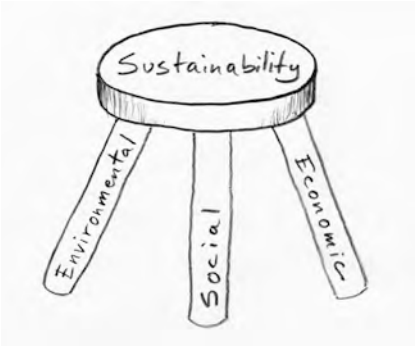


Figure 7. The three pillars of sustainability have often been depicted as a three-legged stool. The analogy that the stool fails with only two legs.

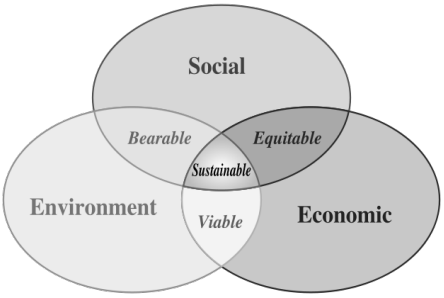


Figure 8. The three pillars are most commonly depicted as overlapping spheres (Dréo, 2006). Reprinted from open source.

A proliferation of narrative and artistic voices appear around the time of the publishing of the Brundtland report and after. Most noticeable among these are perhaps the film made on Al Gore's "Inconvenient truth" (Demos, 2006) and the picture of a polar bear balancing on a melting glacier (see figure 9).

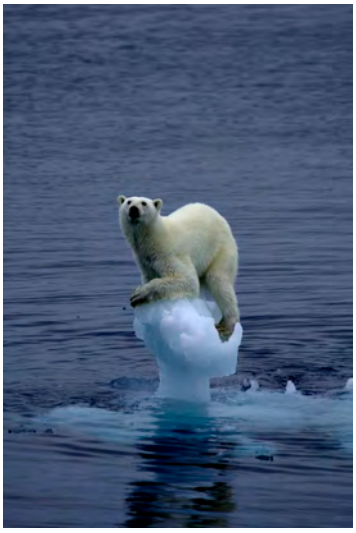


Figure 9. Images of polar bears on melting glaciers have become emblematic of the all for action to deal with climate change. Aerne Naevra's (2005) award winning image "Isbjørn" is one of the most widely used. Reprinted with permission.

In the age of hyperconnectivity, which has bloomed in post-Brundtland times, it may also be the sheer mass of narratives that proves to be the most influential. For

[27] See section 2.43

example, Greenpeace recently increased their work with artists. Art, they argue, is something that the general public can relate to and helps to give new perspectives on political issues. It is, therefore, likely to help them reach a larger audience and engage people with the issues (Greenpeace, 2016, p.2). More study is necessary on the topic, and only time can tell which narratives and art stand out in a historical review of our times. Hopefully, these future historians will be looking back in gratitude over the massive challenges that our generations struggled with and eventually overcame.

2.43 Ontologies within ecologism

Few argue that they wish to have poor (or 'unsustainable') relationships to the planet and their fellow human beings, however, conflicting ontological views and values create heated debates on how to view and improve these relationships (Jamieson, 1998). There are a number of pre- and post-Brundtland views on how to understand and address the socio-ecological problems of our time, many of which overlap or contradict one another. There have been a number of attempts to group these into larger categories in order to help orientation among them.[28] After reviewing many of these studies, I have chosen a simple division into three major groups based on underlying ontological views, and narrative themes, of the relationship between ecology and society.

I. Negotiable substitutability - society vs. ecology

This strand of thought interprets sustainability "as a relationship between present and future welfare of *persons*" (Norton, 1992, p.97).[29] It is a view which holds true to the neo-classical economic theories of substitutability between man-made and natural capital; in other words, it believes that the "costs of environmental deterioration...can be compensated by benefits from manufactured capital" (Rennings & Wiggering, 1997, p.25). Many choose to call this approach 'weak sustainability' (Rennings & Wiggering, 1997). It has, however, also been called the 'social scientific' (Norton, 1992) and 'ecological modernization' (du Plessis, 2012; Zaccai, 2012). It is often favored by governments and private sector organizations

[28] Examples of such in du Plessis (2012), Holland (2002), Kidd (1992), Norton (1992).
[29] Emphasis is mine.

(du Plessis, 2012) who in turn are more likely to use the term 'sustainable development' (Robinson, 2004).

II. Ecologically dependent societal welfare

This strand of thought rejects the notion of substitutability of natural and (hu)man-made capital (Ang & Van Passel, 2012; Rennings & Wiggering, 1997). Though it has a stronger ecological focus, it is primarily focused on maintaining and prolonging human well-being as long as possible. For this reason it is not unusual for ecological care to be framed in terms of "the maintenance of the stock of natural capital" (Jamieson, 1998, pp.184-185). Those who call the previous approach 'weak' call this one 'strong sustainability' (Rennings & Wiggering, 1997); it has also been called 'scientific contextualism' (Norton, 1992).

This stance tends to be preferred by NGOs and academic environmentalists who tend to prefer the term 'sustainability' to avoid the implication that "sustainable development means ameliorating, but not challenging, continued economic growth" (Robinson, 2004, p.370). The dominant economic theory is often accused of excluding unpaid labor of humans (often women) and perpetuating age-old north-south power dynamics. Thoreau's philosophy on life and freedom rings true with this group:

> "The good life has little or nothing to do with ever increasing levels of consumption and manufacture, or with any conception of ourselves as Homo economicus, that is, economic man" (Oelschlaeger, 2000, p.5).

It is well expressed in Norton's (1992) description of sustainability "as an obligation to protect the natural processes that form the context of *human* life and culture, emphasizing those large biotic and abiotic systems essential to *human* life, health, and flourishing culture. Ecosystems, which are understood as dynamic, self-organizing systems *humans* have evolved within, must remain 'healthy' if *humans* are to thrive" (Norton, 1992, p.97).[30]

III. Co-evolutionary socio-ecological welfare

This third strand of thought rejects the objectification of the natural world as a resource and context whose *sole* value is to benefit *human* life and culture.

[30] Emphasis is mine.

Proponents of this stance claim that sustainability can only be measured by the well-being of *all life* on earth. It argues that the common future of all life depends on a co-creative partnership between civilization and ecology which, in turn, "calls for profound and radical changes to the structures of society, including the dominant worldview" (du Plessis, 2012, p.8). While some who argue for this view can be guilty of substituting an anthropocentric view with an ecocentric one, others maintain stance that the "emancipation of the natural world cannot be considered separately from the emancipation of the social world" (Moore, 2001, p.19).

Proponents of this view are likely to accuse the terms 'sustainability' and 'sustainable development', along with its accompanying three pillars diagram of misleading priorities and for containing irreconcilable conflicts (Campbell, 1996; Mebratu, 1998). It is sometimes called 'beyond sustainability' (Jamieson, 1998), 'absurdly strong sustainability' (Holland, 2002), and 'radical ecologism' (du Plessis, 2012), and includes theories of deep ecology, integral ecology, social ecology, eco-feminism and, last but not least, regenerative sustainability (Robinson & Cole, 2015).

It holds similar criticisms of reigning economic theories as those made in *ecologically dependent social welfare*, with the addition that we must also consider the unpaid labor and welfare of *non-humans*. Being kinder to the environment and making current systems more efficient are deemed necessary but insufficient measures to avoid socio-ecological disasters, instead we need to redefine socio-ecological relationships (de Beaugrande, 2004, p.117). Human and non-human welfare must be considered on equal terms, and is at times described as a co-creative and co-evolutionary affair in a socio-ecological context (Kagan, 2010). In a Thoreauvian spirit they would claim that the well-being of humans and non-humans cannot be reduced to, or achieved by, economic being.

Mainstream and beyond...

These first two categories are the paradigms of sustainability which have reached mainstream practices, with the first (*negotiable substitutability*) dominating most heavily (du Plessis, 2012). The third category accuses the first two of not being very different from one another. Alan Holland (2002) goes as far as claiming that the difference between them is a misunderstanding at best, a "charade" at worst

(Holland, 2002, p.126). One can therefore arguably refer to the first two jointly with the term *mainstream sustainability*.

While recognizing the important achievement of making concerns for our socio-ecological conditions mainstream, long time proponents of sustainability have become increasingly concerned that the mainstreaming process has thwarted the paradigmatic shift that are necessary for real change to occur (Sneddon et al., 2006). Proponents of the third category identified as *co-evolutionary socio-ecological welfare* often claim that their arguments call for moving beyond mainstream conceptions of sustainability, and can therefore be referred to as '*beyond mainstream sustainability*'.

2.44 A basis for beyond

The call for moving beyond mainstream sustainability is not a united call, but rather a sum of varied voices of concern and critique that arose post-Brundtland. The first description and use of the phrase 'beyond sustainability' seems to have been made by Dale Jamieson (1998). The arguments he makes for moving beyond are emblematic of the loose 'movement' and entail a critique of sustainability as too vague, conservative, and focused on economic and anthropocentric concerns. He recognizes a need for a discourse on sustainability "that permits deeper discussion of aesthetic, spiritual, religious, political and moral values" (Jamieson, 1998, p.191) of how to shift the ways humans relate to each other, creatures and ecology. Other concerns that align with Jamieson's call for moving beyond sustainability are in the description of *co-evolutionary socio-ecological welfare.* One can further define the call for moving beyond sustainability into three primary criticisms of mainstream sustainability:

I. The sustainment of exiting dualisms and paradigms

Mainstream sustainability is accused of perpetuating a number of dualistic Cartesian ontologies – man vs animal, technology vs nature, urban vs rural, natural landscape vs built landscape (Moore, 2001). This is rooted in mainstream's inability to provide a vision that departs from the traditionally antagonistic and dualistic notion of the relationship between man and nature. Where nature is primarily a resource for human well-being in an anthropocentric and mechanistic world-view.

Ted Trainer expresses the thoughts of many when he accuses the Brundtland definition of sustainability of being "a conventional statement that argues for continuation of the same basic values, systems and strategies, which are the very roots of the problems to which the report was intending to offer solutions" (Trainer, 1990, p.71). The cause of which lies in the report's "fail[ure] to face up to the basic contradiction of how to reconcile the expansionist nature of industrial society with the limitations presented by the planet's array of self-regulating ecological systems" (Sneddon et al., 2006). The mainstream interpretation is therefore accused of promoting 'business as usual' in a more 'eco-efficient'[31] (Najam, 1999) form with the ultimate goal of upholding 'the status quo' of the current world order (du Plessis, 2012; Moore, 2001).

Sustainable development, in particular, is accused of problematizing and victimizing the poor, as it tends to frame poverty as the cause of unsustainable behavior (Lélé, 1991). This also relates to the accusations that sustainable development oversimplifies the notion of economy into forms coherent with neo-classical economic theory and thereby continues to ignore the role of unpaid labor (Pietilä, 1990). These combined factors are accused of reinforcing age old power dynamics between the global north and south (Pietilä, 1990).

II. Vague language and misleading terms:

The Brundtland report is accused of being ambiguous, vague and contradictory (Langhelle, 1999) and for allowing for co-option by "powerful actors hoping to give unsustainable activities a 'sustainable' veneer" (Sneddon et al., 2006, p.263), otherwise called *greenwashing*[32](Corporate Watch, 2006; Najam, 1999; Greenpeace, 2012). A practice which is counterproductive for the understanding and implementation of the core principles and ethics that lie at the core of the Brundtland report (Langhelle, 1999). Sharachchandra Lélé (1991) points to how this

[31]The World Business Council for Sustainable Development has been a key proponent of 'eco-efficiency'. In 1993 they developed a formal definition and in 1997 they defined and promoted it "as a 'marketing philosophy'…'developed by business for business' and [highlighted] the fact that 'the first word of the concept ["eco"] encompasses both ecological and economic resources—the second ["efficiency"] says we have to make optimal use of both" (Najam, 1999, p.70).

[32]Greenpeace and Corporate Watch define 'greenwashing' as "the phenomenon of socially and environmentally destructive corporations attempting to preserve and expand their markets by posing as friends of the environment" (Najam, 1999, p.72).

vagueness has burdened discourses of sustainable development with a recurring "mixing of goals and means, or more precisely, of fundamental objectives and operational ones" (Lélé, 1991, p.611). Critics therefore claim that the very notion of what should be *sustained* and *developed* as well as *for (and by) whom* this work is to be done needs more linguistic, philosophical and normative clarity in order for real change to occur (Jabareen, 2008; Lélé, 1991; Mebratu, 1998; Norton, 1992; Robinson, 2004).

III. Misleading ontology of the three pillars

The definition and widespread diagram of the 'three pillars of sustainability' (social, ecological, economical) are a representation of powers that must be appeased in politics (Murphy & Drexhage, 2010), not a depiction of the actual interdependence in real life (Mebratu, 1998). The diagram reinforces the positivist idea of independent interacting, but separable, spheres of activity, and that sustainability lies in their intermingling (Mebratu, 1998) (see figure 10a). When it is interpreted as a description of the ontological constitution and relationships of the world, there has been a grave "cosmic (mis)consception" (Mebratu, 1998) as to who depends upon whom and the relationship between their realms of influence.

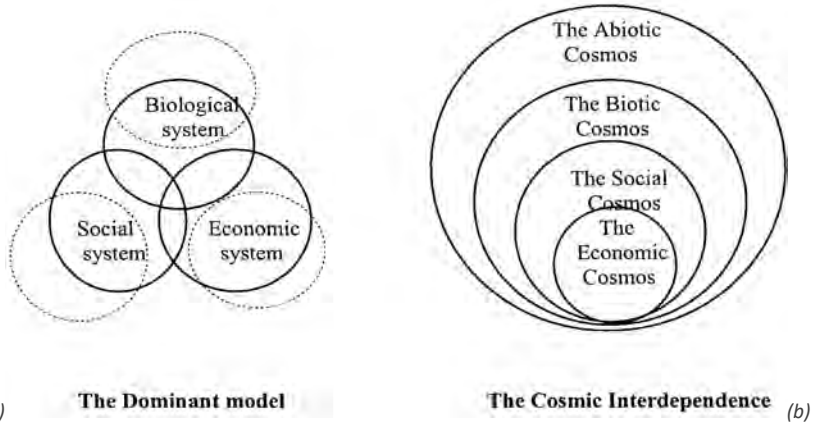


Figure 10 (a & b). Desta Mebratu's (1998, p.513) diagram explaining the "(mis)conception "of interdependence underlying the diagram of the three pillars. The three pillars diagram (left) communicates three interacting but separate spheres of influence, when in actuality each sphere of influence acts within a larger sphere which it is dependent upon (right). Reprinted with permission.

Proponents of moving beyond sustainability, or at least beyond the three pillars of sustainability, argue that there lies a basic lack of recognition of the ubiquitous

nature of ecology in all social well-being and that economics are inseparable from social institutions (see figure 10b).

2.45 Moving forward from the past

Proponents of moving beyond sustainability question how many concessions to current conditions and norms can be made before the practice of sustainability becomes more about maintaining current degenerative conditions than changing them. Mainstreaming a concern for our socio-ecological conditions was a necessary step, but it was only the first step; let us now take the next steps and do so by envisioning the future we want rather than simply making current conditions a little 'less bad' (Robinson & Cole, 2015). It is not a question of rejecting sustainability, but more of how to examine the core values that will drive needed changes and how to focus on them *more affectively*. It is also about how to build more actionable, inspirational and constructive ways for envisioning and moving forward into our common future. This requires a type of thinking which reflects on future possibilities, their implications on the present, and the ways in which we need to get from here to there (Holmberg & Robert, 2000), a type of thinking that designers are often engaged in (Groat & Wang, 2013; Janssens, 2012).

Chapter 3

Designing in Hypercomplexity

Crucial to the well-being and continued survival of all species on the planet is access to resources and habitat. In an urbanizing planet, habitats become increasingly built environments causing the ecological services the natural habitat once provided to be altered and non-human habitat to be lost. In these clearly spatial aspects, spatial designers can play an important role in finding ways to mediate these effects through the types of places they create. However, as human population, consumption of resources and globalized mobility increases, human influences on even the most distant of ecosystems from human habitation is an unavoidable fact (Lyle, 1994). It is then also crucial to consider how spatial designers form built environments which can either facilitate or frustrate lifestyle changes and attitudes that affect resource consumption and the ability for the common world to satisfy both human and non-human needs.

However, it is not only through the physical environment that spatial design can provide some service to navigating our hypercomplex times and dystopian predictions of future conditions. Designerly thinking, approach and methods could help to look at hypercomplexity and the future in ways that go beyond our "over-reliance on scientific reasoning" (Lagadec, 2007, p.29) which Lagadec identifies as potential liabilities in devising action in hypercomplex situations. Scientific reasoning is undoubtedly useful in deriving 'facts' and making predictions from these and designerly thinking is unlikely to be *the* solution to all of the problems we are facing. However, in it's particular ways of generating and communicating combinations of values and facts, design thinking can provide some insight and influence on how to operate in hypercomplex contexts and devise actions from future visions rather than present conditions.

This chapter does not cover all the ways in which design thinking may be able to contribute to our current predicament. Instead it focuses on design's relationship to two key strands of thought from the previous chapter, namely: the influence of narratives and the call to move beyond sustainability.

3.1 Being part of a solution

> "These challenges look daunting, and they are. But the beauty of the metaphor of tipping points is that in a context of complex systems and constant change, even small actions can have a powerful, transformative effect on the bigger picture…we will get from here to there by a series of small, but carefully considered, steps" (Thackara, 2005, p.96).

Design can be part of the solution, but design has also been part of the problem. Tony Fry (2009) accuses design practitioners to be involved in the practice of "defuturing" (Fry, 2009) through pandering to many of the driving forces which also contribute to the age of the ephemeral. He claims that the design profession suffers from a "political amnesia" (Fry, 2009, pp.25–26) underpinned by "the general lack of a sense of how design makes or breaks worlds" (Fry, 2009, pp.25–26). Victor Papanek (1968) also criticizes the very design strategies that brought on the age of the ephemeral, i.e. designed obsolescence and pandering to the obsession of spectacles of fashion and throw-away culture. This is particularly tragic in an age where "design has become the most powerful tool with which man shapes his tools and environments (and, by extension, society and himself)" (Papanek, 1971, p.1).

Currently, solutions for sustainability often lies within the realm of technology (Fry, 2009; Puig de la Bellacasa, 2011) and even though some designers engage in sustainability issues, the result often is that "the unsustainable gets sustained" (Fry, 2009, p.53) due to the designer's limited understanding of consequences and lack of accountability. A critical problem with sustainable spatial design is that so often our clients and society, and even designers, think that it is mostly about energy and material use. It *is* about these things, but the design and creation of the built environment also has an identity and culture-building aspect, which is a way of making worlds through making sense of the world. Papanek argues that to avoid current trends of superficiality in design, designers not only need to have a greater understanding of the people for whom they are designing, but that the general public need to have "more insight into the design process" (Papanek, 1971, p.1). As Fry and Papanek have insinuated, designers need to investigate, develop and communicate

the potential of their own methodologies and actions for making and breaking worlds.

3.2 Syncretic thinking

Designerly thinking is a process and approach which is especially adept at investigating poorly defined problems and assimilating contradictory and disparate elements into assemblages of relatedness and new meaning. Designers operate in complex situations with unknowable and unforeseeable consequences through generative practices that include, reframing (Paton & Dorst, 2010) and reflective action (Schön, 1983). The complex situations of a site and competing needs of stakeholders requires designers to develop methods for combining competing values and facts. This implies that designerly thinking can contribute knowledge and methods for how to work in with problems that have an interdisciplinary nature, such as sustainability (Paton & Dorst, 2010).

A crucial part of this interdisciplinary skill involves 'syncretism'; a term originating in ancient Greece which Erasmus defined as "the positive union of seemingly disparate points of view" (Gort, Vroom, Fernhout, & Wessels, 1989, p.9). In discussing the particular skills of spatial designers Janssens (2012) explains that "the scyncretic mind...is able to associate apparently incomparable issues into new concepts and in doing so is able to proceed beyond common patterns of thought" (Janssens, 2012, p.188). Gaston Bachelard (1958), in his philosophical analysis of the *'poetics of space'*, speaks of the "syncretism of sensitivity" (Bachelard, 1958 p.146) as one of the crucial elements of poetry. It creates an environment for associated meanings in words and forms and keeps them "from crystallizing into perfect solids" (Bachelard, 1958 p.146). The syncretic ability of designers to "create a new whole without removing the contradictions among the parts" (Janssens, 2012, p.188) could, by this logic be a way in which spatial designers 'write' poetry.

Synctretism has, however, most commonly been used in reference to the mixing of religions and belief systems (Gort et al., 1989). While it is not without criticism in this regard, it does make designerly syncretism a particularly interesting approach

for dealing with discrepancies in the debate between deeply held beliefs regarding the appropriate power relationships between people, creatures and ecologies. Design works with physical manifestations and implications of values. This physical manifestation works on the mind-body level of cognition, or what could be called the space-place-object-body-mind relationship. This situated and embodied experience has been shown to be inseparable from all thought and action (Gallese, 2005; Kahneman, 2011) and can therefore have a significant bearing on the ability for altering attitudes and habits and understanding of the world.

3.3 Narratives in world-making & design

As in all interpretations of 'reality', the language we use and the story we hear and tell carry ontological suppositions that form the way we interpret and act in the world. Narratives help us make sense of the world. They not only express and communicate our interpretation of the world, they also form the way in which we understand it (Brône & Vandaele, 2009; Bundgaard, 2007). An example of this is how narratives have been influential in the growth and development of ecological awareness and ecologism.[33] In articles on this development, stories and images have been credited with: engendering empathic responses; formulating and defining, or strengthening, identities; as well as engaging, activating, and gathering people from diverse backgrounds to a common cause.

The role of narratives is studied in fields such as educational research, cognitive sciences, social sciences and organizational studies. Through an overview of a wide range of studies on the "applied aspects of narrative" (Mitchell & Egudo, 2003, p.7), The use of narratives and story-telling were found to be effective tools in seeking insight into changes in organizations and cultures, and useful in the processes of decision making and knowledge transfer (such as education). Narratives were also seen to be able to "contribute to sense-making", "act as a source of understanding" and "serve as a source of implicit communication" and impart "complex tacit knowledge" (Mitchell & Egudo, 2003, p.7). Mitchell and Egudo's meta-study shows

[33] As discussed in section 2.42

that there is ample evidence of the importance of narratives in sense-making, world-making and self-making. They conclude that "through stories, narrative becomes an instrument to construct and communicate meaning and impart knowledge. Stories told within their cultural contexts to promote certain values and beliefs can contribute to the construction of individual identity or concept of community."

There is ample argumentation that space and spatial design have linguistic, narrative and poetic implications. In addition to Bachelard (1958) relating syncretic thought to poetic expression and in turn connecting this to the poetic implications of spaces, there is a long history[34] of recurring language metaphors within architectural theory (Forty, 2000). Even the design process itself has been likened to a form of narrative building and story-telling (Ampatzidou & Molenda, 2014). However, in tracing the history of parallels made between language and architecture, Adrian Forty (2000) points out that there is a world of difference between architecture *being* a language, *being like* a language, and *being comparable to* literature (Forty, 2000). The first implies that it has a syntax and grammar; the second that it has similar characteristics to languages, such as its ability to contain implicit meaning(s); the third that it shares characteristics with literary compositions, i.e. it tells a specific story.

These analogies were argued in various ways until the beginning of the twentieth century when the notion of language and narratives in architecture was rejected all together by the emerging modernist movement. It then reemerged through postmodern movement and developments in language studies, in particular semiotics, which looked to architecture as a way to prove the thesis that objects carried meaning in the form of symbols and signs. Even this semiotic look at architecture was in turn criticized, most significantly by Henri Lefebvre, for neglecting how space is produced and how meaning is derived from the lived and embodied experience of it (Forty, 2000). There is a clear relation between this latter critique and the discussion in the sections that follow on the formation and influence of schemata through lived and embodied experiences. As schemata are central elements of narrativity, one can find a narrative quality *even* in the lived and

[34] Since 1650 (Forty, 2000, p.65)

embodied experience of space and place that is less linear and clearly constructed than a traditional narrative.

3.31 Making sense of the world

There is yet another parallel worth mentioning which ties narratives to sense-making and world-making, as well as design methods to narratives. A central aspect of the "narrative mode of knowing" (Czarniawska, 2011) is the '*scheme*' or '*schema*' (plural: *schemata*) which organizes experience and assumes "the intentionality of human action" (Czarniawska, 2011). In the retelling of a story, we do not generally retell memorized details, instead we "reconstitute it in [our] own terms" (Arbib & Shapiro, 1992, p.3) and relate it to a schema that we are already familiar with.

A *narrative schema* is the "canonical process structure of any given tale" (Bundgaard, 2007, p.249) and operates similarly to syntax and grammar. The identification of these canonical processes originated in literary analysis and influenced the social and cognitive sciences. Through social and cognitive studies, the understanding of expressions of narrativity evolved from structures of a classic tale of fiction or personal experience to include the ways that scientific and other types of reports told stories. Finally, narrative analysis was extended into the way in which our bodies and gestures interact with the world around us. Despite this expanded understanding of the different forms that narratives can take, the central character of a narrative has not changed:

> "Narratives possess an internal structure which assigns a general form to the action and which distributes a limited number of general roles to be played by the protagonists (Propp's *functions* or Greimas' *actants*)" (Bundgaard, 2007, p.248).

In cognitive sciences the term schema is used to denote assemblages of embodied and situated knowledge through which humans perceive, organize experience and act in the world (Arbib & Shapiro, 1992; Ignatow, 2007). As we continuously encounter new experiences we simultaneously process these through our personal schemata, as well as add the experience to these schemata (Arbib & Shapiro, 1992, p.3). New experiences create new associations and can create new, or alter old,

schemata. Creating completely a new schema is complicated, however, as we filter new experiences through old schemata. In cognitive psychology, a schema is seen as a type of cognitive structure that both organizes and is created by our experiences of our environments. A schema is formed selectively and "in some ways constructs reality as much as it embodies it." (Arbib & Shapiro, 1992, p.3). While one could consider schema to be a type of unit of knowledge, this is potentially misleading as knowledge can just as well be seen as a networked condition of fluid associations. Schemata would therefore be more aptly described as a temporal condition of relative permanence in this otherwise transitory associative network, or "emergent properties of adaptive, connectionist networks" (Arbib & Shapiro, 1992, p.3).

This is echoed in Véronique Havelange's (2010) work that points to a number of correlations between the modern understanding of "the ontological constitution of cognition" (Havelange, 2010) in cognitive sciences and Husserlian phenomenology. Her insights seem particularly relevant due to phenomenology's strong influence in philosophical discourse of design. She points out that in cognitive science, cognition is no longer seen "as a linear input/output sequence…but rather in terms of a dynamic sensorimotor loop [where] actions themselves produce feedback effects on subsequent sensations. Action is thus no longer a simple output; it becomes actually constitutive of perception." (Havelange, 2010, p.349). Neither does perception precede action in a linear manner; that which is perceived, consciously or otherwise, is simply inseparable from action and their correlation is non-linear and co-constructive. Non-cognitive processes in these sensorimotor loops have been shown to play a significant, often deterministic, role in actions and the attitudes of humans (Kahneman, 2011). As schemata are often non-cognitive structures which simultaneously embody and construct our individual and shared realities an acts, a change of attitude and behavior therefore necessarily involves an alteration of schemata.

Schemata shifting paradigms

The idea of shifting attitudes through schemata, could be extended to paradigms and paradigm shifts (Kuhn, 1962). Paradigms are social and cultural structures of sense-making which appear to be permanent and well-established truths and tend to

both embody and construct our *shared* realities. Like paradigms, schemata simultaneously embody and construct our experiences and interpretations of 'reality'. However, while schema incorporate paradigmatic structures, they are more individually constructed and potentially more flexible as they are determined by each individual constructing them. Paradigms, by comparison, are knowledge assemblages that are communally held and can only shift through a collective change in the individual schemata of a majority of members in a community. By this logic, a paradigm is a socially shared schema which affects an individual's schema. These socially shared schemata could in turn be affected by a significant number of individuals altering their own schemata in relation to the reigning paradigm. Hence schema formation becomes particularly interesting in the challenge to shift beyond sustainability.

Amongst the different disciplines who study narrativity and schema, several different types of schema have been identified. There are two forms of schemata identified in cognitive sciences that are particularly interesting to consider in relationship to the experience of space and place, and a third which relates to the design of space and places. Image and body schemata help us to begin to understand how the embodied and sense experiences affects individual schemata. The third, design schemata, suggests how designers use and affect schema and thereby potentially also paradigms.

Image schemata

Images are clearly affective ways in communicating ideas, and we have seen how they have been influential in the development and communication of different narratives in ecologism. They can tell a story, yet they rarely include the event sequentiality in the more classical structures of narratives. This narrative condition relates to what cognitive sciences speaks of as "image schema [which] are imaginative and non-propositional in nature and operate as organizing structures of experience at the level of bodily perception and movement" (Gibbs, Lenz, Lima, & Francozo, 2004). However, image schemata are not fixed visual images in the mind. They are instead abstract mental structures that "consist of dynamic spatial patterns that underlie the spatial relations and movement found in actual concrete images.

Mental images are…temporary representations while image schemas [sic] are permanent properties of embodied experience." (Gibbs et al., 2004) This type of schema is clearly of relevance in understanding the way a space, or place, can carry a narrative connotation and a person's understanding of the world.

Body schemata

While all schema are built upon experiences with our environment, there is a particular schema which has been identified as relating to the particular mental structures of our embodied experiences of the environment. This schema type is called 'body schema' (Gallese, 2005) which in its simplest form is the way the mind maps the form and movement of the body in relationship to its surroundings. Vittorio Gallese (2005) argues that the tendency to see body schema simply as a mapping of the body is oversimplified. He argues that the neural mechanisms involved in the unconscious processing of embodied experiences, are not only the way in which we relate to our own body, but also how we relate to other bodies of objects and people. These neuroscientific discoveries, he argues, support several claims that have been made in phenomenological theory on how we make sense of the world and the identity we hold within it.

> "Neuroscientific research…shows that there are neural mechanisms mediating between the multi-level personal experience we entertain of our lived body, and the implicit certainties we simultaneously hold about others. Such personal and body-related experiential knowledge enables us to understand the actions performed by others, and to directly decode the emotions and sensations they experience" (Gallese, 2005, p.23).

Havelange (2010) supports Gallese in his claim that there are a number of parallels between recent discoveries in cognitive sciences and phenomenology. While one cannot say that cognitive science verifies every aspect of phenomenological theory, there is now ample evidence that embodied experiences of objects are connected to social experiences and social being. She argues that we can no longer speak of social being as the abstraction of intersubjective experiences of sociality alone. The social realm is also a physical realm; social experiences are embodied experiences.

> "Sociality implies a third element which creates the possibility for face-to-face relations and the institution of a symbolic realm. This 'third element' is to be found in the 'mind-laden objects,' the technical and cultural objects which are to be thought of as constitutive of socialization and history." (Havelange, 2010, p.358)

Our built environment is one of these 'third elements' that influence the embodied experiences of sociality and social being. Body schema then play an important role in understanding the narrative capacities of places and their potential effect on social narratives.

Design schemata

The notion of what a narrative is, and the forms its schemata can take, has developed and diversified as narrative theory has made its way through the scrutiny and discourse of different disciplines such as the social sciences, cognitive sciences, neuroscience and literary sciences. The apparent recognition and usefulness of schemata in various disciplines that they could be a significant tool for interdisciplinary work and discourse; to this list of disciplines we can add spatial design. The term itself is not part of the spatial designer's common jargon, however research has shown that use schemata on a regular basis in their methods for developing and communicating ideas.

Bryan Lawson and Kees Dorst (2009) argue that spatial designers actively collect and develop schemata as a way to find and create meaningful forms and expressions in design problems. In one study, Lawson (2004) observes how spatial designers actively interrelate "schema, gambits and precedent" (Lawson & Dorst, 2013) to communicate and gather knowledge in practice. He notes how design precedents are "stored in the form of episodic schemata" (Lawson, 2004, p.443) to which a number of 'gambits' are related as possible solutions[35] to test and explore. Designers use schemata to help relate what at first appears to be radically separate design situations to one another and thereby make progress in otherwise extremely complex sets of variable facts and values (Lawson & Dorst, 2013, p.164). Lawson also observes that not only do individual designers use schemata, but whole design teams/firms will use shared notions of schemata as a way to communicate a whole set of references and

[35] "A repertoire of tricks" as one of Lawson's interviewees called them (Lawson, 2004, p.449).

concepts in the group in a few words or an image (Lawson, 2004). As they are tools of communication, they are also elements of the narrativity which is argued to be embedded in architectural thinking and practice.

Bec Paton and Kees Dorst (2010) support these findings and point out the strong correlation, and a degree of interchangeability, between the notion of cognitive schemata, the notion of paradigms and the notion of framing and reframing practices that Donald Schön (1983) famously recognized in his studies of 'reflective practice'. Schön's notion of reframing is widely recognized as "one of the key characteristics of design thinking" (Paton & Dorst, 2010, p.317), however they argue that Schön and "cognitivist definitions of frames and framing doesn't acknowledge how value-laden frames can be" (Paton & Dorst, 2010, p.318). They describe how frames and reframing techniques are used to understand, communicate and develop concepts and solutions from competing interests and values not only within a design team but also with clients (Paton & Dorst, 2010, p.319). They further argue that this "ability to reframe a problematic situation in new and interesting ways…would lend itself to application beyond the traditional design professions" (Paton & Dorst, 2010, p.317).

I will not dissect these concepts further; however, it is worth noting the parallel between schemata, frames, reframing and paradigm shifts that surfaces in Paton and Dorst's discussion and the intersections and parallels of concepts and needs in our times that I have discussed in previous sections. As shifting paradigms also involve a collective alteration of individual schemata, and frames are a type of schema, the spatial designer's training and agility in identifying and developing frames and schemata through techniques such as reframing could prove to be yet another useful designerly skill to employ in our move beyond sustainability.

3.32 The narrativity of place & place-making

Despite the problematic nature of equating architecture with language, Forty (2000) concludes that it can be useful to think of language as a metaphor for certain aspects of architecture such as how we "read" objects such as plans, vernacular elements, a facade, and architectural styles (Forty, 2000, p.85). In his focus on the

objects of architectural production, he includes in this list of examples the experience of space as an assemblage of situations and settings for human experience and interaction. Does this mean that only architectural objects and aesthetics carry narrative implications? As we have seen in the discussion of schema, our lived experiences in environments help to form our personal and collective narratives. Researchers speak of this in terms of the important influence that the *situated* nature of a narrative, i.e. the place and context in which they occur, has on a narrative's ability to affect things such as knowledge building, identity and learning (J. S. Brown, Collins, & Duguid, 1989; Reffat & Gero).

Settings that are not explained in full detail, yet crucial for the understanding of a story and implicitly understood, are called *meta-narratives*. The term comes from literature studies; however, it is also used more broadly to refer to inferred narratives within reigning social paradigms. The view of our relationship to ecology is, for example, referred to as a meta-narrative for how we interpret sustainability (Du Plessis & Brandon, 2014). Definitions of image and body schema suggest how spatial conditions affect sociality. Correlating these notions we can say that "situated places" (Agnew, 2011) are, then, not only meta-narratives in literary compositions, but also in our personal and collective experiences. The quality of being a meta-narrative may be one of the reasons why the influence of place on world-making (or world-breaking) is so often overlooked as Tony Fry points out (Fry, 2009).

In its role as meta-narrative, place implicitly generates qualities such as ambiances and moods and suggest relationships, seclusions, activities and movement. Design can encourage and suggest certain uses, but there are infinite ways this can be interpreted and re-interpreted. The identity of a place is therefore intimately intertwined with the ways in which it is used, i.e. the daily living of our individual and collective narratives. In their appropriation of space, users become co-authors of the narratives of a place. These narratives then shift and repeat through different time frames and durations according to use and appropriations.

This fluid interaction of the thoughts, expressions and activities of users and makers of spaces are in essence the central acts of *place-making*. When a space is imbued with significance through individual interpretation and meaning-making, social roles and relatedness, it becomes place. Place-making then helps to create the

meta-narratives of place that are made up of a set of quasi-measurable and quasi-definable qualities and acts. Place-making is in this way part of the poiesis of place, and its poetics. The narrative capabilities of spatial design is, then, not only through how it affects sensory experience of objects and aesthetics in an environment, but also how it affects the flows and layers of uses and spatial networks that affect place-making.

Though a place may never tell a story in the sense that a literary composition might, it is arguably narratively charged through its role as meta-narrative in lived experiences that influence individual and collective narratives. One cannot help but wonder if the power of the built environment, space and spatial design may just lie in it being *like* a language and yet *not* a language. Through their role and influence as meta-narratives, places are then background settings that can have a non-verbal sensory (tacit and implicit) influence on a variety of interacting narratives of our eco-socio-spatial conditions.

Shifting notions and roles of space and place

The question of space versus place is a question of how we perceive and live in our physical and psycho-social worlds. Not unlike the concept of sustainability, the concept of place is knowable in principle and yet widely variable in its interpretation and application. The over two-hundred-year discourse on space and place is complex and confusing, and the differentiation between and use of the terms varies greatly (Agnew, 2011). To adequately study the two phenomena, John Agnew (2011) argues that we must establish a more coherent definition of place and distinguish it from space. Place he defines of being comprised of three dimensions: *location, locale* and *sense-of-place:*[36]

> ***Location*** is the answer to the question 'Where?' in relation to everywhere else. Location is an objective understanding and is not just a Euclidian topographical measurement, but also its measurable aspects of economy and politics.

[36] Originally derived in "Place and Politics" (Agnew, 1987)

> ***Locale*** is the actual shape of the space, such as defined by objective and subjective boundaries such as the walls in a room, edge of parks and streets in a city, etc. but also associated with determinations of activities (work, recreation, etc.). This is a modality which lies in between location and sense-of-place and is the realm where spatial designers tend to have the largest influence. (Moore, 2001, p.47)

> ***Sense-of-place*** is the personal and emotional attachment people have to a place. Agnew associates this with "a strong sense of 'belonging' to a place, either consciously or as shown through everyday behavior such as participating in place-related affairs." (Agnew, 2011, ch.23) He argues that though other factors are also influential "some sense-of-place (with a locality, nation-state, or world) is a necessary prerequisite for social solidarity and collective action" (Agnew, 2011, ch.23). Steven A. Moore describes Agnew's concept of sense-of-place as "the local 'structure of feeling' that pervades Being in a particular place" (Moore, 2001, p.47) and explains that "it is in this mode that the complex human poetics of place are experienced" (Moore, 2001, p.47). These observations suggest narrative qualities inherent to sense-of-place.

From a historical review of discourses on space and place, Agnew concludes that that one of the key distinctions between space and place is the institutional versus personal relationship we have to them. Spaces are institutionally defined and their differentiation from place lies in the levels of interaction and engagement invested in them through lived experiences, i.e. the meaning we imbue them with. Space carries fewer layers of personal meaning and associations for individuals and communities than place does. According to this logic, important theoreticians on the implications of place, such as Harvey and Lefebvre, use the term space when in fact they are referring to place (Agnew et al., 2003). Agnew also concludes that current theoretical discourse on place focuses on "the construction of places through social practices" (Agnew, 2011, ch.23). Place as a fixed unit of space inherited from history is generally rejected. They are instead described as fluid, interconnected and dynamic, with an internal constitution and character that is diverse and inhomogeneous and yet capable of "express[ing] a certain communality of experience and performance" (Agnew, 2011, ch.23).

An unsettling of the notion and importance of place[37] has also been heavily debated in recent times in relation to modern advances in communication and transportation in the industrial age. The hypermobility and hyperconnectivity which modern technology has brought about is argued to have affected our relation to places by making "the sense of belonging, community and communality [traditionally] associated with sense-of-place…less directly dependent on location" (Agnew et al., 2003, p.606). Doreen Massey (1991) explains that our growing uncertainty with how we relate to place(s) and what we mean by the term is an effect of what postmodern thinkers call "time-space compression" (Massey, 1991, p.315). In other words, the speed of things, i.e. the acceleration of time, destroys our relation to space.[38]

At the core of this unsettled notion of place lies the question of "how, in the face of all this movement and intermixing, can we retain any sense of a local place and its particularity?" (Massey, 1991, p.315). Massey argues, however, that part of the problem lies in the tendency to treat place and community as synonyms. The treatment of the two concepts as interchangeable, she continues, has been a mistaken extrapolation of an idealized notion of place.

> " 'Place' and 'community' have only rarely been coterminous. But the occasional longing for such coherence is none the less a sign of the geographic fragmentation, the spatial disruption, of our times" (Massey, 1991, p.315).

The discussion on the meaning of place as a romantic notion of the past in times of new modes of communication, socialization and movement is likely to continue. Agnew maintains that, though the modalities of the hyperconnectivity and hypermobility may be changing the way we relate to place, they will not change the importance of place. There is evidence that suggests that the contrary is true, and that place is growing in importance in the age of the internet and increased globalization (Agnew et al., 2003, p.611-612). Within ecologism, there are also those who argue that place plays a crucial role in facing our socio-ecological predicament

[37] See section 2.21
[38] Massey refers to Marx as the origin of this concept.

(Guy & Farmer, 2001; Moore, 2001; Regenesis, 2006; Svec, Berkebile, & Todd, 2012; Williams & Stewart, 1998).

3.33 A narrative by design

Gaston Bachelard (1958) argues in "Poetics of Space" that poetry and storytelling are integral to the spaces we inhabit, making it perfectly sensible to "read" or "write" a space or place (Ampatzidou & Molenda, 2014; Bachelard, 1958). This concept gains another level of depth in regards to acting in and understanding the world when we see it through the eyes of cognitive sciences. The situated nature of schema, in particular image and body schemata, underscores the ability of nonverbal embodied sense experiences of spaces and places to influence personal and social narratives. Designerly thinking contributes to, and uses, these types of schemata through what we could call *syncretic reframing*. This, in turn, relates to a poetic way of creating, understanding and living in the world. All of these aspects suggests ways in which spatial design can affect narratives that help builds worlds, and hence potentially contribute to a new narrative for our common future. However, to tell a story, one must have a story to tell…

3.4 A NARRATIVE FOR BEYOND

> "While the directions are clear the process is far less established. Society and the design and planning professions need to continue to determine and agree upon clear definitions of the theoretical aspect of sustainability, and establish this into practice" (Bartuska & Kazimee, 2005, p.221).

The internalization and digestion of sustainability through designerly thinking not only develops the practice of spatial design, it also provides a different perspective of sustainability that could advance and inspire the creation and use of spaces that celebrate the multiplicity of life and support ecosystem health. To do this spatial designers need a language and practice based on its own "intellectual culture"

(Cross, 2001, p.54) that can support the curtailing of degenerative practices in society that threaten a vast number of life forms while simultaneously also providing fertile ground for the creation of meaningful and engaging spaces that contribute to our timeless search of 'the good life'.[39]

Spatial design is a practice that straddles the realm of the immeasurable world of perception and experience (mind) and the measurable world of material and technology (matter). Yet within design practice there seems to be a brooding dualism reminiscent of the tendency to divide mind from matter, which takes form in tendencies to separate technology and place (Moore, 2001). Groat and Wang remark on a need to find ways to overcome this "common tendency in architecture…to divide 'knowledge' into domains associated with particular subdisciplines. Consequently, insights derived from research in energy-efficient technologies cannot easily be integrated with insights drawn from aesthetic analysis of exemplar buildings" (Groat & Wang, 2013, pp.11-12).

Within Groat and Wang's observation one finds the remnants of other problematic stances on the nature design. This is the reduction of design of places to a set of aesthetic and technical components and the neglecting or equating the aesthetics of a place with its poetic aspects. It is not unreasonable to argue that *the poetics of sustainability* is as different from *the aesthetics of sustainability* as it is from *the technologies of sustainability,* and yet integrally related to them both. If design is to begin to take its world-making abilities seriously as Fry (2009) urges, it must begin to understand its role as 'third object' (Havelange, 2010) in sociality and habitat for socio-ecological being.

The mainstream narrative of sustainability is, likewise, accused of perpetuating age old dualisms of mind and matter that underpin an anthropocentric, mechanistic and economic view of nature (Moore, 2001). Sustainable design strategies are subsequently often defined as technological and social advances that make measurable reductions in the negative impacts of the built landscape on the natural landscape and ecological resources, while also "maintain[ing] the status quo" (du Plessis, 2012, p.7) of human economic interests. The solution it postulates is to be

[39] 'The good life' is a phrase used both popularly and scholarly to discuss shared conceptions of the ideal life. Aristotle famously discussed this as the ideal relationship between personal virtue and happiness.

"less bad" (McDonough & Braungart, 2002, p.45), i.e. for us to withdraw from and desist from intervening with natural processes. Mainstream sustainable design strategies are often technical solutions applied to design, or design applied to sustainable technology (Awan, Schneider, & Till, 2006). It is in this way that mainstream sustainability perpetuates and compounds the Cartesian human-nature divide in society and spatial design.

True to mechanistic paradigms, current practices tend to rely on measuring values of austerity and economic growth as key indicators for sustainability (Till, 2012). The implication that one can combine austerity with maintaining the status quo of a society addicted to economic growth and consumption points at an underlying problem in the reigning understanding of the problem at hand. While there is no doubt we must reduce our negative impact, one of the key problems with an approach focused on austerity is its emphasis on the *negative* impact of humans rather than on potential for *positive* influence and mutual prosperity between humans and with non-humans. Behavioral research has shown that individuals and communities feel more motivated for action and engagement when the message is honest, yet positive (Clayton et al., 2014). People are more likely to participate in changing behaviors, regardless of whether they believe or care about environmental issues, if there is a positive impact on the local community.

Design practice is rooted in projective world-changing often led by a utopian concept (Janssens, 2012) of the 'the good life'. The incorporation of austerity and maintaining the status quo with these generative and utopian seeking qualities results in an awkward philosophy of 'sustainable' spatial design. In this philosophy one often finds spatial qualities, such as 'sense-of-place', treated as separate from, yet applicable to, sustainability (i.e. measures of austerity), or sustainability treated as an appliqué to spatial qualities. Mainstream sustainability has, for these reasons, become less conducive for more philosophical discussions about an equitable future and the 'good life' within spatial thinking, designerly thinking, sense-making, and place-making. Nel Janssens eloquently observes this tendency and its dangers:

> "The present tendency to treat the socio-ecological problematic as a mere technical or management problem causes a deficit in the fundamental reconceptualization of the way we inhabit our environment" (Janssens, 2012, p.815).

From concerns such as these, along with others which we have discussed regarding the call for moving beyond sustainability, a *regenerative* approach for design and development has emerged from within the design professions of spatial design (e.g. architecture, urban planners and landscape architects).

3.41 Regenerative Design Theory

Regenerative design argues that in order to move forward and beyond current paradigms we must build new narratives of eco-social relationships. Regenerative design criticizes the prevailing anthropocentric approaches to sustainability which gravitate around an antagonistic view on the relationship between humanity and nature. It shifts the focus from austerity to the generation of systemically regenerative inter-relations between ecological and civic values and resources through living systems and situated narratives (Cole, 2012a; du Plessis & Cole, 2011). It has no lesser aim than to bridge many of the dualistic separations inhibiting a new world order where humans and nonhumans share habitat and participate in the regeneration of resources for mutual benefit and well-being.

A term beyond sustaining

One of the most common characteristics used to describe spatial design practice is its focus on generating new situations through previously *unknown* or *unseen* relationships (Groat & Wang, 2013). This is in stark contrast to efficiency measures typically heralded by mainstream sustainability, whose primary aim is to reduce, minimize and improve *existing* and *known* relationships. I contend that it is precisely this contrast of raison d'etre which makes designerly thinking and mainstream sustainable thinking an awkward match, and may be part of the reason why some designers reject or resist measures of sustainability.

The narrative of the paradigm therefore begins with its nomenclature. The verb 'to sustain' evokes the sense of permanence which we find so alluring, however, 'to sustain' also suggests static (and potentially stagnant) conditions. Its danger is in a latent tendency to project a protectionist fear of change whose focus is "to maintain the status quo" (du Plessis, 2012, p.7). 'To sustain' indicates the supply of sufficient support to maintain current and basic conditions. It can also imply the narrow escape of misfortune, or the balance on the brink of it. A healthy ecosystem doesn't balance on the brink of extinction; it thrives.

Both permanence and static conditions are illusory conditions. They are not only in stark contrast to the paradigm shift that ecologism is calling for, they also contradict the dynamic processes of change inherent in the processes of evolution and development vital for the continued relevance and survival of ecologies, societies and places. The intention of 'maintaining' that sustainability implies is accused of being inadequate to communicate or motivate the changes that must be considered when designing and the field of design. To meet this challenge, the field of design needs to digest the concept of sustainability through its own set of criteria and concerns and come to "a common understanding of what we mean when we talk about sustainable design" (McLennan, 2004, p.2). The generative nature of design common in its practices and inquiries is a logical place to work from.

The term 'regenerative' begins to describe a more constructive response in our variable relationship to past, present and future environments. Its root 'regenerative' has many definitions in the English language primarily "formed or created again; spiritually reborn or converted; restored to a better, higher, or more worthy state" (Merriam-Webster, 2016). 'To generate' lies at its root and is therefore implicated and significant. The Latin origin is generāre and means "to beget" (OED, 2016), and its English definitions[40] include:

- to bring into existence; cause to be; produce
- to create by a vital or natural process
- to create and distribute vitally and profusely
- to reproduce; procreate

[40] Definitions and synonyms from (Dictionary.com, 2010)

The synonyms for the verb 'to generate' are also noteworthy:

- to create; to evolve; to originate; to engender; to institute.

Another synonym used in philosophical and design discourses is *poiesis.* In ancient Greece, *poiesis* was used to speak of the human activities involved in making. Aristotle used it to refer to "the science of made-things or the artificial" (Buchanan, 2007, p.58). Heidegger's use of the term has been influential in design discourse through phenomenological discourses. He uses the term in relation to an act of bringing forth and of revealing the nature of a thing over time (Wheeler). Poiesis is also the root word for poetry, which makes an interesting connection to Bachelard's (1958) notion of the poetics of space. While it may be a simple connection in etymology, this relationship suggests an ability for a term such as regenerative design to relate to more ephemeral aspects of space. Connotations and secondary meanings of generation and regeneration should not be discredited in their ability to help build narratives.

Together with the prefix *re-* (meaning "again"), the term 'generate' emphasizes the cyclical nature of healthy systems and the evolutionary process of re-creation. It also suggests breathing new life and prosperity into ailing systems that have suffered from our mismanagement and reminds us that humanity not only has the power to destroy and survive, but also to create and nurture. A sense of stability is created through the implication of fertility and rebirth with a nurturing environment of growth and recovery, which is by no means static. In this sense, it is an act of perpetually sustaining generation. One could speak of the more generalizable theory behind regenerative design as *regenerative sustainability,* and conclude that it is designerly thinking's contribution to the advancement of theories on sustainability, and beyond...

Not to be confused with...

The term regeneration has also been used in the context of reviving derelict neighborhoods in the past thirty years and has unfortunately often lead to various levels of gentrification. While a confusion of terms is possible, this dissertation rests

on the shoulders of a wide body of regenerative theory and practice that is clearly distinct from a method of urban renewal.

Regeneration for the ages of hypercomplexity

Regenerative design theory provides tools that help us to deal with conditions of a hypercomplex world. We can review these by dissecting Pamela Mang's description of the particular strengths of regenerative design and comparing these to aspects of hypercomplexity discussed in this licentiate.

> "Regenerative Design…introduces into Ecological Design at least two additional streams—the Science or Art of Place, and the science of living systems. Regeneration is far more than simple renewal or restoration [it] include[s] three key ideas: a radical change for the better; creation of a new spirit; returning energy to the source" (Mang, 2001).

Regenerative design advocates place centered approaches for addressing the glocal conditions of, and threats to, ecosystems and society. This glocalized view of problem settings is based on the recognition that "all ecosystems include human influence and most include human presence, we might as well think of human ecosystems as the ordering systems of life" (Lyle, 1994, p.22). Through its focus and use of "the Science *[and*[41]*]* Art of Place" (Mang, 2001) it addresses issues related to the ontological alienation and rootlessness (i.e. being and belonging) generated by increasing levels of eco-socio-spatial *unsettlement* in the world.

Regenerative theory rejects the human-nature dualism that plagues debates within *the age of ecology and (in)action*. It instead argues that society (i.e. humans) *belong* in ecosystems and ecosystems *belong* in society. Furthermore, regenerative design rejects human presence and activity as inherently bad for ecology and insists that humans can and do have *positive* impacts on the earth's socio-ecological conditions. This is often expressed by advocating co-evolution and co-creation as the basis from which we need to measure and create well-being and define the good

[41] The original quote says "Science or Art of Place". However, it is unclear if Mang's "or" is an ambivalence as to whether spatial design is a science *or* an art, or if it implies that one can choose one of two approaches to the understanding place. I would argue, however, that spatial design and regenerative design's strength lies in the bridging of the measurable and immeasurable, i.e. of science and art, and I have therefore replaced Mang's "or" with 'and'.
(continued next page)

life. Sacha Kagan (2010) calls this 'autoecopoiesis' and identifies it as a natural and necessary part of hypercomplexity.[42]

> "In an age of hypercomplexity inextricably interweaving social systems and ecosystems for better or worse, interdependencies increase the relevance of coevolutionary capacities" (Kagan, 2010, p.1097).

Through focusing on a "change for the better" and fostering a "new spirit" (Mang, 2001), it helps to address issues of 'eco-anxiety' and other psychoterratic syndromes (Albrecht, 2011). Its message is one of "designing for hope" (Hes & Du Plessis, 2015) through focusing on the positive effects humans can have in supporting life enhancing systems.

By grounding technical processes in principles of "the science of living systems [and] returning energy to the source" (Mang, 2001) it addresses the degenerative conditions of *the age of the ephemeral*. Its basic premise is to replace these degenerative and high temporal rates of entropy with techne that mimics and includes ecosystems, and promotes life and well-being. Material and technological solutions are developed for each glocally situated place in order to help define that community's eco-sociological role and identity in living systems and continuous processes of change, i.e. the process of *becoming* in a world in *flux*.[43]

3.42 Some distinctive turns

The theory of regenerative design has matured since its inception just over thirty years ago. In this section, we will review basic premises for regenerative design and some key developments upon first definitions and principles.

Coining Regenerative Design

The term and basic premises of regenerative design were first defined in John Tillman Lyle's book *Regenerative Design for Sustainable Development* (1994). Without directly refuting the term sustainability, he emphasizes the need for further

[42] See also UNESCO (2008).
[43] See section 1.2 and 2.3, as well as Bohm (1980).
(continued next page)

refinement and development of the concept of sustainability beyond "[maintaining] the status quo of natural carrying capacity" (Moore, 2005, p.442). Lyle was inspired by the concept of *regenerative organic agriculture*[44] developed by Robert D. Rodale (Mang & Reed, 2013) and set out to define regenerative systems and their implications for society and the design of human habitat.

Basing his arguments on the premise that "human ecosystems" (Lyle, 1994, p.22) dominate the world today, he argues that the built environment must include places, practices, systems and technologies that support and learn from natural ecosystems which are "inherently self-renewing" (Lyle, 1994, p.X). This concept is diametrically opposed to the degenerative practices of the age of the ephemeral which "[devour their] own sources of sustenance" (Lyle, 1994, p.5). This is not to say that society can design its way out of the second law of thermodynamics, i.e. eliminate entropy. However, it does propose that societies can participate more effectively in natural ecological systems than they currently do and thereby reduce rate of entropy that defines the age of the ephemeral and threatens current living systems and forms, including civilizations. Lyle, therefore, argues that society must move from its existing linear systems (figure 11a) to ones which mimic and include regenerative processes of ecosystems defined by closed loop systems (figure 11b) of resources with "multiple pathways" (Lyle, 1994, p.43) for minimizing entropy and maximizing beneficial use of waste for living things.

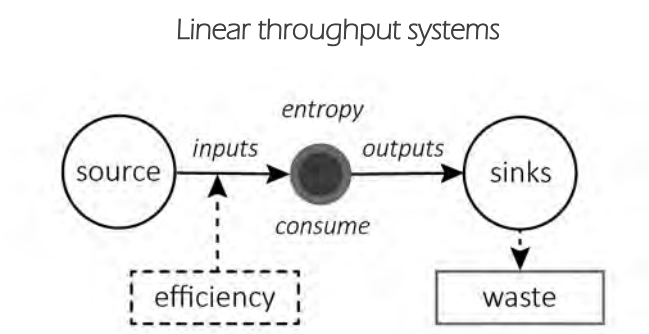


Figure 11a. The diagram is a depiction of my understanding of Lyle's (1994, p.5, 52) description of current systems and approach to sustainability. Mainstream sustainability tends to simply apply efficiency to existing linear throughput systems of resource use and waste-making. The linear throughput system aim is efficiency and includes degenerative linear flows of resources.

[44] The agricultural approach has also been influential in the principles of permaculture.

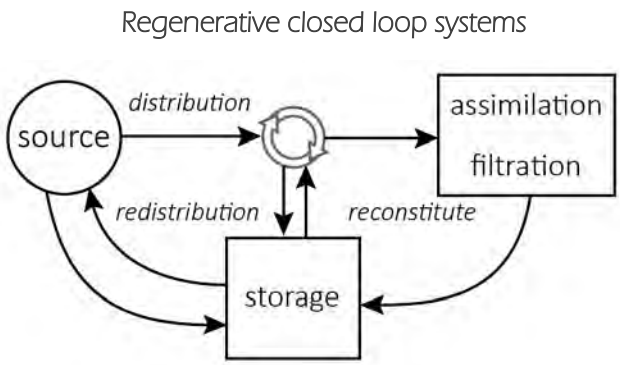


Figure 11b. The diagram is a depiction of my understanding of Lyle's (1994, p.10) description of regenerative systems work differently from linear systems. The regenerative system aim is effectiveness, symbiosis, renewal, integration with natural processes, multiple pathways, and minimal entropy.

Lyle subsequently outlines the general characteristics of regenerative systems for human purposes (Lyle, 1994, p.11):

- Operational integration with natural processes, and by extension with social processes
- Minimum use of fossil fuels and man-made chemicals
- Minimum use of non-renewable resources
- Use of renewable resources within their capacities for renewal
- Composition and volume of wastes within the capacity of the environment to re-assimilate them without damage

Lyle's definition of regenerative systems is a cornerstone in regenerative theory:

> "A regenerative system provides for the continuous replacement, through its own functional processes, of the energy and materials used in its operation" (Lyle, 1994, p.10).

He adds that a regenerative systems' main purpose is to *effectively* support "the necessities of daily life: shelter, water, food and waste processing." (Lyle, 1994, p.10). He differentiates this from *efficiency,* stating that the most common method used for achieving sustainability involves adding efficiency to existing throughput systems (see figure 11a). While efficiency may reduce energy and/or resource consumption, it can still can be wasteful or inhospitable to life if systemic effects and temporal considerations are not taken into account. He proposes we question and explore the

overall effect of actions within complex system relationships over *time,* rather than simply reducing known factors of simplified and isolated system relationships to a minimum. Lyle emphasizes that one of the key components of regenerative systems (and sustainability) is managing storage. In other words, it is essential that we find moments of pause and accumulation in the temporal speeds that are creating the crises of socio-ecology in the age of the ephemeral.

Lyle proposes twelve strategies for regenerative design (Lyle, 1994, pp.38-45), which are summarized and paraphrased in the following list:

1) Let nature do the work
2) Consider nature as both model and context
3) Aggregate, do not isolate
4) Seek optimum levels for multiple functions, do not seek the maximum or minimum level for anyone
5) Match technology to need
6) Use information to replace power
7) Provide multiple pathways
8) Seek common solutions to disparate problems
9) Manage storage as a key to sustainability
10) Shape form to guide flow
11) Shape form to manifest process
12) Prioritize sustainability

An oversight in Lyle's work is that he does not address aspects of diversity, multiplicity and adaptability very clearly in his description of regenerative systems or his twelve strategies for regenerative design. While he hints at diversity through the need for multiple paths in regenerative systems, he fails to speak of this issue on a larger scope of species and society. These qualities are, however, inherent and crucial in natural ecosystems and are argued to be equally important for "human freedom and well-being" (Parekh, 2000, p.168) as well as individual and cultural identities.[45]

[45] For a deeper discussion on this see Parekh (2000, pp.167-168)

Three knowledge bases of Regenerative Studies

The publishing of Lyle's book corresponded with the opening of the Lyle Center for Regenerative Studies at California State Polytechnic University Pomona, USA. After twenty four years of operation, the acting director of the institute, Kyle Brown, ventured upon a summation of what he identifies as the "common knowledge base of regenerative studies" (K. D. Brown, 2008) and illustrated this in a diagram (figure 12) which is reminiscent of the three pillars diagram of sustainable development (figure 8).

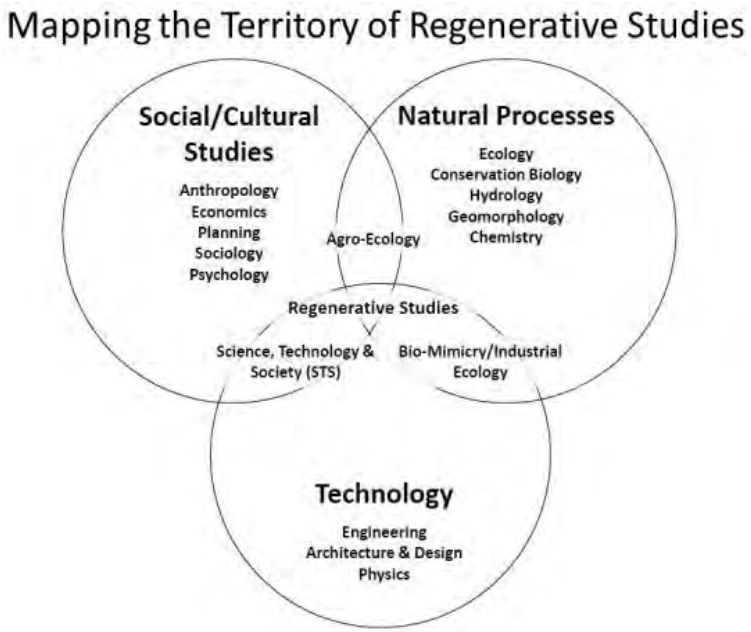


Figure 12. Kyle Brown's (2009) diagram of regenerative knowledge bases and their correlating fields. Reprinted with permission.

These pose an interesting alternative to the three pillars of sustainability as a base of priorities in the operational knowledge for research, education and projects. It is an indirect challenge to those who view the three pillars of sustainability as anything other than a diagram of political concerns and power struggles.

Brown observes that "the systems thinking integrated into regenerative studies by John Lyle and others, is a methodological directive that may offer some promise in crafting not exclusive, but somewhat unique, identity and commonality for regenerative studies practitioners" (K. D. Brown, 2008). He also notes the "relatively

unique emphasis of systems thinking and the action-oriented normative perspective" (K. D. Brown, 2008) as a strength that justifies regenerative studies to remain a field worthy of study. Brown does not mention designerly thinking, however the generative nature of design thinking is a type of action-oriented approach and the value driven nature of design is related to normative perspectives. While I will not go into specifics about the center's different activities, it is worth noting that the student and teacher body is cross-disciplinary and so are the studies that are conducted there. The center would, therefore, be a fruitful place to study how a design based theory for sustainability supports cross-disciplinarity.

Cradle to Cradle

William McDonough and Michael Braungart popularized and expanded the principles of regenerative design with their book *Cradle to Cradle.* It is has made a considerable impact in industrial design and has more recently spread in spatial design fields and community development[46]. McDounough and Braungart center their arguments on the difference between efficiency and effectiveness that Lyle discusses in regards to regenerative systems. They criticize mainstream sustainability for focusing too heavily on 'eco-efficiency'[47], which they argue is an approach which aims to do more with less and to be "less bad" (McDonough & Braungart, 2002, p.45).

They do not deny that efficiency is needed, and contend that "eco-efficiency is an outwardly admirable, even noble concept, but it is not a strategy for success over the long term, because it does not reach deep enough" (McDonough & Braungart, 2002, p.62). As an alternative to eco-efficiency they propose 'eco-effective' measures. McDonough and Braungart point out, eco-effectiveness is also efficient and is inherently concerned with reducing or eliminating bad materials and processes. Eco-effective design, however, takes sustainability to a level of health and prosperity which eco-efficiency alone is unable to do.

[46] Political policies: Venlo, Holland (Westerlo, Halman, & Durmisevic); Community design: Ronneby, Sweden (in concept and design development stage) (Gunne, 2014); Dongtan, China (not built) (Goodbun, Till, & Iossifova, 2012)

[47] The term eco-efficiency was coined in 1993 by the Business Council for Sustainable Development (Najam, 1999)

Central to the cradle-to-cradle approach are two types of regenerative waste-resource systems called the 'biosphere' and 'technosphere' respectively (McDonough & Braungart, 2002) (see figure 13a & b). The principles are simple. All things that can be made into food for some other living creature, should go into the biosphere and the system of biological metabolism. All things that cannot become food should become part of the technosphere, which is a metabolism of things and materials.

(a) (b)

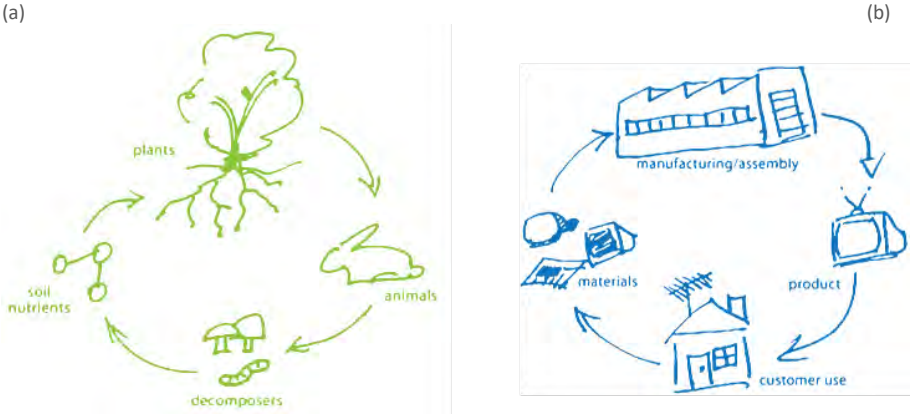


Figure 13 (a-b). A sketch on the Cradle to Cradle website representing McDonough and Braungart's (2002) notion of the biosphere (left) and technosphere (right). Reprinted with permission.

Ideally, the objects and materials in the different spheres do not succumb to entropic conditions through 'downcycling' (McDonough & Braungart, 2002, p.56), i.e. they do not lose value or usability as they move through the regenerative system. 'Up-cycling' (McDonough & Braungart, 2013) is the term they use to infer that an items value or usability has increased in a regenerative process. One can then infer that re-cycling is the state at which they emerge with an equal value or use.[48] Up-cycling in the technosphere, is more complex than in the biosphere. In broad strokes, it requires products and buildings to be designed for disassembly.

What McDonough and Braungart are essentially proposing here is to design our way out of entropy. While this is an admirable sentiment, even possible to an extent, even they acknowledge that some level of down-cycling and toxicity is unavoidable, or at least until we have a completely eco-effective society and industrial process in place (which they acknowledge will be long in coming). However, any industrial

[48] Though a logical conclusion, it is my own and not that of the authors.

society (re-evolutionized or not) will include *some* amount of down-cycling and toxicity. The entropy inherent in the second law of thermodynamics proves that down-cycling exists in natural ecosystems as well. The earth and natural organisms produce their own set of pollutants which are assimilated into the metabolic systems of the earth and storage systems (as Lyle calls them). When the pollutants exceed acceptable levels, extinctions and evolution take place. The goal is finding a balance. Regenerative design proposes to do so through not just reducing negative effects but also producing positive effects in these metabolic systems.

Compelling narratives and schemata

A great deal of the success of cradle-to-cradle is a compelling narrative where *thriving* has been the central message. McDonough and Braungart eloquently illustrate this concept with the analogy of a cherry tree producing many times the number of flowers, fruit and seeds it needs in order to reproduce. Only some of these become trees; the rest provide multiple services to the ecosystem of which it is a member. Their manifesto is littered with these types of stories of eco-effectiveness and catching phrases which communicate basic design principles which are in essence regenerative schemata: 'Imagine a building like a tree, a city like a forest.'; 'Waste=food'; 'Celebrate diversity'; and 'Use solar income' (McDonough & Braungart, 2002).

An industrial re-evolution

With eco-effective measures in place they see no reason to limit productivity, creativity and growth. This culminates in a call for an "industrial re-evolution [where] products and processes…resemble the living world." (McDonough & Braungart, 2002, p.154). This living world is where abundance, diversity, and niche adaptation into metabolic cycles dominate and support a continuous re-creation. They argue that, though it is a complex design challenge, human beings can fit into this living realm and prosper without endangering ourselves, nature's ecosystems and our shared future. While William McDonough and Michael Braungart do not directly refer to (or criticize) Lyle, their cradle-to-cradle approach adds diversity as a key concept in regenerative design theory.

McDonough and Braungart incorporate regenerative technologies with commercial interests. Contrary to many environmentalists who work and argue against industry, they prefer cooperation and dialogue over opposition. They wish to embrace the hubris of creativity and production that industry has harnessed over the past couple of centuries and direct it towards "good growth" (McDonough & Braungart, 2002, p.78). The authors appeal to commercial interests by inferring that it is not consumption that is wrong, but rather the modes of production. The cradle-to-cradle discourse seems to imply that we can continue our current consumptive behaviors as long as everything we do is bio-degradable or recyclable. Though cooperation can be more practical, both opposition and cooperation are necessary components of change. At the onset, it may also seem pragmatic to philosophically support society's voracious appetite; however, it is doubtful that our socio-ecological conditions will improve simply by making products and processes more regenerative.

Regenerative eco-technophilia

There is a potential for conceptual confusion caused by the popularity of cradle-to-cradle and its association with a regenerative design approach. While it is most definitely a regenerative approach, cradle-to-cradle lacks any significant dialog on the role of place and other psycho-social dynamics and aspects of space. Though Willlam McDonough is an architect and cradle-to-cradle's key area of application outside of industrial design has been the design of buildings and communities, it is in fact in danger of falling into what I call the *eco-technophilic*[49] trap and losing sight of the importance of place-making.

Through its origins in spatial design, regenerative design has unique ability and opportunity to develop the notion of place in the ages we are living and those to come. However, there are eco-technophilic tendencies also in Lyle's manifesto. Lyle's statement that the "necessities of daily life [are] shelter, water, food and waste processing" (Lyle, 1994, p.10) exemplifies what I find to be a significant conceptual oversight in his manifesto on regenerative design: a lack of consideration of the

[49] I have not found the term 'eco-technophilia' anywhere else. This may be the first time it is used.

embeddedness of technology in situated psycho-social relationships. This list of 'necessities of daily life' address the physiological needs of human beings but does not address the equally important aspects of psychological and social well-being for human survival.[50] Lyle does recognize that "regenerative systems…are enmeshed in natural and social processes" (Lyle, 1994, p.37) and that "thought processes mesh with ecological processes; together, they transcend and ultimately determine form" (Lyle, 1994, p.28). However, Lyle's approach to psychological well-being focuses primarily on employing proper technology to connect "the human mind with the inner rhythms of the earth" (Lyle, 1994, p.28).

While Lyle, McDonough and Braungart on occasion assert the vital importance of human well-being, social issues and place, they fail to address the social and cultural embeddedness of technology and human beings, particularly in relation to place and place-making. Every attempt to do so is approached in a technocratic manner, relegating these issues to an integrated but practically subsidiary position to regenerative technology. The underlying message is that regenerative technology will supply us with the means to create healthy and dynamic societies and places.

Critical regenerative regionalism

Steven A. Moore (2001) points out the persistence of dualistic notions of technology versus place within design for sustainability. He observes that while there is a clear relationship between civilization, the built environment and place, there is not a clearly defined relationship between sustainability and place, in particular between sustainable technologies, place and social engagement. Arguing against the tendency to view technology as prescriptive of human identities and actions, he points to discourses in science and technology studies (STS) that have shown that technology is inseparable from social processes and societal structures.

> "Technology, like place, is a field where the struggle between competing interests plays out" (Moore, 2005, p.435).

[50] This is not to say that psychological and social well-being is not essential to the health of wildlife as well, only that Lyle is speaking here of human survival.

Moore criticizes William McDonough and Lyle for "fail[ing] to relate their ecological concerns to the cultural politics of place-making" (Moore, 2001, p.20). He maintains that "it is simply a passive form of positivism (traditional science by another name) to imagine that ecologists can repair the ecosystem in isolation from political processes" (Moore, 2005, p.440). Leaning on David Harvey's (1996) thesis[51] he insists that regenerative systems involve both "biological *and* political feedback loops" (Moore, 2001, p.8), and proposes an addition (in italics below) to Lyle's definition of regenerative systems:

> "A regenerative system provides for the continuous reproduction, through its own functional processes of energy, materials, and *the human practices* engaged in its operation" (Moore, 2001, p.8).

Moore's political perspective on Lyle's definition of systems is extended to a definition of regenerative technology, which adds two distinctive qualities to sustainable technologies:

> "First, regenerative technologies are socially visible and politically transparent...Second, where sustainable technologies require only that the status quo of production/consumption be attained, regenerative technologies require a net increase in life enhancing conditions" (Moore, 2001, pp.130-131).

Moore contributes to regenerative design theory through mapping its theoretical framework (see figure 14) in relation to architecturally relevant modern and postmodern ontologies, and the underlying dualistic view of technology versus place. Using this map of ontologies and theories he argues for the combining of critical regionalism with social ecology to help inform and advance principles of regenerative design. Without going into further detail, this combination helps to overcome the modern/post-modern divide and the "dichotomized principles of technology and place" (Moore, 2001, p.7) in sustainable architecture and lays the foundation for a *nonmodern* approach.

[51] In "Justice, Nature and the Geography of Difference" (Harvey, 1996)

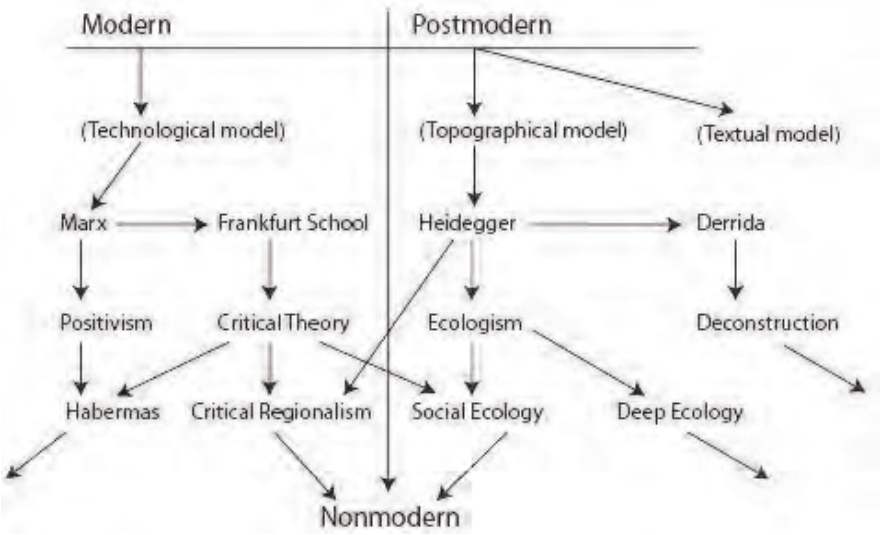


Figure 14. Moore's (2001, p.22) map of significant theoretical influences leading to a nonmodern approach to sustainable architecture, i.e. critical regenerative regionalism. Reprinted with permission.

Building on Bruno Latour's (1991) notion of being nonmodern, he illustrates how society is a dynamic process that transforms places and technology, which in turn is transformed by these. Place, technology and society are hence dialogically interrelated and must be addressed equally in regenerative processes. Moore points out that places and technologies are both spatial concepts with related structures. While the spatiality of place is easily understood, understanding technology as a spatial concept is more complex. Pulling on Latour's descriptions of technological networks[52] (Latour, 1991), Moore explains that technology is not a "set of objects [but rather] the social networks that construct relationships between human knowledge, human practices, and nonhuman resources…Technology is essentially a spatial concept because its operation depends upon the mobilization of human and nonhuman resources that exist in different places" (Moore, 2005, p.436).

Moore seems to have a difficulty in deciding what to call the merging of nonmodern notions of critical regionalism with regenerative design and varies between three titles through different publications: 'critical regenerative regionalism', 'regenerative regionalism', and 'nonmodern regionalism'. None the less, his proposal is consistent and rooted in the idea that this nonmodern approach

[52] A key figure in science and technology studies (STS) and actor-network theory (ANT).

"might consciously, and democratically, construct places that relate humans and nonhumans in life-enhancing and ever-changing practices" (Moore, 2005, p.440).

By combining society, place and technology he helps to advance regenerative theory beyond the realm of eco-technophilia, and into the realm of human experience and sense-making. This is illustrated clearly in how differentiates sustainable architecture from regenerative architecture:

> "A durable architecture need only delay the inevitability of decay. A sustainable architecture need only maintain the status quo of natural carrying capacity. A regenerative architecture, however, must concern itself with the reproduction of the institutional agreements that tie humans to the ecological conditions of a place" (Moore, 2005, p.442).

He concludes with eight principles for regenerative regionalism (Moore, 2005, pp.441-442):

1) A regenerative architecture will construct social settings that can be lived differently.
2) So as to participate in local constellations of ideas, a regenerative architecture will participate in the tectonic history of a place.
3) The producers of regenerative architecture will participate in the construction of integrated cultural and ecological processes.
4) A regenerative architecture will resist the centers of calculation by magnifying local labor and ecological variables.
5) Rather than participate in the aestheticized politics implicit in technological displays, regenerative architecture will construct the technologies of everyday life through democratic means.
6) The technological interventions of regenerative architecture will contribute to the normalization of critical practices.
7) The practice of regenerative architecture will enable places by fostering convergent human agreements.
8) A regenerative architecture will prefer the development of life-enhancing practices to the creation of critical and historically instructive places.

Moore does not elaborate on exactly how this his eight points for regenerative regionalism relates to Lyle's twelve strategies for regenerative design. However, it

does not seem that he deems them a substitution but rather as a development of Lyle's strategies. A more explicit discussion on how to interweave Lyle's and Moore's principles would be fruitful to help clarify their differences and similarities.

3.43 Other contributions to regenerative theory

There has been a growing interest in and development of regenerative design since the turn of the century. The following sections outline key contributions to the advancement and understanding of central principles and theories, as well as delineating different types of regenerative approaches.

The Regenesis group and Story of Place

The Regenesis group is a design and research group that has made significant contributions to regenerative theory and methods. One notable contribution is their trademarked method for analyzing and defining a "Story of Place" (Regenesis, 2006) and the notion of place and community that lie behind it.

> "Focused on patterns and patterning rather than data collection, this whole-systems assessment (cultural, economic, geographic, climatic, biological and ecological) develops understanding of how community and place work as an interdependent living whole" (Regenesis, 2006).

This is a method which they use in community development projects where they help a community build a narrative that combines their inter-subjective experiences with the history of the landscape and ecology of the place and develop a plan of co-evolution with the local systems revealed in the process. Though they do not discuss nonmodernity, his method both reveals and helps to build a nonmodern understanding of places and community. There is a sensitivity and generosity in the way in which this concept of place incorporates and adjusts to variable contexts. However, there is something in the act of trademarking its title that seems to contradict the very same humility and generosity of spirit that the method embodies.

Regenerative design and regenerative development

Through the application of regenerative theory and methods to a number of different projects, Pamela Mang and Bill Reed (2013)[53] found there is a reason to distinguish between the scope of regenerative design and that of regenerative development. They define regenerative development strategies as those that identify and engage a larger scope and context for more specific implementation of design strategies.

> "Regenerative approaches view development and design as two distinct yet synergistic processes, both of which play an essential role in ensuring that greater scope, neither of which is sufficient without the other" (Mang & Reed, 2013).

They admit that the distinction is blurry, however none the less significant. Their descriptions of the two, and how they differ, is not unlike the way many in traditional design separate architecture from urbanism and regional development. While it can be fruitful to distinguish needs of different types and scales of projects, too much of a distinction can be problematic. Regenerative development and regenerative design are presented as corollary and complimentary theories, and must continue as such if they are to avoid a division into sub-disciplines that has plagued the otherwise complimentary natures of urbanism and architecture.[54]

Regenerative sustainability

John Robinson and Raymond Cole (2015) further distinguish 'regenerative sustainability' from 'regenerative design and development' (Robinson & Cole, 2015). They define regenerative sustainability as a general concept for sustainability planning and community development that is less associated with site specific processes for designing the built environment than regenerative design and development tends to be. Through Robinson and Cole's discourse we can begin see how reprocessing and reevaluating the concept of sustainability through designerly thinking can contribute to sustainability theory in general.

[53] In this paper, they are representing the Regenisis group.
[54] See Cuff and Sherman (2011) for a discussion on the problematic distinctions between urbanism and architecture.

Regenerative pathways - values for a narrative of hope

Chrisna du Plessis and Dominique He (2014) emphasize the importance of fostering a narrative of hope and "ecological values" (Hes & Du Plessis, 2015, p.35) in facing the challenges before us. Regenerative sustainability helps us to achieve these, they argue. To achieve sustainability, our worldview must be one based on a "spiritual and emotional affiliation" (Hes & Du Plessis, 2015, p.26) with ecosystems. The spaces we design and use need to nurture this intrinsic part of what it is to be human. To help explain this aspect of regenerative approaches they provide a list of 'ecological values' that should be practiced (Hes & Du Plessis, 2015, p.35):

- Integrity; Inclusivity; Harmony; Respect; Mutuality; Positive reciprocity; Fellowship; Responsibility; Humility; Non-attachment

Their work helps establish the relationship between regenerative sustainability and the philosophies of permaculture, deep ecology, biophilia and integral theory. Through discussing this relationship, they emphasize the spiritual, ontological and co-evolutionary relationships with ecology, as well as the importance of narrativity in world-making.

3.44 Regenerative schemata & principles

I will conclude this literature review with three main components of the regenerative paradigm and a definition of them:

- While *sustainable development* aims are to continue growth without harm and to persevere, ***regenerative sustainability*** aims to enrich and interweave ecological, technological and social systems so as to foster a productive and co-evolutionary relationship between the human species and their nonhuman counterparts in globally interconnected local places.
- A ***regenerative system*** reserves and reconstitutes resources for future use, fosters prosperity, and provides a framework for participation, creation, adaptation and co-evolution through diversity and multiplicity.

- A ***regenerative community*** is centered on situated places that engage the reenactment of local institutions, assemblages and narratives that tie humans to each other and nonhumans in their socio-ecological context.

Based upon these definitions, and the literature reviewed, we can begin to identify more specific regenerative schemata and principles that help build a regenerative narrative. The sketches of schemata that follow are titles of more lengthy descriptions of key principles and areas of knowledge extractable from an overview of this designerly look at moving beyond mainstream sustainability, which will be derived further in 7.3.

Re-evolution through eco-sociotechnological co-evolution

Regenerative theory aims to reduce the anthropocentricity of the current paradigm of sustainability, while simultaneously emphasizing that humans are an integral and driving force in *all* ecological systems on earth (even the ones where there is no human habitation). Rather than speak of *development*, it argues that we must speak of *co-evolution*. With this change in terminology, there is a shift away from improvements to the world based on the perspective of "Homo economicus" (Oelschlaeger, 2000, p.5) and a continuation of current norms and standards of value and growth. It proposes a revolution from current anthropocentrically based economic values: a re-evolution.

Co-evolution implies dynamic and dialogical processes of improvements and adaptations to changing circumstances over a longer temporal perspective. It requires society to embrace and include means for forces of constructive and beneficial change with each other and other living creatures in reciprocal responsibility in and benefit from thriving living systems. Regenerative design posits that the method to do so is with a net-increase of systems that include social and ecological principles and technology in co-creative partnerships. Seek and abundant and resilient re-evolution through eco-sociotechnological[55] co-evolution.

[55] I have not found this term used before. This may very well be its first use.

Temper entropy with system perspectives

Regenerative design asks 'is there such a thing as waste?' and proposes to shift our language and practices into viewing the world in terms of resources in different states of renewal, storage and use. It is based on an understanding of scarcity as a relative term that is produced by our view of what is considered a resource and what is not. Regenerative techne directly addresses the high rate of entropy (i.e. waste-making) caused by the age of the ephemeral. The term *techne* (from ancient Greek) connotes the combined realm of technology and technique, as well as the cognitive dispositions related to these. This term allows us to speak more broadly of practice based and embodied knowledge, particularly in regards to physical forms and mechanisms. "Techne gives more to the practitioner than merely equipment and a knowledge of how to use it. It provides an active disposition…from which he or she can relate to the world and act within it" (Mei, 2015, p.279).

There are three basic principles involved in regenerative techne:

- ***Ecosystem-mimicry***: create systems, mechanisms and processes where waste is a resource
- ***Ecosystem-inclusion***: incorporate human systems, processes and mechanisms into biological systems, process and mechanisms, or vice versa.
- Adopt ***a living-systems view*** which fosters effectiveness over efficiency in the advancement of our eco-socio and techno-spatial condition.

While regenerative techne is not limited to dealing with waste, using waste as a resource is a central theme in the theoretical discourse of its practitioners. It lies at the base of the term *regenerative* and its principle extends into other values that have less to do with physical resources.

Foster proactive and inclusive nonmodern narratives

Regenerative theory does not deny that humans must reduce harmful activities, however it postulates that the narrative focalizations[56] of strategies and solutions must be on creating and enhancing life giving conditions that foster well-being for all living beings. Basic to our ability to shift paradigms is overcoming a dualistic and antagonistic view of humans and nature. This dualism is argued to be a product of the Cartesian division of mind and body, thought and matter (Moore, 2001). To overcome this dualism, it is not enough to only speak of humans as being dependent upon nature and natural processes. One must understand that identities are defined by an interaction of humans and nonhuman creatures and things, i.e. a nonmodern notion of self and community. We must also alter the idea that humans and human activities are *de facto* negative for the environment and enhance narratives and situations where humans have positive impacts on ecological health. This does not imply that we should deny the existence and need for reduction in negative human impacts; it simply shifts the focus onto acts of increasing *positive* impact.

In essence, it is a move from current tendencies to motivate through focusing on fear, protectionism and measures of austerity, towards motivating through hope, co-evolution, reciprocal abundance and balancing the relativeness of scarcity. It seeks to balance the measurable and immeasurable values of sense-making by emphasizing the importance of qualities such as identity, spirit and sense-of-place. We must realize mankind's ability to excel in something other than destruction and degeneration. Narratives of how to prosper and develop are built upon the unearthing of neglected elements and contributors (actants[57]) in a more complex view of local economies and identities.

Embrace and affect positive change

Regeneration does not bolster itself against change; it incorporates it as a central ingredient. It is pro-active in nature and engenders a sense of a participatory and

[56] Focalizing is in its basic form a narrative method for drawing attention to a subject of primary importance. See also 4.2 and for further reading Jahn (1996).
[57] A narratology term from Greimas in 1966 (Bundgaard, 2007) and frequently used by STS (science and technology studies) to denote that actors (i.e. those who do action in a story) can be objects or creatures. Actors is argued to be too strongly associated with humans (Latour, 2005).

proactive involvement and suggests adaptation through creativity. Rather than simply supporting life and well-being, it implies the act of enhancing and engendering it as well.

Regenerative sustainability reflects the need to constantly reevaluate and reinforce what transitory permanence it is we want to maintain in the world. It is a type of durability through continuously shifting systems and interactions. A stability that is built upon the impermanent entanglements of actants that persist due to a continuous re-enactment of their arrangement in assemblages[58] of thought and objects. It proposes to use the changing nature of systems and assemblages to affect positive change and reduce the entropy that has led us into to an age of the ephemeral.

Situatedness – work from place and context

The contextualized and embodied aspects of knowledge and experience, situatedness, is a crucial aspect of regenerative theory and practice. The argument is that each unique place and context influences the world-making practices needed to meet the challenges of a hypercomplex, unsettled and ephemeral world facing an ecological crisis. Regenerative design therefore advocates place centered approaches to address the glocal conditions of, and threats to, ecosystems and societies.

Situated conditions are argued to be central in image and body schema formation, as well as in social and individual identity and learning (Arbib & Shapiro, 1992; J. S. Brown et al., 1989; Reffat & Gero). The influences and impacts that define a place and its effect on the interaction between society and ecology are immeasurable but much of the discourse in regenerative theory and cognitive sciences argues that it cannot be ignored. If we treat the emergent and subtle influences of situated places as less pertinent to solving the problems of sustainability, we designate the powers of understanding to technological mechanisms and disregard the world-making capacities of cognitive structures.

In regenerative theory, different authors address the importance and notion of place in different ways. Lyle primarily treats place as a location and social context for

[58] A notion from Deleuze and Guattari (1987); more on this notion of assemblages found in Fuglsang and Sorensen (2006).

technological advances which will determine the way humans relate to ecology. The notion of place is all together missing in Kyle Brown's discourse on regenerative knowledge bases. McDonough and Braungart approach place in a manner similar to Lyle's. Steven A. Moore centers his discourse on Agnew's three layers of place (location, locale and sense-of-place)[59] and argues that locale is the most the crucial aspect for spatial design. Locale, he argues, is where the socio-political institutions of regions buildings and spaces are formed and acted out and where the architect is most influential. His primary focus lies in the socio-political meanings of place, with an emphasis on dialogical processes of democratic place-making.

The question remains of how regenerative theory influences place-making in places that function as nodes of meaning in collective life, i.e. public space. Steven Moore's is one of the few who uses the term 'place-making'. The place which Moore uses to elaborate his study of place-making is a farm[60] located at the outskirts of a city. It is not discussed as a space designed for general use and access by the public. His focus lies primarily on the "institutional agreements" (Moore, 2005, p.442) between private and public investors and stakeholders that are involved in the design, financing, making and running of the farm. He does not elaborate upon the less explicit embodied experiences of the place which influence sense-of-place.

The Regenesis group focuses on the story of a place for community dialogue. It is a method for devising action from a local interpretation and constitution of elements that influence well-being in the local area. It is a method which delves into sense-making, not only through understanding the sense-making that exists, but building upon it and making new sense out of the local conditions from patterns that emerge in the process. Regenesis' method Story of Place™ focuses on how to build and discover narratives of a place and its constitutional parts. Chrisna du Plessis emphasizes the importance of a place-based narrative in paradigm shifts. She also emphasizes the importance of the "essence-of-place" and "spirit of place" (du Plessis, 2012, p.18) as the starting point for any project.

[59] See section 3.32

[60] Blueprint Farm by CMPBS (Center for Maximum Building Potentials) was a highly praised and published project in sustainable design discourse in the 1990s which Moore shows eventually failed due to exactly a lack of mutual understanding between stakeholders.

The regenerative literature is suggestive, yet leaves large portions of the question on the nature of regenerative public space and place-making unanswered. Though Regenesis and du Plessis begin to address the less explicit embodied experiences of place and place-making that help to form sense-of-place, they have not specifically addressed how regenerative sense-making relates to the notion public space. Though these elusive qualities are more difficult to document, research and form conclusive statements about, they are a significant part of sense-making in the built environment.

Chapter 4

Lacuna & Focalizations

The following chapter endeavors to explain the particular focalizations and questions that define the area of investigation, the lacuna, of this study. Their purpose is to help investigate aspects of a designerly perspective and approach to understanding and addressing hypercomplex challenges of today.

4.1 Not a gap...exactly

Lacuna (plural lacunae) is a term which suggests other dimensions and possibilities for knowledge seeking other than filling a 'knowledge gap'. A gap indicates a missing link in a chain of logic or a missing piece in a puzzle. Though a lacuna also indicates a missing piece, its suggests other dimensions and methods of inquiry through its secondary meanings. The Latin origin of *lacuna* is a diminutive of *lacus* "pond, lake; hollow, opening" (OED, 2016). Rather than being a missing thing, these are spatial dimensions that can be explored. Their form is somewhat known from the onset; however, they suggest possibilities of discovery beyond that which meets the eye. We do not always seek to discover the unknown, we also seek to re-discover the known, and so it is into the (un)known we must journey.

The (un)known is continuously shifting; the re-evaluation and re-creation of its composition is the ongoing process that keeps it in play. David Bohm (1980) warns that we must be leery of falling into the common tendency to treat reality has a fixed, predetermined structure, and the appearance of a shifting reality as the mere product of a lack of knowledge of "permanent truths which we have yet to discover" (Bohm, 1980, p.63). Instead, we must keep in mind that reality *is* process and knowledge can only be "an abstracted form of becoming, [hence] there can be no absolutely invariant elements of knowledge" (Bohm, 1980, p.63). This is not to say that there cannot be enduring realities, or truths, in the process of becoming. Only that these 'truths' are always a product of a network of phenomena that hold it in play.

4.11 Lacuna

An inquiry into a lacuna which represents the (un)known can be an inquiry into the intersections of questions bounded by different fields of interests. The topics reviewed in previous chapters beg us to question how the issues of ephemerality, unsettlement and a call beyond sustainability affects space, place and spatial design. This is of course a vast question that leads in many directions; this study, like any study, must find a way to narrow the area of exploration into manageable focal points. The narrowing of this study has not been done in a reductionist manner (which posits it can explain the whole through reducing it to its basic parts), but rather in the spirit of Law's notion of method assemblages (Law, 2004). Method assemblages do not exhibit all the 'facts' of a situation, or even the whole picture, instead it is an approach which detects, resonates with and amplifies "particular patterns of relations" (Law, 2004, p.14) which can help us to understand not only these bundles of relations but also provide a window of understanding of otherwise incomprehensibly complex situations.[61] Let us then begin by reviewing the bundle of topics which have already begun to take form in the past chapters and whose intersection helps to create the outline of this study's lacuna.

The historical development of ecologism, unsettlement and ephemerality reveals an underlying concern over the conditions of, and access to, space and resources over time. Through a spatial design perspective on how to address space and resource issues, regenerative design theory has emerged as a proposal for moving 'beyond sustainability'. It is an approach which uses place based narratives and solutions aimed at reducing entropic conditions and engaging people's sense of being, becoming and 'the good life' to a nonmodern understanding of community and eco-socio-spatial contexts.

Our relationship to places is not only part of spatial design's perspective on beyond sustainability, it also is part of a larger concern of ontological alienation/rootlessness in conditions of unsettlement which is arguably exacerbated by the continuous flow of 'the new' in the age of the ephemeral. Cognitive sciences and narrative studies indicate that embodied experience of environments, i.e. our

[61] See section 1.2 and 7.2 for more on method assemblages.

situated condition, is crucial to how we understand, communicate and form relationships to other human and nonhuman beings and things. Shifts in paradigms are interlinked with shifts in narratives and schemata; both of which are constructs influenced by situated conditions in places. A paradigm shift in eco-social conditions is then arguably intertwined with a shift in eco-socio-spatial conditions.

To explore the relatively unexplored relationship of place to the age of the ephemeral *and* develop a deeper understanding of regenerative design's relationship to place-making, this study's lacuna is defined by a focus on ***place-making practices*** that try to make sense of and ***adjust our relationship to waste-making practices***. The need for a society wide paradigm shift, in turn, suggests a need to explore how potential and existing confluences of phenomena of place and waste could be of value for ***intersubjectively lived experiences*** of places.

4.2 Focalizations

Within this lacuna, there are a few thematic focalizations[62] that are worth explaining further. There are three key focalizations:

- Place-making practices
- Adjusting our relationship to waste-making practices
- Intersubjectively lived experiences

4.21 Place-making practices

Much of the work of spatial designers consists of managing the intersection of technology and materiality with space and place (Moore, 2001). The raised awareness and increasing demand for improved co-existence of civilization and ecology in the age of ecological awareness requires designers to reconsider the impact and meaning of technology and place for quality of life in the common world

[62] Focalizing is a narrative method for drawing attention to a subject of primary importance through the perception of a character in the narrative (Jahn, 1996). It is an action done by a character (i.e. the focalizer) towards a perceived element in the story, i.e. the focalized thing (Felluga, 2011).

and our common future. The tools of the spatial designer lie in the interplay of the measurable and immeasurable; between function and perception. Though the practice of place-making is something which is undertaken by all who use a space, the spaces made by spatial designers have an influential role in how the act of place-making plays out. For this reason, the tools of the spatial design are also tools relevant to the practice of place-making.

To address the age of the ephemeral one needs to consider the role of human and human involvement in the techne and technology of waste-resource systems and how this affects the lived experience of place, i.e. location, locale and sense-of-place. Of these three aspects of place sense-of-place holds promise for addressing the ontological alienation in the age of unsettlement through its connection to a sense of 'belonging' (Agnew, 2011). It also has potential to contribute to the need for a new narrative through its poetic relationship to 'being' (Moore, 2001) as well as contributing to the need for taking action in the age of ecology (Agnew, 2011).

4.22 Our relationship to waste-making

Regenerative techne centers around the need to begin to address waste as an integral part of and consequence of our lives and design, as something that should (as in nature) regenerate life and redefine itself and its context, recreate life, recreate itself. While regenerative techne is not limited to waste-resource systems, the incorporation of processes and thought which reformulate waste as food for creatures or technical systems (McDonough & Braungart, 2002) is a crucial element of regenerative theory. Regenerative design argues that we can, and must, slow down the rate of entropy in the age of the ephemeral and eliminate it wherever possible.

Waste is generally thought of as something that must be removed from space, as antithetical to the 'the good life', but where do we move it to? The world bank predicts that in the coming century both private and public sectors will increasingly need to take on responsibilities "for waste generation and disposal, specifically, product design and waste separation." (Hoornweg & Bhada-Tata, 2012, p.3) Additionally it predicts that 'urban mining' is likely increase in the coming century. With these predictions in mind, it is only natural that spatial designers begin to

address how their particular practices could affect and be affected by considering waste as a resource and source of life and design inspiration.

4.23 Intersubjectively lived experiences

Meta-narratives, such as paradigms and place, are intersubjective constructs which in turn influence and are influenced by individual and socially shared schemata. To affect a paradigm shift, such as that which is required to move beyond sustainability, ecologism must also have an effect on our intersubjective experiences. Studies of psychological effects of "positive co-benefits" (Clayton et al., 2014, p.33) through "local, place-based impacts" (Clayton et al., 2014, p.34) can help to overcome controversies and inaction in socio-ecological concerns. Co-benefits are, naturally, intersubjective and are socially understood. Sense-of-place is also described as an intersubjective experience influenced by a culture's ontological understanding of 'quality of life' and 'the good life' (Moore, 2001, p.47). This cultural understanding of 'the good life' is a meta-narrative played out and represented through places that they feel a particular attachment to.

Cognitive studies reveal that 'social being' and 'sociality' (Havelange, 2010, p.358) are not simply intersubjective interactions between people, but are interactions between people and "a third element which creates the possibility for face-to-face relations and the institution of a symbolic realm." (Havelange, 2010, p.358). As body and image schemata shows, this third element is often a space or place. Havelange also points out that these third elements are "mind-laden objects", in other words we associate them symbolically with "socialization and history" (Havelange, 2010, p.358).

Public spaces are traditionally symbolic and practical nodes for social being. In their idealized democratic form, they are places where self-expression and communal values are expressed, developed and represented across and through the passage of time. In this idealized form, they are also social spaces that allow for spontaneous meetings and gatherings outside of the private realm and are a vibrant stage for 'the good life' to be explored, expressed and enjoyed. Public space is often seen as *common* spaces for collective life. This makes them particularly relevant

when speaking of *our common future.* Like all spaces, they can both affect behavior and identity. However, they have a particular potential for influencing larger groups when their location and locale supports not only public access but also public use. Through their effect on our intersubjective experiences, such as sense-of-place and sociality, they also have the potential to influences shared attitudes and identities, which in turn underpins the very existence of paradigms.

The classical form and definition of public space as outdoor spaces that are owned and managed publicly has been challenged by changes in forms of urban settlement in our times (Tonnelat, 2010). Not all publicly owned spaces support the iconic values that we would like to associate them with, and sometimes semi-private, private-public, and privately owned spaces are used as public domains for sociality. How much of an intersubjective experience a space can support arguably depends more on access and use; for this reason, Stéphane Tonnelat (2004) argues that public space should rather be defined through how accessible a space is to the public.

Shared narratives on ecologism have been affected through stories, art and images. Spatial design is argued to carry its own type of narrativity and plays an important role in forming the spaces and places that affect body and image schemata. Body and image schemata have been found to construct our individual and social identities and how we view and treat others. As an increased population on the move in the age of unsettlement affects local cultural institutions, ecological constitutions and the ontological sense of belonging, the need for more and new types of places for collective life and broader understanding of the common world will arguably increase.

4.3 The quest in question

A research question sets off a number of quests that drive a journey forward, which in turn spur a number of subsequent questions. The grander intention of this study has been to understand and create ways to address current and future eco-socio-spatial conditions from a designerly perspective, in particular the role spatial design can play in a shift beyond sustainability. Through a series of focalizations

described previously, this original intent has landed in a quest to understand the character and qualities of regenerative place-making. This in turn has lead more specifically into an investigation into:

> Discovering how the potential and existing confluences of the transformative phenomena of space-into-place and waste-into-resource could be of value for the design of 'third elements' (Havelange, 2010) that support intersubjectively lived experiences of regeneration and eco-social being.

This first quest is broken down into a few more specific questions:

> What are the qualities and character of places with regenerative waste-resource practices that are open to public use?
>
> Does the lived experience in these places support a sense of *eco*-social being and belonging, i.e. sense-of-place and placemaking?
>
> How can design contribute to and learn from these places?

A secondary quest follows these inquiries and asks:

> What are the dialogical elements particular to the regenerative paradigm which foster place-making?

Which implies the more specific question:

> What are the regenerative knowledge bases for place-making practices?

Chapter 5

Methods... Applied & Derived

What is perceived, communicated and understood is a crucial aspect of intersubjectively lived experiences and narratives. As Agnew (Agnew, 2011) points out, place is a space that has been given several layers of personal and inter-personal meaning by those who created it and use it. These layers of meaning are how we make sense of the world in which we live. Place-making is then a type of sense-making. This study therefore focuses on what is *perceived, communicated* and *understood*, i.e. how we make sense of things, rather than upon what *is.* This is not to discredit the measurable aspects of a place such as form, proportion, enclosure, etcetera, but is rather a means to focus on spatial meta-narratives that relate to the intersubjectively lived experiences of engagement in place. The embodied experience of a place is also lived in our imagination and therefore extends beyond the physical boundaries of the space; as Bachelard points out "inhabited space transcends geometrical space" (Bachelard, 1958, p.47).

This chapter first describes how détournement and syncretism[63] are used to define what types of cases and circumstances were to be explored. In search of an appropriate case to investigate thoroughly, I considered over twenty different sites that included both public access and some type of waste-resource process. In reviewing my research process, I realized how influential my visits to these sites had been upon the development of my thoughts on regenerative place and place-making. I began to see these 'places of waste' as proto-regenerative places. As I sought to find a way to describe (and understand) the reasons why I stayed at one place more than another, I realized that there was a pattern in my approach. It is this which I am now choosing to call a *directed dérive*.

In the following chapter I will speak of two methods used in the exploration of the cases: one that I have developed (directed dérive) and one that I have used (autoethnography). I will first describe the mechanisms and history of the directed dérive, including a description of the specific ways this method was used to probe proto-regenerative places. This is followed by a description of how autoethnography relates to and was used in combination with the directed dérive.

[63] See section 3.2

5.1 Détourned-syncretism

While it, at first glance, could seem reductionist to summarize spatial design as the art of making places and regenerative techne as waste-resource cycles, I am not proposing that these two aspects are the ontological constitution of regenerative place-making. Instead I use place and waste to help me search for sense-making in the confluence of polarities particular to regenerative thinking in spatial design. By bringing them together it is a deployment of a type of spatial détournement, a form of syncretism, and a method for forming new narratives and poetics of sense-making in times of hypercomplexity.

Détournement, as defined by Guy Debord and Gil Wolman (1956), is at its core a poetic move based on "the analogical structure of images" (Debord & Wolman, 1956, p.9). They explain it as a method for creating new thoughts, experiences and concepts through the combining of opposites. that "when two objects are brought together, no matter how far apart their original contexts may be, a relationship is formed...The mutual interference of two worlds of feeling, or the bringing together of two independent expressions, supersedes the original elements and produces a synthetic organization of greater efficiency" (Debord & Wolman, 1956, p.9).

Its proliferation and effectiveness in commercial purposes of conveying messages, capturing attention, and suggesting new associations and attitudes only serves to underscore its potential as an effective tool in building new narratives for alternative eco-socio-spatial relationships. Debord and Wolman advocate the use of these tools for purposes other than the selling of products and refers to a few artists who were using it in art. In its artistic and Avant Garde use, it is less prescriptive then in the commercial sphere and suggests meanings and allows space for interpretation and personal narratives. In other words, it acts in poetic ways. Debord and Wolman call for a broader exploration of its potential for pushing the boundaries of its use in suggesting alternative ways of viewing and practicing the experience we call living (Debord & Wolman, 1956).

Détournement is akin to syncretism[64] in so far that there is a combining of opposites and generating something new. Though they are exceedingly similar, they

[64] For a longer discussion on syncretism see section 3.2

may not be synonymous concepts. Syncretism seems to lean towards the act of *merging* in order to combine concepts into a new *whole*. Creating a new whole through the merging of concepts potentially supplants or diminishes the identity, or integrity, of the opposites combined. It is this tendency which has caused the debate over its value within religious discourse (Gort et al., 1989). Détournement, however, seems to lean towards the act of *juxtaposition* in order to create a new *thought or experience.* The two opposites may influence one another, however, it seems that they do so without losing their individual integrity. Two words or images meet in a composition and create a third meaning (or more). They may infect each other by proxy in one composition, and yet they retain the ability to emerge in other compositions unaffected by previous associations.

As there is ample evidence that syncretism exists within the field of design[65], there is reason to believe that détournement can and does exist in spatial design and that it could be developed further. By identifying its narrative capacities through spatial poetics, détournement and syncretism could be used more effectively and conscientiously in spatial design.

5.12 Détourning place and waste

Place is a space which has become meaningful and valuable to how we connect with and make sense of our surroundings. (something we wish to associate with). Waste is a resource which has lost its value and meaning in daily life and industrial processes (something we do not want to associate with). Place and waste as binary opposites in the conception of the good life, the combination makes a spatial detourning and syncretism, which in turn may help us to explore the sense-of-place through a type of regenerative poetics.

This is an inquiry into our relationship to, and the relationship between, that which we move through and that which moves through our lives and into the lives of other human and non-human creatures. When these conceptual and physical relationships become meaningful to us on a psychosocial level we consider space to be *place* and waste to be *resource*. It poses the question if there can be a meaningful

[65] Reviewed previously in section 3.2

dialog in the transformation processes that convert space to place and waste to resource, and how designers can use and contribute to it.

5.2 Deriving a new dérive

As the name implies, the method is an interpretation and development of the 'dérive' developed by the Situationist International (Debord, 1957). The term dérive is from French and translates to 'drift' in English. Those who use Situationist techniques tend to keep the French term. I do this for two reasons: first, to connote the methodological and theoretical heritage; second, to connote that, unlike drifting, in a dérive one is also attempting to *derive* (English meaning) a deeper understanding of a place. Where a dérive is guided by chance encounters with any phenomenon that "discourage[s] entry into or exit from certain zones" (Sadler, 1998), the directed dérive is a journey guided by chance encounters with select phenomena which help to determine whether to enter, exit or stay in a particular zone. It is a way-finding method for exploring places. I will explain how this works later on, but first I wish to illustrate the basic intentions and strengths of the Situationist dérive which it builds upon.

5.22 The Dérive

The dérive was first developed by the Lettrists with Guy Debord as its key proponent, and was carried over and developed by him into the later formed group Situationist International during the late 1950s. It was a method to explore, and in particular create, lived situations outside of scripted norms through "playful-constructive behavior and awareness of psychogeographical effects" (Debord, 1958, p.1). The dérive, coupled with détournement, was intended as an active revolt against the rationalization of lived space (and negation of place) in the modernist movement and the scripted life bounded within it by tradition, habit, schedules, and function (Sadler, 1998).

> "In a dérive one or more persons during a certain period drop their relations, their work and leisure activities, and all their other usual motives for movement and action, and let themselves be drawn by the attractions of the terrain and the encounters they find there" (Sadler, 1998).

The key elements driving the dérive were "psychogeographical contours" (Debord, 1958, p.1) of lived situations in (urban) environments. The mapping these contours were seen as a way to "[discover] unities of ambiance" (Debord, 1958, p.3). Debord's description of these "psychogeographical articulations" (Debord, 1958, p.3) is reminiscent of descriptions of sense-of-place as a " 'structure of feeling' that pervades Being in a particular place" (Moore, 2001, p.47).

The joining of the word *psyche* with *geography* implies a correlation with what cognitive scientists today call *embodied cognition,* i.e. how the body and mind jointly interpret and create our experiences, thoughts and actions in the physical world (Kahneman, 2011). The dérive has a dual purpose to open up the observer to unexpected phenomena and to derive underlying patterns in the lived and experienced environment. In essence, the derive is a method for understanding and illustrating the phenomenological aspects of place experienced through image and body schemata. Bachelard (1958) argues for the importance of lived and imagined experiences of bodies and images to the understanding of space: "phenomenology of the imagination cannot be content with a reduction which would make the image a subordinate means of expression: it demands, on the contrary, that images be lived directly, that they be taken as sudden events in life. When the image is new, the world is new" (Bachelard, 1958, p.47).

Conducting a dérive involves allowing one's subjective emotional reactions to places guide the discoveries of phenomenological effects of urban flows and structures. Debord tries to deal with the domination of chance in the dérive, and excuses it as an effect of the "[infancy of] psychogeographical observation" (Debord, 1958, p.1), and describes the dérive as a way to find objective knowledge about a city. Debord proposed that the layering of dérives from separate individuals would reveal hidden structures of the city. Likewise, multiple directed dérives could be layered upon one another, and compared with other qualitative analysis and interviews (Debord, 1958).

5.23 The Directed Dérive

Where the derive asks you to open your senses and follow *whatever* impulse (other than habit) directed by them, the directed derive chooses which factors to react to and asks you to follow whatever impulse *it/they* give you. To illustrate this, I wish to give you a brief background on the emergence of this concept in my own practice.

In 2007 artist Liz Kenueke and I conducted a workshop on subjective cartography at the school of architecture in San Sebastián, Spain.[66] Amongst several suggestions for ways of exploring the urban experience through subjective mapping, we sent one group of students out with the instructions to do a 'dérive of the senses'. They were to walk an area several times, each time picking one sense to follow and map how different their journey was if they followed the attractions and repulsions given to them by that particular sense. I discovered that there was a parallel between this and the way in which I interacted with 'places of waste'. The directed dérive is a development and variation upon this 'dérive of the senses' that Liz Kenueke and I developed for the workshop in San Sebastian.

In a classic dérive "the participant in the constructed situation [is] an autonomous agent within the structure of the work and not limited to enacting a predefined script is key" (McGarrigle, 2010, p.57). In the directed derive, however, there are criteria, which is a script of sorts, but it does not predetermine a path. In my directed derives, I let the encounters I have with the space and the people on site dictate how long I stay and how I get involved. I tune in to certain predetermined aspects if, and as, they arise and follow these as far as they lead. In this way the directed derive helps to discover how easily a place engages a visitor's interest and enrolls them in any activity on site, and what narrative qualities are readily displayed through spontaneous and intuitive interactions. In the end, it is the spontaneous and intuitive aspects of a place which a visitor encounters that builds narratives of the place. It is in this way, a method for exploring the story a place tells a visitor. As well as a method for exploring the levels of attraction and engagement of a place and activity. The intent here is to discover how a moderately interested visitor is pulled

[66] ETSAS: Escuela Técnica Superior de Arquitectura de San Sebastián.

in to the place's narrative. How much is this space inviting me in? How much is the site reaching out to motivate my engagement in any activity there? Do I feel compelled to stay or come back?

The sense-of-place produced both by physical, social and practical circumstances is what determines my length of stay. This includes who I am as a visitor. I can then write about these places in terms of the actants (Latour, 2005) that are in the place, how they affected me, how welcoming they were, which ones communicated what to me, and which ones formed my experience and my understanding of the place, which ones allowed by to get involved in what they were doing, which ones asked me to get involved in my own way.

Tactics used in the directed derives of places of waste

As the Situationists built an experience and understanding of the city by allowing the city's effect on them dictate their movements so I let my cases reveal and dictate our relationship, from which I built my own experience and understanding. Where the Situationists' area of interest was the city in general, my interest is in places of waste. The situationists site selection was quite broad, urban areas of any sort. My criteria were more limited:

- some facet of waste-resource conversion on site
- the space has an aspect of public access and use

Once on site I allowed my social and bodily senses to guide me through the site. Bachelard's words explains well the spirit and intentions behind this act:

> "I…put my trust in the power of attraction of all the domains of intimacy. There does not exist a real intimacy that is repellent. All the spaces of intimacy are designated by an attraction. Their being is well-being" (Bachelard, 1958, p.12).

These powers of attraction, along with practical factors such as time, determined the length of my visit and my involvement in the case. Though time limits a stay or level of engagement, the directed dérive still reveals the opportunity for, and a desire to, return or stay for a longer period. The following list of criteria is distilled from how I approached most of the cases.

The invitation:

The invitation is basically the moment that the place makes itself known to the public and 'says' that it is open for visits. A site may make itself not and communicate its openness through its physical presence, events and/or information that is spread via word of mouth or other media.

The encounter:

The encounter is at times a part of the invitation. However, it is the step taken after the initial invitation and is a transitionary stage towards deeper engagement. I reach out to a place either from an email or through visiting on site and I let the place and/or people invite me in. In the encounter I allow my social and bodily senses to tell me how welcome I am and what kind of interaction and engagement the place asks of the visitor.

Staying:

I let any, and all, of the elements of place-making in the following list determine whether or not I stayed in a place and noted what qualities the place had that made me want to stay. I kept myself attuned to general aspects of place-making:

- public access
- social interaction
- functions, meanings and convergences of multiple experiences
- invitation to stay
- opportunity for individual intervention/expression
- spatial qualities

I do not get involved with any activity unless it has been offered or asked of me. My identity as designer/artist/researcher, as well as personality, influenced this interaction further. However, I did not advertise my background and instead let the interaction on site draw a behavior, or my personal information, out of me. For this reason, many places were never informed of my background.

Allowing for poiesis:

I am always interested in how design could interact with the place. However, I do not act on inner visions unless the site/organization offers an opportunity, or asks me directly, to do a project with them that draws on my personal skills or talents. This is usually the point at which I discuss who I am and my personal interests. Though falls as the final element of a visit, temporally it can occur at any point in time in the directed dérive, even at the time of initial invitation.

5.3 Autoethnography

Autoethnographic methods have been used to document that which has occurred during the directed derives. There are many similarities between the two, which makes it plausible to consider the directed derive an autographic method. In ethnography, a common technique for data collection is for researchers to observe the behaviors of subjects through participating in their lives, and is called 'participant-observation'. Autoethnography builds upon this tradition, however it is the researcher's own lived behaviors and thoughts that are observed and documented while living them (Chang, 2008).

Autoethnography relies not only on personal field texts, images, drawings, stories of others, etcetera,[67] but use these to facilitate the memory of the experience. Through actively using recall and memory the autoethnographer places an importance on 'the whole' rather than on minutia. This is important as narrative inquiry, reading and writing are "driven by a sense of the whole" (Connelly & Clandinin, 1990, p.7). Detecting the 'sense of the whole' is hence a way to determine the schematic qualities of a narrative (Chang, 2008; Connelly & Clandinin, 1990). The ability for memory to blur minutia and reveal more general schematic outlines of a lived experience also carries with it inherent dangers of subjectivity that tend to omit and add things to recollected events (Chang, 2008). Extra care needs to be taken to avoid portraying subjective accounts as objective facts when communicating one's experience, while also being extra cautious of omissions or

[67] See Chang (2008) for a more detailed description.

additions that may be essential or extraneous to the whole. The intention of the narrative inquiry is to engage the reader, invite them to participate in the experience through explaining what was seen and experienced by the researcher (Connelly & Clandinin, 1990, p.8). An autoethnographic way to do this is to focalization through firsthand accounts of experiences and perspectives. The accounts in the following cases have been documented on site with photographs, field notes, sound and film recordings as well as some sketching. The documentation of my behaviors and thoughts are complimented by conversations and interviews on site with organizers and other visitors, as well as from printed and digital information available from the site or from the internet. Where my own field notes and photographs have been poor, I have used personal accounts and photographs from blogs of visitors or from the organization's Facebook page and/or website.

In my accounts, I have also focused less on data and more on what happens and what is expressed to me, the visitor and/or participant. Within actor-network research, which has been a driving force in narrative research in the social sciences, it is commonly considered that in a narrative "who is doing what is always less interesting than what is going on" (Czarniawska, 2016).

CHAPTER 6

Exploring Proto-regenerative Places

6.1 Exploring places of waste

The full narrative of a designed and built landscape is a co-creative meeting of spatial designer's realized imagination with the lived (embodied & situated) imagination of the users of a place. These descriptions are my lived experiences as a user of 'places of waste'. All users of a place have an experience which is influenced by their history and situation in life. To say I could ever view these places objectively would be a distortion of reality. I wish to therefore make clear that the experiences of these places are unabashedly influenced by my design and artistic imagination, research interests and personal ways of engaging with people and place. To test what role design or art could play on site, I also applied acts of poiesis (designerly or artistic interventions) when opportunities to do so arose.

The notion, or schema, of public space has a number of iconic and idealized forms. To avoid any prejudices of form and spatial expression, I have chosen to deem any space that allows public access as worthy of study. Though they may not be public spaces in a classical sense, they all have some degree of public access and so help us begin to reflect upon possible futures of public spaces from a regenerative perspective.

In discerning the regenerative nature of a place, I have focused on how it directly or indirectly implied different meanings to me in relation to different aspects of *eco-sociotechne*[68] (seen in the graphs at the end of each site description). The roles listed under the separate eco-sociotechne categories of ecological, psycho-social and techne significance are in themselves a summation of my lived experience on site. These items were not created prior to the site visits but were derived in conjunction with an inventory of what could be gleaned from the lived experience of the place.

Interacting with and reflecting upon these sites were initially done to privately ruminate on possible aspects of regenerative place-making, and to canvas for a proto-regenerative place 'out there' that could be investigated further. This has had a few consequences on this section: The first is that the methods have not been used to their full potential in each case. The second is that the experiences are documented and presented in varying levels of detail.

[68] See sections 7.3 and 8.14

6.2 A FEW SITES EXPLORED

The following section selects six of the twenty sites visits visited to present here to illustrate the explorations and potentials of both methods and places. Four of these were explored in a manner that fit into the directed derive. Two of them were not[69], and have descriptions that differ from that of the directed derive, yet they are pertinent in that they contribute to the knowledge of how waste-resource can be found in places. Other cases that have also been relevant, but are only documented in eco-sociotechne charts found in section 7.1. The knowledge gained from visiting these places warrants further development, however, preliminary results are discussed in the chapter seven.

[69] Alelyckan and Chalmers Recycle

Waste Warriors

Baghsu, India

The situated self and the situation

Baghsu is a small village in the Himalayas, growing thanks to the tourism brought by the fame of the Dali Lhama, whose home and temple is in the neighbouring village McLeodganj. I am one of these travellers, seeking something to do other than 'see the sights'. Prior to getting here I googled for volunteer opportunities and to my delight I found an organization with my interests (Waste Warriors) and arranged for an extended stay with them.

Upon arrival I notice Waste Warrior (WW) flyers in cafés and restaurants inviting tourists to join in clean up hikes in the Himalayas. Waste Warriors does more than clean up hikes; they arrange activities for children during and after school, paint murals around town and on

Figure 15. A mural made by WW volunteers on a café wall half way up the path to Triund. I helped refesh another mural outside a school in central Baghsu. In total, I saw four WW murals in Baghsu.

Figure 16. View from Dharamsala valley looking towards McLeodganj and Baghsu. Triund is located at 2842 meters (left arrow). McLeodganj and Baghsu are located at the mountain top in front (right arrow).

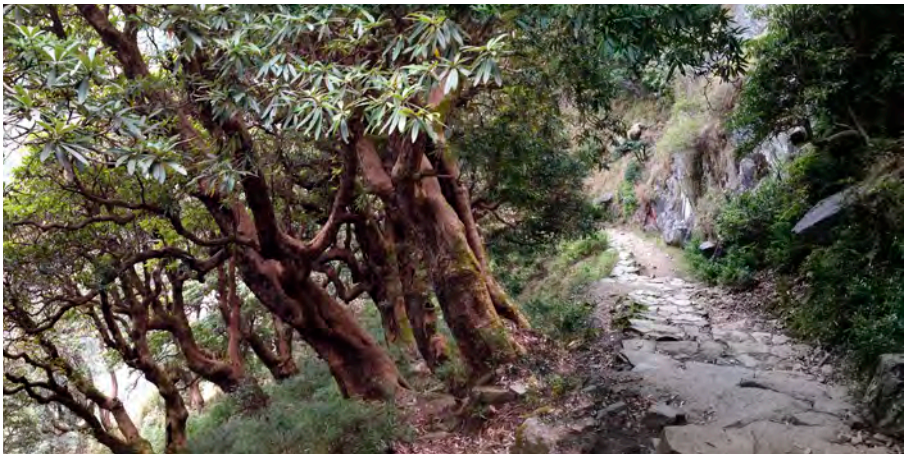


Figure 17. Along the path to Triund. Baghsu's second largest tourist attraction, but also used by locals.

roadsides, run a recycling pick-up service for businesses and homes in Baghsu and host volunteers who want to volunteer for a longer time period. I get involved in all of these activities, and gain friends in both the staff and the volunteers that come and go.

Perceived intentions and roles

From first contact it is clear that the employees are passionate about reducing pollution in the form of waste from the natural and built environment. They are outdoor lovers and enjoy hiking and bonfires in the yard of the office. Their primary mission is to keep two hiking paths clean and raise awareness of the problem of waste and *the three R's* (Reduce, Reuse, Recycle) in the local community and with tourists. While their primary responsibilities are a path to Baghsu falls and another up to Triund mountain station. The waterfall trip is a one day event, the Triund hike is two days including a night sleeping in one of the mountain cabins there. They also organize special clean up events with locals and businesses with a focus on cleaning up the stream and public areas in town, for example the overflowing public

Figure 18. Each clean up day ends with collecting all trash from the hike in one pile and hand sorting it into different material types. This image is of such a sorting practice, however done at the dumpsters located in central Baghsu. Reprinted with permission.

Figure 19. Baghsu falls is the town's main tourist attraction.

Figure 20. Me collecting waste from the path to Baghsu falls. Tourists often ask questions and help out a bit as they pass. Some ask to take pictures with us. We are told this is because meeting europeans is a rare thing for some.

Figure 21. A sketch I made at a rest area next to a WW mural in Baghsu.

Figure 22. Volunteers and tourists at the falls.

Figure 23. Recycling station and information installed and managed by WW employees on the way to Triund. The path to Bagshu falls is also spotted with trash bins managed by WW (yet smaller and without recycling divisions).

Figure 24. Volunteers getting instructions and equipment. The restaurant (in background) gave us free chai moments earlier in thanks for the work we will soon do.

Figure 25. Volunteers on the path to Triund.

Figure 26. View of Baghsu from the path to Triund.

Figure 28. Volunteers and WW staff on the path to Triund.

Figure 27. Volunteers braving the steep incline to collect trash on the mountainside. Many areas were impossible to get to because of the incline.

Figure 29. Sign on the community house where a Tibetan ceremony and celebration for the Dalai Lhama lasted all night. The only built structures at Triund is this house, a cabin where we slept, an outhouse and semi-permant structues for people selling food and drink.

dumpsters that greet you as you enter Baghsu.

As a volunteer on one of these hikes it is at first a shock to sort through the collected waste by hand at the end of the day, but you get used to it quickly enough. I cannot help but reflect that such a dirty job is in the end a noble act, and how humbling it is to experience the effects of our modern society in this way. The issue of waste from consumption patterns in society becomes less intellectual and more visceral through this experience. Other volunteers make similar comments. Nearly all of the waste we collect (I am told 90%) is sold and used in local industries and helps to pay for the running of the organization, along with donations from local sponsors and fees for collecting recyclables from businesses and households.

As we clean up an area, paint murals, or simply walking around town, Tashi (the local director of Waste Warriors) is often pausing to tell residents and visitors about the work and why it is important to keep natural areas clean for enjoyment of the natural landmarks and the health of local villagers. The emphasis is always on how the thoughtless small acts of each individual mounts to become a massive problem. Their hope is that tourists will take the awareness home with them in another part of India and that the locals become champions of 'the three R's' (Reduce, Reuse, Recycle). The employees are Indian, however most volunteers are of other nationalities, but Tashi says there has been a slight increase in Indian volunteers.

The waste warriors see the need to teach children not only as part of solving the future, but also as a way to influence the parents today. The school is nearby the headquarters and we often run into children who ask when the next event will be. We organize one on a Saturday and about twenty children arrive. Some claim to have walked for over an hour to get there. Each of us volunteers and staff have a different staff with crafts and Tashi has some of the older children paint a banner to hang downtown near the beginning of the path to Baghsu falls.

Figure 29. Volunteers and WW staff at the top of the mountain (i.e. Triund) sorting and collecting waste that is later to be carried down on the backs of burros.

Figure 30. Volunteers and WW staff sharing a fire with tourists and local visitors to Triund.

Figures from the top and left to right:

Figure 33. Tashi introducing activities and the 'three R's'.

Figure 34. Abhi teaching showing how to make things from egg cartons.

Figure 35. Claire teaching kids how to make musical instruments from tubes.

Figure 36. Me teaching kids how to make boxes from soda bottles.

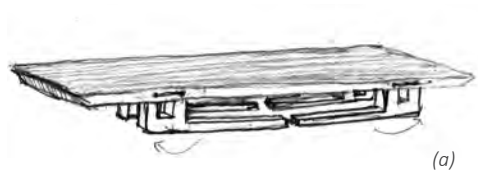
Figure 37. A soda bottle box.

Figure 38. A tube trumpet.

Figure 39. A banner for the Baghsu falls path entrance.

Opportunities for Poiesis

Besides devising a craft workshop on how to make a box from a soda bottle, button and string, I was also asked if I could think of a way to contribute to the organization with other skills. Questions about my professional background led to conversations on building and designing things of waste. We brainstorm about their needs and decide to make a table of cardboard for the office which is transportable and doubles as a display table at events. Unfortunately, I fell ill during my time in Baghsu and was unable to finish it. Even without my physical condition, building a table of cardboard proved to be a task that was more time consuming and more technically demanding than I had anticipated.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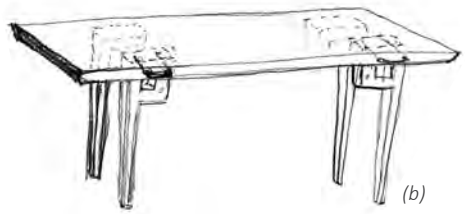
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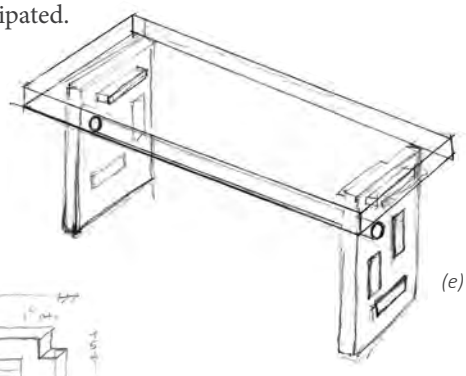
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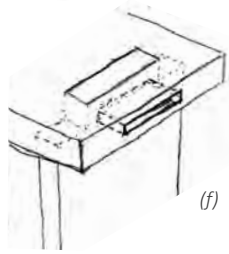
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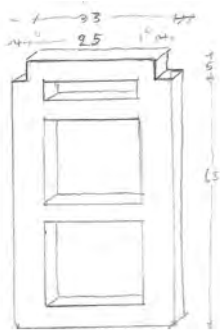
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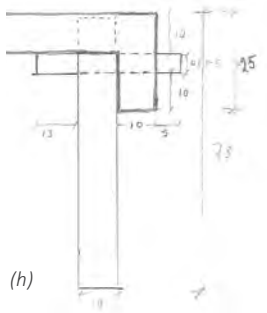
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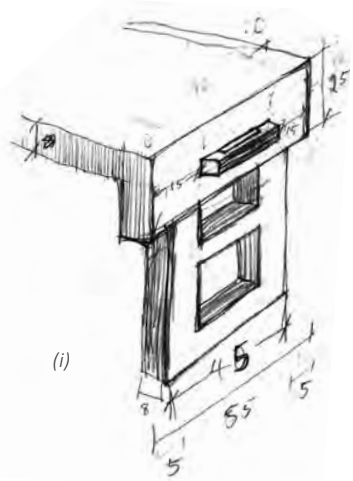

(i)

Figure 40 (a -i). Sketches of the evolving design ideas and construction of the cardboard desk/portable display table.

Though I have built with cardboard before, this was my first attempt at making such a large piece of furniture and knowledge was gained and shared in the group regarding possibilities and limitations of cardboard in the process despite the absence of a final product.

Figure 41. I was reminded of the importance of a good workspace is for efficiency. The floor is not a good working space.

Contributions to place

Waste Warriors are not tied to one space, but several. The place it affects spreads between the built and ecological environments of a social community of residents and travellers: the town of Baghsu and its context. It is a network of spaces and places which contribute to the character of the town of Baghsu, and through its social and physical interventions it provides a layer of qualities to that network. These qualities are good will, learning, connection with local ecologies, social bonding, and intermingling of cultures, and reflecting upon the state of waste in the world. It connects children with adult questions, local problems with global ones, travellers with locals. The project pro-actively engaged me with a number of meaningful acts that also helped me gain a sense of the places character.

Figure 42. This is a small sampling of the piles of cardboard I gathered from the local recycling station. One can also see the tools I had available to me: a metal ruler, a paper cutter and paper glue. The condition and size of the cardboard sheets complicated the lamination and cutting processes. Though the simplicity of materials and tools at first seemed to be an advantage, for this scale of cardboard structurs you need a fine-toothed bandsaw to be effective and precise in cutting after having laminated sheets .

Figure 43. The floor is not the best workspace for drawing either.

Figure 44. Eco-socio-techne contributions to place

Waste Warriors

Perceived intentions and roles of: **Ecological significance**	
Reduce chemical pollution in air/soil	
Use ecological waste products from society	
Contribute to the welfare of nonhuman creatures	
Reduce the extraction of raw resources from nature	
Reinforce the importance of ecology/'nature' in society	
Contribute to/be a landmark in the ecological landscape	
Perceived intentions and roles of: Psycho-social significance	
Provide employment on site	
Opportunity to practice goodwill through volunteer activities	
Financial benefit through selling materials or items	
Reduce cost of living in local community	
Pedagogical/empowerment of local community	
Catalyst/setting for entertainment and relaxation	
Promote physical health and activities	
Reinforce sense of contribution to human welfare	
Contribute to/be a landmark in local social life	*
Contribute to an aesthetic experience	
Perceived intentions and roles of: Techne significance	
Structure and aesthetics of waste define space	
Distribute (used or re-designed) products to public	
Support local gardening knowledge and practice	
Provide raw material for industry/civil society	
Promote thought on individual role in waste-resource cycles	
Exhibit repair/redesign/upcycling/recycling techniques	*
Donation point of materials or reusable products	
Promote locally sourced products and production	*
Reduce the rate of entropy of resources	
Place for the development of art/innovation	*
Reinforce individual and community connection to techne	*
Contribute to/be a landmark in the built environment	*

Legend:

* partially or plausibly

* indirectly or implied (but debatable)

Figure 45. West McLeodganj; neighborhood of CUDP.

Figure 46. Central McLeodganj, one block from CUDP.

Clean Upper Dharamsala

McLeodganj, India

The situated self and the situation

As you walk around the center of McLeodganj, as I often did during the month I was living in Baghsu, you cannot avoid seeing the shop and information signs of the Clean Upper Dharmasala Program (CUDP). The signs welcome you to segregate your recyclables from waste in the bins provided, visit the "green shop", attend workshops on how to make recycled paper, and how to get to the Environmental Education Center, all of which are "undertaken by the Tibetan Settlement Office", as the signs clearly say.

I buy a number of sketchbooks from the 'green shop' and am impressed by the quality of the paper and the creative details of the binding. I decide to attend a workshop of how to make paper, hoping that maybe I might also learn some bookmaking skills. I enter the environmental education center, which is wide open, and I'm greeted by two workers with smiles, but little English. Sonam, the director, welcomes me into his office and tells me about the mission, activities and goals of the center.

Sonam is happy to arrange a workshop for making paper, but they are not binding any books at the moment, so he gives me several files of how-to videos on a range of products they make. The exact recipe for the papers they make,

Figure 47. CUPD (2016) signs, Green Shop, courtyard, office and workshop building (left, behind tree). Reprinted with permission.

Figure 48. CUPD office and top floor workshop. (Tibetan Relief Fund, 2013) Reprinted with permission.

however, is a well guarded secret he is not willing to divulge. The paper-making workshop is informal and I simply join in with the craftsmen in their daily work. The craftsmen are Tibetan refugees trained by the organization. English is limited but we get by. I learn, we laugh, and pride and skill in the work is clearly present in the making.

Perceived intentions and roles

The story which first meets the eye is one of an organization which is dedicated to environmental issues on several levels: they promote individual responsibility of recycling; they support Tibetan craftsmen through the selling of items made from waste paper and other Tibetan products; they promote health and equity through providing free clean drinking water from a publicly accessibly outdoors tap in front of the store. The store keeper is not very well informed but can tell you that the paper products are made by Clean Upper Dharmasala.

Figure 49. Books for sale in the Green Shop. (IM, 2009) Reprinted from open source.

Figure 50. CUDP bag made from recycled paper.

As I get pulled in by the signs to learn how to make paper and the wide open office of environmental education, I learn that the center is in fact a community wide organization with many employees focused on keeping all of McLeodganj 'clean' and effectively serves as a local waste management company. Many of their employees collect waste from households and businesses, but they also provide training and employment in the art of paper-making and other crafts to sell in the shop and online. They fill special orders and are often experimenting with new recycled paper products. Most of the paper they use for making paper comes from local schools and I see children's homework assignments thrown into the pool of mushy paper and cotton from clothing factories from afar.

Figure 51. A notebook made from recycled paper that I purchased.

They train and employ Tibetan refugees and accept volunteers on a regular basis. Volunteers fill a number of different functions, from community clean up walks to more skilled design and promotional work. I meet a couple of Swedish students of graphic design who are helping with the website and catalogue of products.

Opportunities for Poiesis

Sonam asks me about my background and what I'm doing in the area. The mention of Waste Warriors sets him in a bad mood. I learn later that there is bad blood between the two organisations, which I find a bit silly and very sad as they would be stronger if they cooperated. I manage to smooth over the tense moment and my architectural background gets him on the topic of his dream to rebuild the building complex they are in. He wants it to keep the current functions but add space so it can function as a (Tibetan) community center. The site has great potential due to its central location, its dramatic terrain and the view it could offer of the valley and Himalayas behind its main facade.

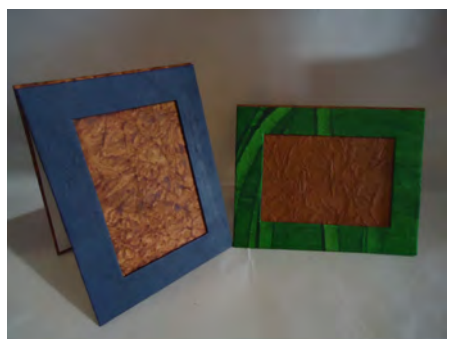
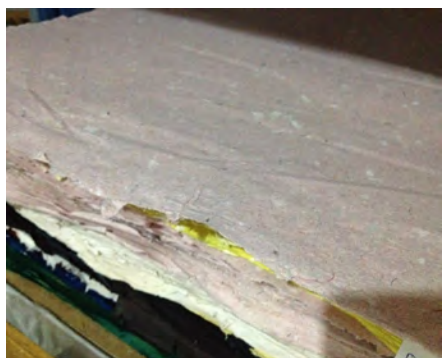


Figure 52. Frames made from recycled paper.

As I probe further, it is clear that it is a dream, not a plan, and I suggest due

Figure 53 (a - h). Pictures of paper-making process that I took part in. The pulp this day is made from school assignments and scraps from a cotton t-shirt factory. These are common sources of raw material for their paper.



to my time limits (and a poor health) that we keep in contact. I add that I would be happy to help out with programming and design drawings in the future when we both are a bit more prepared to dedicate the time required for such an undertaking.

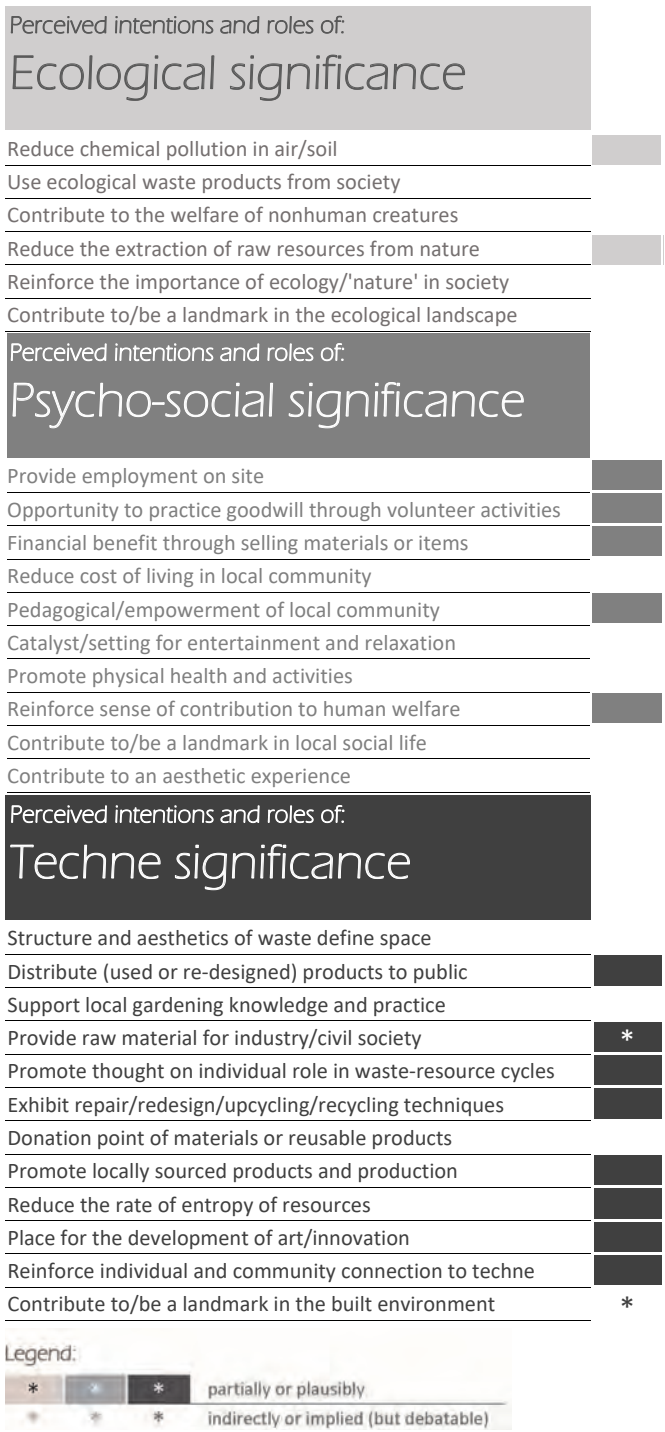
Figure 53. Drying sheets of cleaned cotton to be used in papermaking.

Contributions to place

The center itself is fairly nondescript building, but I and other visitors treat it as a landmark, referring to its location as a point of reference in way-finding. I believe that this is due to the signs, the free water, and the fact that the building sits back a bit from the street creating a small entry courtyard which gives a spatial breather in the otherwise crowded street edge. The organization is an important employer in the community and there is a clear sense of pride in all of the employees of what they are doing, not only for the environment and the quality of their craftsmanship, but also for the representing the Tibetan nation in exile. The building complex serves as publicly accessible node of somewhat invisible activities that stretch out into the networked space of the community and beyond into more distant industries.

Figure 54. Eco-socio-techne contributions to place

Upper Dharamsala Clean, India



Cykelköket

Göteborg, Sweden

The situated self and the situation

I first was invited to Cykelköket (The Bike Kitchen) by going with a friend, Isabel Ordoñez, when she was going to fix her bike. In the four years since then, they have grown and changed location. The new location was less reliant upon good weather as there was more space for fixing bikes indoors and this led to a social life which I enjoyed on many occasions since my first introduction with Isabelle. It is a place that I have spent time at even when I have not needed to fix my bike, and it is frequented by a dedicated group of volunteers and is often very busy. I have become friends with several people who frequent the kitchen and/or are part of the dedicated group running it. It is open to the general public on two evenings during the week and on Saturday afternoon. On Fridays volunteers and close friends of volunteers hang out and fix their own bikes, as the other days just are too hectic.

Figure 55. Cykelköket (2012) logo. Reprinted from open source.

Perceived intentions and roles

Two primary goals are apparent upon entering 'the kitchen'. The first is an open workshop where tools and salvaged parts are available for anyone to use to fix their bike. You do not need to be a member to use the kitchen, however if you are a member (100 SEK per year) you can get a maximum of two free bikes per year. Bikes

Figure 56. Cykelköket shares their space with other organizations with a focus on transitions for sustainability.

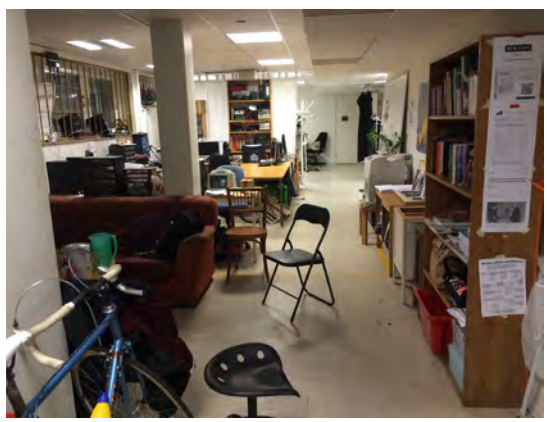


Figure 57. View from cykelköket towards the spaces of the other organizations. To the right is a sharing shelf with books and other things that people can borrow or take.

Figure 58. Bikes and wagons one can borrow.

come in varying degrees of repair and are donated from various property owners that regularly clear bicycle parking and storage areas from abandoned bicycles. They have a few wagons and bicycles to pull the wagons that are specifically for that purpose. These can also be borrowed by anybody who comes and asks kindly. I have referred a few friends to the cycle kitchen's wagons for moving between apartments.

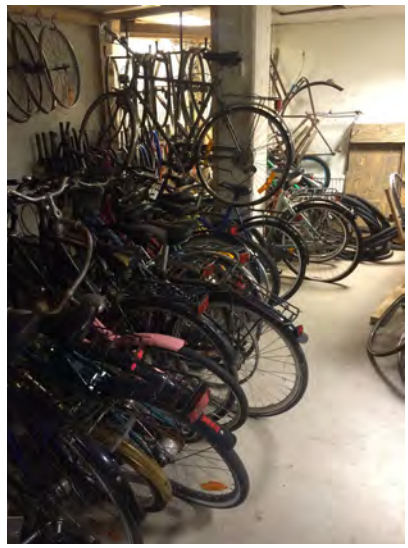


Figure 59. The storage room full of bicycles for people to repair and own.

The group of volunteers are regularly out gathering bikes and they have helped organize different events to promote the use and repair of old bikes. One of these events is the Re-Cycle event at Chalmers which I helped organize one year (see next place description). Ian, one the volunteers running the kitchen, told me he and a few others had given bikes and bike repair workshops

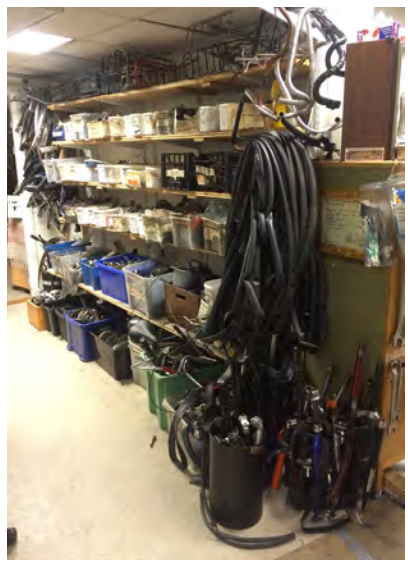


Figure 60. Parts to use, saved from old bikes.

Figure 61. The workshop area.

to refugees. There have also been some workshops at the bike kitchen on basics on how to repair bikes, some of which were specifically for 'chefs'. Chefs are volunteers that are in charge of opening and managing the kitchen during opening hours. You do not have to know a lot about bicycle repair to be a chef, but many who become chefs do want to know more. When you go to the bike kitchen to repair your bicycle, you cannot count on the chef being able to teach you. However, they are often willing to try to figure it out with you and there is plenty of help shared between everyone who is there to use the shop.

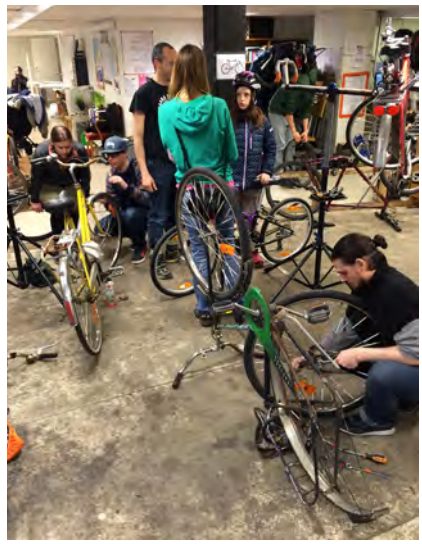


Figure 62. The workshop area.

Opportunities for Poiesis

When Cykelköket invited other bicycle kitchens to Gothenburg, Isabel and I got to talking about the event and by the end of the conversation it was decided that my band Ljudlabbet (The Sound Lab) would play during the dinner. As a great number of instruments in our band is made from 'waste', I asked if it would be possible to build an instrument from bicycle parts. The idea was met with enthusiasm.

I returned with another band member, Asgeir Sigurjónsson, to build what later became called the 'cyclophone'. While there was great interest in the making of the cyclophone, there was some hesitation as to which parts we could use. I learned then that we had been given an exception to the standard rule: their large store of salvaged bicycle parts should only leave the kitchen attached to a bicycle. I doubt that I am the only person who would be given special permission to brake this rule, however, this rule does limit the opportunities for making anything other than a bike at Cykelköket.

Figure 63. Testing the cyclophone that Asgeir and I made for the concert at Cykelköket. To see and hear the clip: https://www.youtube.com/watch?v=T8cSGUOwIml

Contributions to place

The space they are in is in the ground floor of an apartment building and is shared with other groups that work towards transitioning society towards more sustainable ways of living. The place is there fore called 'The Transition Workshop' (Omställnings Verkstan). Cykelköket occupies the majority of space and is the first thing you meet as you enter. There is a sharing shelf and a sharing corner where people donate books and things for others to take home with them. The kitchen is quite messy. Volunteers are often reminding people to keep the space in order. When the weather is nice people often want to repair their bicycles outside on the sidewalk. However, there have been complaints and repairs outdoors are only allowed for short periods of time and for specific tasks. Those who are doing long projects, like building a bike from scratch, will lock the 'project' to a nearby bicycle stand until they finish it...if they finish it.

It is a place rooted in global and local conditions. I was told the first bike kitchen started in the United States and the concept has spread to many cities. Each bike kitchen is however locally initiated and run with no formal affiliation to an international body of bike kitchens. The atmosphere is international with different languages frequently being spoken. I have met many people who got to know Gothenburg through their early involvement and/or use of the kitchen.

Figure 64 (a-e). Images from a small film of the concert (Östlund, 2016). To see and hear the clip: https://www.youtube.com/watch?v=mPRc5bPnFi4

Figure 65. Eco-socio-techne contributions to place
Cykelköket

Perceived intentions and roles of: **Ecological significance**	
Reduce chemical pollution in air/soil	
Use ecological waste products from society	
Contribute to the welfare of nonhuman creatures	
Reduce the extraction of raw resources from nature	
Reinforce the importance of ecology/'nature' in society	
Contribute to/be a landmark in the ecological landscape	
Perceived intentions and roles of: Psycho-social significance	
Provide employment on site	
Opportunity to practice goodwill through volunteer activities	
Financial benefit through selling materials or items	
Reduce cost of living in local community	
Pedagogical/empowerment of local community	
Catalyst/setting for entertainment and relaxation	
Promote physical health and activities	
Reinforce sense of contribution to human welfare	
Contribute to/be a landmark in local social life	
Contribute to an aesthetic experience	
Perceived intentions and roles of: Techne significance	
Structure and aesthetics of waste define space	
Distribute (used or re-designed) products to public	
Support local gardening knowledge and practice	
Provide raw material for industry/civil society	
Promote thought on individual role in waste-resource cycles	
Exhibit repair/redesign/upcycling/recycling techniques	
Donation point of materials or reusable products	*
Promote locally sourced products and production	
Reduce the rate of entropy of resources	
Place for the development of art/innovation	*
Reinforce individual and community connection to techne	
Contribute to/be a landmark in the built environment	*

Legend:
* partially or plausibly
* indirectly or implied (but debatable)

Chalmers ReCycle

Göteborg, Sweden

The Chalmers ReCycle event is a temporary event held on campus twice a year. It began as a cooperation between Cykelköket and CSS (Chalmers Students for Sustainability) and has since then become an official event sponsored by the university as a whole. I present it here in conjunction with Cykelköket. My work as a volunteer to organize this event was not through Cykelköket, however, and was instead through my connections with CSS. It is not something that I have done in the capacity of the directed dérive. However, I include it here for two reasons: first through its connection to Cykelköket, second as it is a waste-resouce centered event in public space.

Figure 66. The courtyard as the event begins.

Figure 67. The registering station to get a bike.

CSS and Cykelköket pick up bicycles from a variety of landowners and collect them in a public space on campus. Students are invited in through a facebook event and are told to come at a certain hour to get a number and get a bike for free. The events are always full of attendees and long cues form. Once a person gets a bike there are areas where tools and basic parts are available and a number of volunteers from Cykelköket and CSS to help the new owners repair their bikes. Two bike stores are also present (Sportson and Team Sportia) to help.

Figure 68. The line is long in wait for a bike. A dj entertains this wait and the repair efforts that follow getting a bike.

Besides the year I was involved in organizing it, I have been by to visit the event.

A DJ plays music (the year I organized it we had a live band) and, good weather willing, the event lasts a full day with people mingling, meeting and learning how to repair their new bikes.

Figure 69. New bike owners check out what their bike needs.

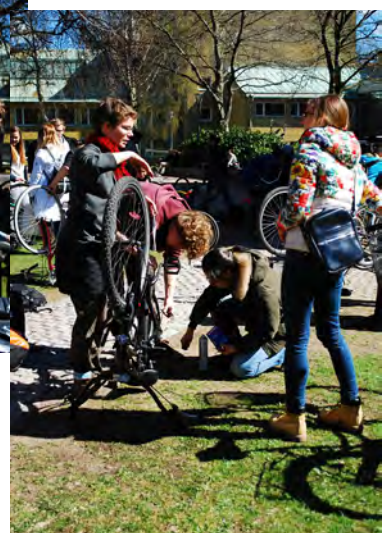
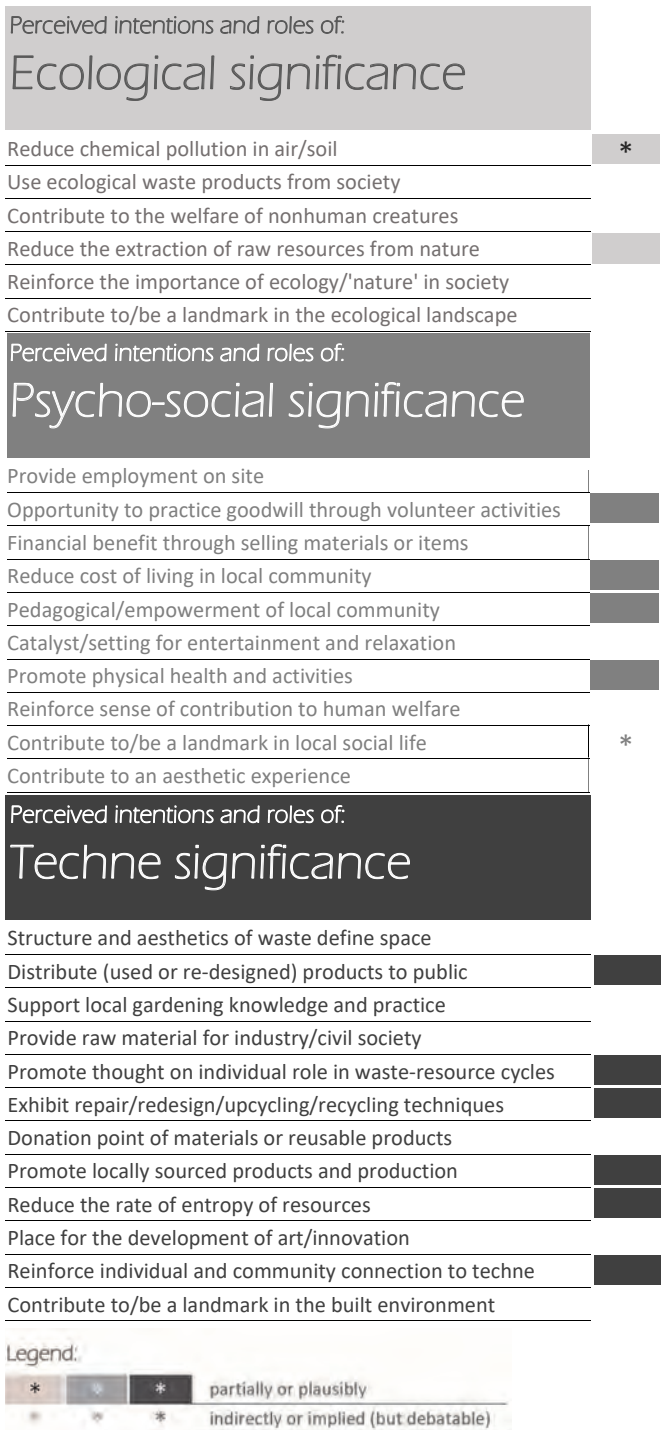


Figure 70. People help each other figure out problems and there are 'chefs' and CSS volunteers on site to help out. Basic tools and materials are made available at a table set up by Cykelköket managed by Cykelköket 'chefs'..

Figures 71 & 72 (bottom two images). Sport stores are there to give support as well, but are less visited.

Figure 73. Eco-socio-techne contributions to place

Chalmers ReCycle



Neighborhood Receptacles

Kungsladugård, Göteborg, Sweden

The situated self and the situation

Within a three hundred meter radius from my house I have a not just one, but several options for sorting my 'waste' so that it may become a resource for someone else. These are the most common ways that people interact with waste-resource systems in Göteborg which has over 300 recycling stations throughout the city (Kretslopp, 2015). The ones I am intimately familiar with are placed in or near publicly accessible spaces, all of them lie in my paths of travel to different parts of the city, and I experience their presence several times a week.

Figure 74. Godhemsgatan recycling with a well 'tagged' donation container.

Perception of intentions and roles

I am most often alone at the recycling station sandwiched by two parking lots, but every now and then there is one other person there. Only twice in the four years I have lived in the area, has any verbal communication taken place at this station. The place does not invite lingering and the conversation does not keep us in the place either, instead a few comments are added until we reach the sidewalk and we part our ways. There is also a receptacle here to donate "soft" items to children's charity *(Barnens Framtid)*. It is heavily 'tagged' (a style of graffiti) every now and then, and periodically cleaned. Sometimes some materials intended for the recycling bins scatter like drift wood on the beach of the ocean. This is a place for chores, civic duty and charity, not for social gathering or interaction.

I am lucky there is a bin in a courtyard across the street from my building as composting recepticals are less common than recycling recepticals in Göteborg. The receptical is actually meant for my neighbors building complex, not mine. I justify my use of their bin by arguing that the morality of composting overrides any formal ownership rules. I have never

Figure 75. The recycling station is parked in the parking lot.

been challenged on this point, and I never run into anyone who is composting at the same time as myself. This is a solo venture beneath a tree, beside parked bicycles and the little individualized garden plots used by my neighbors in the spring and summer. I occasionally use a bench here to catch the evenening sun. Sometimes I combine it with compost disposal chores, but I would use the space for evening light regardless of the compost bin being there or not.

An Emmaus donation receptacle is a block away from both the recycling station and the compost bin. I feel a stronger affinity towards this bin, as I myself often shop at Emmaus. Donating things here gives a stronger sense of being part of cyclical use than donating to the other bin. I have also many friends who shop at Emmaus and have had the pleasure of finding that they have bought shoes that I have donnated there (which originally were bought from Emmaus in the first place).

Figure 76. My neighbors' compost bin.

Figure 77. View of my neighbors' yard.

Opportunities for Poiesis

None, other than if I wanted to join in with the 'tagging' of containers.

Contributions to place

The receptacles do not necessarily feel like an integral part of the public space and yet they are placed there exactly so that they may be publicly available. They more often seem like an appendage at the edge, corner or in-between spaces of the public areas of the neighborhood.

Figure 78. Emmaus donation receptacle is also well tagged.

Figure 79. Eco-socio-techne contributions to place

Neighborhood Recepticals

Perceived intentions and roles of: **Ecological significance**	
Reduce chemical pollution in air/soil	
Use ecological waste products from society	*
Contribute to the welfare of nonhuman creatures	*
Reduce the extraction of raw resources from nature	
Reinforce the importance of ecology/'nature' in society	*
Contribute to/be a landmark in the ecological landscape	
Perceived intentions and roles of: Psycho-social significance	
Provide employment on site	
Opportunity to practice goodwill through volunteer activities	*
Financial benefit through selling materials or items	
Reduce cost of living in local community	
Pedagogical/empowerment of local community	
Catalyst/setting for entertainment and relaxation	
Promote physical health and activities	
Reinforce sense of contribution to human welfare	*
Contribute to/be a landmark in local social life	
Contribute to an aesthetic experience	
Perceived intentions and roles of: Techne significance	
Structure and aesthetics of waste define space	
Distribute (used or re-designed) products to public	
Support local gardening knowledge and practice	
Provide raw material for industry/civil society	
Promote thought on individual role in waste-resource cycles	
Exhibit repair/redesign/upcycling/recycling techniques	*
Donation point of materials or reusable products	
Promote locally sourced products and production	
Reduce the rate of entropy of resources	
Place for the development of art/innovation	
Reinforce individual and community connection to techne	
Contribute to/be a landmark in the built environment	

Legend:

* * *	partially or plausibly
* * *	indirectly or implied (but debatable)

Alelyckan Kretsloppspark

Göteborg, Sweden

I have visited Alelyckan on several occasions, but none of them have been in the capacity of the directed dérive. The visit depicted in these photographs was an organized visit made in conjunction with a course on Regenerative Design at the Architecture Department of Chalmers University of Technology. I was a guest teacher in this course run by Barbara Rubino.

Alelyckan, established in 2007, is a center for recycling and reuse that is located 6.5 km north of the city center. Its location makes it difficult to access by any other means than private vehicle, but there is a bus stop walking distance from the entrance. The complex is managed by the coordinated cooperation of three agencies: Stadsmissionen, Återbruket, and Returhuset. Within the property are sorting containers for the recycling of a variety of items and materials. Before reaching these containers, one passes through a drop-off area for donations where the center's employees actively encourage the donation of objects for reuse rather than recycling.

While much of what is resold and reused at the center is brought there by individuals, items and materials are also collected from other parts of the region. Most of

Figure 80. The sign that greats you at the entrance gives you an overview of the site.

Figure 81. It is free to donate or buy re-usable items. However, you do have to pay to pass the 'sorting hall' (red building) and get to the recycling and incineration areas.

Figure 82. Cars going towards the dumpsters for recycling and incineration are met by staff in the 'sorting hall' who encourage and help them to find things that can be reused.

the center's customers are private home owners. It is believed that the combination of the different services and types of items available at the center is what attracts people and encourages the purchasing of reusable items.

Återbruket

Återbruket focuses on the reselling of used construction materials, appliances, and built-in furniture (such as closets, cabinets, bathtubs, etc.). They also assist construction teams by reviewing demolition plans to help them recover as much valuable materials for resell and reuse as possible.

Figure 83 (above). The office of Återbruket.

Figure 84 (left). Återbruket has a number of outdoor storage facilities for materials and items that are too to be indoors and that will not get damaged by cold weather. There is rain protection for water sensitive items.

Figures 85 (a-e) (below). Construction materials of all sorts tickle ones fantasy with thoughts of projects and new uses.

Figure 86. The main display hall is the largest building at Alelyckan and is a reused building that suffered a fire, but whose structure was still sound.

Figure 88. One of the burnt beams in the roof structure.

Figure 89. The interior of Återbrukets main area is full of doors, appliances, sinks, furniture, etcetera. Återbruket says that it many small construction businesses frequently shop here when doing smaller projects. Private home owners are the other type of frequent shopper here.

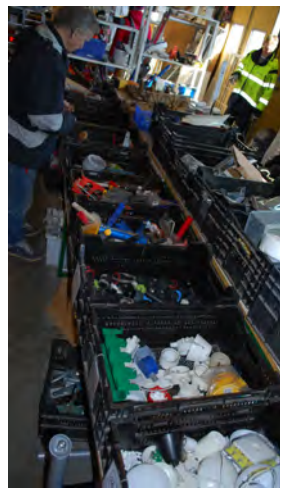


Figure 90. Plumbing and electrical elements and connectors.

Figure 91. Looking for windows.

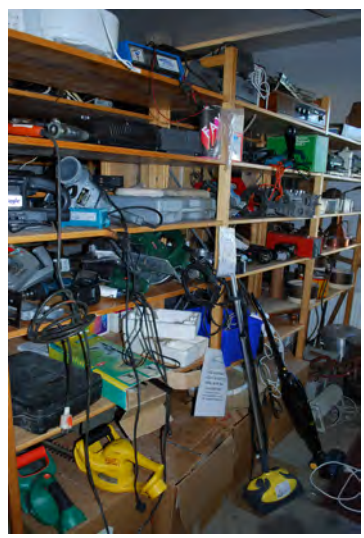


Figure 92. Power tools, electronics and other household items abound.

Stadsmissionen

Stadsmissionen is a for-profit charity organization, which means they donate a percentage of their overall profit but not all of it. They focus on the resell of used clothes, household items and furniture.

Figure 93. Stadsmissionens shop is the first building you see as you enter the complex of Alelyckan..

Items they cannot sell are donated to Returhuset. There are seven stores in Göteborg associated with Stadsmissionen. Prices in their shops vary according to location. At Alelyckan the prices are quite low as they are far from the city center and shopping districts.

Figure 94. Stadsmissionen is full of household items, furniture and clothes.

Figure 95. Returhuset's gardening boxes and entry court.

Returhuset

Returhuset is a center that focuses on the refurbishment and recreation of donated items that cannot be sold at Återbruket or Stadsmissionen. However, sometimes they also buy items from these two organizations for use in their various workshops. Bicycles, furniture and other items are repaired, refinished or

Figure 96. The entry court is full of imaginative waste-resource creatures.

Figure 97. Returhuset repairs and sells bicycles.

reinvented into new objects by individuals who are receiving work training. There is a small café and gift shop which displays and sells the items made in their workshop. The café sells as much ecological and local food as possible.

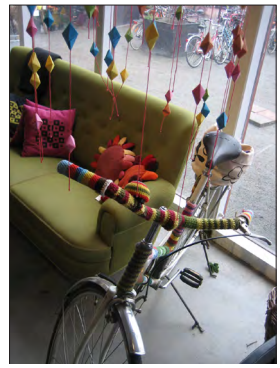


Figure 97 & 98 (above). Things made from discarded things. Everything made and repaired at returhuset is done throug the work training program and are on display for inspiration and sale. Many of these the materials and things are given to Returhuset from Stadsmissionen or Återbruket, as well as directly from the sorting hall (Flygare & Östlund, 2010).

Figure 99. Besides the visitors to Alelyckan, employees at local businesses will also come and have lunch at the café. The café is also part of the work training program.

Figure 100. The interior space is inviting and comfortable for lunch or coffee breaks. The building itself is made from reused materials, and of course all of the furniture is as well.

Figure 101. Plants light up the room. Some of them are herbs, but many are ornamental.

Figure 102. An example of how one can build a small green house from left over materials.

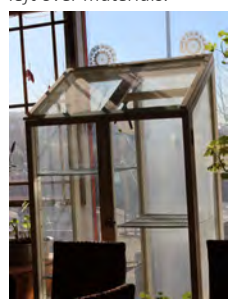


Figure 103. Eco-socio-techne contributions to place
Alelyckan Krettsloppspark

Perceived intentions and roles of: **Ecological significance**	
Reduce chemical pollution in air/soil	
Use ecological waste products from society	*
Contribute to the welfare of nonhuman creatures	
Reduce the extraction of raw resources from nature	
Reinforce the importance of ecology/'nature' in society	
Contribute to/be a landmark in the ecological landscape	
Perceived intentions and roles of: Psycho-social significance	
Provide employment on site	
Opportunity to practice goodwill through volunteer activities	
Financial benefit through selling materials or items	
Reduce cost of living in local community	
Pedagogical/empowerment of local community	
Catalyst/setting for entertainment and relaxation	
Promote physical health and activities	
Reinforce sense of contribution to human welfare	
Contribute to/be a landmark in local social life	*
Contribute to an aesthetic experience	*
Perceived intentions and roles of: Techne significance	
Structure and aesthetics of waste define space	
Distribute (used or re-designed) products to public	
Support local gardening knowledge and practice	
Provide raw material for industry/civil society	
Promote thought on individual role in waste-resource cycles	
Exhibit repair/redesign/upcycling/recycling techniques	
Donation point of materials or reusable products	
Promote locally sourced products and production	
Reduce the rate of entropy of resources	
Place for the development of art/innovation	
Reinforce individual and community connection to techne	
Contribute to/be a landmark in the built environment	*

Legend:
* partially or plausibly
* indirectly or implied (but debatable)

Chapter 7

Reflecting Upon the (un)Known

There are three primary areas worth reflecting upon so far in this licentiate; all of which warrant further exploration and analysis. The following chapter will discuss these along with preliminary conclusions from experiences and observations. As the conclusions are preliminary, I will speak in broad terms and tendencies rather than use percentages or proportions.

First addressed is a summarizing the impressions from proto-regenerative places; second is a reflection on the directed dérive as method; the third is a preliminary derivation of regenerative knowledge bases for place-making, which in turn has implications for the practice of spatial design and the task of moving beyond mainstream sustainability.

7.1 Summarizing impressions of place

Each place of waste in chapter 6 has been accompanied by a chart[70] that has identified the different intentions and roles that I perceived during my visit(s). These have been joined here (figures 104-106) in order to compare and see common patterns amongst them. Together they are a summation of potential roles and stories in places of waste and their eco-sociotechnological conditions. Comparing the three categories, one can see the lack of ecological significance in the proto-regenerative places visited.

How public is it?

Most of the places of waste in the previous chapter are not public space in the iconic sense of a public plaza, park or street. There is, however, a certain amount of public access to all of them. The intention has been to see the effect of waste to resource in different spaces where people gather and/or activities that people can easily gain access to. The consolidated charts divide the different sites into how accessible they are to the public.

Complete and uncontrolled access is rare. Most waste-resource processes require some form of oversight. Theft comes into play when valuable metals are on

[70] See section 6.1 for more on these charts.

site, as was noted at recycling stations such as Alelyckan. This need for management creates restrictions of access either through time and/or membership. However, the limited accessibility of a space does not necessarily discredit its role as a space for collective activities and public enjoyment.

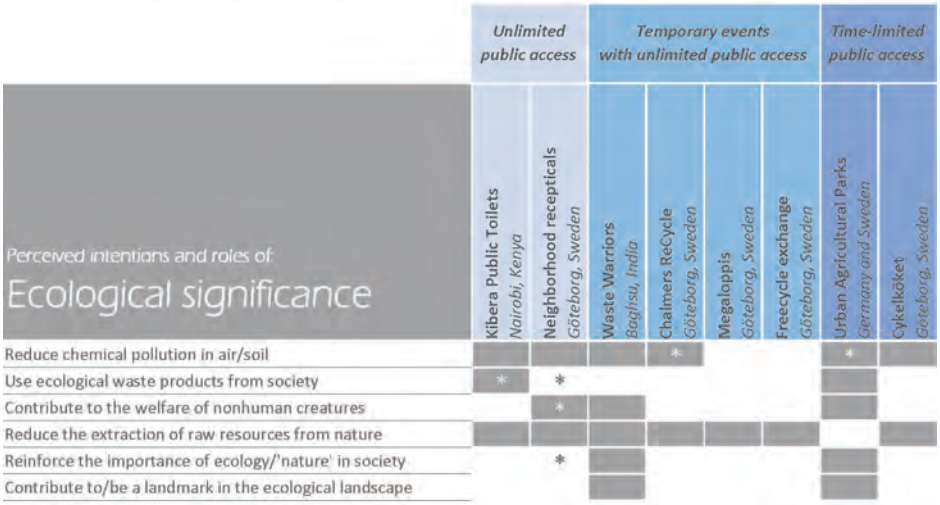
Managed, organized and semi-organized activities often proved to be an instrument or element around which people gathered and social interaction occurred. This indicates that a common project, shared interest and/or cause initiates and can engage people in public life and create a sense of belonging in place. Places with managed activities were often affective in engaging the visitor's creativity and activating a sense of belonging through social interaction. The places where I learned a skill or was invited to develop a project of my own gave me a sense of becoming, i.e. a sense of growth and development in my personal identity in relation to a social context with its own identity.

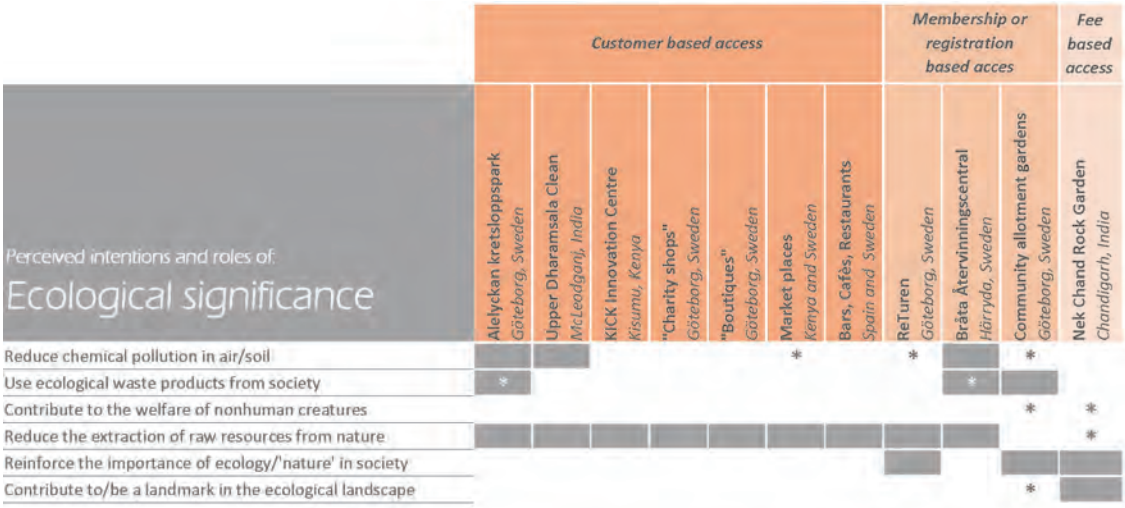
Summarizing impressions of ecological significance

Figure 104 (a-b)

Legend:

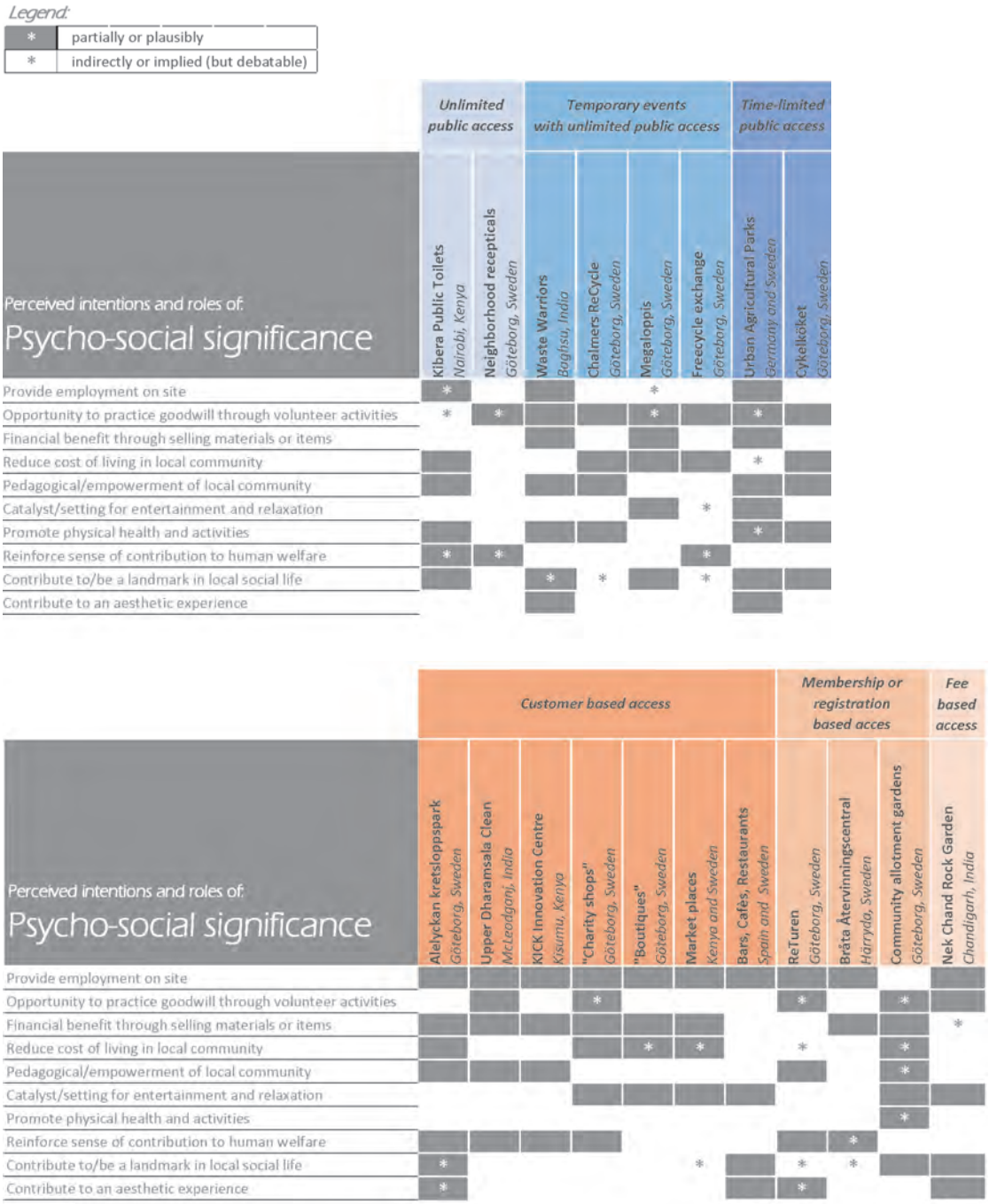
■	partially or plausibly
*	indirectly or implied (but debatable)





Summarizing impressions of psycho-social significance

Figure 105 (a-b)

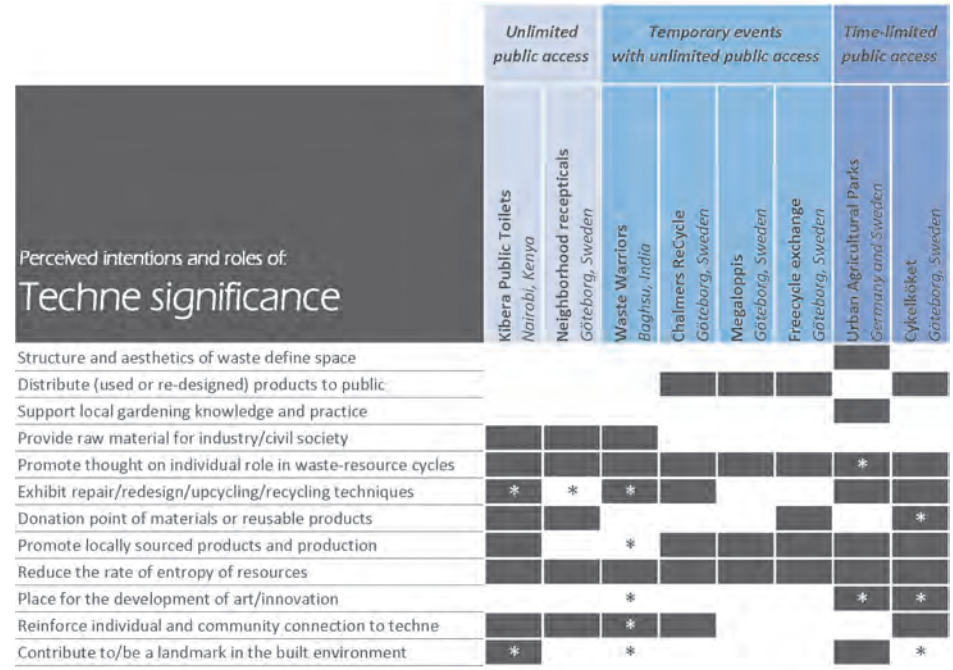


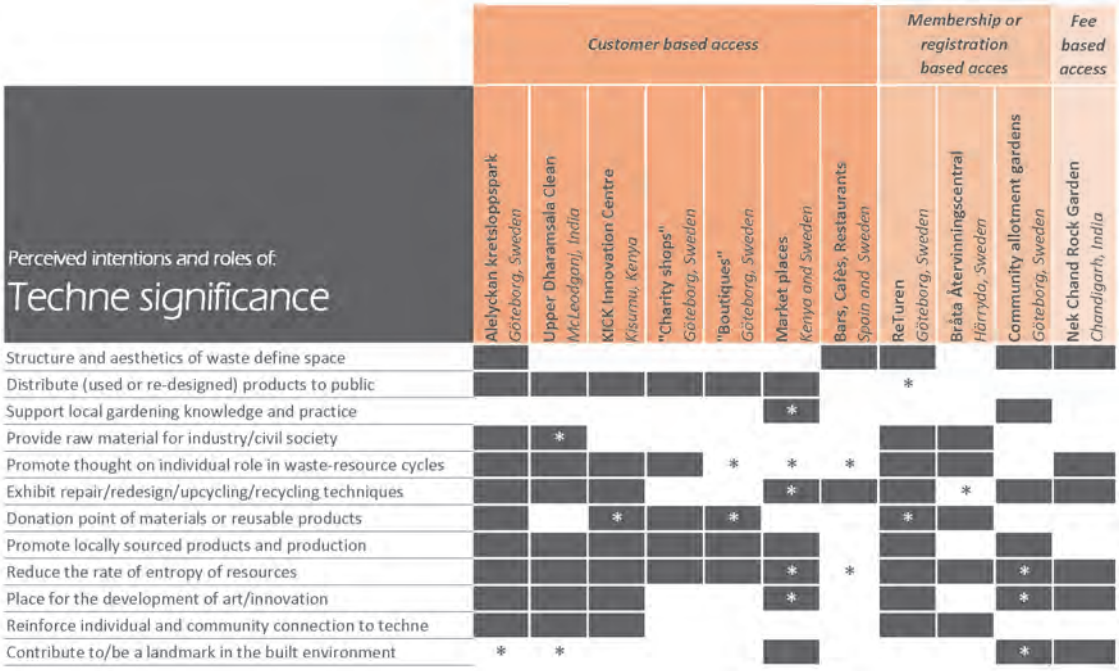
Summarizing impressions of techne significance

Figure 106 (a-b)

Legend:

*	partially or plausibly
*	indirectly or implied (but debatable)





7.11 Place typologies

As pointed out previously, the selection of sites to visit has been based on the presence of some facet of waste-resource conversion on site and that the space has an aspect of public access and use. In seeking similarities in type for these spaces, William Straw's (2010) rhythmanalysis of movement patterns of waste in urban environments has been influential. He identifies four main types of places in cities that "[extend] the itineraries through which things travel as they live out their life cycles" (Straw, 2010, p.206):

- Charity shops
- The main street boutique (Boutiques in my chart)
- The neighborhood yard sale (Market places in my chart)
- The pawnshop (not included in my chart)

The directed dérive explorations in this study have identified other types of places with public access and which serve to delay resources from being lost to entropy too early in their life cycle. These are named in the tables in the previous pages, and range from:

- Communal kitchen and toilets
- Gardens
- Parks
- Work training centers
- Eating establishments
- Centers for education and/or activists
- Swap events
- Offices and workshops
- Waste management centers and stations

In Lyle's (1994) analysis of regenerative systems, he identifies the function of "managing storage as a key to sustainability" (Lyle, 1994, p.43). Storage serves as a place for materials to accumulate and await proper use, and may also be a place of transformation from one material state to another. They help create pause in the temporal speeds of consumption and discard in the age of the ephemeral. The proto-regenerative places visited in this study serve as delay mechanisms of materials and

objects, and they also often store materials in wait for use in various making practices. However, rather than simply containing materials inertly and transforming them into new materials, many of these spaces also contribute to social interaction and, to varying degrees, ecological health.

Proto-schemata and activities

While each proto-regenerative place has a specific schema of its own, general themes could be discerned. These in turn could be said to be basic forms of schema, or proto-schema, that suggest place typologies and the potential narratives of places of waste. The following diagram (figure 107) illustrates these along with clusters of activities found in conjunction with the general themes. While this could benefit from further investigation, one can conclude that including waste-resource processes into a place of public access does not inhibit a wide range of activities that one would be pleased to find in more traditional public spaces.

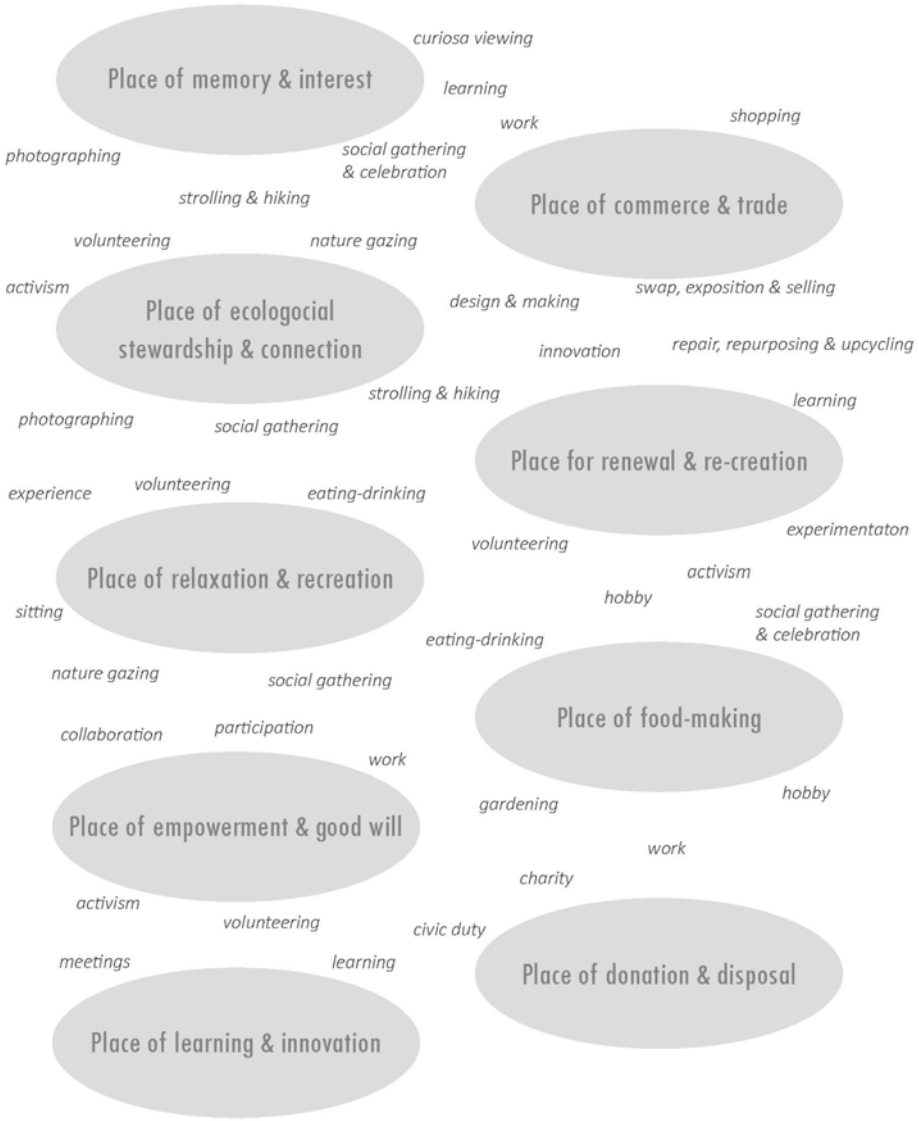


Figure 107. Generalized schemata and functions found in places of waste.

The waste-resource phenomenon itself is at times a backdrop for these activities and schema. However, in most cases the waste-resource phenomena is integral to, even an impetus for, the activities and narratives that are in place. They are also often the reason why visitors or local inhabitants are in that location. This attraction factor ranges from interest (e.g. tourism or shopping) to practical reasons (e.g.

ridding oneself of unwanted items or cooking a meal) to institutional reasons (e.g. gaining skills and knowledge or making a living).

Spatial experiences

The different sites I visited gave four distinct types of spatial experiences that could be useful to consider in the design of regenerative places. These indicate the different *spatial topologies* (Murdoch, 2006) of places that include waste-resource processes. Many of the places also included a layering of several, or all, of these qualities:

- ***Network:*** The waste-resource process gave a sense that the place was connected to a number of different actors in the local and/or global community. The interconnection of different sites through waste-resource making and selling, or other activities, illustrates the concept of technological networks as spatial (Latour, 1991; Moore, 2001). Place and technology are in this situation two interlinked and layered spatial phenomenon influencing the phenomenological experience of the visitor.
- ***Flow:*** The flow of waste-resources through the place created a sense of continuously shifting conditions of people, object and relations. This shifting condition, however, was the character which gave the place a sense of constant presence. Flows, like networks, also insinuate a connection between the site and other places in the local and global context.
- ***Artifact:*** The experience of waste-resource was more of an object in space. At its best it was a curiosa of ingenuity; a visual experience, or spectacle, that influenced the imagination and gave a sense of uniqueness. At its worst it was a functional object or set of objects in the landscape (i.e. trash receptacles).
- ***Enclosure:*** The experience of waste-resource gave a sense of enclosure. They were often interior or exterior 'rooms' created for activities or rest.

7.12 Engagement

> "Waste is not a condition of the material, but a value attributed to it by actors in its lifecycle" (Dartel & Nigten, 2015, p.1)

Many of the sites I visited are dependent upon volunteers, and some are even run by volunteers. This can be problematic. Many of the volunteer initiated recycling programs of the 1970s in the U.S. often collapsed as they were too small and financially vulnerable to the ebb and flow of prices on recycled materials (Strasser, 1999, p.284). These market based recycling and reuse programs are criticized as being incapable of readjusting "the way in which we attribute value to things" (Dartel & Nigten, 2015, p.1). The efficiency driven markets that guide the trade of waste lack the morals necessary to include the full range of socio-ecological costs that are involved in the production of materials and objects (Dartel & Nigten, 2015, p.4).

In many of the places I visited, operational costs were covered by money gained from the activities of selling waste or products made from waste. However, most organizations were also highly dependent on funds supplied via municipalities and/or donors. This stresses the need for political values which look beyond market interests and understand social and ecological costs of products. Not unlike the U.S. of fifty years ago, India's recycling programs are mainly championed by volunteer organizations such as Waste Warriors program and Upper Dharamsala Clean. In the United States, the volunteers who initiated local recycling programs changed tactics into prodding municipalities and industrial waste collection businesses to take recycling seriously, and were quite successful in doing so (Strasser, 1999). Though a direct parallel between both countries may be presumptuous, many volunteer organizations are currently involved in advocating municipal responsibilities for recycling and waste management in India.

Despite the need for municipal and political support, the important role of volunteer organizations dealing with waste-resource issues should not be overlooked or replaced, but rather supported. A crucial part in tackling the solution to our mounting waste problem lies in changing the value systems which claim that a material or object is 'waste'. For this reason, we need organizations that focus on changing values more than simply removing 'waste' from lived space. We therefore

need a wide range of different types of actors who operate in the public realm and help shift the underlying value systems that have lead us into the age of the ephemeral. Municipalities can be involved in this work, as at Alelyckan in Gothenburg. However, even here the municipality has partnered with charity groups and work training programs. As the World Bank study on the global problem of waste points out, all sectors of society will need to get involved (Hoornweg & Bhada-Tata, 2012). This includes, but should not be limited to, volunteer organizations.

A common feature amongst the people I met who work with projects that actively help to collect and renew resources is a passion and enthusiasm for their work. They all expressed a belief that they are doing something useful for the planet. Many also expressed that they felt their work benefitted the quality of life in the city through sociality, economic opportunities and/or through improving the physical experience of being there. An explanation for why these types of places and activities have that affect on people can be found in John Agnew's arguments on place and engagement. He argues that the encounter of people with each other and things in places has both theoretical and political implications:

> "It implies, above all, the real, everyday possibility of popular political action rather than the assimilation of places and their inhabitants into a commanded space driven simply by the imperatives of capital, the state, or some other singular 'motor' of history...Place allows for the truly human use of space. If space is the 'top-down' impact of institutional schemes of spatial organization and representation, then place is the 'bottom-up' representation of the actions of ordinary people" (Agnew et al., 2003, p.613).

The ability for these places to create a sense that one is contributing to a system which is reducing harm to and/or in symbiosis with local ecosystems can help reduce eco-anxiety. Cognitive consonance occurs when our actions reflect our understanding and belief systems, and is the opposite of cognitive dissonance which can cause anxieties such as eco-anxiety. In other words, the more a person can engage in acts that feel meaningful and relevant for socio-ecological concerns, the less anxious s/he will feel. Cognitive consonance may help to explain part of the mechanisms behind the positive and passionate attitudes I encountered in people working with waste-resource issues.

The economic, learning and making aspects of waste-resource processes support and foster social dynamics in many of the places I visited. This combination is likely to help counteract, or at least balance out, our ontological alienation as they engage us with local place through a problem that is globally shared. Through linking a local condition with a problem which has a global extension, such as waste, a place can help to increase our ability to relate and feel a sense of belonging glocally, which in turn helps to support the "popular political action" (Agnew et al., 2003, p.613) in our everyday lives.

Places of learning

While an increased awareness of the problems of our consumption and waste of resources is still needed, it must also be coupled with a social and built environment that offers opportunities to interact with resources and things in alternative ways to throw-away cultures. Information campaigns are often not enough to help one learn and adopt new values. To incorporate new knowledge into our lives and shift attitudes and practices, it is necessary that these feel meaningful to individually lived experiences of the world and society.

> "Active learning happens when we participate in projects that are meaningful to us and engage with the real world. We need to believe that the task we are about to tackle is important and meaningful" (Thackara, 2005, p.148).

Many of the proto-regenerative places I visited embody this notion of active learning and offer opportunities for hands-on involvement, co-creation and making. Waste-resource cycles where making is involved seems to produce these qualities more readily than more passive experiences. I encountered many opportunities for, and expressions of, acts of making such as: innovation, repair and creativity. Thackara (2005) argues that place acts as a hub for learning, conviviality, innovation, identity and engagement. Learning that is experienced in situ, and through several senses, increases the ability for individuals to acquire and express knowledge on their own terms and with their particular skills.

> "All spaces, places, and communities that foster complex experiences and processes are potential sites of learning. New geographies of learning need to be based on redesigned configurations of space, place, and network that respect the social and collaborative nature of learning—while still exploiting the dynamic potential of net-worked collaboration" (Thackara, 2005, p.147).

The wide variety of activities around, and involved in, the waste-resource phenomena I have encountered suggests that they could be used as an element in designed space to foster learning environments that Thackara argues are necessary for innovation to occur (Thackara, 2005).

7.13 Post-ephemeral economies

Places of waste are also places that contribute to local economies in different ways. Most of the places I visited provide employment or income for private individuals. Many places provide savings through cheap or free objects, resources, and/or services. Other economic services from places of waste include revenue for local governments and materials for industries. Despite the critique of the lack of morals of market driven recycling projects, market principles also seem to be of value in waste-resource processes.

The markets I visited that include the selling of used items are not only places of commerce but also of places of making and remaking, i.e. generation and regeneration. Conversations in markets often flow easily. This enables learning and inspiration for how discarded materials can be made into things of beauty and be an important part of economic well-being. Though to a lesser extent, the boutiques and charity chops also include products that have been repaired or made from waste, however mostly they focus on selling re-usable items.

Many cities have begun to shift into post-industrialist phases, leading to the need for more opportunities new forms of urban life and places. We have yet to enter into a post-consumerist phase. However, an age of scarcity is predicted to be upon us soon if we do not change current forms and habits of resource use from the linear degenerative model that has driven us into the age of the ephemeral. As the need to make things does not disappear with post-industrialism, neither does the need to

acquire objects disappear with a linear degenerative model of consumerism. There is need for a different modality of economies that reduces the level of entropy that predominates our time. As living involves consuming, it is then perhaps more realistic to speak of a shift towards post-ephemeral consumption and economies. This shift will require a shift in values. My experiences in proto-regenerative places suggest that they may have a role to play in this shift, which also suggests the role that regenerative places would have in this respect.

7.2 Reflecting on method

As I have mentioned previously, the directed dérive is a method I did not realize I was engaged in from the onset. None the less, there is enough commonality in my approaches to each site to warrant the identification of a methodology that could be further explored and developed. It is a method which would likely fit into Law's description of method assemblages (Law, 2004). He argues that the social sciences, as well as other sciences, need to recognize that methods themselves have world-making effects. Methods produce reality through the way in which they record and communicate it (Law, 2004; Puig de la Bellacasa, 2011). The limitations of mechanic and imperialist tendencies of "standard methods" (Law, 2004, p.5) mislead us into believing that reality follows rules which require clarity and preciseness.

Law (2004) proposes that the sciences must explore methods that address the messy, elusive, fluid and multiple qualities of the world. He argues there is a need to explore "quiet methods, slow methods, or modest methods" (Law, 2004, p.4) that use bodily and emotional experiences to help reveal and take responsibility for the elusive and transitional qualities of reality. These methods would have "fewer guarantees [and are] less caught up in a logic of means and ends" (Law, 2004, p.151). He argues that they could, however, help to address that which is lost in the predominant way for science and society to describe reality by subdividing it into separate disciplines.

> "After the subdivision of the universal we need quite other metaphors for imagining our worlds and our responsibilities to those worlds" (Law, 2004, p.156).

The directed dérive is slow, quiet and modest. It also reflects the messy, elusive, fluid and multiple paths of knowledge and 'reality'… It could serve separate disciplines as an initial probe into hypercomplex problems to identify nodes of aspects and emergent qualities worth investigating further with other methods.

7.21 Advantages

The directed dérive is a probing of a site and situation that reveals the way in which a place engages the visitor. Probing is a method often used by design and artistic researchers (Koskinen, Zimmerman, Binder, Redström, & Wensveen, 2011). It helps the researcher enter a hypercomplex situation which is initially overwhelming, and allows the situation itself to reveal patterns and aspects that are worth further investigation. A probe documents what emerges from the assemblage of information and experiences available, rather that mapping and hunting down all the facts.

The directed dérive, as used in this study, allows the stories of a place to reveal themselves through probing a site in the way an interested visitor might do. In this way, it can help one to understand how a place reveals and conveys its purpose and intentions to an individual. Stories of places are conveyed through these types of random encounters with people, information and objects, not through a collecting of all of 'the facts'. I have used the method to help me gauge how chance encounters in these complex environments helped to invite me in, engage me and entice me to stay for longer periods and/or come back.

This prolongation of time and investment in a place is one of the things that differentiates our understanding of a space as a place (Agnew, 2011), and is therefore a mechanism of place-making. Attachment and engagement over time are not only qualities that help to build a sense-of-place but are also "necessary prerequisite[s] for social solidarity and collective action" (Agnew, 2011, ch.23). By gaging these qualities through methods such as the directed dérive, one can begin to understand this particular and potential effect of place-making.

7.22 Limitations & developments

One could argue that through probing, testing and recording the human experience of the identity of a place in different situations, it is possible to predict the probable experience of identity in similar situations. However, this knowledge can never stand the test of reproducibility or cause absolute predictions. Each place and

person can reliably be said to have an identity, and yet each one of us will experience and define that identity in varying degrees of accordance and discordance in relation to a myriad of variables over time. Rather than being factual, the knowledge gained in a directed dérive is an understanding of the possible assemblages of phenomena in a particular situation, which in turn suggests the possibility of other assemblages of phenomena in related situations. It may also be able to point towards a probability of the occurrence of certain phenomena in certain situations, however, it can never lead to absolute reproducibility of said phenomena.

Documenting and communicating the complex experience of place encountered through the directed dérive needs development. This licentiate has taken a first step in that direction. The on-site documentation could have been conducted in a more strategic matter. Particularly important would be to document and present the specific moments where one of the directory elements were encountered and what action was taken in response to this. However, care should be taken to not delve into minutia and loose the wholeness of the experience. One could also add more artistic and designerly means of documenting the sites, such as sketching, measured drawings, diagrams of use zones etcetera. Care must be taken in doing this, however, as excessive documentation can cause the lived experience to be less of an interested visitor and more of a researcher and documenter.

Time is a factor in these encounters. Exploring how to document and communicate its influence more effectively would be an interesting and important contribution to the directed dérive. The directed dérive could then also prove to be a way to explore temporality. Referring to Lefebvre's (1992) notion of rythmanalysis seems particularly applicable in this regard.

The criteria for the directed dérive could have been more rigorously elaborated and followed than was done in the cases presented here. There is, however, an advantage to a loose set of criteria as it enhances the drifting aspect of a dérive and allows for more unexpected results. A more restrictive set of criteria can enhance an ability to derive (English meaning) more specific results from a dérive, but also fail to discover unpredictable aspects of a place.

In similitude with what Debord (1958) suggested for the layering of Situationist dérives, the layering of multiple of directed dérives by different observers would lend

a fuller understanding of the emergent narratives and reveal nodes of commonly experienced phenomena of a place. One could also conduct the directed dérives in different capacities, i.e. switching dérive criteria, the role of the observer and modes of documentation. It is also natural that one should complement or challenge any findings of the directed dérive with other methods. I conducted some semi-structured interviews in my directed dérives, and these fit well into the process of fluid discovery that the dérive offered. This is, however, not intended to imply that other methods must fit *within* the directed dérive.

7.3 Regenerative knowledge bases for place-making

Different strands of thought exist within the discourses that have emerged for regenerative design. Kyle Brown (2008) has identified three bases for regenerative studies as social/cultural studies, natural processes and technology. His diagram and division of studies fit well within existing disciplines and sub-disciplines of today. [71] They also perpetuate the dualistic separation of technology from place that pervades modern and post-modern theory (Moore, 2001) and the division of the universe into subdivisions (Law, 2004).

Identifying regenerative knowledge areas according to existing disciplinary structures and paradigms is useful for orientation amongst existing fields. However, if we are to challenge this "subdivision of the universal" (Law, 2004, p.156) which is claimed to be a core concern of regenerative theory (Benne & Mang, 2014; Hes & Du Plessis, 2015; Moore, 2001), we need to define areas of regenerative knowledge that go beyond a disciplinary viewpoint.

7.31 Identifying ontologies & common principles

One of the strengths and liabilities of regenerative design is its ability to draw attention to and reinforce the transitory nature of the world. Though the temporal nature of impermanence between nature and society today is what needs to come into balance, one can see how some could interpret regenerative design, particularly cradle-to-cradle, as a license to the continued consumptive behaviors of consumerism as long as everything we do is bio-degradable or recyclable. This isn't necessarily a bad argument; however, it is an unrealistic one as long as the temporal dimension of current consumption patterns are not taken into account and modified. It is also in danger of feeding the systems of insatiable desire and craving which can leading to psychological unrest and addictive consumptive behavior (Whybrow, 2009).[72] Cradle-to-cradle is growing in influence and as a representation

[71] See section 3.42

[72] This is discussed in relation to the age of the ephemeral in section 2.31

of regenerative design principles. It is therefore important to delineate how it differs from other approaches to regenerative design and identify strengths and weaknesses of each.

I have previously reviewed of key contributions to regenerative theory and summarized these by identifying regenerative schemata that include and combine core issues of each strand of thought.[73] Condensing a comprehensive and complex theory into as few elements as possible can help to communicate and transmit knowledge and concepts. Key principles create normative reference points that help to make theoretical treaties more programmatic and actionable. Designerly thinking is future, solution and action oriented, and may be the reason why a list of guiding principles and checklists are abundant features in works on design theory.

The explorations of this licentiate have led to three common principles for regenerative place-making (figure 108) that have the potential to represent the common strengths between different strands of thought within regenerative theory and facilitate the communication of these. Describing the full logic behind the condensation of regenerative concerns would be a lengthy endeavor, and is an opportunity for further exploration after this licentiate.[74] To simplify, let us begin by reviewing the regenerative schemata described earlier. These distill key principles from the literature review[75] and relate to the three knowledge bases I have identified. To briefly review these principles their titles were:

- Re-evolution through eco-sociotechnological co-evolution
- Temper entropy with system perspectives
- Foster proactive and inclusive nonmodern narratives
- Embrace and affect positive change
- Situatedness – work from place and context

Three primary areas of concern can be distilled from within the descriptions of these principles; each of these are then translated into themes that represent the way regenerative knowledge address these areas of concern:

[73] See section 3.44
[74] See section 8.21 and Appendix I
[75] See section 3.42

- How things work, are maintained and cared for ***(Regenerative eco-sociotechne)***
- How we learn, build and communicate relationships and identities (***Situated nonmodern narratives***)
- How we shift from in-equitable paradigms to equitable paradigms (***Empowering change***)

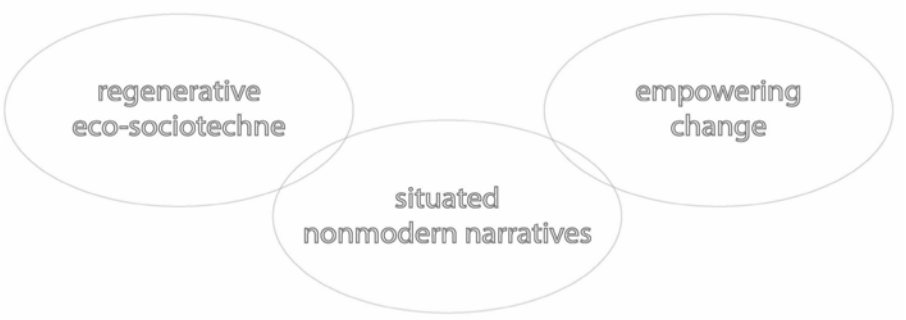


Figure 108. The diagrams is a distillation of core issues of regenerative place-making into three key areas of knowledge and action that could in turn, help to define and guide regenerative sustainability, design and development.

Regenerative place-making served as a probe into the complex set of regenerative theories and revealed general characteristics of regenerative design principles, concerns and knowledge bases. The intention for deriving these core areas is to bring together strengths of the different strands of thought, and define common knowledge bases for regenerative theory and enactment. They are presented here as a summation of the issues transversed in this study. Using a tripartite form that is reminiscent of the three pillars of sustainable development (figure 9) helps to compare a mainstream sustainability approach to design with that of a regenerative approach to sustainability. These, in turn, provide a designerly perspective on principles for moving beyond sustainability.

CHAPTER 8

Summarizing Thoughts & Further Exploration

8.1 Summarizing thoughts

Let us conclude with a few thoughts on regenerative design's role and character in changing conditions for and qualities of lived experiences.

8.12 Changing Attitudes & Behavior

How we imagine the future is inevitably caught up with the way the future eventually manifests itself. Change builds momentum through interactions in the world. The effects of these interactions are often multiple in nature, not sequential and singular, which means that change is exponential, fluid, and messy. The advent of the age of ecology suggests that a change in society's belief systems are increasingly present. Socio-ecological awareness, action and care are becoming important issues in all realms of human activity. However, a disparity between beliefs and practices persists alongside denial and/or anxiety over the problems facing the world as we know it.

Regenerative design, development and sustainability presents a family of philosophies and practices that could help to promote a positive narrative for change and co-creative action. A regenerative practitioner works from, and engenders, three key principles of regenerative place-making:

- find and develop *situated nonmodern narratives* of hope that bridge dualisms and tie humans to their socio-ecological place
- *empower change* in and of reigning norms and power dynamics to foster equity and well-being in glocal relationships
- reduce current rates of entropy and degeneration in energy, material and socio-ecological systems through the implementation of *regenerative eco-sociotechne*

8.13 Place & waste & making

If all resources are caught up in maintaining the status quo, there is no lee-way for innovation and experimentation. In the age of the ephemera, many societies are consuming the resources available for the transitions necessary to avoid dystopia and support well-being of life on earth. Designers of places could have a significant role to play in both the preparation for and the encouragement of this transition.

Regenerative activities, technologies and principles of making in places of public use can offer opportunities for hands on involvement, co-creation and learning about the power of interaction and human ingenuity and how these can benefit economically and socially from including and mimicking ecosystem functions and elements. This interaction could help to decrease the sense of hopelessness, helplessness and inaction regarding global challenges of environmental degradation.

A place can include and visualize eco-systemic elements that do not require immediate interaction from the local inhabitants. However, places that allow for personal engagement are arguably more capable of bringing about changes in the way we see the world. Their role as inspiration and input into a citywide, and by extension worldwide, forum on human and ecosystem co-existence can provide local inhabitants with the sense that they are contributing to a living system which is in symbiosis with local ecosystems.

As the World Bank predicts, we will increasingly have to come into contact with, and take responsibility for, waste processing. The experience individuals have when interacting with waste-resource cycles should be a positive and rewarding one. The use of waste as a resource in shared space can enhance or be enhanced by a sense-of-place and sense of community. This shows that regenerative techne can have a world-making effect on the lived experiences of places, i.e. sense-of-place, and place-making which in turn influences the implementation of the techne itself. If we do not consider that sense-of-place, poetic experiences and other emergent aspects of lived experiences are not pertinent to the move towards sustainability and beyond, we designate the powers of understanding to technological mechanisms and disregard the world-making capacities of cognitive structures.

Through helping to make places of waste pleasurable experiences, spatial design can influence the rate of entropy of resources through increasing the amount of recycled, reused and up-cycled content in construction materials. They can also decrease energy consumption through materials and construction which require less energy to make and maintain. Regenerative strategies and tools often have the characteristic of being one act or element which has multiple benefits for human and nonhuman life forms. Particularly advantageous are those which have a beneficial role in the material and nutrient cycles, as well as the psycho-social and embodied experience of the common world. However, most tantalizing of all is their influence on the ability of places to influence and improve life, identity and imagination through encounters and interactions of humans and nonhumans. A regenerative spatial designer's job is to bring people closer to their eco-socio-spatial condition and supply opportunities to build co-evolutionary and positive relationships through nonmodern narratives.

8.14 A twist of terms

In this text, I have used some terms that I have not found used similarly elsewhere and are of significance for ecologism and ecological design theories, such as regenerative design. They are explained in context in other places in this licentiate, however I will point out their basic meaning here.

Eco-technophilia ***Eco-sociotechnology*** ***Eco-sociotechne***	***Eco-technophilia*** is an over-reliance on eco-technologies to 'save the day'. This is not to say that eco-technologies are not necessary; only that just as *socio-technology* is a term which has been coined to point out that technologies are socially and culturally embedded, so also we must consider methods and mechanisms that are more ***eco-sociotechnological*** and involve ***eco-sociotechne***.
Waste-resource processes & relationships	What I have chosen to call ***waste-resource processes*** and ***waste-resource relationships*** is typically called either *waste-to-resource* or *waste-as-resource* in common and academic discourses. These two phrases are used

interchangeably, and I have not found any source that distinguishes between the two. However, if we take a closer look at their different linguistic implications, we can see two different ways of thinking about, and treating, waste. These were also apparent in my visits to 'places of waste' and can be described by the following distinctions:

Waste-*to*-resource implies a journey, a conversion, from one state to another, i.e. waste is useless until it goes through some type of transformation process. Waste-*as*-resource implies that waste, prior to any conversion, *is* a resource that can be used as-is or as raw material for making a new thing, i.e. waste is useful in and by itself as any other material might be for making things. By removing the 'as' and the 'to' and creating the term ***waste-resource***, I include both ways of treating this relationship and thereby create a more generalized and neutral term.

Within this generalized term for waste-resource systems lies also the distinctions of *down-cycling* (waste-resource with degradation of value) and *up-cycling* (waste-resource with upgrading of value) as defined by McDonough and Braungart (2013) and *re-cycling* (waste-resource with unchanged value) as I have defined it.[76]

Détourned-syncretism

As in the case of the term above, the combination of ***détourned-syncretism*** creates a common term that combines two concepts that otherwise may be used interchangeably. My contribution is then not as much the combining of the terms but in identifying that a distinction between them could be useful. The basis for this argument is outlined further in section 5.1. One can summarize this by saying that discourses on these terms suggest that beyond their similarities, syncretism implies an act of merging while détournement implies an act of juxtaposition.

Directed Dérive

This study may not be the first instance of a dérive being conducted with some kind of instruction to guide it. However, it may very well be the first to; coin the term ***directed dérive***; delineate its methodological

[76] See section 3.42 (sub-section title: Cradle to Cradle)

characteristics; as well as associate, it with autoethnography and Law's notion of method assemblages.

8.2 Further exploration

There are several avenues for further exploration within the topics of this thesis that could be pursued in future studies. I will outline a few of these in the following sections.

8.21 Deriving & delineating principles

One avenue of study would be to continue to explain and examine the derivation of regenerative design principles and concerns that are described mostly in diagram form in section 7.3 (figure 108), and in appendix I. Parallel to this work one should also further delineate differences between the different strands of thought. An example of this is the identifications of regenerative sustainability and regenerative development from regenerative design, and it could be investigated further. Delineating differences in regenerative approaches can help to avoid misunderstandings, co-option and shine a critical light on where the different strands of thought are less coherent.

I have hinted at some differentiations between various authors, however, this licentiate has primarily focused on bringing together the different strands of thought and creating a common ground to work from. A place to begin is in relation to the eco-technological and eco-sociotechnological divide that I have already pointed out. Another area of difference that could be investigated further is the different ways of addressing the notion of place which I have begun to address in this study.

8.22 Developing the directed derive

Another avenue of inquiry is to continue to analyze, and further discuss, results from the directed dérives of proto-regenerative places. That which is shown here does not do the method or the places justice. A first step in further developing the directed dérive would be to explore and illustrate its results for proto-regenerative places more fully. The second step would be to conduct new directed dérives. This could be done by visiting new sites, changing the directory elements and/or

changing the person doing the directed dérive. A third development would be to discern which other methods of inquiry can be combined with/layered upon the directed dérive and help to further understand the qualities and character of proto-regenerative places.

8.23 Performative investigations of regenerative places

A further investigation into design's potential contribution to moving beyond sustainability could be investigated in a more performative and future oriented manner. This would include looking more deeply into the performative acts already conducted in the explorations of proto-generative places as well as developing new ones. Another important step in such a performative study would be to explore existing and potential forms and narrative expressions of a proto-regenerative place through more traditional designerly experimentation. This would serve three purposes:

- First, to further delineate characters and qualities of a regenerative place and narratives.
- Second, to explore how regenerative theoretical principles play out in the design process and conversely how this informs shifts needed in traditional design practice and education.
- Third, to further explore design's more performative methods of research for studying the future.

A key quality of the design field is a tendency to work towards understanding and testing future alternatives through projecting aspects of the current situations into imaginary scenarios and testing these in various ways. This ability is a particularly useful when the research involves understanding future possibilities. Design is a generative practice. It is concerned with the future; what could be. Design activities are "courses of action aimed at changing existing situations into preferred ones" (Simon, 1996).

Design research is then also concerned with projecting and generating possible outcomes of situations. It is often caught up in possibilities rather than actualities, and preferred realities' relationships to current situations. However, we cannot solely look towards the future through prognoses extrapolated from studies of current situations. When designing by prognosis, "the space of possibilities are reduced to the space of probabilities" (Janssens, 2012, p.209). We must re-frame current situations to look for new and latent relationships as well as reflect upon how the future *could* be. Investigating the question of world-making for a common future cannot be answered solely by asking what *is,* but must also be answered by asking what *ought to be.* Once we have an idea of where we ought and want to be, we can then relate that idea to current situations and figure out how to get there from here.[77]

These projective investigative articulations is where research "brings into being what, for want of a better word, it names" (Haseman, 2007). In other words, it creates as much as it investigates and can be a catalyst for transformation. Brad Haseman argues that this type of research is best called "performative research" (Haseman, 2006) and should not be subsumed into the qualitative side of the qualitative-quantitative research divide. Though it may share some characteristics qualitative research, it is a research form of its own accord; "a [third] paradigm of research with its own distinctive protocols, principles and validation procedures" (Haseman, 2007).

Exploring regenerative theory through performative measures is highly appropriate as it aspires to be a catalyst for change, is future oriented and endeavors to "bring into being what...it names" (Haseman, 2007), i.e. a future beyond sustainability. A further investigation into the role and relationships between detournement, syncretism and spatial poetics in the design process would be an endeavor which could contribute to understanding of this third paradigm of research, the practice of regenerative design and development, and the lived experience of regenerative sustainability.

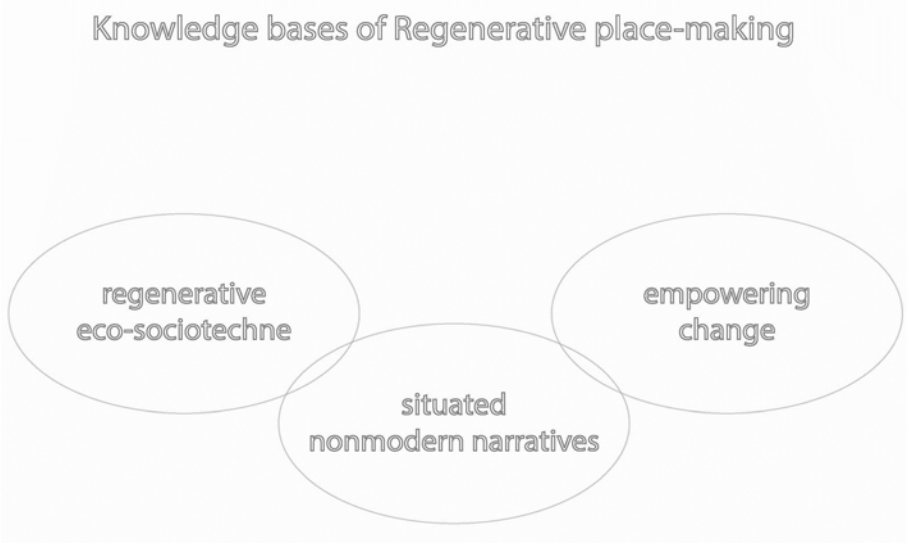
[77] See Janssens (2012) and Holmberg and Robert (2000)

Appendix & References

Appendix I

A derivation of principles & considerations

The core principles found in this study were derived at through the mapping of numerous particularities in an assemblage diagram. The different elements of concern and care were placed in assemblages of relatedness. These in turn began to reveal certain clusters of common cares and concerns. A discussion into each of these in detail is a topic for further development. However, showing these assemblage and cluster diagrams can help to give a basic explanation of their relationship to the three areas of knowledge and a regenerative proposal for how to move beyond sustainability. The following sequence of diagrams (figures 108–112) is to be read as if each diagram is a layer upon, or below, the other. Each diagram therefore carries certain reference points with it from the previous.



This is a duplicate of the diagram in section 7.31 (Figure 108)

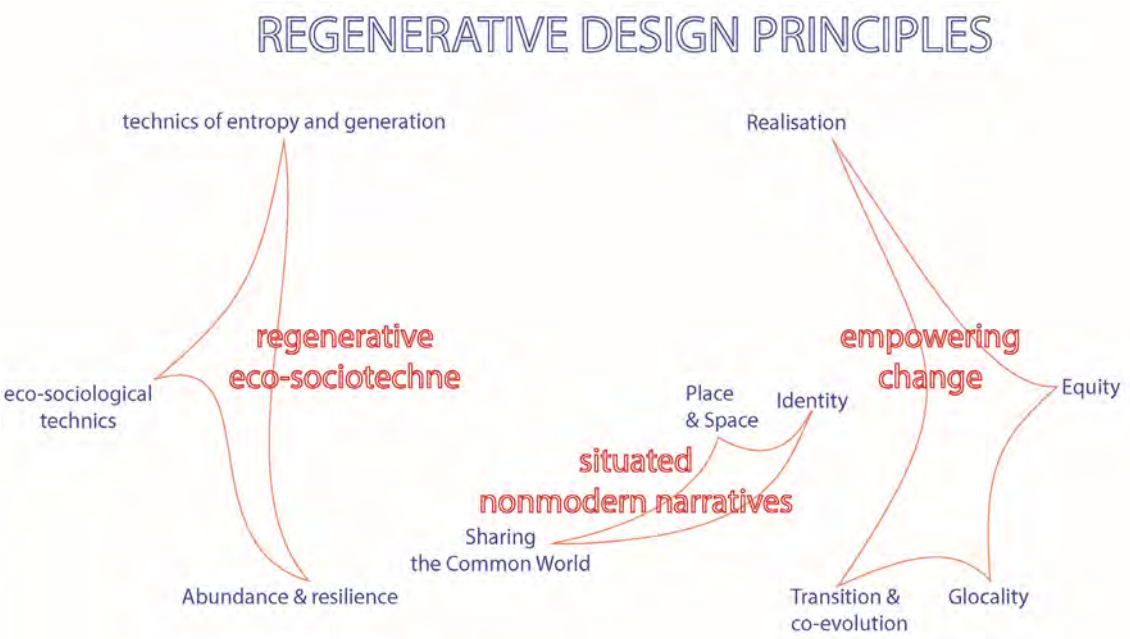


Figure 109. The three core areas of knowledge for regenerative place-making (figure 108) are a way to summarize more specific principles through a common denominator.

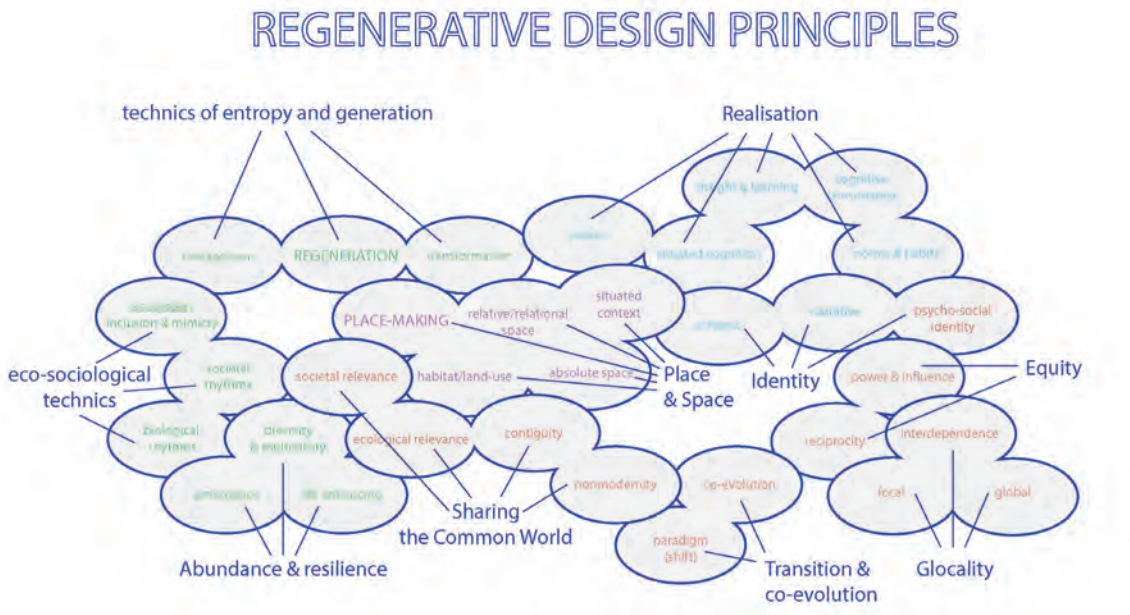


Figure 110. The principles in figure 109 can be subdivided further into further specificity as in this diagram. These sub-principles in turn help to define the broader principles in figure 109.

Figure 111. The sub-principles in figure 110 can be correlated into general factors to consider in regenerative place-making and design. This diagram is more of a graphic step to help the reader see the correlation between diagram 110 and 112. Note how the colors of text and outlines create new areas of correlation.

REGENERATIVE DESIGN CONSIDERATONS

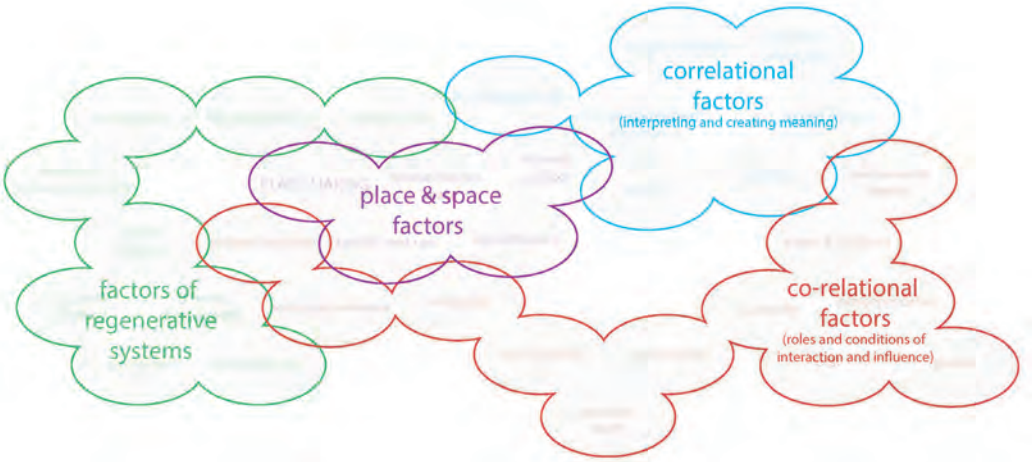


Figure 112. These areas of regenerative design considerations, or concern (Puig de la Bellacasa, 2011), are different from principles as they are less value laden. Principles are normative that speak of how things should work, whereas the factors in this diagram are more related to being, becoming and belonging.

Figure References

Unless otherwise noted, all figures and diagrams are made by Sigrid Laurel Östlund.

Figure 1 (a & b)
Steffen, W., Grinevald, J., Crutzen, P., & McNeill, J. (2011). The Anthropocene: conceptual and historical perspectives. *Philosophical Transactions of the Royal Society A: Mathematical, Physical and Engineering Sciences*, 369 (1938), 851-852.

Figure 2
A diagram drawn by Sigrid Östlund combining the EU list of waste management priorities: Waste Framework Directive, Directive 2008/98/EC on waste C.F.R. (2008).
Retrieved from: http://ec.europa.eu/environment/waste/framework/
With open sources showing Lansink's waste hierarchy retrieved from sites such as the following:
https://www.circulairondernemen.nl/bibliotheek/afvalverwerking-hoe-circulair-gaat-jouw-bedrijf-met-afval-om.
http://www.recycling.com/downloads/waste-hierarchy-lansinks-ladder/

Figure 3
Durand, Asher (1849). Kindred Spirits.
Retrieved from:
https://commons.wikimedia.org/wiki/File:Asher_Durand_Kindred_Spirits.jpg

Figure 4
Moran, Thomas (1874) "Cliffs by Green River". Retrieved from:
https://commons.wikimedia.org/wiki/File:Thomas_Moran_Cliffs_of_Green_River_Amon_Carter_Museum.jpg

Figure 5
NASA Apollo 8 (1968).
Retrieved from: https://www.nasa.gov/multimedia/imagegallery/image_feature_1249.html

Figure 6
NASA Apollo 17 (1972).
Retrieved from: https://www.nasa.gov/content/blue-marble-image-of-the-earth-from-apollo-17

Figure 8
Dréo, Johann (2006) Retrieved from:
https://en.wikipedia.org/wiki/File:Sustainable_development.svg#filelinks.

Figure 9
Naevra, Aerne.(2005) "Isbjørn". Image file retrieved directly from photographer.

Figure 10 (a & b)
Mebratu, D. (1998). Sustainability and sustainable development: historical and conceptual review. *Environmental Impact Assessment Review, 18*(98), 513. Retrieved from: http://www.sciencedirect.com/science/article/pii/S0195925598000195

Figure 1 (a & b)
Diagrams are drawn by Sigrid Östlund, based on Lyle's original diagrams and descriptions.
Lyle, J. T. (1994). *Regenerative design for sustainable development*. NY: John Wiley & Sons.

Figure 12
Brown, Kyle (2009) faculty seminar presentation at the Lyle Center. Unpublished, except for on web site https://env.cpp.edu/rs/rs.

Figure 13 (a & b)
Retrieved from http://www.c2cproducts.com/detail.aspx?linkid=1&sublink=6
A website based on principles from: McDonough, W., & Braungart, M. (2002). *Cradle to Cradle*. New York: North Point Press.

Figure 14
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Figure 18
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