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Evidence-based urban developmental: beyond the urban anecdotes

The need of going beyond anecdotal knowledge in urban planning

Building a sustainable city is a complex task. Planners regularly become trapped in the tension between broad international or national aims for sustainable development and local, negotiated, agreements on what a professional is being asked to deliver. That's because professional behavior and decision-making are based on service to clients or citizens, with only a very general sense of responsibility for economic and social impact on a wider scale. On top of that, the established development- and construction industries with their traditional professional territories and divisions of labor also limit more holistic ways of working with sustainable urban development (Cooper and Symes 2009).

In the contemporary debate, transdisciplinary approaches (Harris et al 2010), new ways of co-production of knowledge (Polk 2015), often with the framework of multi stakeholder partnerships that involves universities as well as municipalities and private companies (Trencher et al. 2013: Trencher et al. 2014), preferably organized as urban living labs (Marvin et al. 2018) are presented as ways out from such traps. However, transdisciplinary co-productions of knowledge also visualize the disparity between theoretical research-based knowledge about sustainable urban development, often combined with normative visions (see Bradley and Hedrén 2014) versus experiential practice-based knowledge, emerging from the daily work with these issues as a planner or an urban developer.

The complex and wicked global problems related to sustainable urban development we face today, is the best argument for the need of transdisciplinary co-production. Nevertheless, it also demonstrates how different forms of knowledge can become one of the biggest obstacles to solving those challenges. On a theoretical and conceptual level, we all agree what ought to be done, but an informant at a Swedish planning department said: *"This will not help me tomorrow, when I'm back at my office to must deliver a detailed development plan…"*. Back at the offices, planners much serve clients, citizens and politicians, with other priorities and perspectives, and they will again be trapped into conflicts.

In this paper, we present an attempt to support the urban planner and his colleagues, in the daily struggle with challenges of translating and transforming e.g. the global Agenda 2030 goals, into the messy reality of building, and re-building, planning and re-planning cities. Instead of establishing those conflicts between long-term visons versus short time deliverables, as a sign of neo-liberal planning discourses (Taşan-Kok and Baeten 2011), we would like to offer suggestions of how such conflicts could be managed. This approach of evidence urban development will help professional planners, real-estate developers and other urban professionals to better navigate through this "messy reality" of sustainable urban

development. By systematically combining four forms of evidence - professional, organizational, scientific and stakeholder evidence - we think that professional practitioners could better navigate the stormy waters of sustainable urban development.

How to combine different – and conflicting – forms of evidence

In this paper thus, we present an approach – evidence-based urban development – with the attempt to support all who daily struggle with the challenge of translating ideas, goals and visions to transform contemporary cities into more sustainable versions.

Evidence-based urban planning should be understood as a systematic way of working with co-production of knowledge, questioning the modernistic idea that scientific knowledge is "better" and more true than other kinds of knowledge, and at the same time avoiding the relativistic pitfall of "every opinion is as good as another". Some knowledge or perspectives are better, and stronger, the other. However, instead of proposing that professional planners should rely more on research, or that researcher must work closer to practice, or that citizens voices must be stronger, we will argue that research, professional experiences, organizations and stakeholders each produce different kinds of "true" evidences. The task is to combine various forms of evidence in a way where they support each other instead of coming into conflict. That done, we will have a better ground for making professional decisions with the aim of supporting a more sustainable urban development.

How to make better use of available knowledge

Evidence-basedd urban planning was formulated as a response to assignment from a real-estate company in Gothenburg, which involves both of us. The real-estate company own a large housing stock in two socio-economic vulnerable areas in Gothenburg, the second largest city in Sweden. The areas were dominated by large-scale rental houses. The unemployment rate was high in the area, and because of that, there were a high rate of low-income households. From time to time, gang-violence and other forms of crime affected both areas. On the other hand, the building blocks were surrounded of green spaces, parks, and recreation areas, which created nice environments, and most of the residents liked to live in the area. When we started the project, we faced a complex web of anecdotes about the means and ends of urban development, narratives and prejudice about certain areas in the city (the poor ones with many immigrants), socio-economic statistics, demands from the real-estate companies, worries from the tenants and other living in the neighbourhood and so forth. To cut a long story short: we faced just about everything that make sustainable urban planning a wicked problem.

To find a way forward, we needed a systematic approach to acknowledge the wickedness of the situation. We needed a systematic way to acknowledge all perspectives but avoid grading them as "better" or "weaker", and avid the dichotomy y between research versus practice-based knowledge. We also look for a better way to handle stakeholder participation, and make sure that opinions from those who lived and worked in the area were treaded as knowledge with high relevance for the planning process, instead of being reduced to opinions. We developed evidence-based planning as the answer to those challenges. Our inspiration was the concept of evidence-based management (Barends and Rousseau 2018), which is an approach to professional decision making, which also could be understood as a

process of making judgements for actions. Barends and Rousseau argued that this could be done in ways that produced better foundations for decisions, judgments and actions, if we worked more systematic with knowledge acquisition.

At first, practical (and often messy) issues must be translated into answerable questions. Then we need to systematic search for four kinds of evidence: scientific, professional, organizational and stakeholder evidence. By using the somehow complicated concept "evidence", we would like to emphasize that we are not talking about perspectives, or opinions but different kinds of knowledge that each However, all those different forms of evidence must be critically judge in relation trustworthiness and relevance for answering the questions. Different forms of evidence must also be weight and pulling together (Barends and Rousseau 2018). This could be understood a process where professionals make they apply a frame to a field of experience. This frame enables them to highlight certain features of the situation, including certain worries that as symptomatic and relevant for a specific situation/problem. At the same time, they must ignore, or select out, certain other features and worries of the situation, as noisy and irrelevant. In the end, professionals bind together the salient features of the situation, including the relevant worries, into a pattern which is coherent and graspable (Schön 1983).

The outcomes from these process – the evidences – must then be applied and incorporated into decisions-making processes, which always are tangled and embedded in organizational structures and practices, like job instructions, decision procedures, chain of commands, budgeting and routines for accounting and measuring results. All these create different forms of path-dependency, which influence the incorporations of evidence into decision-making processes (Barends and Rousseau 2018). Professional descension-making always take place within a certain community of practice, which affects how evidence could be applied (Lave and Wenger 1991; Wenger 1998). Among the members of a community of practice, there are always a variation of understating of the work and what to do. Different ways of understanding the same kind of work – like urban planning – exists side by side within organizations which also affects how individuals consider and use different forms of evidence (Sandberg 2000).

To conclude, we do not apprehend evidence as something that could be applied straightforward on professional practices to improve them. Evidence is the total sum of all knowledge, both focal as well as tacit, both individual as organizational, both professional as well as lay knowledge, that could help us make better outcomes of professional work. What will be regarded as evidence depends on how we translate practical issues into questions that could be answered. *How* we understand something also affects which questions we formulate, which means that we always risk being trapped into our own understandings. To overcome this, being one of the main goals with evidence-based practice, we must constantly evaluate the outcome of our decisions. Learning is the core of all evidence-based practice, but learning is dependent on a systematic approach to problems. Evidence- based planning offer such systematic approach. In the next part, we will illustrate how to work systematically through the four forms of evidence: organizational, professional, scientific and stakeholder.

Organizational evidence: how to make better use of organizational knowledge

Organizations produce lots of data and knowledge. Another source of data is from both the members in an organization as well as the users or clients. It could be both ´hard´ numbers and statistics, as well as ´soft´ data such perceptions of organizational norms and cultures. When we talk about organizational evidence, we will highlight that knowledge about urban development always are tied to one (or several) organizational context. We will use figure 1 as an illustration.

Figure 1: three levels of learning. After Crossan, Lane and White, 1990

Crossan, Lane and White (1990) claimed that an organization contains three different forms of learning

When we worked with organizational evidence with the real-estate company owning a great number of publicly-owned flats in the outskirts of Gothenburg city, we systematically tried to translate practical issues and problems – into answerable questions. One method was 'walkshops'. We walked around with representative from all organizations involved in the management of the area were the housing company's stock were situated. This visualised lots of interactions between the private company and the public partners. One was the management of public areas, like green space, bike lanes and parking lots. The ownership of public areas was divided between the municipality and the real- estate company, and consequently, the attendance differ. Those who lived in the area did not know where the borders were. They just saw how some public areas were manage in a different ways compare to others, which was a long standing source of complain form the tenants. As a first step in the developmental work, representatives from the real- estate company and the municipality walk around the area and developed a joint agreement about attendance.

At first, this seems like a very trivial thing to talk about. However, this walk and the discussion revealed lots of organizational evidence that explained why things were as they were.

Administrative borders were in fact knowledge borders between the private company and the municipality. The development of a joint agreement for maintenance of public spaces trigged a process of collaborative learning. If we return to figure 1 above, this collaborative learning takes place on group level, and manifests as shared understanding (about how to maintain public spaces in the same way) and development of shared norms (in this case, what was a preferred level of attendance of green space, bike lanes and so on). However, as the figure illustrates, if the learning only takes places on the second or first level, and not affect changes on the organizational level, developmental processes will probably slow down. The concept of organizational evidence will highlight that organizational structures could effectively block a learning process. If we return to figure 1, this example illustrates a process when learning take place on all three levels. The individual, who hade learns a certain way of managing the area, depend on which origination the belong to. Through the 'walkshops' they developed shared knowledge, and shared norms around how the area could be managing. This resulted in new routines for out-door management – learning on the organizational level.

The governance of knowledge production in intra-organizational collaboration is dependent on good network governance. At the same time, knowledge and information is one of the tools for carry out network governance. Intra-organizational collaboration that led to an increased capability among those organizations who collaborate are dependent on learning on all three levels (see figure 1). Nevertheless, power structures could hamper those learning processes. Here, we would like to differ between three forms of power. The first one: open power is the when an actor openly exert power. In this case, it could be if one of the parts decide not to listen, which obviously hamper processes of learning. Hidden power manifests through actors capability to exclude perspectives and ways of acting. Hidden power could be subtle ways of affect processes of naming and framing, with the aim to exclude or ignore aspects of a problem in favour to other. This is close to the concept of governmentality, which describes processes were the power is hidden in our own understanding of what is "normal". (Dean 2010).

In urban planning, those three forms of power manifests in several ways in processes of naming and framing, where some ways to understand a problem – and select solutions – become excluded. Sometimes by referring to regulations, without questioning the regulation. Other times through more subtle forms of governmentally, for example when we fail to questioned the modernistic idea that people who live in a city of course own a care and therefore must have access to parking lots. When we talk about organizational evidence, we will highlight – and at the same time put into question – the fact that organizational structures, norms, routines etc (illustrated in the third level in figure 1) always affects witch knowledge are relevant for a certain organization. If we strive for an urban development based on knowledge, we must take into consideration that organizational structures affect the use of knowledge. Of course, we could criticize this. However, ignoring it mean that we also ignore structures that limits the use of knowledge, to then become surprised when some knowledge become ignored by actors in an urban planning process.

Professional evidence: how to make better use of professional experience

In his studies of how professionals handle complex working tasks, Donald Schön argued that town planning as a profession differ from other professions in that respect that a planner

never could rely only on previous experiences but must always be prepared to handle unique challenges (Schön 1983). A town planer could, as best, develop some rules of thumbs, or a set-up of strategies that could be applied onto a new planning project. According to Schön, professional problem solving is also based on judgements, and therefore, problem settings could be judgements about problem situations that also contains prescriptions of desirable directions for action. Based on a broad range of case studies on how professionals work, Schön understood professional problem solving as a process of naming and framing.

In the introduction, we describe professional competence in urban planning as an ability to "tame" wicked problems to make them enough well-defined to become possible to solve. Hoppe's (2011) distinction between structured, moderately structured, and unstructured (or wicked) problems could help us to formulate more nuanced approaches to wicked problems (se figure 2)

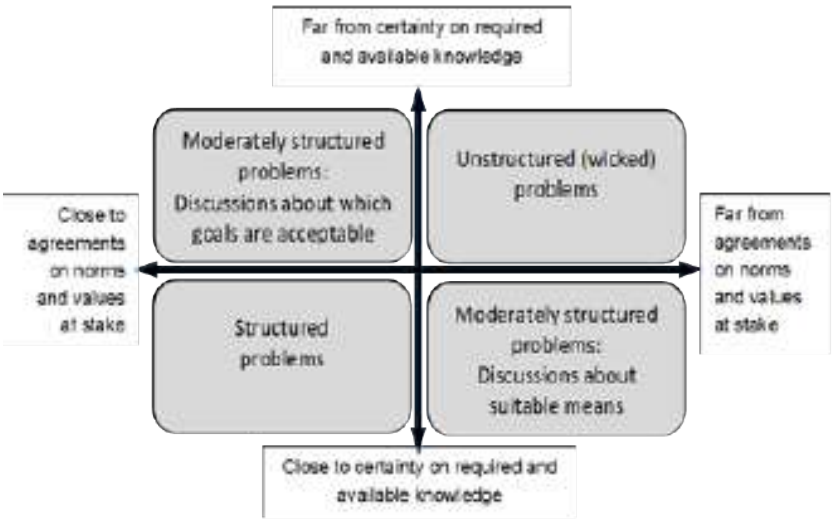

Figure 2 – Four types of problem structures (after Hoppe 2011, p. 73)

Often, the organizational every day practices dominates of what Argyris and Schön (1978) once labelled as single-loop learning. Ellström (2001) use the concept adaptive learning, for describing a situation where there is an agreement of the ends and means for a working task, how it should be done and what results should be archived. Transferred to urban planning, adaptive learning take places were a newcomer to a municipal planning department is told how a certain planning process should be done and which outcomes are preferred. The opposite, double-loop learning (Argyris & Schön 1978) or creative learning (Ellerström 2001) implies an open situation were means, ands and methods are questioned. Sustainable urban development needs (lot of) double loop and creative learning, not at least because of the fact that a waste majority of unsustainable urban development is the results of established practices, were professionals serves clients in the same way as they always do (Cooper and Symes 2009; Brown et al 2010; Polk 2015). Learning must therefore take palace on several levels within an organization to accomplish long-lasting changes.

If we connect the model in figure 2 with the distinction between the two basic forms of professional learning: single-loop/adaptive versus double-loop/developmental learning, following picture emerge if we have a structured problem, task, methods and results are given, according to Ellströms definitions. On the other hand, wicked problems could be the source for creative learning and innovations. If we return to Donald Schöns description of professional problem solving as a process of naming and framing, another picture emerges if innovations are dependent on the ability to develop new ways of naming and framing, then a first step may be to make structured problems more wicked by adding on new perspectives and uncertainties. If we have structured problems too hard, by ignoring to many aspects of a wicked problems, then we may hindrance the ability to innovate. Naming and framing – and professional problem-solving – could be understood as a movement between open and closing processes of naming and framing. Opening a problem means that we add on new perspectives – and may risk that a structured problem become less structured. By closing a process of naming and farming, we ignore one or several parts of a problem, which make less wicked and more structured, and then easier to solve in an efficient way.

Professionals seldom act in a such structured way, because practice are messy and unstructured. To a large extend, professionals relay on previous experience and rule-of-thumbs. Even if Schön argued that urban planners (at least in his case) found it harder to rely on established practices – planning, as every practice, become routine. With professional evidence, we include all this tacit, embodied, practice based, situated knowledge, we use, more or less deliberately, to carry out our work. If we return to figure 1, professional evidence grows at the first and second level, among individuals and groups. Professional evidence could come into conflict with organizational evidence, e.g. when personal and tacit knowledge are ignored by the organization. But, as both Argyris and Schön and Ellström illustrated with the concept of single-loop learning/adaptive learning – professional habits and tacit knowledge could be a hindrance for learning. Professional evidence – "what works" could be either an asset or a hindrance in processes of urban development. Professional evidence, as well as organizational evidence, sometimes need to be challenged.

In the work with the real-estate company, professional evidence always emerged in discussion about what could be done or not. Professional evidence are often presented as anecdotes or stories, told we the more and less open purpose to presents a truth. In other case, professional evidence was used as a way of challenge and problematize how things were done and organised. Frequently, professional evidence emerged more and less accidental in conversations. Because of its tacit character professional evidence are not regularly expressed and talked about, because of it is not considered as evidence. We tried to come around this through interview with key person both on managerial level as well among janitors, gardeners, service staff and others. Based on this, we gain a rich material with different perspectives on what out to be done. With other words; we gain a broad variety of ways of naming and framing how the real-estate company should carry out the work in this specific neighbourhood, based on previous professional experience on what works.

Scientific evidence: how to make better use of scientific knowledge

The main source of scientific evidence is literature, like textbooks, course materials, reports or articles published din academic journals. To reach scientific evidence, one must first access

and learn to understand and decode academic papers. Scientific texts have high demands of clarity. Scientific clarity is reached with specific uses of concepts and words and references to previous research and relevant theories. However, the demands of scientific clarity often result in texts that people outside of academia find hard to read, understand and apply. Scientific clarity often ends up in practical obscurities, which is why research often become hard to apply "straight off the bat".

One reason to this (which is often neglected) is that scientific problem-formulation is also a process of naming and framing. However, scientific ways of naming and framing problems regularly create boundaries between research-based knowledge versus other forms of knowledge (or in this case "evidence"). Knowledge boundaries between scientific evidence versus organizational and professional evidence is well-known. Transdisciplinary research (Brown et al 2010) or different forms of co-production (Polk 2015) often organize in Living Labs (Marvin et al 2018) are often seen as the best way to overcome this divide. However, those discussions also tend to forget (or ignore) that scientific evidence is the product of day-to-day work among practitioners – named "researchers" – who work in specific organizational and professional contexts – named "university departments"," research centres", and so on. (Latour & Woolgar 1986). Doing research is a professional practice among other practices, like doing urban planning.

Another reason that naming and framing of scientific problems differs processes of naming is because scientist must consider previous research, established concepts and theories and last, but not least, on-going debates within a certain research fields, when they formulate a problem. Besides being a member of a local community of practice, researchers also belongs to epistemic communities, which unites by shared ontological, methodological and epistemological perspectives on a phenomena or question, like conditions for sustainable urban development. Because of the boundaries between scientific versus practice based knowledge, which steam from different conditions of how to name and frame problems, just simply apply scientific knowledge may not help professional planners in their daily practice. For research knowledge to be spread and have an impact, researchers find allies outside the university in the form of knowledge brokers, who support the translations of scientific knowledge into professional practice (Callon 1984). However, research knowledge must be translated to find ways to overcome boundaries between scientific evidence versus professional evidence.

Despite those borders, several studies have shown that professionals from other fields often use scientific evidence as a way of making better professional decisions (Weiss 1980; Lundgren and Sundqvist 2000; Rickinson 2005). However, they use scientific evidence in an ad-hoc manner, based on current needs and situations. In general, scientific evidence seem to be used in four ways (Nutley et al. 2007), which is illustrated in figure 3.

Figure 3 – Four ways of using scientific evidence (after Nutley et al, 2007 p. 51)

If we return to figure 2 above, we could assume that scientific evidence is used in a more instrumental way if a professional practitioner faces a structured problem. An instrumental use may probably occur, as a result of a single-loop/adaptive learning situation, were the problem is well named and framed. On the other hand, conceptual use of scientific knowledge could be a way of turning a well-structured problem into a more wicked one, which in tur could open for double-loop/creative learning.

In the work with the real-estate company, we begin using scientific knowledge in a conceptual way. There is a broad and varied range of literature about socio economic deprived neighbourhood, which we could draw some conclusions from, together with contemporary research about urban planning. However, we struggled to find research that were relevant for this specific area, so we hade to design are own studies, and used our own capability as researcher to develop scientific evidence relevant for this specific developmental process. In this case we used UN Habitats five principles for sustainable neighbourhood planning (UN Habitat 2014) when we design our own g pilot-studies and validating the results. Usually, it is not common that people with a PhD-degree work as planners. If that is the case, there is often not time or resources for them to conduct their own research in relation to a planning process. The common situation is that professionals must make their own judgement about the relevance and truthfulness of scientific evidence m in relation to their own practice.

Studies of how professionals used scientific facts (Weiss 1980; Lundgren and Sundqvist 2000; Rickinson 2005) showed that professionals prefer scientific evidence that are aligned with how they already name and frame different tasks. In other words, scientific evidence that support professional and organizational evidence seem to have a better chance of being used and referred to. On the opposite, scientific evidence that come into conflict with established practices – i.e. with professional evidence – are seldom used. This point to the main argument for using scientific evidence, i.e as a way of challenging both professional and organizational knowledge. However, as Callon (1984) stated, research need to find its allies to be spread and used. Therefore, scientific evidence much finds ways of connecting with professional as well as organizational evidence, in order to become useful. Here, it is important to be aware of why we bring in scientific evidence in a developmental process. Are we striving for conceptual or instrumental use of scientific evidence? Are we looking for supporting the solution of a well-defined (tamed) problem, or would we like to open for new perspectives and make things more complicated with the intention to pay the way for more creative and innovative learning?

Above, we described evidence-based urban planning could be understood as a systematic way of “opening” problems, by adding-on evidences with the aim to visualize the complexity

of a planning problem. If we return to figure 2, scientific fact could be used as a way of challenging knowledge, and make a structured problem more wicked, and at the same time open for creative and double-loop learning. But we also argue that planning problem must be "closed", through processes of naming and framing. One way is actively ignoring aspects of wicked problems in order of tame them and make them possible to handle in professional situation, in relations to clients (Cooper and Symes 2009). This process of opening and closing could be moments back and forth along the arrow in figure 3. Structured problems could be opened (and become more wicked) using scientific facts in a more conceptual way. Using scientific problems in a conceptual way also opens for processes of creative learning. In reverse, if we want to use scientific problems in an instrumental way, we need a structured and well-defined problem. Those kinds of problems emerge from a process of naming and framing, which ignores aspects as noisy and irrelevant. According to Barends and Rousseau (2018), this is how practical issues are translated into answerable questions. Scientific evidence could be used as a tool for those translations, by highlighting what is relevant. In the work with the real-estate company, we used the UN Habitats (2014) five principles for neighbourhood planning for highlighting what the company should focus on, if they want to develop their hosing stock into more sustainable ones. We also used the five principles as guides wen we construct our own studies for gathering scientific evidence that could support the real-estate companies own decision making process. We also used the five principles as challenge established ideas among employees from the company about neighbourhood development. This example illustrates that scientific evidence could be used both in a conceptual as well as instrumental ways.

Stakeholder evidence: how to make better use of the user's perspective

According to Barends and Rousseau (2018) stakeholders are different actors who, in the context of this chapter and book, are influenced or affected by a change in an urban environment of some kind. Stakeholder evidence is about understanding what is perceived as important from an everyday-life perspective, for inhabitants, associations or companies: what values are there, how is a place perceived, what are the local networks that make society work?

Previously, we discussed how urban organization has shifted *from government to governance*, i.e. from clear hierarchical governance based on well-defined political goals and with outlined and predictable roles to a more network-based and market-driven way of producing or developing city districts. The Danish organizational and public sector researchers Boch Waldorff, Söderkvist Kristensen & Vind Ebbesen (2014) argues that it is not *only* so that society is governed by the scratch of new public management, where everything is to be procured at the lowest price and where citizens are made into customers who will "trade" welfare services (see also Tahvilzadeh 2015). More traditional and bureaucratic governance models are in play at the same time and, in line with the governance ideals, another kind of logic has been merged into the game - "new public governance". By the occurrence of the model presented in this chapter, we argue that urban dialogues are levelled with other necessary knowledges for urban development processes.

Through the dialogue we can question and reflect on basic assumptions for *how it is* in the world, in society, a city district. In or case, there are many ready-made ideas and descriptions,

"black poetry" if you will (Ristilammi 1994). Beyond the urban anecdotes: what is covered in the news about suburbia is not exactly the complete picture. A good dialogue will instead produce stakeholder evidence, stories about the everyday life lived in a place. A dialogue emerges in several steps. If we use a metaphor, you can talk about the "evolution" of dialogue, in which the first step is about creating a "melting pot", in which we try to make each other aware of the different perspectives and approaches we are sporting. In the next step, we must challenge each other's performances. Here, we need both to defend and question our own and others' views. It goes without saying that this is a process that creates uncertainty and instability. Being challenged and questionable can often be perceived as unpleasant. Here different types of evidence are placed against each other. Here, one must strive for both dare to stand for their own experience and knowledge while being open to questioning them. It's no easy process. Such dialogue requires a safe environment and it takes time. It also requires endurance of those who participate. Here, a "broker" can fill an important function by being the one who keeps the process together (Gustafsson, Norström and Fioretos 2015).

In order to move forward, the group must begin to search for a new common understanding. Since a dialogue in itself is a meeting of different competencies regarding urban life – the everyday-life perspective, the professional perspective(s), various political perspectives etc. – a contextual framework is needed. A linguistical common ground, where different forms of metaphors can fill an important function. This allows you to reach the final stage of the process: a new common performance. Group members share a common partial silent understanding. An example could be a project group that brings together different stakeholders and where time is spent on the joint dialogue. If the dialogue succeeds in getting through all the steps and achieving a new common understanding, you have also developed a new common knowledge.

The common knowledge has emerged by helping the different participants translate their own experiences and professional skills in such a way that others understand it. In the model we've discussed and argued for in this chapter, stakeholder evidence is *equally important* as any of the other evidences. Urban dialogues can be discussed from several different standpoints, methodological and political, but for us it is inevitable. To work evidence-based with urban development is to *always* do a dialogue, regardless of scope and style. Without the knowledge from local inhabitants, business and associations, you simply won't get the full knowledge circle.

In the work with the real-estate company, we conducted two workshops, one in each district, as open houses where inhabitants and others could drop by to answer a semi-structured questionnaire alongside the assignment to pinpoint the spatial experiences of the districts in question. Around 90 participants attended per workshop and the key messages concerned housing – apartment size and standard as well as form of tenure – and lack of general services in and maintenance for the public places.

Conclusions and ways forward

So, let us return to the workshop. Would the scene be different if the participants had worked more evidence-based? In one way no, because there would still be conflicts and tensions

between how the participants would talk and approached the issue for the workshop: how to build sustainable cities. However, if the participants had worked more evidence-based, that had open acknowledge the different perspectives, and worked them through. At first, they should organise at least four workshops, one around each evidence, were they should use different forms of evidence for opening and closing questions.

The four forms of evidence should be treated as outcomes of knowledge from four different kinds of practices: professional practices, research as a practice, organizational practices, and living experience as a practice, here referred to as stakeholder evidence. Those outcomes would be used to translating practical issues and problems into answerable questions. Of course, depending on which evidence we use, the questions would be different as well as the proposed answers. Naming and framing a specific urban developmental process from a stakeholder perspective will result in different questions compare to naming and framing the same process from a professional perspective. Of course, there will be conflicts and tensions between those different questions, and our approach of evidence urban planning will not solve the tensions. However, by acknowledge them, we think that we could make better decisions in urban planning, were we are aware of what we win and maybe lose.

Urban development is a wicked problem. Adding on dimensions of sustainability make it even more wicked. Urban planners are squished between the wickedness of sustainable urban planning and demands from construction companies, politicians, citizens and so on to plan and construct cities in a way that are economic viable and results in neighbourhoods that are both social and ecological sustainable. That is a very complex professional task, least to say. However, we seldom talk and acknowledge its complexity as something we had to live with. In the contemporary urban debate, there is a tendency to relay on one form of evidence, like scientific evidence that refer to dominating discourses as a way of explaining failures in urban development (Tasan-Kok and Beaten 2011) and see the development of new planning discourses as necessary (Rydin 2013). Transdisciplinary approaches to urban development, (Harris et al 2010), Co-production (Polk 2015) and different forms of experimental urban planning and experimental governance (Marvin et al 2018) are proposed as a way forward. At the same time, results from urban research may not help those professionals who find themselves trapped between conflicting demands (Cooper and Symes 2009).

We will see evidence-based urban planning first and foremost as way of organising a systematic conversation which acknowledge the fact that sustainable urban planning must rely on different and conflicting form of knowledge. Instead of being content with that “it is complex”, we would like to offer a systematic way of navigating over the stormy water of sustainable urban development.

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