Modern-day sustainability: managing the parts or looking beyond to the meaning?
De Kock, Pieter

1

Modern-day sustainability: managing the parts or looking beyond to the meaning?

Pieter de Kock[1]

University of Lincoln, UK
School of Architecture and the Built Environment

Abstract

This study looks at ways in which education and practice can find common ground in a concept of visual sustainability. It looks at ways of sifting out the meaning from endless flows of information, to scaffold a theoretical framework from the rhizome-like obstacle of ambiguity and uncertainty. This can be achieved by adjusting our focal length to better see our visual world, and so help better describe the conditions for growth that are so important for sustainable urban development and architectural practice. This study is divided into three parts. Firstly, a declaration of meaning; secondly, how we transact with meaning in everyday assemblages; and lastly, the concept of a spectrum of meaning. It builds on existing discourse around education and practice, with a view to understanding what makes the urban 'tick' (Dovey & KTH Media Production, 2017). So that we can discover what makes us 'tick' in the urban.

Keywords: Urban, Heuristics, Visual, Architecture, Sustainability

[1] Pieter de Kock is an Australian registered architect with a master's in urban design from the University of Westminster. He is experienced in a wide range of project types and sizes spanning several countries. Pieter is currently researching visual sustainability at the University of Lincoln.
Contact: Pieter de Kock, Lincoln School of Architecture and the Built Environment, University of Lincoln, Brayford Pool, Lincoln LN6 7TS, UK.
E-mail: pprojexio3@gmail.com
ORCID https://orcid.org/0000-0002-9982-4573

Modern-day sustainability: managing the parts or looking beyond to the meaning?

De Kock, Pieter

2

Contents

Modern-day sustainability: managing the parts or looking beyond to the meaning?

De Kock, Pieter

3

Introduction

Modern-day sustainability is comprised of seventeen parts; each part culminating in a Sustainable Development Goal (SDG). And each of these parts contains more parts, all increasingly driven by Big Data. It is no wonder then that we feel overwhelmed as data grows at a rate faster than we can comprehend. That any investment emotionally or otherwise runs the risk of being quickly superseded by new information. As we try to manage the parts, the complexity of the calculations required to reconcile levels of sustainability are intimidating. Which, it can be argued, aggravates the alienation produced by our fixation on the parts of each assemblage. These elusive conditions for growth can be found in visual sustainability. Satisfy the process by which people are sustained and enriched in daily life through the visual relationship held dear, and we satisfy these conditions.

Polanyi describes how we should look beyond the individual parts of any construct to the meaning (Polanyi, 1966). This is true for riding a bicycle as it is for navigating our urban; both physically and visually. By focusing too much on the parts of any urban assemblage we neutralise any the promise of emergent properties that describe the meaning beyond the whole; that over time becomes visually sustainable; we fixate on parts out of context reducing their meaning, that get in the way, like unresponsive floaters in our minds eye. There exists, it can be argued by way of paying attention to invisible interactions around us, a more nuanced relationship between visual elements and meaning; between visual

Modern-day sustainability: managing the parts or looking beyond to the meaning?

De Kock, Pieter

4

meaning and time; and between our well-being and our visual surroundings. Invisible interactions can include the "Connective forces [that] act on urban geometry, driving it towards a unique morphology" (Salingaros & Coward, 2005, p. 112). Invisible interactions can also infer visual order, continuity or "Information networks [that] are invisible on a normal map" (Arthur van Bilson, 'About this Chapter', In: Salingaros & Coward, 2005, p. 171). Invisible interactions also refer to social interactions that drive diversity of use.

The paper is divided into three main themes (Figure 1). Firstly, a declaration of meaning, followed by how we transact with meaning (Figure 2), and then finally by some ideas around a spectrum of meaning (Figure 3). Aspects around the six key concepts are discussed throughout the study. The first main theme, a declaration of meaning, follows a discussion around transactions of uncertainty. The methodology will be to look beyond ambiguity to the invisible interactions at work in everyday assemblages around us.

Within this remit we also stop at several crossroads to unpack a number of contrasting conceptual relationships. The first of which combines Lefebvre's concept (Lefebvre & Nicholson-Smith, 2011, p. 394) of invisible needs (which it can be argued is contained in structures of networks, assemblage, and conditions of satisfaction) with Wittgenstein's observation that perception contains thought and thought contains perception (Ludwig Wittgenstein, cited in Davey, N. (2001) 'The Hermeneutics of Seeing'. In: Heywood & Sandywell, 2005, p. 7). Both reinforce how meaning is in seeing, if only we "looked harder for longer" (*David Hockney - The Art of Seeing*, 2018, p. 00:43:15) at both visible and invisible.

Modern-day sustainability: managing the parts or looking beyond to the meaning?
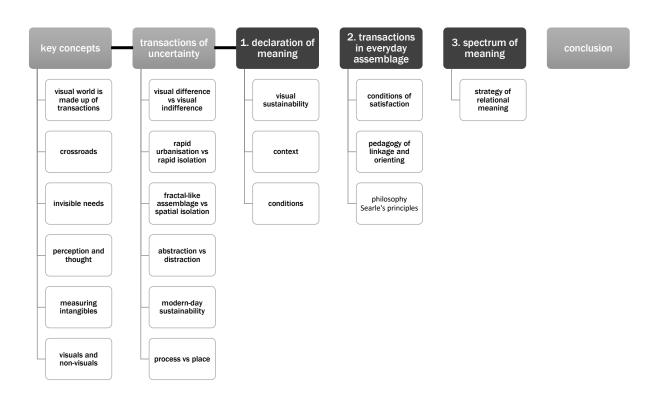
5

De Kock, Pieter

Figure 1. Key conceptual relationships.

Visual meaning and sustainability are premised on a richness of information. If the information we seek is not there, or we "cannot connect to surrounding surfaces, then we find ourselves in an alien environment, and our most basic instincts drive us to leave it" (Salingaros, 1999) At the crossroads of rapid isolation in rapid urbanisation 75% of people will be urbanized by 2050, (TED & West, 2011) while in England 19% will live alone by 2033, (Jones & Evans, 2013) further compromising social integrity and the correlation that arguably exists between visual meaning and conditions of alienation. Which is unsustainable.

It follows that if activity is diminished, social integrity will be compromising by negatively biasing participation in society. Design theories too appear to be out

Modern-day sustainability: managing the parts or looking beyond to the meaning?

6

De Kock, Pieter

of register with real-world business strategies, health, and well-being in our cities (Newman & Brucks, 2016).

The idea that our visual world is made up of transactions (De Kock, 2019) introduces six key concepts that are used throughout the study to agitate the discussion around the three main themes (Figure 2). These concepts are as follows: that our visual world is made up of transactions; that we are confronted on a daily basis by crossroads of uncertainty; that we are surrounded by invisible needs (Lefebvre); the dialogue between perception and thought (Wittgenstein); how these intangibles can be measured (De Landa); and lastly, that people have different visual capabilities and can broadly speaking be divided between visuals and non-visuals.
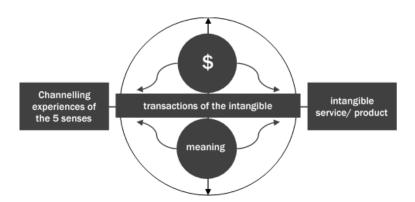

Figure 2. Our visual world is comprised of transactions; and the currency used is meaning.

Modern-day sustainability: managing the parts or looking beyond to the meaning?

7

De Kock, Pieter

Transactions of uncertainty

How often do we find ourselves at crossroads, where we intersect with uncertainty or ambiguity. This paper uses a concept of transactions of uncertainty, to highlight how often our thinking is conditioned by mental roadblocks or states of ambiguity that prevent us from paying attention in our urban.
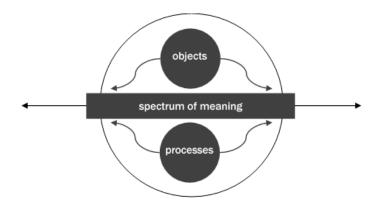
Figure 3. Objects and processes along a spectrum of meaning. The context of a declaration of meaning in this study, is in how visuals and non-visuals evaluate and structure our cities.

In arguing for the restorative value of visual meaning through its relational qualities, this paper also recognises the worldwide phenomenon of mass relocation; 'cutting-and-pasting' memory and meaning at the scale of entire city populations. A crisis at the confluence of ambiguity where senses conflict with expectations; (Rodaway, 2011, p. 145) and the spaces we occupy become "populated by visible crowds of objects and *invisible crowds of needs*" (Lefebvre & Nicholson-Smith, 2011, p. 394, emphasis added).

Modern-day sustainability: managing the parts or looking beyond to the meaning?

8

De Kock, Pieter

At another crossroad, visual difference contrasts with visual indifference. And compounding the problem, is rapid urbanisation and rapid isolation. For Salingaros the conditions in the urban, if information we seek is not there, drives us to leave. The challenge however is not only in the physical rejection of urban space, but also in the psychological and health related effects.
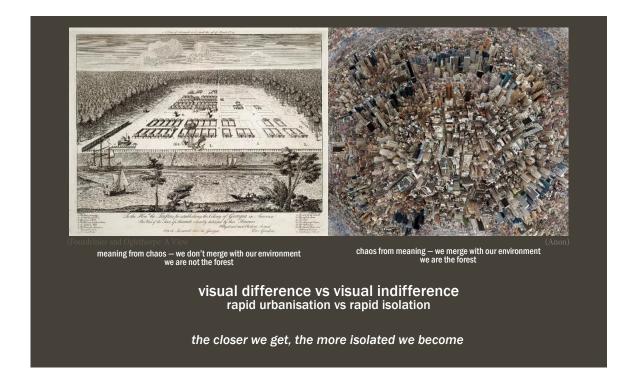
Figure 4. Transactions of uncertainty.

Educators, city leaders, and governments should be encouraged to follow the maths, to counter alienation in society. This paper serves then as a reaction to perceived levels of alienation and acts as an exploration into whether we should reset the conversation from sustainability driven by itself, to sustainability driven by pedagogy — through the affordance and "significance of the application of theory to practice," (Roberts, 2017) — so that emergent conditions (Larson-

Modern-day sustainability: managing the parts or looking beyond to the meaning?

9

De Kock, Pieter

Freeman, 2015, p. 00:07:50) are created from the interaction of networks, assemblage, and conditions of satisfaction (Searle, 2011).

At the crossroads between abstraction and distraction we "inhabit thought at any given moment" (Stafford, 2014a, p. 00:54:00) We inhabit and become inhabited by architecture. For all its virtues, technology also appears at the crossroads of distraction, through architectural expediency; to look here, not there. (Pask theory, 1969, 1975, cited in Glanville, 2010) Our products increasingly appear to resemble our buildings and vice-versa. Sleek skins and wraps now obscure meaning and mask sensing technology. The challenge posed by "screening and filtering technologies… [is that] some greater effort has to be [made] to get the pre-attentive seeing together with attentive seeing" (Stafford, 2014b, p. 01:04:30) to avoid modern buildings "fading in and out of consciousness;" (Stafford, 2010, p. 01:01:30) of being "not always there…not always here" (Stafford, 2010, p. 01:01:30).

Sustainability driven by pedagogy

Another transaction of uncertainty from the previous section, one could say, is visual sustainability. The importance of visual meaning in our lives speaks to the absence of a concept like visual sustainability from modern-day sustainability (Figure 5). In reconciling with a declaration of meaning, a concept of sustainability cannot be separated from meaning. Modern-day sustainability is well documented and there's a lot going on. Except for, it can be argued, a concept of visual sustainability.

Modern-day sustainability: managing the parts or looking beyond to the meaning?

10

De Kock, Pieter

Modern-day sustainability is measured in ambiguous ways. Even Sustainability Indices (SIs) are difficult to understand. Despite the science, much of which can be argued remains subjectively oriented, modern-day sustainability would be unable to stop social degradation and destruction through visually insensitive developments. If you look at the related Sustainable Development Goal's (SDGs) it becomes clear how difficult it is to extract out any sense of visual meaning or of the existence of a concept of visual sustainability.

Figure 5. Modern-day sustainability

Images © UNITED NATIONS ENVIRONMENT PROGRAMME (*Environment & You*, 2018; *SDGs .:. Sustainable Development Knowledge Platform*, n.d.; *UN Environment*, n.d.; UN, 2019) https://www.unenvironment.org/environment-you

https://www.unenvironment.org/explore-topics/sustainable-development-goals/about-sustainable-development-goals.

Modern-day sustainability: managing the parts or looking beyond to the meaning?

11

De Kock, Pieter

Figure 6. Why we need visual sustainability as a Sustainable Development Goal (SDG)

Image © Model of 1925 Plan Voisin by Le Corbusier to replace the Marais district of

Paris (Brussat, 2018b) (Daily Beast)

https://architecturehereandthere.com/2018/11/07/more-on-making-dystopia/.

Turning now to vision and the prefrontal cortex. That non-autopoietic or non-self-regulating 10% devoted to attentiveness that Stafford talks about. And which operates within the larger orbit of perception's five senses. Visuals and non-visuals can find meaningful information to use to their advantage. By leveraging this capability that we all have regardless of levels of creativity, we can use positive urban phenomenon without having to redesign anything.

We can also reconcile Wittgenstein with Stafford, who subscribes to a pedagogy "of voluntary attentiveness," (Stafford, 2010, p. 01:07:25) of "the long conscious look," (Stafford, 2014b, p. 00:05:35) of "slowness… slow looking" (Stafford, 2014a, p. 00:10:04) That slowness of looking contains slowness of thought; which helps us pay attention to the surrounding invisible interactions. Where we should

Modern-day sustainability: managing the parts or looking beyond to the meaning?

De Kock, Pieter

12

resist seeing that is stripped of richness of meaning; "the blink, I know what it is" (Stafford, 2010, p. 01:03:40) culture permeating the built environment.

Berleant poses the question whether education "can serve as part of a larger social environment, one that achieves an aesthetic character" (Berleant, 1997, p. 126) He maintains that "genuine educational experience involves working with thought as a creative activity… [with] important implications for pedagogical practice;" (Berleant, 1997, p. 132) that we should turn away from being grade-oriented. Whether this is true remains to be seen in the unfolding world of pedagogy. What we do know is that we are now more than ever a "civilisation of images," (Zagkotas et al. 2017, cited in Pettersson, 2018, p. 8) and yet despite this explosion of images "professionals in the ways of the visual [and] pedagogues… are faced with a shrinking arena of influence" (Stafford, 2014b, p. 00:51:30).

This is arguably also true of what may be described as the self-fulfilling prophecy of 'sustainability driven by sustainability' where we lose track of the original meaning or intent and succumb to a technological simulacrum. The solution may be to use the concept of visual sustainability to bridge theory with practice. This can be achieved through pedagogical devices uniting perception and thought with a view to understanding when and how urban phenomenon change.

In Figure 3 we followed the logic of De Landa in understanding how it may be possible for condition states to exist; that when analysed by a concept of dials can produce qualitatively different phases. Using this technique hopefully we will extract unseen 'things' and 'events' by way of gradations of evidence and

Modern-day sustainability: managing the parts or looking beyond to the meaning?

13

De Kock, Pieter

causation, for example, between perception & thought; or between visual elements and meaning; or in the durability of visual meaning over time (Figure 7).

The challenge in education must be to test the hypothesis that locates visual sustainability at the source of the river of sustainability; and not simply as a coincidental outlier, or disconnected stream. Foundational to the idea of visual sustainability are Searle's concept of collective intentionality: "The glue that holds human civilisation together" (Searle, 2011).
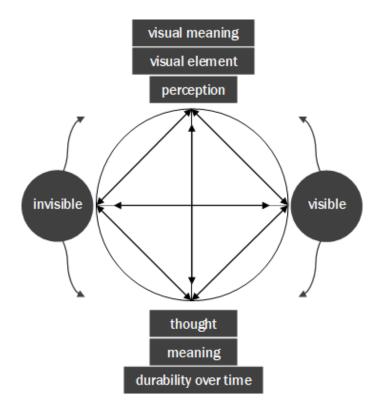

Figure 7. Perception contains thought / thought contains perception. (Wittgenstein, cited in Davey, N. 'The Hermeneutics of Seeing'. In: Heywood & Sandywell, 2005, p. 7) Condition states analysed by a concept of dials (De Landa, 2016, p. 3) to produce "qualitatively different phases" (De Landa, 2016, p. 6).

Modern-day sustainability: managing the parts or looking beyond to the meaning?

De Kock, Pieter

14

Declaration of meaning

Meaning, but meaning for who? "It's not exactly obvious what that means, to experience something that is meaningful" (2017d, p. 1:49:55) In the past meaning was achieved by seeding levels of comfort through storytelling; by passing on the baton of relevance. (2017a; 1964) Meaning can be declared in the built environment by how visual difference contrasts with visual indifference (Figure 4). Consider the fractal-like results of architects working in a schema supporting solid blocks of fractals within fractals; where originality and meaning is produced through established sets of relationships. Conversely in a schema supporting isolation through fractals in spatial suspension, the relationships architects seek lie trapped in the distance between objects (Figure 6).

It has been said that meaning lies where thought resides (Stafford, 2010, p. 01:01:25). What people value determines what they look at, which buildings and what kind of architecture. "We never think of the world as something that reveals itself through our values, but of course it does, because you look at what you want. *You aim at what you want*" (Jordan B Peterson, 2017b, p. 1:08:15, emphasis added). This paper suggests that while we aim at and want meaning, the engine of meaning that sustains us has stalled because modern buildings no longer hold our attention.

Reframing the problem: if meaning is the luggage and sustainability the leaving, then the distinction for meaning must be centred in context; around relationships. The luggage in this case must be concerned with 'hooking' in with the existing

Modern-day sustainability: managing the parts or looking beyond to the meaning?

15

De Kock, Pieter

surrounding contextual meaning; while the leaving transports that collective meaning into the future for someone else to 'hook' into.

We exist meaningfully too through an affordance of meaning. "A work of art [a building]… provides information for perception-information… [it] educates our attention. It shows us how to look and listen. It points out what is important. It reveals meanings previously hidden" (1975, p. 320). Creativity is centred around "an affordance property that's been created to support activity" (H Heft, 2013, p. 1:17:15). We "engage the environment in order to somehow discover those properties" of meaning.(H Heft, 2013, p. 1:17:20). Our "brains are biological, but minds are cultural" (Michael Killen & Eisner, 2012, p. 00:02:00) and the pedagogical relevance is that: "Education is about… providing the conditions for that growth" (Michael Killen & Eisner, 2012).

Suggested as a declaration of meaning then is that, in evaluating space and properly structuring our cities ahead of more visually creative input from other disciplines, non-visual professionals employ a strategy of relational meaning along a spectrum of meaning. This can be achieved through creativity afforded by affordance; by creatively "finding opportunity in objects and processes that were not part of the original intention" (Gibson, 1979, cited in Glanville, 2010).

Transactions of meaning in everyday assemblage

The idea that our visual world is made up of transactions, is a useful one. The idea that there is a sense of some form of social contract implied, creating a visually sustainable environment in return for an investment that only people can

Modern-day sustainability: managing the parts or looking beyond to the meaning?

16

De Kock, Pieter

make. The richness of that investment makes all the difference. Visual sustainability can then be described as the process by which people are sustained and enriched in daily life through the visual relationship, they hold dear to their surroundings (Figure 12).

A valuable transaction with meaning is through theory. Yet across disciplines theory lacks authority, direction and "remains amorphous… marked by fluidity and heterogeneity… from Habermas to Harvey, from Latour to Lacan… such that it can be difficult even to reach agreement on the very object of theory" (Roy, 2011, pp. 6–7). For some, theory is more troubling; as "something we have to invent when we've forgotten how to do automatically what the theory describes" (Brussat, 2018a, citing Steven Semes, Notre Dame's architecture school). The next section will focus on context; at four ways in which we transact with meaning. With intangibles; through our environment; when conditions of satisfaction exist; and in using building blocks of meaning.

Transacting through the environment

The key to meaning in seeing, of attentiveness in the built environment, can be found in environmental structures which exist as behaviour settings (H Heft, 2013; A. Rapoport, 1990) supported by affordances, (Gibson, 1974) facilitating how we afford meaning to objects around us. "We move through the environment by entering and leaving behaviour settings all the time" (H Heft, 2013, p. 1:21:00) but the significance for architecture is in the activation of meaning through use;

Modern-day sustainability: managing the parts or looking beyond to the meaning?

17

De Kock, Pieter

because while "it is the social situation that influences people's behaviour… it is the physical environment that provides the cues" (A. Rapoport, 1990, p. 57).

Visual sustainability in urban design, by way of linkage information "when people cross from one space to another," (Jeffery, 2017) encapsulates "the most fundamental form of perception …[that] sense of meaning is *an orienting reflex*" (2017c, p. 1:29:00, emphasis added). We orient ourselves one may argue in our environment through the relationships between the artefacts that surround us; that validate our existence. A good analogy maybe of our relationship with the urban is in Shannon information theory. In understanding aspects of visual connectivity through the static of urban noise.

At the crossroads of process versus place a question arises about environmental aesthetics (Figure 8). What is the primary container of meaning, the environment or the object in the environment? For Lefebvre "space is already flow and place — it is simultaneously a process and a thing" (Merrifield, 1993, p. 521). Recently there has been a perceptual shift in "the resolution at which modern-day analysis occurs," (Brenner & Ibañez, 2014) focusing more on urbanisation processes as opposed to morphology. It can be argued that process (flow) appears to be more suited to meaning in seeing by way of its "cognitive, conceptual, or narrative positions… [that] take knowledge and information to be essential to aesthetic appreciation of environments" (Carlson, 2016, p. 12).

This contrasts with place, or thing: the non-cognitive, non-conceptual, or ambient positions that "take some other feature, such as engagement, emotion arousal, or imagination, to be paramount" (Carlson, 2016). There is arguably no ambiguity,

Modern-day sustainability: managing the parts or looking beyond to the meaning?

18

De Kock, Pieter

but a certain satisfaction of signification between observer and observed through "aesthetics of engagement… especially on urban environments" (Berleant, 1978, 1984, 1986, cited in Carlson, 2016, p. 17).

Figure 8. Transacting meaning in a simulacrum of seeing. Because we cannot have a conversation with ourselves, when the message becomes so predictable, and one could argue that the message of the urban has become very predictable.

© Author, 2019. Image based on: Dismaland Bemusement Park programme, 2015, and https://www.citylab.com/life/2019/03/rue-cremieux-paris-instagram-tourists-where-to-take-pictures/584164/ (O'Sullivan, 2019).

An engagement where we do not see 'Objects', we see 'Tools' and 'Options' through a process of mapping and transformation; between order (opportunity, promise) and chaos (obstacle, recalibration) (Jordan B Peterson, 2017c, p. 00:44:45) — action also described as "a fundamental form of intentionality" (2013, p. 00:01:20). Taken together with the assertion that "what is directly experienced is not only things, or objects, but the relations between them," (paraphrasing

Modern-day sustainability: managing the parts or looking beyond to the meaning?

19

De Kock, Pieter

James (1909, 173), cited in H Heft, 2013, p. 1:30:55) and inferring the concept of affordance, (H Heft, 2013, p. 1:16:30) it may well be that the archetypal city attracts us precisely because of the environment, the use of space, (Lefebvre & Nicholson-Smith, 2011, p. 128) and the relationships between objects; not the objects themselves.

Transacting through conditions of satisfaction

Conditions of satisfaction can be found in architecture, where you "set up the environment so that it facilitates the *actions* you intend to pursue there," (2017c, p. 1:16:20, emphasis added) avoiding "the circuitry… that makes you uncomfortable" (Jordan B Peterson, 2017c, p. 1:16:55). This is done "to facilitate the detection of the environment's functionally significant properties (affordances)" (Harry Heft & Richardson, 2013). The philosophical concept of intentionality (Searle, 2011) relates to the semiotics and nonverbal communication of Lefebvre (2011, p. 7), Rapoport (1990, p. 82) et al. — in how space is inhabited and read. "If the code is not shared or understood, the environment does not communicate" (A. Rapoport, 1990, p. 57) and the status and meaning of a function (Searle, 2011) is lost.

Several of Searle's principles (Figures 9, and 10) are immediately evident in modern-day urban life. Of visual richness in society Lefebvre highlights the visual relevance of the sixteenth to nineteenth centuries: "Should an attempt be made to reconstruct that language, which was common to the various groups making up that society – to users and inhabitants, to the authorities and to the technicians

Modern-day sustainability: managing the parts or looking beyond to the meaning?

20

De Kock, Pieter

(architects, urbanists, planners)?" (Lefebvre & Nicholson-Smith, 2011, p. 17). This speaks to the first two principles of human cooperation and collective intentionality. The multiplicity of meaning revealed by principles three and six (Figure 9) can be seen in everyday environmental and urban encoding and decoding processes. Most evidently seen in education and practice that co-exists unambiguously; personified by the craftsmanship and human scale (Eglash, 1999) of Cosmati floor fractal patterns that populates buildings with meaning and scaling coherence. (UTSA - The University of Texas at San Antonio & Salingaros, 2014, p. 23:30).

THE GLUE: 'SEARLE'S PRINCIPLES'	
1	We rely on "human cooperation" to exist "relative to observers" (2011, p. 00:06:30).
2	Human cooperation presupposes the concept of "collective intentionality… that observer-relative facts exist" (2011, p. 00:07:00).
3	We assign functions and beyond their physical attributes we recognise in each object a certain status (Searle, 2011, p. 00:08:00).
4	Status functions serve the perceptual needs of our ontologically subjective reality, locking us into an "invisible system of functions" (2011, p. 00:09:30).
5	A set of constitutive rules recognise the role of context in status functions: X condition counts as Y status function; in the context of C (2011, p. 00:12:50).
6	Meaning is created in the built environment by imposing the conditions of satisfaction using two-way language (2014, p. 00:34:20).
7	Declarations create reality by declaring the reality to exist. Status function declarations exist by declaration or implication (2011, p. 00:18:20). Through status function declarations we create institutional facts and sets of power relations (Searle, 2011, p. 00:42:40).

Figure 9. Adapting Searle's social ontological rationalisation (2011).

Modern-day sustainability: managing the parts or looking beyond to the meaning?
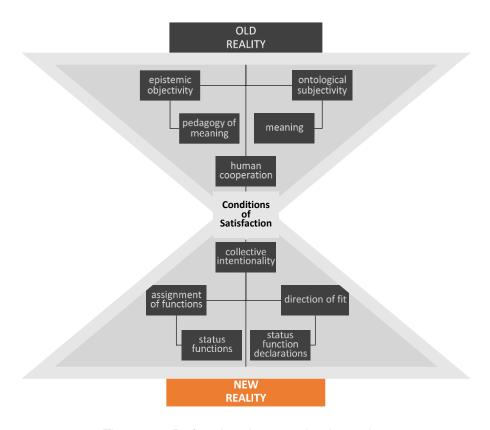
21

De Kock, Pieter

Figure 10. Reframing the meaning in seeing

The environment as a solution for visual meaning: adapting Searle's principles. Knowledge and information from process (flow) drives place (thing) (Carlson, 2016, p. 12) (Image © Author, 2019).
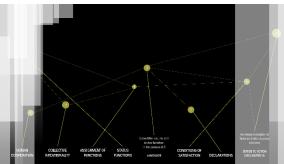
Principles four and five (Figure 9) offer insights into how the rules of the game may be changed to stop the symbolic degradation of our built environment: that as fractals have become bigger (Figure 6), architects and artists have become smaller. This new environment diminished also (A. Rapoport, 1990, pp. 150–151) by the practice of taking "symbolic language and then [using] it consciously in a manner that… mimicked true spontaneous symbolic revelation" (Peterson, 2017, p. 00:19:00). For the environment to be the primary container, this paper supports Searle's argument (Figures 9, and 10) that "the fundamental form of meaning is the intentional imposition of conditions of satisfaction, namely that it should not be enough just to say that it is

Modern-day sustainability: managing the parts or looking beyond to the meaning?

De Kock, Pieter

22

raining; *it should be* raining" (emphasis added, 2014, p. 00:29:50). We might conclude that it's not enough for a street lined with buildings to say: 'I'm a street that means something to you because I have objects called buildings', but that the conditions of satisfaction include that the street actually has meaning and value.

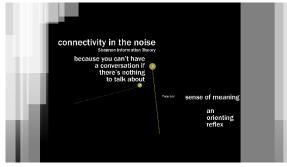## Transacting through building blocks

Technological advances have made visualisation of all kinds the obvious building blocks or "tool[s] for developing new theoretical understandings" (Brenner, 2015). Yet, despite "an aura of objectivity that suggests they represent some kind of truth" (Wilson, 2017, p. 69) visualisation is "far from neutral" (Wilson, 2017, p. 68) in "generating and deploying knowledge" (Yaneva, 2015, 235, cited in Wilson, 2017, p. 69) and we should "critically question both the data and decisions that have gone into their construction" (Wilson, 2017, p. 77). Similar transactions of meaning use "tactics" (E. Rapoport, 2015, p. 309) "which allows people to 'live the assemblage'" (McFarlane, 'Assemblage and critical urbanism', City, 15 (2), 204–24, cited in E. Rapoport, 2015, p. 321) that employ "sensory… inhabiting" (E. Rapoport, 2015, p. 307) techniques "more akin to salesmanship;" (E. Rapoport, 2015, p. 308) the purpose of which is to both educate and learn "through dwelling" (McFarlane, 'Learning the city: knowledge and translocal assemblage', cited in E. Rapoport, 2015, p. 311). However, if we are to engage with meaning at a deeper level, then perhaps it is through Holland's insights into how we recombine "building blocks," (Holland, 2008, p. 00:50:08) that these ambiguities can be overcome.

Modern-day sustainability: managing the parts or looking beyond to the meaning?

23

De Kock, Pieter

Emergent conditions in assemblages

Their invisible interactions

Conditions of alienation

Things we don't have a language for

(Polanyi & Grene, 1969) conditions to thrive

Figure 11. Working with a spectrum of meaning.

Top left: Image © https://architecturehereandthere.com/2018/10/07/europe-as-museum-for-rich. Bottom Right: *Image* © Mary Blake, http://paintingparis.blogspot.com/2015/08/tabac-de-la-sorbonne.html (Blake?, 2015).

In depending less on mediation by technology and more on new ways around old ways of doing things; and of using what's already there, visuals and non-visuals, while creatively different, are arguably equally capable of harnessing emergent properties from the unseen world around us. In exploring the "interface… between theorization

Modern-day sustainability: managing the parts or looking beyond to the meaning?

24

De Kock, Pieter

and visualization… research and practice" (Brenner, 2015) we are thus able to collaborate in a way that technology cannot.

In developing patterns of building blocks Lefebvre perhaps most succinctly counters popular architectural and pedagogical thinking of space by asking, "how could a constructed space subjugate or repel otherwise than through use" (Lefebvre & Nicholson-Smith, 2011, p. 128). Art teaches us how to use space. Some paintings are about the object and the object's movement; while others like Picasso's paintings are about the observer's movement. (*David Hockney - The Art of Seeing*, 2018, p. 00:15:40). Through use, it can be said that we determine levels of sustainability, how well we function, and how 'oriented' we are in these spaces.

Spectrum of meaning

In the concluding main theme, it can be argued that for the conditions of a spectrum of meaning to exist, it is all about context. The context then of a declaration of meaning in this study, is in providing the right conditions for development. This links back to the earlier idea of richness of investment. Because the evidence is only found in certain urban conditions; where people are prepared to make that investment.

Having looked at a declaration of meaning and how meaning is transacted, the remainder of this paper is devoted to illustrating how meaning in seeing may be configured in a spectrum of meaning by way of the following three key concepts. Firstly, that objects exist along a spectrum of meaning (Figures 14, and 15). Secondly, that this spectrum ranges between collections of unrelated things at the one extreme, and visually sustainable assemblages with emergent properties spanning time and

Modern-day sustainability: managing the parts or looking beyond to the meaning?

25

De Kock, Pieter

space, at the other (Figure 16). Thirdly, that the principles of ontologically subjective experiences located along the spectrum (Figures 17, and 18) are reinforced pedagogically to reconcile epistemic objectivity of knowledge (know that), with knowledge from experiences (know how) (Ryle, cited in De Landa, 2011, p. 01:02:00). Because knowing "does not come from standing at a distance and representing but rather from a direct material engagement with the world" (Barad, 2007, 49, cited in Shotter, 2014, p. 305).
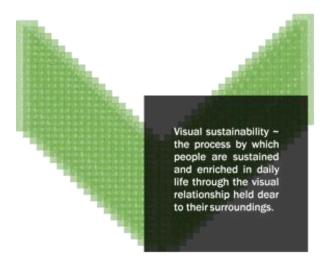

Figure 12. Defining visual sustainability

Figure 13. Spectrum of meaning: hierarchical process. Traditionally understood concept of Maslow's Hierarchy of Needs adapted for visual sustainability.

Modern-day sustainability: managing the parts or looking beyond to the meaning?
De Kock, Pieter

26

UNRELATED	AESTHETIC	VISUAL RICHNESS	VISUAL

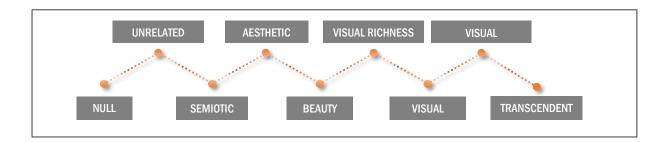| NULL	SEMIOTIC	BEAUTY	VISUAL	TRANSCENDENT

Figure 14. Spectrum of meaning: linear process.

A new paradigm: meaning as a power law. Because we can't have a conversation with ourselves when the meaning has become completely predictable, as one could argue exists in much of the urban today.

| iM + eM = aE
Image + Emotion = Aesthetics | aE + vR = vM
Aesthetics + Visual Richness = Visual Meaning | vM/t = vS
Visual Meaning /Time = Visual Sustainability |
|---|---|---|

Figure 15. Spectrum of meaning: emergent properties.

Visual sustainability as a linear process in a spectrum of meaning, where an assemblage of meaning exists, slowly being enriched, and changed over time to the point that it becomes sustainable and fixed in our memory.

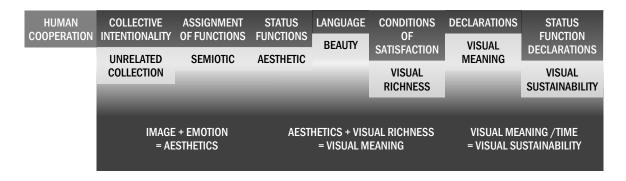| HUMAN COOPERATION	COLLECTIVE INTENTIONALITY	ASSIGNMENT OF FUNCTIONS	STATUS FUNCTIONS	LANGUAGE	CONDITIONS OF SATISFACTION	DECLARATIONS	STATUS FUNCTION DECLARATIONS
	UNRELATED COLLECTION	SEMIOTIC	AESTHETIC	BEAUTY		VISUAL MEANING	
					VISUAL RICHNESS		VISUAL SUSTAINABILITY
	IMAGE + EMOTION = AESTHETICS			AESTHETICS + VISUAL RICHNESS = VISUAL MEANING		VISUAL MEANING /TIME = VISUAL SUSTAINABILITY	

Figure 16. Spectrum of meaning matrix.

Assemblages within assemblages; self-similar phenomenon; repeating. The meaning in seeing hypothesized as an infinitely linear process. In a spectrum of meaning, perception

Modern-day sustainability: managing the parts or looking beyond to the meaning?

27

De Kock, Pieter

and thought can be said to co-exist unambiguously; where we involve ourselves "in more complex prefrontal brain activity thinking, communicating, investigating, [and] observing… [and we] slow down" (Stafford, 2014a, p. 00:29:00).

ONTOLOGICALLY SUBJECTIVE CONSTRUCTS		
iM + eM = aE	aE + vR = vM	vM/t = vS

⬇

ASSEMBLAGES		
Assemblage 1	Assemblage 2	Assemblage 3

⬇

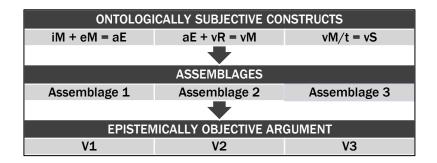| EPISTEMICALLY OBJECTIVE ARGUMENT		
V1	V2	V3

Figure 17. Reconciling epistemology and ontology.

Epistemically objective meaning of ontologically subjective domains of knowledge.

artefact/ object ➤ element/ building ➤ environment/ streetscape

Assemblage 1 Artefact/object	Assemblage 2 Element/building	Assemblage 3 Environment/streetscape
Image + Emotion = Aesthetics	Aesthetics + Visual Richness = Visual Meaning	Visual Meaning /Time = Visual Sustainability
Survey of assemblages. Example: decorative element, door, window.	More complex assemblage that includes Assemblage 1. Example: device, façade.	Groups of assemblages that includes assemblage 2. Example: streetscape.
V 1	V 2	V 3
Aim: determine the existence of an image with emotion *and* the presence of transcendence.	Aim: determine existence of aesthetics with associated visual richness *and* presence meaning.	Aim: determine the existence of visual meaning *and* the presence of sustainability.

Figure18. Objects of assemblage.

Linear process of assemblage. Celebrating difference in what we can't or don't see.

Modern-day sustainability: managing the parts or looking beyond to the meaning?

De Kock, Pieter

28

Conclusion

In summarising around the concept of the meaning in seeing; what's not there and why this is important this paper has broadly covered the six key concepts; some transactions of uncertainty; a declaration of meaning; some examples of transactions in everyday assemblage; and lastly, a spectrum of meaning.

This paper has through an analogy of crossroads, looked at the conditions of uncertainty in our built environment. It has explored conditions of complex uncertainties. One idea stands out clearly. That in both education and professional practice, our primary role must be focused on creating the right conditions for growth. And these conditions, it is argued, can be found in visual sustainability. Satisfy the process by which people are sustained and enriched in daily life through the visual relationship held dear, and we satisfy these conditions.

Four promising themes inviting further in-depth research have emerged. Firstly, as with "inhabiting through visual media," (E. Rapoport, 2015, p. 314) that the danger of inattention lurks in the shadows of technological appropriation of new or emergent meaning — as it does in rapid advancements of artificial intelligence and deep learning. A pedagogy of voluntary attentiveness is essential (Stafford, 2010, p. 1:06:00, 2014a, p. 00:09:00) in keeping pace with technology (Ragsdale & Jemtrud, 2015) and simulation. Voluntary attentiveness can be achieved by engaging with the things we cannot see through a spectrum of meaning, so that young professionals — visual and non-visuals alike —can fully embrace their role in a rich network of meaning.

Modern-day sustainability: managing the parts or looking beyond to the meaning?

29

De Kock, Pieter

Secondly, that in paying attention to this underlying invisible forcefield (Figure 11) we encounter certain teachable and taught moments. Through a pedagogy of linkage and orienting processes, we see evidence of connectivity of meaning; complex interactions; emergent properties and delight in unpredictability.

Thirdly, that the allure and intrigue of ancient analogical and metaphorical devices that have sustained us over the years, oppose the 'sameness' evident in our modern-day built environment. As Ireland mulls over ideas to "lift our gaze above the parapet of our visually oriented technologies," one view is that we exist not to merge with our environment but to be different. We paint the differences between things (Bock-Weiss & Matisse, 2009, p. 152) perhaps because "we always see with memory…[and] seeing each person's memory is a bit different, we can't be looking at the same things. We're all on our own" (*David Hockney - The Art of Seeing*, 2018, p. 00:42:18). It is in these building blocks, this "connection between creativity and memory… attentive scrutiny that looks at something both in the past and the future and reconfigures it, reimagines it," (Stafford, 2014a, p. 00:30:30) that ambiguity is broken; precisely because we're not on our own but depend on each other for meaning in seeing.

Finally, in gazing into our environment — especially at the things we don't see — this paper holds that visual meaning is activated at the base of Maslow's hierarchy of human needs because "people will place self-identity above even survival" (Appleyard, 1979, p. 146) (Figure 13).

A city may after all simply be a manifestation of the exhaustion of individual effort; evident in remnants of countless assemblages; each unique to an individual's struggle for identity and survival. In this sense then a city is not an object but a process of

Modern-day sustainability: managing the parts or looking beyond to the meaning?

De Kock, Pieter

30

conscious retrieval of memory, (Stafford, 2014a, p. 00:20:30) of shadows (Macdonald, 2014) of survival and traces of identity. Where physiological, safety, love/belonging, and esteem that drive self-actualisation processes, are all underpinned by an ontology of visual sustainability. We are thus foundationally driven by the embodiment of difference towards each need through visual meaning: the meaning in seeing.

—

References

Appleyard, D. (1979). The Environment as a Social Symbol: Within a Theory of Environmental Action and Perception. *Journal of the American Planning Association*, *45*(2), 143–153. https://doi.org/10.1080/01944367908976952

Berleant, A. (1997). *Living in the landscape: Toward an aesthetics of environment*. University Press of Kansas.

Blake?, W. I. M. (2015, August 21). TABAC DE LA SORBONNE. *PAINTING PARIS*. http://paintingparis.blogspot.com/2015/08/tabac-de-la-sorbonne.html

Bock-Weiss, C., & Matisse, H. (2009). *Henri Matisse: Modernist against the grain*. Pennsylvania State University Press.

Brenner, N. (2015). *Dean's Lecture Series 2015—Prof. Neil Brenner*. https://www.youtube.com/watch?v=AXhwDwPzH2Y&feature=youtu.be

Modern-day sustainability: managing the parts or looking beyond to the meaning?

De Kock, Pieter

31

Brenner, N., & Ibañez, D. (2014). *Globalization as reterritorialization', 15 years later: Neil Brenner in dialogue with Daniel Ibañez.* https://www.youtube.com/watch?v=39hSD5Koc3s&feature=youtu.be

Brussat, D. (2018a, May 6). Fine wrinkles on Alexander. *Architecture Here and There*. https://architecturehereandthere.com/2018/05/06/fine-wrinkles-on-alexander/

Brussat, D. (2018b, November 7). More on 'Making Dystopia'. *Architecture Here and There*. https://architecturehereandthere.com/2018/11/07/more-on-making-dystopia/

Carlson, A. (2016). Environmental Aesthetics. *The Stanford Encyclopedia of Philosophy*, 21.

David Hockney—The Art of Seeing. (2018). https://www.youtube.com/watch?v=Cdqch3-D94A&feature=youtu.be

De Kock, P. M. (2019). The Meaning in Seeing: Visual Sustainability in the Built Environment. *AMPS Proceedings Series 17.1. Education, Design and Practice – Understanding Skills in a Complex World. Stevens Institute of Technology, USA. 17 – 19 June (2019)*, 69–77.

De Landa, M. (2011). *Manuel DeLanda. Deleuze, Subjectivity, and Knowledge. 2011*. https://www.youtube.com/watch?v=rnoKUKax9sw&feature=youtu.be

De Landa, M. (2016). *Assemblage Theory*. Edinburgh University Press.

Dovey, K., & KTH Media Production. (2017). *Kim Dovey, Mapping Urbanities*. https://www.youtube.com/watch?v=8F9TVn5v09w&feature=youtu.be

Eglash, R. (1999). *African fractals: Modern computing and indigenous design*. Rutgers University Press.

Environment & You. (2018). UN Environment. http://www.unenvironment.org/environment-you

Modern-day sustainability: managing the parts or looking beyond to the meaning?

32

De Kock, Pieter

Gibson, J. J. (1974, May 23). *James Gibson—Ohio—1974—Part 1*.

https://www.youtube.com/watch?v=hwRxUyuQEgc&list=PLtoX6L88vjkdj8HfxaYRt

LkuR-yYoZYu3

Gibson, J. J. (1975). Pickford and the Failure of Experimental Esthetics. *Leonardo*, *8*(4), 319.

https://doi.org/10.2307/1573011

Glanville, R. (2010). A (Cybernetic) Musing: Design and Cybernetics. *V!RUS. N. 3. São

Carlos: Nomads.Usp*, 13.

Heft, H. (2013, November 13). *The ecological approach to perception & action*.

https://www.youtube.com/watch?v=k4fKBqu-Ris&feature=youtu.be

Heft, Harry, & Richardson, M. (2013). *Ecological Psychology* [Data set]. Oxford University

Press. https://doi.org/10.1093/obo/9780199828340-0072

Heywood, I., & Sandywell, B. (Eds.). (2005). *Interpreting Visual Culture: Explorations in

the Hermeneutics of the Visual*. Taylor & Francis e-Library.

http://public.ebookcentral.proquest.com/choice/publicfullrecord.aspx?p=235245

Holland, J. H. (2008). *Modeling Complex Adaptive Systems*.

https://www.youtube.com/watch?v=6aN6PlsvkpY&feature=youtu.be

Jeffery, K. (2017, May 3). *Spatial reference frames and the sense of direction | Conscious

Cities*. https://www.ccities.org/spatial-reference-frames-sense-direction/

Jones, P., & Evans, J. (2013). *Urban regeneration in the UK* (2nd edition). SAGE.

Jordan B Peterson. (2017a, January 16). *2017 Maps of Meaning 1: Context and Background*.

https://www.youtube.com/watch?v=I8Xc2_FtpHI&list=PL22J3VaeABQAT-0aSPq-

OKOpQlHyR4k5h&index=1

Jordan B Peterson. (2017b, February 6). *2017 Personality 02/03: Historical & Mythological

Context*.

Modern-day sustainability: managing the parts or looking beyond to the meaning?

33

De Kock, Pieter

https://www.youtube.com/watch?v=HbAZ6cFxCeY&index=2&list=PL22J3VaeABQ

ApSdW8X71Ihe34eKN6XhCi

Jordan B Peterson. (2017c, February 20). *2017 Maps of Meaning 6: Story and Metastory*

(Part 2).

https://www.youtube.com/watch?v=nsZ8XqHPjI4&index=6&list=PL22J3VaeABQA

T-0aSPq-OKOpQlHyR4k5h

Jordan B Peterson. (2017d, May 27). *2017 Maps of Meaning 12: Final: The Divinity of the*

Individual.

https://www.youtube.com/watch?v=6V1eMvGGcXQ&index=12&list=PL22J3VaeA

BQAT-0aSPq-OKOpQlHyR4k5h

Jung, C. G., Franz, M.-L., & Freeman, J. (1964). *Man and his symbols*. Anchor Books.

Larson-Freeman, D. (2015). *Prof. Larsen-Freeman talks about complexity theory its*

implications for TESOL.

https://www.youtube.com/watch?v=ZqQi5de6bxU&feature=youtu.be

Lefebvre, H., & Nicholson-Smith, D. (2011). *The production of space* (Nachdr.). Blackwell.

Macdonald, R. G. (2014). The City as a Laboratory of Shadows: Exposing Secret Histories

While Thinking of the Future. *Architecture_MPS*.

https://doi.org/10.14324/111.444.amps.2014v4i1.001

Merrifield, A. (1993). Place and Space: A Lefebvrian Reconciliation. *Transactions of the*

Institute of British Geographers, *18*(4), 516. https://doi.org/10.2307/622564

Michael Killen, & Eisner, E. (2012). *Sustainable America: Importance of Art Education*.

https://www.youtube.com/watch?v=6_76YZL_7fM&feature=youtu.be

Modern-day sustainability: managing the parts or looking beyond to the meaning?

34

De Kock, Pieter

Newman, K. P., & Brucks, M. (2016). When are natural and urban environments restorative?

The impact of environmental compatibility on self-control restoration. *Journal of Consumer Psychology*, *26*(4), 535–541. https://doi.org/10.1016/j.jcps.2016.02.005

O'Sullivan, F. (2019). *Paris's Rue Cremieux Has an Instagram Problem—CityLab*. CityLab.

https://www.citylab.com/life/2019/03/rue-cremieux-paris-instagram-tourists-where-to-take-pictures/584164/

Peterson, J. B. (2017). *Jordan Peterson Explains Psychoanalytic Theory*.

https://www.youtube.com/watch?v=PC8FNfMIIhg

Pettersson, R. (2018). *Image design*.

Polanyi, M. (1966). *The tacit dimension.* Doubleday; /z-wcorg/.

Polanyi, M., & Grene, M. (1969). *Knowing and being*. Routledge and Kegan Paul; /z-wcorg/.

Ragsdale, K., & Jemtrud, M. (2015). Citying in the Anthropocene. *Architecture_MPS*.

https://doi.org/10.14324/111.444.amps.2015v8i2.000

Rapoport, A. (1990). *The meaning of the built environment: A nonverbal communication approach*. University of Arizona Press.

Rapoport, E. (2015). Sustainable urbanism in the age of Photoshop: Images, experiences and the role of learning through inhabiting the international travels of a planning model. *Global Networks*, *15*(3), 307–324. https://doi.org/10.1111/glob.12080

Roberts, M. (2017). Urban design, central London and the 'crisis' 2007–2013: Business as usual? *Journal of Urban Design*, *22*(2), 150–166.

https://doi.org/10.1080/13574809.2015.1106914

Rodaway, P. (2011). *Sensuous geographies: Body, sense, and place* (1. iss. in paperback).

Routledge.

Modern-day sustainability: managing the parts or looking beyond to the meaning?

De Kock, Pieter

35

Roy, A. (2011). Urbanisms, worlding practices and the theory of planning. *Planning Theory*, *10*(1), 6–15. https://doi.org/10.1177/1473095210386065

Salingaros, N. A. (1999). *Urban Space and its Information Field, by Nikos A. Salingaros*. http://zeta.math.utsa.edu/~yxk833/UrbanSpace.html?utm_medium=website&utm_source=archdaily.com

Salingaros, N. A., & Coward, L. A. (2005). *Principles of urban structure*. Techne Press.

SDGs .:. Sustainable Development Knowledge Platform. (n.d.). Retrieved 9 September 2018, from https://sustainabledevelopment.un.org/sdgs

Searle, J. (2011, May). *John Searle on Language & Social Ontology*. https://www.youtube.com/watch?v=PESRS1EXfQA&feature=youtu.be

Searle, J. (2013, March 21). *John Searle on Gibson and Direct Perception*. https://www.youtube.com/watch?v=ve0c0B47xJw&feature=youtu.be

Searle, J. (2014, October 31). *Unity of Reality—New realism. Prof. John Searle*. https://www.youtube.com/watch?v=h3_L0HVYdYI&feature=youtu.be

Shotter, J. (2014). Agential realism, social constructionism, and our living relations to our surroundings: Sensing similarities rather than seeing patterns. *Theory & Psychology*, *24*(3), 305–325. https://doi.org/10.1177/0959354313514144

Stafford, B. M. (2010). *Designed to Hesitate: Consciousness as Paying Attention*. https://www.youtube.com/watch?v=2BF6UaI7HGA&feature=youtu.be

Stafford, B. M. (2014a). *140409 barbara stafford images precisely*. https://www.youtube.com/watch?v=NUjCQoUztjE&feature=youtu.be

Stafford, B. M. (2014b). *Selective Attention: Neuroscience and the Art Museum*. https://www.youtube.com/watch?v=AvoGEScg0m4&feature=youtu.be

Modern-day sustainability: managing the parts or looking beyond to the meaning?

De Kock, Pieter

36

TED, & West, G. (2011, July 26). *Geoffrey West: The surprising math of cities and corporations*. https://www.youtube.com/watch?v=XyCY6mjWOPc

UN. (2019). *About the Sustainable Development Goals*. UN Environment. http://www.unenvironment.org/explore-topics/sustainable-development-goals/about-sustainable-development-goals

UN Environment. (n.d.). UN Environment. Retrieved 28 October 2018, from http://www.unenvironment.org/node

UTSA - The University of Texas at San Antonio, & Salingaros, N. A. (2014, April 1). *Algorithmic Sustainable Design: The Future of Architectural Theory - UTSA Lecture 2*. https://www.youtube.com/watch?v=2582OjU1R-M

Wilson, A. N. (2017). Representing connections: How visualizations shape understandings of networks. *Visual Methodologies*, *5*(1), 67–79. https://doi.org/10.7331/vm.v5i1.86