Puzzling and powering in the city: two case studies on collaborative research

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Abstract

Cities are turning to urban living labs and research consortia to co-create knowledge that can better enable them to address pervasive policy problems. Collaborations within such practices help researchers, officials and local stakeholders find new ways of dealing with urban issues and developing new relations with one another. Interestingly, success in the latter is often closely related to accomplishing the former. Besides of analysing this phenomenon in terms of learning—as is common—this paper also delves into the power dynamics involved in collaborative knowledge development. This perspective contributes to a better understanding of how puzzling and powering are simultaneously involved in making research relevant to policy-making. By presenting two collaborative research consortia in the Netherlands, we demonstrate how developing knowledge involves both re-structuring problems and the urban practices involved in governing such problems. Collaborative research practices are predominantly concerned with learning as long as re-structuring the problem leads to research findings that are meaningful to all actors. Power becomes manifest when one actor insists on restructuring (often reproducing) problems in a manner judged unacceptable by others. Analysis of two case studies will show how the familiar three faces of power express themselves in collaborative knowledge development. It is recommended that these new practices also require methods for better orchestrating power besides a methodology for successful structuring learning through collaborative research practices.

1. Introduction

Halfway through their collaborative research project with municipal officials, the economic researchers host a workshop to explain the inner workings of a cost-benefit analysis (CBA). The officials listen carefully, mainly because the national government has recently prescribed CBA to evaluate the merits of local area development proposals. In response to the economists’ exposé, the officials argue that the CBA fails to consider the local political, natural and technical particularities and, consequently, does not yield correct results. In response, the researcher presents alternative solutions to demonstrate the soundness of the generic CBA. With the aim of demonstrating that the calculation is insufficiently sensitive to local circumstances, the local policy-makers describe, once again, the relevant local peculiarities. After some more back-and-forth arguments, the economists flatly disqualify the proposal made by the officials to better account for local circumstances and values in a CBA. As the economists explain afterwards, their decision is based on the fact that the suggestion is informed by particular local interests. To economists, such subjectivities are an invalid reason for tinkering with the scientific formulae underlying the CBA.

This example is an excerpt from the CBA case study that is described in further detail in this paper. It demonstrates how both researchers and officials introduce certain criteria by which they evaluate a CBA. Such criteria are rooted in their own municipal and academic ‘home-practices’. As we take a closer look, we see that the deadlock they are in is actually about how to collaboratively decide on whether a CBA’s inner workings should be evaluated in terms of scientific or local values. Exactly how this may play out will be described in this paper by analysing the puzzling and the powering going on in these two cases. Both are collaborative research projects funded by the Nicis Knowledge for Strong Cities (KSC)
programme (see Table 1). The first case concerns a project on ‘Lifestyle Allocation’ and the second on ‘Cost-Benefit Analysis’ in urban planning. By analysing these cases, I will demonstrate that establishing authoritative knowledge on urban problems through a collaborative research project is as much about doing research as it is about governance. Thus, it should be designed to accommodate and orchestrate both.

**Table 1 KSC - Funding Transdisciplinary Urban Research**

| KSC - Funding Transdisciplinary Urban Research |
|-----------------------------------------------|
| The KSC programme - Hosting over forty consortia wherein more than 400 academic researchers, municipal officials and urban professionals collaborating in transdisciplinary research projects provides a rich and interesting field for such a study (Nicis, 2006). In dividing the €40 million funding budget, Nicis demanded that these consortia be assembled in partnerships between universities and municipalities, each expected to contribute in equal measure in terms of either money or personnel. The creation of a research consortium was meant to create a horizontal working relationship between municipal officials and researchers, instead of the usual contract relationship. To further stimulate equality, Nicis requested that instead of a detailed research proposal outlining the planned scientific project, fieldwork and deliverables, the consortia must frequently meet and deliberate their collaboration before and during the research project. Thus, instead of an ex-ante, an ongoing, evolving evaluation of quality is established, the responsibility for which is partly transferred from the funder to the consortium partners. Through this measure, officials and researchers have an increased level of freedom in exploring how to co-produce knowledge that is both relevant and rigorous. To this end, Nicis required the consortium partners to commit to a shared responsibility for operationalising, interpreting and disseminating the research. |

Collaborative knowledge development has significantly gained importance over the last ten years, and research consortia and urban living labs have become popular venues for achieving this goal (Evans et al., 2016; Dekker, Contreras & Meijer, 2019). Cities are turning to these knowledge practices expecting that the latter will enable them to better address complex, real-world problems, such as poverty, inequality or discrimination (Bulkeley et al., 2018; Voytenko et al., 2016; Puerari et al., 2018; Steen & Van Bueren, 2017). Within these collaborative knowledge practices, researchers and officials engage in structuring problems by collaboratively developing knowledge and by deliberating on how a city can best deal with certain issues (Hisschemöller & Hoppe, 1995; Hoppe, 2011). Here, learning is generally considered the best way forward, and rationality can reign as long as exploring and restructuring a research problem keeps the collaboration moving as planned and agreed upon. However, power comes to the surface when progress is blocked, when experiments prove unsuccessful, or if the research findings are at odds with established interests. In these situations, we see the officials and researchers, who were brought together for cooperative research between equals, do more than develop knowledge and, consequently, not always as
equals. Thus, there is clearly more going on in these practices than researchers and officials who aim to better understand or explain urban problems. We see actors involved in the collaborative knowledge practices co-producing knowledge for achieving (designing, legitimising, instigating and so on) societal change through policy making (Duiveman, 2020; Cordner, 2015).

Using two case studies, I will describe the process by which officials structure problems whilst moving back and forth between academic and policy-making practices. Through this description, we will find that officials, who initially seem to participate in a knowledge practice because it is instrumental in achieving better governance, can come to realise along the way that such practice can be instrumental in governing the policy-making process. In other words, the knowledge that is developed to be instrumental to policy-making can be used to govern how policies are made. This is a phenomenon that is key to a specific approach to coordinating public tasks, namely ‘knowledge governance’ (KG) (Gerritsen, Stuiver, & Termeer, 2013; Van Buuren & Eshuis, 2010).

To capture collaborative research as both research and governance, the work done by the officials and researchers in our case studies is described as both puzzling and powering. This approach allows us to address the central question: **How do actors working in collaborative research practices enable or constrain the actions of others in dealing with a real-world problem?** The objective is to obtain a more comprehensive understanding of the nature of and mutual relations between puzzling and powering in collaborative knowledge practices.

### 2. Puzzling And Powering To Achieve Translation

The role of power in collaborative research has of course been studied before. For instance, to highlight and understand innovation (Hoffman 2013; Hoffman and Loeber 2016) or the lack thereof (Majoer et. al 2017). However, due to ‘analytical limitations’ (Biegelbauer, 2016: 142), descriptions of collaborative research practices commonly present them as either guided by rationality or by power (Hufen & Koppejan, 2014). Moreover, power is often regarded as a nuisance—something to be either contained (Turnhout et al., 2020; Carrozza, 2015) or abolished (Wesselink & Hoppe, 2010). More commonly, power is simply left out of the picture, as descriptions of collaborative research tend to focus on knowledge development by analysing how stakeholders broker, bridge, transform or even transcend the boundaries between academic and governmental practices (Meyer, 2010; Horst & Michael, 2011; Stone, 2012; Turnhout et al., 2013; Meyer & Kearns, 2013; Klein, 2015; MacKillop, Quarmby, & Downe, 2020).

Instead of describing collaborative research projects as sites where knowledge is being transferred, this paper describes policy-makers and researchers collaboratively puzzling and powering, with the goal of finding new ways forward to establish translations that, in turn, would help them better address complex, real-world problems. These italicised concepts are clarified in the next section and will be subsequently applied to two cases.

**Puzzling**
Describing interactions between officials and researchers as a *structuring problem* between *home-practices* might seem needlessly vague and abstract. Thus, this section sets out to clarify these concepts and argue their usefulness for capturing the puzzling involved in collaborative research.

*Structuring Problems*

A collaborative practice, such as a research consortium, hosts people from different institutions, each with a specific approach to resolving an urban issue (Hisschemöller & Hoppe, 1995; Hoppe, 2011). Consequently, structuring the problem *properly* is a prerequisite to ensure collaboration. This entails finding an approach that incorporates the perspectives involved, captures the relevant characteristics of the real-world problem and connects with the policy-making routines in the field (Hopp, 2011). This is a normative endeavour requiring political judgement, even though this is not always recognised as such. On the one hand, officials prefer structuring the problem in line with the instruments already at their disposal, thereby applying laws and budgets they are acquainted with. On the other hand, researchers are known to prefer well-established theories and methods that help frame a problem in accordance with papers published by their peers, thus emphasising some aspects of an issue whilst neglecting others (i.e. -author-, 2020a: pp–pp). Understanding a problem as a discrepancy between how each actor represents the actual (or anticipated) situation, on the one hand, and the desired situation on the other, provides us with an empirical focus when describing the interactions amongst actors embedded in different institutions.

*Embedded Practices*

Instead of taking for granted the characteristics of the institutional backgrounds and communities in which researchers and officials are embedded, given and constant, this study considers these actors as being engaged in shared practices (Hamilton, 2011). Similar to the idea of Shove, Pantzer and Watson (2012), practices are seen in the current work as recurring combinations of the three elements, namely, ‘material’, ‘competence’ and ‘meaning’. Simply by doing their work or by writing, talking or reading, practitioners (re-)make the relations amongst the three elements and thus perform their everyday practices. By writing a memo, for example, officials relate specific materials (computing and word processing technology) with competences (abilities to punch the keyboard, apply grammar and regularly inform colleagues) and meanings (sense of civil service or the status of covering a prominent dossier). When the three elements that make up a practice (‘material’, ‘competence’ and ‘meaning’) are no longer performed in the same manner, the practice is changed. Evidently, as the relations amongst the elements are broken or (re-)made, practices can change or even disappear.

When applied to the cases, we see the participants in the KSC-consortia participating in a collaborative knowledge practice, because they are part of a certain governmental or academic practice. The latter I will refer to as their ‘home-practices.’ It is within these multiple home-practices in which the collaborative research project is embedded. They include both the organisations by which people are employed and the professional, social or ethnic practices they are part of.
In our cases, we will look for researchers’ and policy-makers’ (emerging) awareness of the power that can be performed by participating in a new, collaborative research practice that is embedded in both governmental and academic home-practices. To determine how these actors enable or constrain the governance of urban problems by moving within and between multiple practices, we turn to Haugaard’s (2012) revised view on Lukes’ (1974) familiar faces of power. The appeal of this approach is that it does not conflate power with domination: whilst he follows Lukes regarding the nature of the three faces, he departs from the latter’s idea by explicitly recognising that either may be both constraining and enabling. This allows us to study the intertwining of powering and puzzling with descriptive precision whilst deferring normative judgment on appropriateness.

1st face of power

‘A making B do what A intends, not B’ is the first face of power (Dahl, 1954). Haugaard (2012: 36) states that ‘every meaningful interaction has two aspects that have to be distinguished: the goal-oriented aspect and the structural aspect. Sometimes these are identical but usually they are not’. When B is contributing to A instead of B realising its own direct interests, it does not always mean that A dominates B. For example, when a housing corporation accepts a negative evaluation report on the effects of its signature policy, it does not necessarily do so out of submission. Rather, the act of conceding contributes to reproducing a (democratic and scientific) practice that, in a future instance, would provide policy-makers with an established routine to have policies evaluated soundly and independently.

2nd face of power

The second face of power consists of A ensuring that the wants of B are not brought to the table, thus organising some issues out of politics whilst organising others (Bachrach & Baratz, 1962). As with the first face of power, Haugaard (2012) notes that the second (as well as the third) is usually associated with relations of domination. Yet, agenda setting is part and parcel of all politics. As such, it is just as constitutive of domination as it is of social equality. For example, John Rawls’ ‘veil of ignorance’, a fundamental part of 20th century thinking on social justice, is actually about organising things out. Consequently, Haugard (2012) argues that agenda setting is only reprehensible when A organises certain issues out to achieve the systemic disadvantage of B.

3rd face of power

The third face of power concerns relations between ‘the tacit knowledge through which actors reproduce structure’ and ‘the reproduction of relations of domination’ (Haugaard, 2012; Lukes, 1974). In other words, the recreation of relations of power and interdependency are shaped by the reproduction of home-practices as well as the knowledge and values embedded in them. Reversing relations of domination is possible by making explicit the tacit knowledge underlying the practices and structure. Applied to the
case studies, this would entail providing an alternative problem structure that would contribute to scrutinising and transforming relations within and between the established practices.

**Translation**

Officials and researchers joining a collaborative research project partake in a new practice to make sense of a contested urban issue in a manner that is meaningful in terms of the practices involved (Grin & Van de Graaf, 1996). To capture instances wherein such a goal is achieved, I will use ‘translation’ as a subtle and productive concept (Stone, 2012)—one that refers to the process by which an issue or problem is redefined to make others think that it is in their interest to start approaching it in the same way (Callon, 1986; Latour, 1987).

Translations are both a displacement and a linguistic turn: by incorporating or excluding specific values or knowledge when redefining—or rather restructuring a problem—its use for others can be increased or decreased. As I have indicated elsewhere:

As perspectives converge or diverge, the relations between actors change, increasing or decreasing the possibility to share insights, interests and resources. Tracing actors as they deliberate and decide on (re-)structuring a problem in terms of Translations shows how structuring problems is related to making interests con- or diverge and re-assembling the relations between the practices the participating actors are embedded in. (author, 2020a:3)

[1] Beyond the faces described here, there is also a fourth face of power (shaping subjectivities), which is commonly attributed to Foucault (cf. Gaventa & Cornwall, 2001; Haugaard, 2012). However, the application of this perspective is beyond the scope of this article. For elaborating the ways in which structuring problems and practices is connected to enabling and constraining the governance of urban issues, the first three faces of power suffice.

3. Research Design

The case studies in this paper have both been described more extensively in separate papers (author, 2020a; author 2020b). Both are part of an extensive study into the interactions between research and governance within the KSC programme (see Table 1). The researcher had unrestricted access to the meetings and the documents relating to the design and the execution of the programme between 2011 and 2014. The overall study comprises four case studies and a survey.

The two cases are based on extensive data gathering, which involved desk research, observation of consortium meetings, interviews and a survey over the period 2012–2014. The desk research covered
nearly 200 documents, including the agendas, minutes, reports, articles and proposals produced by the two consortia. Additionally, external documents were included to better trace the actors as they drew on different practices to structure the problems at hand. I also attended monthly programme meetings by Nicis, along with the consortium meetings (three of the Lifestyle consortium and one of the CBA consortium). I conducted multiple interviews with each of the central actors per consortium: at least three of the municipal officials per consortium and with the executing researchers and, in the CBA case, the Ph.D. students and their supervisors. Within the Nicis organisation, multiple interviews were conducted with the programme managers and the programme director between 2011 and 2014.

After collecting the data, two rounds of analysis were performed. The first consisted of the development of the sensitising concepts (Bowen, 2006) derived from the literature on power, structuring problems and translations. In the second round, the case studies went through recursive rounds of written and verbal ‘member checking’ of the ‘integrity’ of the cases (Blaikie, 2010: 90), in which I discussed my findings extensively with those involved in order to validate and verify them.

4. Case Studies

Case 1: Lifestyle allocation

When Dutch housing corporations were privatised in the 1990s, they retained an extensive public task: to provide housing to people with a lower income. To this end, they were tasked to plan, develop and rent out housing projects; allocate houses to renters; manage physical maintenance; and care for social liveability. This last task took the corporations well beyond their complexes and into the neighbourhoods they resided in. As deteriorating inner-city neighbourhoods were becoming a contested political issue at that time, both national and local governments called upon corporations to invest more in the liveability of the neighbourhoods in which their housing projects and complexes were situated. As they struggled to find a balance between running a profitable private business and fulfilling public tasks, the corporations attempted to determine the contribution they should make to help resolve these liveability issues.

Around the time the Nicis programme took off, many corporations were using lifestyle assessments to distribute houses. This policy is based on the assumption that neighbours having matching, or at least non-conflicting socio-cultural characteristics, are more likely to be satisfied with one another and have similar or matching wants with regard to their living environments. Allocating houses through similarities in lifestyle can thus be an effective and low-cost policy tool for assembling renters with a more positive appreciation of the liveability of their respective environments. However, academic researchers specialising in social housing issues and policies were sceptical of the lifestyle approach, which they considered to be an ill-defined, insufficiently reliable or valid and superfluous policy tool (Heijs et al., 2005; 2009). Moreover, various local and national policy-makers, as well as those within the government and corporations, believed that the segmentation of people based on socio-cultural characteristics can be a basis for discrimination; thus, they were critical of or opposed to its application.
Against this backdrop, a consortium was established to produce new knowledge on these matters, extending a long-term collaboration of academically informed policy research with a collective of corporations. Researchers from UNI U proposed to organise the puzzling by conducting empirical research on the extent to which local lifestyle assignment of social housing may be considered effective as a policy instrument. The question is of academic interest, because so far, only literature studies have been done on this topic. Corporations were willing to participate; some doing so out of curiosity and some aiming to have an established institute evaluate the value of their policy instruments. Municipalities, a prerequisite partner in KSC research consortia, also participated, as they found that aldermen as well as civil servants were split over the normative issue of whether lifestyle allocation constitutes a form of discrimination.

Thus, a research consortium was established, which seemed to be solely focused on collaboratively puzzling but, in effect, also involved powering (summarised in Table 2). Within the emerging consortium, the value dissent was organised by proposing research that only measured which lifestyle allocation contributed to realising the policy goals it served per locality. By agreeing to conduct research to answer the given problem (‘Does it work as intended?’), the actors (re-)structured both the problem and the relations between the practices involved. Thus, instead of the value dissent that divides actors, we now see an emphasis on scientific methods in order to ‘get the facts straight’. This is an endeavour that should be of interest to all with a stake in the issue, independent of one’s normative preferences.

It is through the combination of organising puzzling (restructuring a problem) and powering (enrolling stakeholders to pool resources) that a successful translation is performed: as the problem structure is reshaped, this led to a restructuring of the relations within and between the practices involved in a way that the actors perceive it in their best interest to cooperate on it. Instead of a contested issue, they were able to establish a researchable problem that is relevant to corporations and governments and can be analysed without directly raking up the normative issue. On the premise that lifestyle was only researched in terms of their policy’s goals, two corporations were willing to open up their housing complexes to a survey.

In 2011, as the consortium discussed the first research results, a discussion ensued on how to interpret and deal with the findings. Corporation Soho in Rivercity systematically used lifestyle allocation, yet in surveying the tenants’ living satisfaction, the researchers found that the actual distribution of lifestyles differed from its administration. In particular, the survey pointed out that the ‘placement’ of tenants with a specific lifestyle in a housing complex did not lead to a corresponding increase of people with that lifestyle in that complex. The researchers thus concluded that ‘we are necessitated to put question marks on the stability of lifestyle as allocation instrument, a point that corresponds with previous comments in scientific papers on this concept’. [italicised text added by author]

When the consortium partners discussed these draft findings, Soho’s spokesperson objected to the conclusion that the instrument was not as stable as assumed and that this would ‘reduce its usefulness’. They argued that the research findings only clarified that any decreases in nuisance or growth in
satisfaction found by the researchers cannot be related to the actual segmentation of lifestyles. A surprising outcome indeed, but one that was, according to the corporations’ spokesperson, irrelevant to policy-making practice: even if tenants’ lifestyles change over time, the instrument could still lead to higher residential satisfaction. The argument was that, as long as the instrument delivers increased liveability, the stability of the lifestyle concept is a concern that was only relevant to academic audiences.

Here, we can see that the problem structure achieved by the consortium partners at the outset of the research dissembles as soon as findings allow for divergent interpretations. The two positions taken, one drawing on scientific practices (results are unaccountable) and the other on policymaking practice (as long as it works), appear to be incompatible. The officials and the researchers cannot agree on a congruent restructuring of the problem, because deciding in favour of either one will have negative consequences for the other.

It was through extensive puzzling (or the act of meticulously collecting and analysing data) that the researchers arrived at their conclusions. However, when they presented these findings and were confronted with ‘backtalk’ (Schön, 1983), we see powering come into play: arguments for deciding on one interpretation or another were based on their expected consequences in addressing the problem in their home-practices.

The researchers disputed the suggested interpretation of relevance and stated that the distribution of lifestyle amongst tenants was too diffuse to provide any explanation. Alternatively, the researchers suggested including the recent renovation and the intensification of maintenance as ‘well-known, evidence-based’ explanations for any increase in satisfaction that may be found. This was a misguided and irrelevant comparison according to Soho’s spokesperson: misguided as it answered a question standing apart from the research question agreed upon, and irrelevant as maintaining worn down housing complexes always required this usual set of interventions. The spokespersons stated that in ‘real life’ policy-making practices, the choice would be between complete demolition of a complex or a set of interventions to which lifestyle might, or might not, contribute. Thus, as this was a question that was not researched, it cannot be answered with the data collected.

The municipal partners in the consortium were called upon to take a stance in this debate. These officials initially considered the discussions as a technical matter and refrained from interfering until the researchers suggested comparing the cost and effect of lifestyle allocation versus the other ‘well-known, evidence-based’ interventions. Aldermen, the officials now argued, disliked high costs, so they preferred not to apply the costly ‘evidence-based’ interventions. Instead, they were in favour of the researchers, including this comparison. By drawing on presumed political preferences in their home-practices, the officials now supported the researchers’ suggestion to include a comparison between the expensive evidence-based measures and lifestyle allocation and, as such, between variables that had no relevance for ‘real-world’ policy-making, according to the corporation’s spokesperson. Hence, as the municipal officials supported the researchers in restructuring the problem in a way that fits municipal deliberation, the corporation spokesperson seemed to have been caught at a disadvantage.
The ensuing argument illuminates how home-practices are drawn upon to decide on how to restructure a problem. Soho now argues that the research is awed due to selective non-response; its publication would be harmful as journalists will transmit the question marks on stability raised by the researchers as ‘lifestyle does not work’. Finally, the corporation threatened to pull out support for the research and forbid its publication. The researchers gave their rebuttal, referring to their academic freedom, the absence of a principal–client relationship and a moral and scientific obligation to publish the findings. By drawing on the academic, governance and societal practices they were embedded in, and by finding support for their proposals with the municipal officials, the scientists were able to translate the problem to fit in with their practice.

This consortium clearly struggled to restructure the problem and arrive at a translation that allowed them to, once more, move forward. To do so, however, they needed to realign insights and interests through puzzling, arguing which facts and values to involve. At the same time, in substantiating their arguments, both officials and researchers stressed the relations with as well as those within and between the home-practices they were embedded in. It is here that we can see powering come to the fore.

As for Haugaard (2012), Soho’s spokesperson threatened to rupture the structure relating their practices to realise the corporations’ own direct goals (first face of power). In other words, if the university wanted to keep the business of one of the nations’ biggest housing corporations, it should refrain from publishing these results. The university can oppose them by pointing out that this, in fact, was not an instance wherein the client–contractor structure evoked by the corporation applies. Indeed, the researchers pointed out other traits of the structure (good policy-making required objective science) within and between their practices. Drawing on the latter instead of the former structure, the researchers were enabled, instead of constrained, in publishing their findings on the problem structure, as intended.

Clearly, the Soho spokesperson aimed to constrain a translation that did not contribute to his direct interests. The initial structuring of the problem by the consortium was intended to constrain the freedom of the aldermen to state moral objections and, as such, attempt their domination. The scientific structuration, however, became advantageous to those it intended to dominate. The organising out of the normative issues (second face of power, ‘non-decision power’) enabled the researchers to perform an empirical study on the effects of lifestyle allocation. The structure of knowledge practices in this policy field enabled the research, which eventually found that lifestyle allocation did not work as expected. Thus, organising out the normative issue did not contribute to the domination of the aldermen, but increased the body of systematically collected knowledge, thereby informing and enabling better judgment and action on a public issue. Here, we see that puzzling and powering are not juxtaposed but intertwined: both are required to enable a successful translation from knowledge practice to academic and governmental home-practices.

In the final version of the report, the contested paragraph questioning the stability of lifestyles was published. By then, however, the research was no longer relevant to urban governance: a new legislature
was passed prohibiting the allocation of houses based on lifestyle. The central government feared the instrument could lead to discrimination.

In the end, the normative issue that had been organised out of the consortium in order to be relevant undercut its usefulness. By having a trusted knowledge provider in the field structure out ‘the normative issue’, the participants expected to limit the possibilities for (moral) resistance in the (home) practices involved and to make lifestyle-based home allocation part of ‘the natural order of things’ (third face of power). Their failure to exercise this power has several sources. First of all, it is due to the act of organising out the moral objections from some corporations, which later resurfaced within the central government. The second source of failure is the instrument’s ‘unwillingness’ to perform as it is supposed to in terms of the scientific approach common in the field. Thirdly, the failure can be attributed to the interactions within the knowledge practice, which created conditions that enabled awareness and systemised inquiry of divergent kinds of knowledge, values and interests. The practice allowed for discursive problem structuring in ways that resisted the constraints of the home-practices involved.

*Case 2: Cost-Benefit Analysis*

In 2007, the Dutch national government made cost-benefit analysis (CBA) a prerequisite for co-funding infrastructural projects as well as regional and local planning projects. This rule resulted in economists’ policy analyses gaining considerable influence in local planning projects. This implementation of the CBA also led to tensions between the central government and regional parties as well as between economists and planners.

At a Nicis programming meeting, problems with CBA application on local planning projects were introduced by a municipal civil servant. In a recent project, he experienced that the CBA in effect determined which knowledge and values were of consequence in weighing public costs and benefits. Arguing with national policy-makers for the inclusion of locally appreciated benefits proved unproductive, thereby stimulating the municipality to quickly acquire knowledge and expertise on the application of CBA.

Together with a professor specialising in economics and infrastructure, a professor in planning studies suggested during the same consortium meeting the combination of economic science and urban/regional planning in a joint research proposal. Their research design, drawing on both planning and economistic research practice, described the policy issue that was recognisable in terms of the national economistic officials and the municipal planners. An antagonising portrayal of CBA issues is circumvented by describing frustrations with the tools used in terms of practices involved instead of defining a research question proposing a process to articulate the problem. Furthermore, by drawing on insights and experiences from the practices involved, the policy controversy is thus translated into a proposal for mutual learning instead of a contest between adversaries. Hence, the problem is restructured in a way that both central and local policy-makers perceive it in their interest to collaborate and form a coalition incorporating these adversaries in a new knowledge practice.
The first year of research was dedicated to articulating a common problem definition. Every three months, a consortium meeting was hosted by one of the consortiums’ partners. By focusing on a particular moment within one of the workshops in this period, we can analyse the translations by which structuring the problem (puzzling) co-evolved with structuring relations (powering) between the practices involved.

There are marked differences between the deliberation in the workshop designed and hosted by the planners and the one organised by the economists. These differences become clear by comparing the ways in which they address the zero-alternative (a CBA score is relative to the costs and benefits of an alternative in which the proposed planning project is not executed; this is the so-called ‘zero-alternative’). The economic researchers explained how the zero-alternative is formally established in a CBA through economic formulae. Elaborating on them, solutions were then proposed for employing these formulae in a manner that was most favourable to local requirements. The stakeholders present at the workshop responded to these solutions by emphasising local complexities. They argued that the proposed solution may not yield the desired results, given their peculiar political, natural, governmental or technical exceptionalities. In response, the researcher presented alternative solutions to which the policy-makers and stakeholders responded by bringing in more peculiarities, amongst others.

Just like in the lifestyle cases, we see that researchers draw on academic practice for structuring a problem. As the CBA routine does little to address the problem as perceived by the officials, they proffer objections to them by drawing on real-world policy-making practices.

The researchers from the planning department treated the same zero-alternative topic in a parallel workshop and introduced a different approach to structure the problem. Here, the planners did not explain nor did they propose solutions. Instead, they presented the origin and consequences of different rationalities (e.g., technical and communicative rationality). Subsequently, these rationalities were employed to describe the problems experienced by stakeholders when a CBA was used. In this workshop, the participants did not discuss the limitations of the measurements made by a CBA; instead, they discussed their experiences with them in terms of different rationalities. They also collaboratively reflected on the benefits of a communicative space that facilitated learning around the use of CBA in planning processes. By drawing on a wider array of scientific reasoning, the researchers encouraged the policy-makers to reflect on their practices in a different way, thus generating new insights and facilitating further actions.

In terms of puzzling, the two workshops illuminated how the design of a collaborative research project influenced the trajectory of processing a problem. In the economists' workshop, the zero-alternative was approached as if it were a well-structured problem. Those aspects of a planning project deemed relevant to stakeholders but cannot be captured in CBA were not addressed. Suggestions to include local particularities were disqualified by the economists as partisan or biased and, therefore, invalid arguments for revising the application of CBA. By drawing on their home-practices and scientific methods, the researchers inhibited a restructuring of the problem. Lacking the opportunity to include local knowledge
and values, the problem cannot be restructured in a way that would enable new relations amongst the local practice, the planning/problems and the central government.

In terms of the first face of power, we see powering within the CBA's structure decision-making by selecting, highlighting and interrelating specific characteristics of a planned project. In the planners’ workshop, this CBA-enforced structure was deconstructed: the economists’ rationality underlying CBA was considered just one of many and only suited to a particular type of decision-making. The diverse rationalities presented enabled policy-makers to open up decision-making to alternative, local values, which challenged and opposed the CBA structuring of the issue.

The economists’ workshop contributed to a firmer establishment of the CBA by collaboratively applying its reasoning to the selected local cases. CBA constrains local planners in expressing the value of their plan in their own terms. As such, they are dominated by it. Yet simultaneously, the application of CBA contributes to the creation of a level national playing field, a structure that allows for plans to be judged in the same terms.

On the one hand, the economists’ workshop aimed at ‘getting the facts straight’ constricted the puzzling to the knowledge and values that fit within the formal CBA. On the other hand, the planning researchers provided a perspective that helped acknowledge the ambivalence and ambiguity of the problem situation. By stimulating policy-makers to draw on planners’ theories (i.e. the multiple rationalities), the stakeholders were enabled to re-articulate their problems with CBA. As a result, a translation was achieved through which the researchers and the policy-makers developed a common approach to issues with CBA: a strict CBA formula and procedure served as a blockade to what the planning researchers labelled as ‘just, informed and efficient decision-making’. As a consequence, the actors started discussing the conditions for a learning approach (puzzling) to decision-making geared towards urban planning (powering).

In a joint closing session, the planning professor concluded—in reference to the obstacles encountered in the economists’ workshop—that planning projects featured what he labelled as elusive effects, which are relevant for establishing its costs and benefits, but which cannot be grasped in terms of economic concepts. It is by articulating and drawing on the collaborative workshops that the professor established the idea that there are aspects of the CBA that are relevant to good planning policy but cannot be grasped by economic formulae. Through this final translation, an avenue of research is carved out in a way that makes sense to the parties involved. Planners and economists at the local and national levels can agree regarding the value of investigating how best we can deal with factors that are relevant but cannot be measured.

The translation that allowed this consortium to move forward to collaboratively puzzle and address this contested policy instrument was achieved by making the powering involved in a CBA explicit: economists argued that the CBA was ‘just one step’ in a more elaborate decision-making process and it only served to inform, not to replace, political judgement. Yet, a negative CBA score can jeopardise a proposed project. Therefore, local actors are likely to strategically plan projects to achieve an optimum CBA score later on.
This is the strategic incorporation of economically appreciated choices that planners in the consortium effectively opposed not by decrying CBA as a valuable instrument for judging economic worth, but by proposing to evaluate CBA as part of a good decision-making process related to the planning of projects. This, therefore, represents a shift that enables stakeholders to legitimately draw upon knowledge, values and stakes that are relevant to their home-practices or the problem situation but cannot be monetised (i.e. the elusive effects). The powering in this research practice concerns the ways in which policy-makers can use an instrument like the CBA to actively organise issues in or out (second face of power, see Table 2) of a planning project.

In the following period, both research departments further developed their research design. The planners used the discussion in the workshops to gain information for inquiring into the use of CBA in decision-making. The economists did not apply the same approach; instead, they developed a national survey to generate a representative data set.

The third face of power manifests itself in the CBA case through the ways in which criteria for good science strengthen or weaken the relations between knowledge and governance (home)practices. The economists enacted science in a positivist manner that strived to establish universally valid knowledge by either excluding or controlling for context variables. The planners took a different approach wherein scientific knowledge was not created by shutting out context but by striving for methods to successfully embed knowledge within it. These differences in puzzling are reflected in the structural inclusions and exclusions that planners shared with the municipal policy-makers and the economists with the national calculators (powering). For the first, this has to do with bringing about the best decisions with regard to the specific and contingent characteristics of the situation; for the second, it is about establishing a data set that allows for the economic variables to be objectively measured and compared. The connectedness of the scientific approach and the coalition of policy and knowledge practices is made discursive here through the confrontation of problem structures in the consortium.

5. Analysis

This paper describes the officials and researchers who collaboratively structure problems in institutionally embedded research practices. We note that the interactions between the practitioners involved are guided by what makes sense in terms of the academic and governmental home practices in which they are embedded. Analysing their collaboration as a series of translations, we find that it comes down to a continuous intertwinement of puzzling and powering to find new ways forward.

By analysing the various manifestations of powering in our two cases, we see how actors powering in a knowledge practice can deliberately affect how a real-world problem is governed (see Table 2 for an overview). In other words, the cases show how officials and researchers working in a collaborative knowledge-governance practice enable or constrain the actions of others in dealing with a real-world problem.
Both case studies describe how officials and researchers successfully restructure a problem in a way that its myriad consequences are judged sensible in terms of the home-practices involved. However, this is not always possible. Where an agreement on how to structure a problem remains out of reach, we can see that actors’ decisions are made by each actor trying to ensure that a specific instance of problem structuring is considered in terms of their home-practices. In the lifestyle case, we can see that by performing a scientific analysis, the collaborative practice is structured as a scientific practice. The resulting negative consequences for relations within and between the policymaking home-practices are taken for granted. Thus, through such an extension, a scientific practice can be used to guide subsequent governance practices.

The economists’ workshop provides a similar illustration. When local policy-makers and stakeholders find that economists’ proposals to better deal with a CBA do not directly address the local issues they experienced, the researchers established that adapting the CBA model to accommodate local intricacies would be at odds with their scientific practice. Instead, they stuck to conducting research on the CBA in terms deemed compatible with their scientific practice, even if they did not directly enable problem resolution within and between local policy-making practices. The researchers’ choice can be considered valid and reasonable if and when one considers that decisions should ultimately be judged in terms of the scientific practice and, by implication, not in terms of the local practice.

Within both cases, there are situations wherein actors are (or become) aware of the powering that is inherent in problem structuring: when their actions are informed by the anticipated consequences, a decision in one practice can have on enabling or constraining actions in another. Think, for example, of how research into the effects of lifestyle is meant to keep aldermen from discussing ethical implications, or how research on regional issues with CBA is meant to have local values incorporated in national funding decisions.

In this way, analysing how practitioners ‘drawing on practices’ can (and do) affect puzzling provides a productive take on how exactly knowledge practices are related to the institutional structures in which they are embedded. Indeed, the collaborative research in both cases present several instances of the practitioners deliberately enacting the reflexive consequence of knowledge development (compared to KG in the introduction). We see that actors strategically and deliberately draw on their home-practices (powering) to affect the research in a collaborative practice (puzzling), thereby reaching an outcome they can draw upon to enable or constrain (powering) the practices they are embedded in to, in turn, deal with real-world problems.

*Table 2: Collaborative research through powering based on Haugaard’s (2012) revised view of Lukes’ (1974) familiar faces of power.*
| 1<sup>st</sup> face | **Lifestyle** | **CBA** |
|---|---|---|
| **Constrain** | Soho spokesperson threatening withdrawal from the consortium in order to forbid publication | Applying CBA restricts the arguments, values and stakes that can be incorporated when evaluating a planning project. Planners introducing alternative rationalities limit the hold of the economic reasoning on the procedure of valuating a project’s worth |

| 1<sup>st</sup> face | **Enable** | **Constrain** |
|---|---|---|
| **Enable** | Researchers point out that (1) their agreement has no provision for withdrawal, (2) lifestyle stability is a debated issue in scientific practice requiring them as academics to publish on new findings on it, and (3) their name as an institute is dependent on them reporting findings objectively | Economists providing a well-informed, situation-tailored application of CBA enables actors to ensure that CBA remains instrumental in expressing the value of their plan in the (economists’) terms. |

| 2<sup>nd</sup> face | **Constrain** | **Enable** |
|---|---|---|
| **Constrain** | For Soho’s spokesperson, the report (objectifying lifestyle allocation) is instrumental in limiting the capacity of the alderman to present moral objections to lifestyle allocation | Although the CBA is just one step in the decision-making process, its central position in relating the local project to national funding stimulated strategic planning, thus constraining the ideas and values the actors are likely to incorporate when envisioning a new neighbourhood or area development to those that can be monetised. |

| 2<sup>nd</sup> face | **Enable** | **Constrain** |
|---|---|---|
| **Enable** | It is exactly through the objectifying (scientific) method employed by the researchers that they are entrusted to do this research and are enabled to find locations to carry it out. Consequently, systematic knowledge can be produced to address a public problem. | Planners restructure the problem by not looking at ways in which CBA can be used to evaluate planning projects but by reevaluating the role of CBA in good decision-making. Putting good decision-making on the agenda facilitates the extraction of different kinds of knowledge, values and practices. |

| 3<sup>rd</sup> face | **Constrain** | **Enable** |
|---|---|---|
| **Constrain** | Soho aimed to employ the policy fields’ common way of structuring out moral dissent (i.e. constraining awareness of moral arguments) to punctuate the closed fields’ equilibrium, that is, changing | The economists did not take the consortium meeting to gain information that can be used as data for scientific research. This is because the stakeholders present at the meetings were not randomly selected, were not informed by |
Powering is part and parcel of collaborative research. Our cases demonstrate that both officials and researchers refer to powering to keep their work moving forward (Table 2 provides an overview). Given that powering is studied in this paper as an effect (as opposed to a trait or reservoir), it becomes manifest only when the collaboration hits a deadlock. However, this does not necessarily mean that when it is not manifest, power is not in effect.

6. Conclusion

Currently emerging research practices in which officials and researchers collaborate on restructuring urban problems are sites that—beyond their contribution to understanding and explaining societal or academic issues—can purposefully enable or constrain how real-world problems are governed. The actors involved in a research practice can strategically restructure a problem to influence how it is addressed in the policy-making practices in which it is embedded. This intertwining of research and governance can be characterised as reflexive, because research initiated to be instrumental to policy-making practice can eventually be used to govern the practice of policy-making (author, 2020b; Van Buuren & Eshuis, 2012).

In our two case studies, we see how actors in a collaborative research practice restructure problems. They draw on the home-practices in which they are embedded to achieve a problem structure that enables them to act in a way that is meaningful to their home-practices. As such, home-practices provide a reference and a source as well as a goal that can guide their work. Actors enact their home-practices in the new collaborative practice by accounting for the consequences of different problem structures for relations within and between the practices involved. For example, we see that by claiming that means are supplied or withheld depending on the manner in which a problem is structured, relevance is attained or foregone, collaboration is ensured or terminated, and so on.

As long as actors see how restructuring the problem can lead to congruency and seek to achieve it—a meaningful outcome for the different home-practices involved (Grin & Van de Graaf, 1996)—they seem predominantly concerned with learning (puzzling) that is relevant to such home-practices. The influence
of power becomes manifest when one actor insists on restructuring (often reproducing) problems in a manner that conforms to his own home-practice but is judged unacceptable by others. Decisions on research design, knowledge collaboration or the reporting of findings thus become subject to actors aiming to reproduce home-practices and structures. Analysing this in terms of power reveals that decisions on problem structure are mediated by the three faces of power (Haugaard 2012). Power is shown to affect (1) when actors decide on the structuring of the problem within the practice; (2) the process of determining the problem structure that will enable or constrain certain actions in home-practices with regard to real-world problems; and (3) when actors try to reproduce (or transform) the structure they are embedded in by presenting it as the suitable background and as the natural order of things when evaluating decisions.

Analysing how puzzling and powering are continually intertwined not only allows us to ‘simultaneously describe and analyse multiple forms and modalities of knowledge and power, but also how they interact and transform each other’ (author, 2020a: PP). Through this lens, we can see how research can be enabled and constrained by the academic and governmental home-practices in which it is embedded and how collaborative research enables and constrains how policy-makers address real-world urban problems.

More specifically, this has led to the following contributions to the literature:

1. **On knowledge development and relevance of knowledge to policy-making**

   The reflexive dynamic between researching and governing in currently emerging knowledge practices cannot be adequately described in the well-established terms of a two-community approach (Mead, 2015; Newman & Head, 2015; Newman, Cherney, & Head, 2016). Studying actors who are structuring problems through translations between embedded practices allows for an alternative analysis in which the role of research in policy-making can be understood as the intertwinement of puzzling and powering (Hoppe, 2011; Turnbull & Hoppe, 2018).

2. **On the design of new collaborative research practices**

   The literature on collaborative knowledge development in living labs, pragmatic policy experiments or transdisciplinary research projects emphasises learning as the way forward in addressing complex, real-world problems (Evans et al., 2016; Ansell, 2012; Pohl Hadorn, 2008). However, this paper demonstrates that researchers involved in such practices are engaged in reproducing or transforming governance structures and the power that can be enacted through them. Involvement in these practices means that researchers not only require methods for productively synthesising knowledge (Bammer, 2013) but also for properly and systematically orchestrating powers (see also Gaventa & Cornwall, 2008).

3. **On knowledge governance**

   Previous papers on KG distinguished it from other forms of coordination (Van Buuren & Eshuis, 2010), described its constituting principles (Gerritsen, Stuiver, & Termeer, 2013) and provided an approach for
studying it as a performance. This paper contributes to the analysis of the perspective of power, thereby better equipping the concept of KG for comparative case-study analyses. There is a claim that requires a short elaboration: Haxeltine et al. (2017) proposed to explain the success of innovative collaborative knowledge projects in addressing complex problems in a comparative manner by analysing the extent to which these projects result in adaptions of relations between the practices involved. Following up on this view, by analysing KG practices in terms of restructuring problems and practices in terms of learning and powering, it can provide a lens that would allow for exploratory and comparative studies in the future.

A key implication for practice is that organisations engaging in establishing collaborative knowledge practices need to acknowledge that power is bound to be part and parcel of any such effort. Instead of downplaying, neglecting or excluding actions that are intended to enable or constrain the actions of others, both researchers and officials must acknowledge and accept that these are inevitable when collaborating in research that is meant to address real-world problems. If one does not want to embrace this dynamic, then at least it should be labelled, addressed and discussed as part of the design and execution of a research collaboration. In general, KG (Van Buuren & Eshuis, 2010; Pemsel, Müller, & Söderlund, 2016; Van Kerkhoff & Pilbeam, 2017) and its five constituting traits in particular (Gerritsen, Stuiver, & Termeer, 2013) provide an excellent guide to do exactly this.

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