SECOND CHANCE OR COMMUNITY CHEST? SPATIAL MONOPOLY IN AN URBAN OF UNCERTAINTY VS RISK

Abstract. In the urban, our visual world may be compared to a game of Monopoly. In thinking about the game and what it represents both physically and as an abstraction, there is a growing sense of an emergent dialogue between an unlikely pair of constructs. Constructs that inherit substantial indefinable characteristics; and yet both, when combined, create the magic in our urban we so cherish and often take for granted. This paper explores our visual world for similarities and affordances that may be present in two of today's less well frequented theoretical frameworks. Tacit knowing and heuristics. Heuristics, however, with a modern twist. As we hover over the Monopoly board, saturated in a fetish of light-hearted greed, how does our behaviour of extending meaning differ in the real world? This study is a theoretical exploration. It looks at conceptual relationships, rather than data scraping or solicitation of surveys and case studies, to make a point. The focus is on three main issues. Firstly, how we orient ourselves in the urban. Secondly, the role tacit knowing and heuristics play in orienting us. And lastly, the potential that orienting and heuristics hold as conceptual frameworks. The aim is to provide a lens through which a concept of visual sustainability can find traction in the discourse of modern-day sustainability. One desperately needed in today's melee of visual uncertainty. As we continue to click and gaze our way into new levels of unsustainability.

Keywords: Urban, Heuristics, Visual, Click and Gaze, Sustainability

Introduction

As we appear to be increasingly mesmerized by the 'click and gaze' of the digital, our visual world can also be compared to a much older game: Monopoly. In both forms of the game we are acting as described by Polanyi: "looking *at* something and attending *from* it at something else that is its meaning" (1969, p. 148). In our urban we can also be said to attend "*from* its parts to their joint function" (Polanyi & Grene, 1969, p. 153). This thinking forms the basis of the argument in this paper, about the role played by heuristics in our lives. As "a strategy, a tool" (Gigerenzer, 2011). Our entire existence, of 'Being' is based on a sustainable visual principle: of quick orienting. We know knowledge is orientation (Grene, 1969. In: Polanyi & Grene, 1969, p. xi). And being oriented optimizes the use of space. In occupying space then we experience meaning through use. We thus orient ourselves through architecture and music (Scruton & Peterson, 2018, p. 1:03:30). In a world not of algorithms, but of patterns.

We live in an age of information overload. Our public squares, both physical and digital, are "anything but a neutral field" (Kenniff, 2018, p. 25); and nor should they be. But in a way the information overload encourages neutrality, through displacement. As social integrity is compromised, we seek refuge and become alienated from our lifeline: the 'community chest' of collective structures that bind us as humans.

At the same time that our lives are becoming increasingly complicated by unseen data, we also have to negotiate our way daily through an assault course of new visual data. Our senses are unravelling without the time to renew and refresh; to reorient to this online world of disorganized complexity. A complexity of alienation. A visual complexity that mirrors the disorganization of trillions of variables where very little real interaction takes place (W. Weaver, Science and complexity. American Scientist, 36: 536-544, 1948, cited in Mitchell, 2018).

To provide more context for the discussion around the conceptual relationship between tacit knowledge and heuristics, we can turn to our relationship with our urban, which has traditionally been held through scale. "There are fairly robust scaling results for cities across space and time" (Feldman, 2019b). This study is not only concerned with the physical, but also in many of the interactions we don't see. For example, in how "socio-economic outputs are proportional to local interactions" (Feldman, 2019b). The things that

> drives GDP or wages or various consumption measures, measures of creativity… tend to be interactions. So, cities come together, people come together in cities, because there's a benefit to these interactions that one has… economic benefits, social benefits (Feldman, 2019b).

At a fractal level of scale then

> urban networks are not trees that go, and branch, and go, and branch. They're grids. They're self-similar, but they're grids. And these networks grow incrementally. They can sort of grow from the inside out… They don't necessarily always grow with the tips; they infill as well as growing out. Additionally, the smallest unit in urban systems, urban networks, is the same. Independent of the population size. So in a big city and a small city, the

faucets are the same for water networks, and the doors are the same for transportation networks, and so on (Feldman, 2019b).

That cities are complex systems is a given. Our urban is

made up of a large number of strongly interacting entities, and those entities are often heterogeneous… not only of people, of course, but also the networks and infrastructure, social and physical, that support those people. (Feldman, 2019a).

Any number of observed or empirical emergent relationships can be found in urban patterns. As our urban expands or contracts we see how human and physical resources respond; the sustainability of which is observable, for example, in the patterns between "population and road length. Or population and economic output" (Feldman, 2019a). This presents one aspect of the importance of our visual capabilities; that we can at least observe these complex phenomena; even if we struggle to identify a suitable way of measuring or quantifying them.

Tacit knowing

Tacit knowing is about things that cannot be described but are learnt through experience; that there is a limit in our world to "specifiability" (Polanyi & Grene, 1969, p. 124). Like riding a bicycle for the first time, we engage in "*actual knowledge* that is indeterminate… its content *cannot be explicitly stated*" (Polanyi & Grene, 1969, p. 141).

The relevance of tacit knowing in our urban lies, it will be argued, in how tacit knowing describes the process of shifting our gaze from localised meaning to emergent meaning. From scanning parts of an assemblage of architectural components put together in a certain way, to the whole; whose meaning transcends time and space. Tacit knowing is "an act of integration… in the visual perception of objects" (Polanyi & Grene, 1969, p. 140).

In our built environment we may understand the phenomenon through a deepening of understanding of the idea of information transfer, of data. The key point in tacit knowing "between two kinds of awareness" is that we always attend from the parts to the whole and in doing so "we cause a transformation in the appearance of both: they acquire an integrated appearance" (Polanyi & Grene, 1969, p. 141). A previous study has looked at ways of understanding this transfer of information: as data from data, data from objects, and objects from data (De Kock, 2019a).

The relevance for our urban and how we are visually sustained, can be demonstrated through the analogy of knowing and doing (Polanyi & Grene, 1969, p. 126). We might have acquired knowledge through theory, but that it is only in the heuristics of doing, through the use of space, that we arguably come to understand more deeply how we are "sustained and enriched in daily life through the visual relationship we hold dear to our surroundings" (De Kock, 2019b).

The act of tacit knowing thus implies that its result is an aspect of reality which, as such, may yet reveal its truth in an inexhaustible range of unknown and perhaps still unthinkable ways (Polanyi & Grene, 1969, p. 141).

Meaning through tacitly knowing can be articulated along the lines of

looking at the particulars [of an object or event] in themselves, as distinct from *seeing them* while looking at the context of which they form part… When we focus on a set of particulars uncomprehendingly, they are relatively meaningless, compared with their significance when noted subsidiarily within the comprehensive entity to which they contribute. As a result, we have two kinds of meaning… (Polanyi & Grene, 1969, p. 128).

Heuristics

For the purposes of this study, heuristics may be defined

in essence [as] a rule. The important part is to understand that it is a strategy, a tool that helps you to survive in an uncertain world (Gigerenzer, 2011).

Some 25 years after 'Heuristic Research' (Moustakas, 1990) was published, Gigerenzer, as Director of the Max Planck Institute for Human Development, delivered a speech (2015) that redefined previous theory around heuristics; especially around the concept of the perceived strength of rationality versus the perceived weaknesses of the human mind. In it Gigerenzer discusses the example of catching a high ball by keeping constant our angle of gaze to illustrate his concept of ecological rationality: that a complex problem requires a simple solution, modelled on the immediate environment. This occurs when the focus is on the essential parameters to the exclusion of all other factors to be executed in the time available.

As Gigerenzer reminds us

usually people think a heuristic is a second-class strategy which needs less effort and therefore you lose some of the accuracy. This is called the accuracy effort trade-off. Sounds very plausible and it holds in a small world [of risk, like a game of Monopoly] where everything is known. Yet that doesn't necessarily hold in an uncertain

world where not everything is known and we have shown that heuristics that ignore part of the information can actually make more accurate decisions in an uncertain world (Gigerenzer, 2011).

Experience then offers the solution in what Gigerenzer refers to as a toolbox of options. That provides a heuristic from a single variable: the angle of sightline to the ball. (Gigerenzer, 2011, 2019; Max Planck Institute for Human Development, 2018).

The odd couple

Comparing the two concepts, tacit knowing and heuristics, Polanyi predates Gigerenzer in his illumination of "the heuristic power of a problem" (Polanyi & Grene, 1969, p. 132); that tacit knowing is a function of an "external reality gradually accessible to knowing" (Polanyi & Grene, 1969, p. 133). The way in which we access knowledge gradually throughout our lives cannot be disputed. This study asserts that our visual world is a process of being gradually enriched through visual meaning until it reaches a point of sustaining us, and thus is closely aligned with Polanyi's theory.

We can try to get a sense of how tacit knowing and heuristics overlap by the way in which each underpins aspects of society. Greed is activated metaphorically speaking in the Second Chance cards of Monopoly. Greed can be argued to flourish under conditions of risk, where we deal with 'known-unknowns' that can be quantified by probability calculations and the like. Risk exists in a world where every day is exactly the same as the day before (Gigerenzer, 2011). In which, by extending the argument, creativity is stifled by predictability.

The Community Chest deck by contrast is arguably a convincing metaphor for how we are orientated towards the collective, towards society. This card is played in conditions of uncertainty; not risk. In a world of 'unknown-unknowns' uncertainty flourishes in complex adaptive systems such as cities. This connotation is not a negative force, but a force that produces sustainable levels of interaction and visual richness (Salingaros & Coward, 2005; Salingaros & Mehaffy, 2006). This paper then offers the argument that tacit knowing and heuristics can be combined to produce a highly responsive, highly effective urban. One that is not subject to the dictates of algorithmic thinking.

Gigerenzer, for his part, provides us with the modern-day relevance of heuristics. In helping us to understand that that heuristics is more than just a phenomenological construct and is deeply embedded in our reality. Gigerenzer has made the connection, through excellent real-world examples of heuristics at work in modern life; between abstract and concrete, for example, in the functioning of sustainable business practices.

In considering Gigerenzer's modernisation of the meaning of heuristics, it can be charged that we need something to provide a reversal of roles between abstract and concrete; that we should seek out and find the link pointing to a philosophical modern-day relevance of the concept of sustainability. The objective in doing so is to orient and steer modern-day sustainability towards a, somewhat ironically, more sustainable direction. Where knowledge is steeped in visual meaning. Which then drives our use of space, our actions in that space, and our behaviour in that space so that sustainable development becomes more meaningful to individuals and collectively driven through society.

This can be achieved through the knowledge that Polanyi dwells on, which is knowledge "that is structurally similar to the knowledge of a problem… an activity which would be better described as a process of knowing" (Polanyi & Grene, 1969, p. 132). That sustainability is perhaps less about 'knowledge', for example of technology, which is what modern-day sustainability appears to be increasingly focused on; and more on what Polanyi describes as dynamic knowledge. The comprehension of "unspecifiable contents" (Polanyi & Grene, 1969, p. 132) should thus enable heuristics to play a larger role in modern-day sustainability. We should be confident that in producing conditions of visual sustainability, we are able to leap-frog numerous practical, technological or other man-made obstacles; often, of course, without realising it. The focus then is on that which is beyond us. On the greater meaning and not on the often-alienating interaction between the constituent parts.

An invitation to dance

Heuristics and tacit knowing. Are these not the ways in which we have traditionally understood and perceived our urban? That in understanding the relationships between buildings we are enriched by meaning through patterns or assemblages of wholes.

> A man's name [the architecture or face of a single building] by itself a meaningless sound, acquires a meaning by being consistently used as a pointer to the person whom it designates (Polanyi & Grene, 1969, p. 129).

The pointer in our urban is the short-cut or heuristic. In this case it points to the assemblage or whole that is emergent, in conditions of urban assemblage. That the single building has traditionally been, it can be argued, a pointer for the local urban assemblage; or as offered in this study, a pointer of "transactions in everyday assemblage" (De Kock, 2019b).

In the process of slowly being enriched over time to the point of becoming visually sustainable

the alternation of analysis and integration [transactions between parts and whole] progressively deepens both our insight into the meaning of a comprehensive entity in terms of its particulars and the meaning of those particulars in terms of their joint significance (Polanyi & Grene, 1969, p. 129).

Visual meaning then perhaps in the most personal sense is a visual revelation: "when the image of myself in the mirror becomes the source of the meaning of my self" (Berleant, 1997, p. 102). The significance of this can equally be applied to the urban; that our surrounding artefacts become a source of meaning for 'my self'.

The dance

The difference between procedural memory, for example, how we walk, ride a bicycle, swim, and representational memory, for example, recalling the past (Jordan B Peterson, 2017, p. 00:18:20; Polanyi & Grene, 1969, p. 143) also embraces, it can be argued, an architectural phenomenon. That we do certain things in relation to buildings automatically without thinking; while we also consciously gather up and treasure other aspects that we value in buildings. The interactions we have with our urban speaks to a number of complementary theories. In "steps we cannot specify" (Polanyi & Grene, 1969, p. 143). In mapping out from Point A to B, from testing future scenarios (Peterson, 2002), through to the affordance (Gibson, 1983) offered by heuristics (Gigerenzer, 2015).

That our urban is like the face of a person we're dancing with is true by the evidence of the relationship we hold with it.

When we watch a man's face and try to fathom his thoughts, we do not examine his several features in isolation, but view them jointly as parts of his physiognomy. Thus, we are aware of far more particulars and relations between particulars, than we could specify (Polanyi & Grene, 1969, pp. 134–135).

Similarly, when we walk down a high street or main street, we implicitly know more about its life than we could by inspecting individual shopfronts. We instantly recognise the quality of life present or represented, or lack of it. We do not try to make sense of the invisible interactions taking place, just that they do. Positive and negative. It can be argued that

… we comprehend a living being [our urban] at all levels by our subsidiary awareness of its particulars. These particulars are never observed in themselves; we *read* them as manifestations of an individual. We rely on them as pointers, as we rely on a probe or written text, by making them parts of ourselves for reaching beyond them (Polanyi & Grene, 1969, pp. 136–137).

Just like a face, it can be suggested that our urban is something that can always be looked at for the first time. No single face being the same as any other; while automatically attracting our attention independently of task and ahead of any other feature (Koch, 2013, p. 00:13:00).

Our urban should in many ways be a crowd of faces, or a dancefloor. Pick a view or find a line of sight along any street; and it can be argued that because nothing ever stays the same, we can always view our urban with new eyes. People crossing space, atmospheric changes, new found desires; all create change within ourselves. And in the directed attention, we form meaning for ourselves 'out there'; where meaning resides most powerfully.

Discussion

There is a need at this juncture to restore a sense of overall context especially as it relates to a discussion around several ideas. This will do done through the two important thought processes with which we started. Firstly, by way of Polanyi's theory of tacit knowledge or tacit knowing and his epistemological belief in scientific discovery as opposed to scientific logic (Grene, 1969. In: Polanyi & Grene, 1969, p. xiv).

Secondly, in Gigerenzer's modern-day take on heuristics and associated with what he calls ecological rationality. In which we function differently in a world of uncertainty through the construct of heuristics. As opposed to the world of risk: of process or 'As-If' models referred to by Gigerenzer. That in order to understand phenomenon such as behaviour we should look not only at the mind but also at the environment. This counteracts conventional thinking of bounded rationality which basically exists as an instruction in our social, to ignore any discrepancy in the laws of logic or of probability; to ignore the human mind (Gigerenzer, 2015).

These two approaches, one by Polanyi, and the other by Gigerenzer, form the bedrock of an epistemically objective enquiry around the ontological subjectivity of concepts in this paper. Which of course helps make the concept of visual sustainability real.

Polanyi describes visual attention in terms of "the relation of a set of particulars to a comprehensive entity [or whole]… We can be aware of… [particulars] uncomprehendingly, i.e. in themselves, or understandingly, in their participation in a comprehensive entity" (1969, p. 128). In the context of the urban we thus focus on the meaning beyond the individual parts in any assemblage. What may also be described as emergent meaning.

It can be argued of our urban, that for any assemblage the 'whole' orients us while the individual parts produce "a curtailment of meaning by *alienation*"; by looking at a thing " instead of attending" from a thing to its meaning" (Polanyi & Grene, 1969, pp. 146–147). This is true of riding a bike, playing sport, making a speech, or navigating our urban.

In that sense then, we take our building environment for granted. We consume urban data in measures of assemblages; in a hierarchy of 'wholes'; for as long as they work to sustain us. However, when there is a disconnect or error, or when we need specificity, we isolate and inspect the individual parts. Because until then, "why bother paying attention to something that works?" (Jordan B Peterson, 2017, p. 00:31:40). And is this not exactly how we navigate our built environment?

These aspects of our visual world, of the connectivity of the things we don't or can't see, and contained in a concept of visual sustainability, speaks to the need to understand our role in producing urban meaning. This then links us back up with the fractal-like assemblages that we so admire in nature, that are steeped in eternity.

Heuristics have been demonstrated to be crucial to navigating a world of subjectivity, uncertainty, and unpredictability. Far from being negatively associated with bias, heuristics offer a robust highly relevant toolkit with which to tackle complex questions in modern-day sustainability. With simple solutions. 'Less is more' takes on new meaning in a world of science (Gigerenzer, 2019). The proof of how heuristics outperforms the concept known by science as rationality, is recited by Gigerenzer: from his work with the Bank of England, flaws in financial theories and investment, Google analytics and Big Data algorithms, business practices and leadership, climate predictions, to an analysis of various companies such as airlines, hospitals, sport and retail. Perhaps the most memorable examples are that of the so-called 'turkey illusion', which describes the "confusion between a world of uncertainty and of risk" (Gigerenzer, 2019) and the "fast and frugal tree [which] is a sequential heuristic" focused on asking one question at a time; and which has proved its effectiveness in numerous studies. This all speaks to and supports issues of long-term human sustainability.

Many of these ideas around tacit knowing and heuristics provide strong parallels with how we orient ourselves and navigate around our built environment. We gravitate towards "the logical place to be" (Kenniff, 2018, p. 28) for our circumstance, for that particular moment in time. If we are to bridge the gap between practice and theory we depend on heuristics, not so much in the phenomenological sense as described by philosophers (Merleau-Ponty et al.), memory and dreams (Jung et al.), or by way of sense-data, but in a more concrete sense. We do this through experience, underpinned by the experience of others, for example, of practising psychoanalysts (Peterson et al.); as well as through tools and options (Peterson), direct perception, and affordance (Gibson).

We do not need Big Data or complicated algorithms to understand intuitively what is going on. After all, intuition is simply thought process that doesn't have a language (Gigerenzer, 2019; Max Planck Institute for Human Development, 2018). And Big Data can be said to be language that doesn't have thought process.

Instead of Big Data we should concentrate on the link between sustainability and complex adaptive systems which is most evident in high levels of uncertainty and unpredictability. Gigerenzer argues that "ecological rationality refers to the study of how cognitive strategies exploit the representation and structure of information in the environment to make reasonable judgments and decisions" (2000, p. 57). This is an important concept with which to conclude.

Conclusion

The background theory for this paper consists of tacit knowing (Polanyi), heuristics (Moustakas), and the latest research into heuristics by the Max Planck Institute for Human Development (Gigerenzer). The analogy of differences between risk (Second Chance card in Monopoly) and uncertainty (Community Chest card in Monopoly) has been used to illustrate the differences between how poor urban and restorative urban environments have evolved over time. Risk is essentially devoid of meaning. We know all the rules and can calculate all the outcomes. Life can be calculated. And the predictable outcome of such a scenario is that life implodes in slow motion. Uncertainty, on the other hand, is saturated in meaning. Life is wonderfully unpredictable. Life is slowly enriched until it reaches a point where the visual becomes sustainable. How we respond and apply solutions to our urban is dependent on whether we understand this fundamental difference.

If we fail to acknowledge that a corner shop or an assemblage of shops along a High Street bears is directly or indirectly associated with all the concepts discussed in this paper, then we will have failed our urban. We will have failed to understand the processes that describe the indivisible link between visual meaning and economic sustainability. Future research should be encouraged to draw out connections between heuristics and Space Syntax theory through, for example, visual meaning and significance of aesthetic sightlines.

Future research must also look to the empirical evidence of these phenomenon through the typology of the high street or main street. High Streets are pointers to broader levels of sustainability in a community. Often there is no Second Chance for communities affected by visual blight. Visual sustainability sits at both the base and apex of Maslow's

hierarchy of human needs (De Kock, 2019b) and is key to understanding the role played by orienting and navigating in our urban.

So, as Gigerenzer might say: scrap the documentation, and scrap the spreadsheets. Unless we are in a world of complete certainty, of known risks, where tomorrow really will be like yesterday, then we should embrace the complex problems of life in an unpredictable world. We should recapture what we intuitively once knew (Gigerenzer, 2019). We should also take a step back from our 'click and gaze' existence. We need to rely more on ourselves, not less. In so doing we are more likely than ever to find ourselves in the logical place to be. And the logical place to be will find us.

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References

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

De Kock, P. M. (2019a). *Data, data everywhere, not a lot in sync: Reconciling visual meaning with data (Manuscript accepted for publication)*.

De Kock, P. M. (2019b). The Meaning in Seeing: Visual Sustainability in the Built Environment. *AMPS Proceedings Series 16. Stevens Institute of Technology, New Jersey. 17 – 19 June*.

Feldman, D. (2019a). *Fractals and Scaling: Reflections on urban scaling*. Retrieved from https://www.youtube.com/watch?v=XblKRr6AcFY

Feldman, D. (2019b). *Fractals and Scaling: Summary of course*. Retrieved from https://www.youtube.com/watch?v=-pynRkP-UfY

Gibson, J. J. (1983). *The senses considered as perceptual systems*. Westport, Conn: Greenwood Press.

Gigerenzer, G. (2000). *Adaptive thinking: Rationality in the real world*. New York: Oxford University Press.

Gigerenzer, G. (2011). *gerd gigerenzer—Heuristics*. Retrieved from https://www.youtube.com/watch?v=rKld61XEckw&feature=youtu.be

Gigerenzer, G. (2015). *Homo Heuristicus: Rationality for Mortals*. Retrieved from https://www.youtube.com/watch?v=Oo7sWUtApr4&feature=youtu.be

Gigerenzer, G. (2019). *Simple Heuristics Gerd Gigerenzer Keynote speech Winter School 2019 TAPMI*. Retrieved from https://www.youtube.com/watch?v=dSyhjHHWt-0

Jordan B Peterson. (2017). *2017 Personality 06: Jean Piaget & Constructivism*. Retrieved from https://www.youtube.com/watch?v=BQ4VSRg4e8w&list=PL22J3VaeABQApSdW8X71Ihe34eKN6XhCi&index=4

Kenniff, T.-B. (2018). Dialogue, ambivalence, public space. *The Journal of Public Space*, *3*(1), 13–30. https://doi.org/10.5204/jps.v3i1.316

Koch, C. (2013). *Lecture 11: Visual Attention and Consciousness*. Retrieved from https://www.youtube.com/watch?v=pnfudjQwjS8&feature=youtu.be

Max Planck Institute for Human Development. (2018). *The Heuristics Revolution – Gerd Gigerenzer at Summer Institute 2018*. Retrieved from https://www.youtube.com/watch?v=v2SDBbtFp3c

Mitchell, M. (2018). *Introduction to Complexity: Definitions of Complexity*. Retrieved from https://www.youtube.com/watch?v=bNbbbrB_aUk

Moustakas, C. E. (1990). *Heuristic research: Design, methodology, and applications*. Newbury Park: Sage Publications.

Peterson, J. B. (2002). *Maps of Meaning: The Architecture of Belief*. Routledge.

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

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

Salingaros, N. A., & Mehaffy, M. W. (2006). *A theory of architecture*. Solingen: Umbau-Verl.

Scruton, R., & Peterson, J. B. (2018). *Sir Roger Scruton/Dr. Jordan B. Peterson: Apprehending the Transcendent v2*. Retrieved from https://www.youtube.com/watch?v=XvbtKAYdcZY&feature=youtu.be