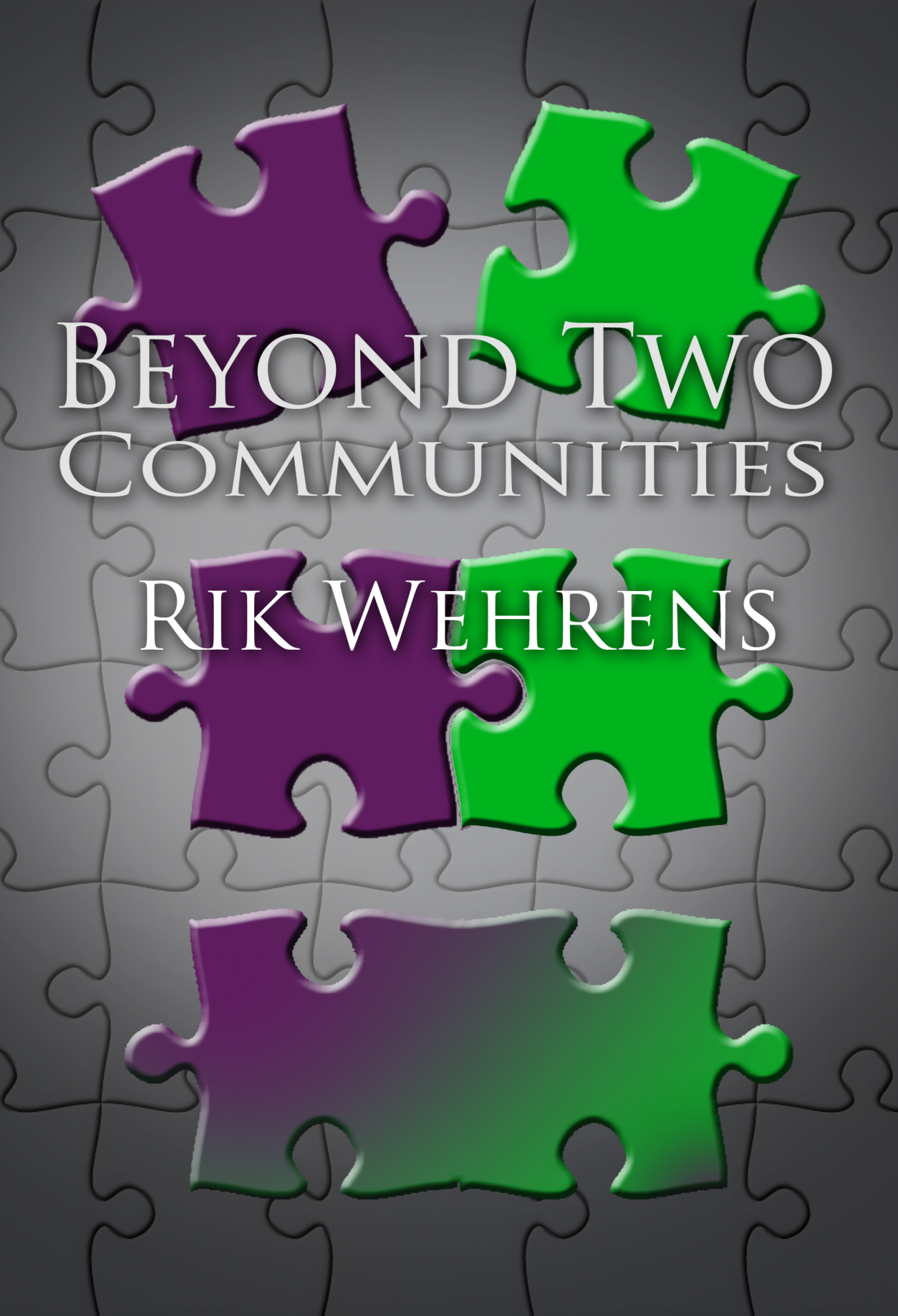
Beyond Two
Communities
Rik Wehrens

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The co-production of research, policy and practice in collaborative public health settings

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The co-production of research, policy and practice in collaborative public health settings

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Ter nagedachtenis van Mia Schroijen-Crombach

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Chapter 1

Introduction

A man in a hot air balloon realized he was lost. He reduced altitude and spotted a woman below. He came lower and shouted, "Excuse me, can you help? I promised a friend I would meet him an hour ago, but I don't know where I am". The woman below replied, "You're in a hot air balloon hovering approximately 30 feet above the ground. You're between 40 and 41 degrees north latitude and between 59 and 60 degrees west longitude".

"You must be a researcher," said the balloonist. "I am," replied the woman, "How did you know?" "Well," answered the balloonist, "everything you told me is technically correct, but I've no idea what to make of your information, and the fact is I'm still lost. Frankly, you've not been much help at all. If anything, you've delayed my trip".

The woman below responded, "You must be a policy maker". "I am", replied the balloonist, "but how did you know?" "Well," said the woman, "you don't know where you are or where you're going. You have risen to where you are due to a large quantity of hot air. You made a promise, which you've no idea how to keep, and you expect people beneath you to solve your problems. The fact is you are in exactly the same position you were in before we met, but now, somehow, it's my fault" (Adapted from: Locock & Boaz, 2004).

While the joke above, meant to illustrate the (cultural) differences between researchers and policy makers, is obviously meant as a caricature, most people working either as a researcher or as a policy maker in the public health field will undoubtedly smilingly recognize some of the characteristics presented. In the past couple of years, I heard some variant of this joke several times during conference talks on knowledge translation in public health.

Jokes are however not just jokes, but reflect underlying cultural ideas and practices.[1] The underlying ideas behind this joke also feature prominently in other public health discourses. Also within scientific literature and within policy documents, the tradition that can be labeled in very broad terms as the 'two communities' tradition has been a dominant way of describing the relations between research and policy. These descriptions usually echo some of the elements that are visible in this joke: a perception of researchers and policy makers stemming from strictly separated worlds, with distinctive logics, rationales and incentives. Within scientific literature, prominent theorists in fields such as public health policy and knowledge translation have discussed

1 See Gilbert & Mulkay (1984) for an analysis of jokes in science.

the cultural differences between researchers and policy makers. They are perceived as 'living in parallel universes' (Brownson et al., 2006). Graham (2008) uses a well-known metaphor when she reflects upon the differences between researchers and policy makers by claiming that 'researchers are from Venus and policy makers are from Mars'.

The result of these differences, so it is argued within this 'two communities' tradition, is a 'lack of fit' between the research and policy domain. This is also clearly visible in the joke mentioned above: the information the researcher presents to the policy maker may be correct, but is of no practical use, whereas the question of the policy maker is too general to render it into a 'scientifically investigable' question. From an understanding of researchers and policy makers as distinctive (cultural) groups, one of the main issues thus becomes to better connect these groups. Much literature in the 'two communities tradition' therefore focuses on discussing how the alleged 'gaps' between research and policy can be 'bridged'. This rhetoric of 'gaps' between research and policy (as well as the alleged 'implementation gap' between research and practice) is very dominant within public health literature, although some other conceptualizations of the relationships between research, policy and practice domains are visible as well.[2] However, the metaphor of 'bridging' the different worlds is a particularly persistent one, not only in research, but also in policy initiatives aiming to facilitate collaborative structures that bring together researchers and policy makers or practitioners.

ACADEMIC COLLABORATIVE CENTRES AS INCENTIVES TO 'BRIDGE THE GAP'

In the Netherlands, similar considerations gave rise to a widely spread initiative to develop a collaborative format within public health, aimed to better connect researchers, policy makers and public health professionals. This format (the so-called 'Academic Collaborative Centres for Public Health [ACCs]), has been developed by the Netherlands Organization for Health Research and Development (ZonMw) in response to several national advisory reports criticizing the lack of integration between the research, policy and practice of public health (WRR, 2004; Algemene Rekenkamer, 2003). One of the most important aims of the ACCs is therefore to facilitate this integration through functioning as 'coordination structures' between local public health policy, practice and research. They are, in short, novel organizational formats that have been established to

2 These will be introduced later in this chapter.

'better connect the worlds of research and policy'. Its overall purpose, as defined by the funding organization, is to "structurally strengthen and anchor demand-driven research activities in the area of public health" (ZonMw, 2005).

The ACCs are thus structural collaborations between researchers, policy makers, professionals and other stakeholders within the field of public health. These collaborations, usually between a Public Health Service (PHS)[3] and a university department (but also frequently involving other stakeholders, such as research institutes, youth health care organizations, or municipal departments) are formalized and expected to be durable. From their development in 2005, nine ACCs have been subsidized through ZonMw. The ACCs are often theme based and focus on specific public health domains, such as health promotion, youth health care, elderly health care and infectious diseases. They operate in diverse ways and differ in terms of organizational structures. Within all ACCs, research projects are conducted in which university researchers and public health professionals collaborate. In many cases, professionals are part-time located at a university in order to conduct PhD research while being supervised by university researchers. However, many ACCs also developed a more detailed infrastructure aimed to increase interactions and collaboration between university researchers, professionals, policy makers and other stakeholders. Brainstorm groups, workshops, seminars, dual appointments, courses and Masterclasses for professionals and policy makers are some examples of instruments and formats that have been developed. Next to larger research projects, usually conducted within the 'traditional' time period of four years, many ACCs also developed small-scale projects aimed to tackle questions from professionals and policy makers in a shorter time period.

The development of the ACCs as 'coordination structures' thus seems to be perfectly compatible with the conceptualization of research and policy as distinctive worlds. Because they are distinctive, there is a lack of fit between activities: scientific knowledge is perceived to be irrelevant or inaccessible by policy makers and professionals, and policy-questions are not amenable to scientific investigation. The ACCs are expected to fulfil a 'bridge-function'.[4]

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3 Public health in the Netherlands is largely organized on a local level, where municipalities are obliged to set 4 yearly policy plans which are then executed by Public Health Services. Except for the larger cities, like The Hague and Utrecht, most PHSs serve several municipalities.

4 This is for example also frequently mentioned in seminar titles and articles published about the ACCs. For example: Garretsen et al. (2007): "Bridging the Gap between Science and Practice: Do Applied Academic Centres Contribute to a Solution?"

THE MAIN FOCUS OF THIS THESIS

This thesis empirically focuses on the phenomenon of the ACCs. It does so in several ways: by investigating the general development of the ACCs over the last five years, but also by an in-depth analysis of four collaborative research projects that have been conducted in the context of these ACCs. However, this thesis does not take the notion of 'two communities' for granted, but rather seeks to take into account other conceptualizations of the relation between scientific knowledge production, policy development and professional practice. One of the most promising conceptualizations, which may provide analysts with more 'analytical rigor' than the 'two communities' framework is able to provide, is the notion of 'co-production' (Jasanoff, 2004). This radically different view on science/policy relations focuses on how natural and social orders, or science and policy, are being *produced simultaneously and interactively*. Such a perspective sheds a radically different light on the interactions between researchers and policy makers.

The aim of this thesis is to investigate whether a conceptualization of research/policy/practice relations in terms of this co-production framework serves as a better tool to understand these relations and interactions than the two communities perspective is able to provide. This is important as the two communities notion underlying much knowledge utilization literature is not sufficiently able to explain all the facets of research/policy and research/practice relations, especially when these relations are established in structural collaborations. The two communities metaphor mainly focuses on why the one community is not the other. In this way, the distinctions between the domains are represented as static (they cannot or do not change over time) and generalizable (they are not open to interpretation). The basic assumption of research and policy as strictly separated worlds is problematic for three reasons: a) it tends to focus on the *non-use* of research; b) it is in many settings insufficient as organizing conceptual framework; and c) it neglects the *process* of scientific knowledge production, which is treated as black box in the analysis. The main goal of the thesis is to investigate whether a conceptualization of research/policy/practice relations in terms of a co-production framework can provide us with more analytical rigor in terms of acquiring an in-depth understanding of these relations and interactions than the two communities perspective is able to provide. And if it does, what kind of insights can be gained from such an analysis and what are the theoretical and practical implications of such a perspective?

This introduction then sets out to accomplish a number of tasks. First of all, it is important to explore in-depth the main characteristics, assumptions and logic behind the 'two communities' tradition. This tradition can be mainly situated in the 'knowledge translation' and 'research utilization' literature. I sketch the development of these fields in terms of *three main approaches* which show an increasing maturation and sophistication in how the relationships between research, policy and practice are conceptualized (cf. Bekker, 2007; De Goede, 2011), but in which many of the underlying assumptions remain similarly problematic. Second, this introduction will outline the alternative conceptualization provided by the 'co-production framework' of Jasanoff (2004). I discuss its central characteristics and explain why this notion may be better suited to analyze the Dutch ACCs (as well as other collaborative formats involving researchers and policy makers or professionals). This notion is becoming more widely spread within management science (Martin, 2010; Antonacopoulou, 2010) and also public health literature (Nutley, 2010; Greenhalgh & Wieringa, 2011). Thirdly, this introduction will emphasize the *epistemological turn* that underlies the co-production framework. In terms of philosophy of science, there are large differences between the origins of the 'two communities' notion and the co-production framework. It is important to touch upon some of these differences, as some of the more recent public health literature works with the notion of co-production (or co-creation) without further reflection on the (epistemological, and other) implications of such a framework. Fourth, I argue that a co-production framework leads to the *identification of different problems* than traditionally associated with science/policy relations (i.e. the problem of the 'poor uptake' or 'lack of fit' between research and policy), and consequentially also to *different solutions*. Based on the outline of this framework, I will then introduce the main research questions that will be addressed in the succeeding chapters and discuss some of the theoretical concepts that provide the tools to deal with these questions.

THE DEVELOPMENT OF KNOWLEDGE TRANSLATION LITERATURE IN PUBLIC HEALTH

Given the enormous body of literature that has been developed around issues of knowledge translation[5], any overview will inevitably be limited and incomplete. However, this introduction sketches, in broad lines, the development in the ways of thinking about knowledge translation in public health. In broad terms, we can distinguish between rationalistic linear models, interactive and incremental models presuming dialogue (relationship models), and models aiming to more broadly incorporate the complex structures and contexts in which these dialogues are embedded (systems or network models). I will discuss them only briefly, as other recent work (Van Egmond, 2010; De Goede, 2011) have provided similar overviews.

Rationalistic linear models mainly focus on describing a one-way process where researchers produce new knowledge, which then gets disseminated to end users and finally incorporated in policy and practice (Best & Holmes, 2010). These models have been dominant mainly in early knowledge utilization studies. Research use is seen as *instrumental* from this perspective (Hoppe, 2005; Bekker, 2007). The language ('knowledge transfer', 'research uptake') of these kinds of approaches reflects this one-way process. From this perspective, one of the main problems is the 'gap' between theory and practice, which is framed as a knowledge transfer problem. Consequentially, the issue then becomes diffusing research knowledge into practice (Van De Ven & Johnson, 2006). In summary, Best & Holmes (2010) highlight the following characteristics of this linear conceptualization of research and policy relations: 1) knowledge is viewed as a product; 2) there are relatively discrete, predictable and manageable stages that separate the production and application of knowledge; 3) the exchange process

5 Unsurprisingly, the notion of 'Knowledge Translation' itself is surrounded by profound conceptual ambiguities. In their review of knowledge translation literature, McKibbon et al. (2010) referred to the wide variety of concepts used to describe processes of knowledge translation as a 'Tower of Babel'. The conceptual ambiguities, in part related to the various disciplines working on issues of knowledge translation, are profound: the authors found more than one hundred individual terms being equivalent to, or closely related to, knowledge translation (McKibbon et al., 2010). However, the purpose of this thesis is not to delve into these conceptual issues. Rather, it suffices to say here that the concept of 'knowledge translation' is increasingly used to overcome the limitations of more linear concepts as 'knowledge transfer' and 'research utilization' (Graham et al., 2006; Freeman, 2009). Some authors point out that the concept of knowledge translation recognizes the two-way exchanges between researchers and policy makers / practitioners that are required. However, not all scholars who use this concept seem to make this explicit or recognize this.

is largely one-way and often from research producer to research user; 4) effective communication is the key component to successful outcomes (2010: 147).

Relationship models recognize the interactive character of the relationship between science and policy. These models are dominant in the knowledge translation literature, which recognizes that 'something' needs to be done with generated knowledge before it is considered useful and becomes adopted. Models falling into this general category usually presume (and promote) dialogues, or types of 'linkage and exchange', between researchers and policy makers (Lomas, 2000). The main issue from this perspective is the identification of effective ways of exchanging. Interaction or relationship models therefore primarily focus on the perceived gaps between the worlds of research and policy and the (sustained) interactions that are required to increase research utilization (De Goede, 2011). Solutions are often framed in terms of 'building bridges' (cf. Nutley, Walter & Davies, 2003) or knowledge brokering (Lomas, 2007). Most scholarly work within this 'relationship-approach' recognizes the complex, process of evidence-informed decision making. The most important aspect these relationship models have in common with the 'first generation' of linear knowledge utilization studies, is that they assume a basic distinction between objective knowledge and subjective values. These are attributed respectively to the domain of science and the domain of politics. In this sense, both generations are deeply rooted in the prevalent 'two communities' perspective.

Systems or network models try to incorporate the 'mediating structures' in which science-policy interactions are embedded, shaped, and organized (Best & Holmes, 2010). The analytical focus is then not only pointed towards the interactions themselves, but also how the 'arena' in which these interactions take place is shaped and how that influences the presence or absence of interaction between research and policy domains (De Goede, 2011). These kinds of models thus emphasize the contexts (and underlying logics) in which the interactions between research, professional and policy domains take place (Best & Holmes, 2010). The systems models highlight an additional layer of complexity to their understanding of research-policy interactions as they display analytical sensitivity to the structures and networks in which such relationships develop.

More recent developments within the public health literature indicate that alternative conceptualizations are being sought that are more critical towards the assumptions in the two communities perspective. For example, Lin & Gibson (2003) propose three alternative constructions of research/policy/practice relationships, based on different theoretical concepts (the Advocacy Coalition Framework, the notion of 'organizational epistemology' and concept of 'governmental rationality'). Horstman & Houtepen (2005) focus on *network building*

between researchers, policy makers, professionals and other actors. Using an Actor-Network Theory perspective, they approach the relations between these domains from a pragmatic paradigm through which research, policy and practice are all seen as open, experimental learning processes. De Leeuw et al. (2008) explored multiple theoretical conceptualizations that move beyond the two communities approach. For example, the 'blurring the boundaries' framework recognizes the often fluid and negotiable character of the boundaries between these domains.

UNDERLYING ASSUMPTIONS AND PROBLEMATIC ELEMENTS WITHIN THE 'TWO COMMUNITIES' PERSPECTIVE OF SCIENCE AND POLICY

Despite the growing sophistication in knowledge translation literature models conceptualizing the relations between science, policy, and practice, the question remains whether these models are able to explain all facets of how science and policy interact, or if important elements may be overlooked. This becomes especially important as one realizes that the basic assumptions in the systems model are still remarkably similar to the assumptions in the other models. Although these models focus on the networks and structures in which interactions are shaped, the basic underlying notion of research and policy as distinct worlds remains notable. Before addressing an alternative approach, it is therefore important to render these underlying assumptions more explicit and reflect on the problematic issues they bring about.

In their critical reflection on the notion of evidence-based health policy, Vivian Lin and Brendan Gibson (2003) also discuss the dominance of what is known as the 'two communities construction of the research-policy problem'. According to these authors, the two communities hypothesis:

> Argues that the fundamental reason for the failure to translate research into policy is that researchers and policy makers live in different 'assumptive worlds' or 'cultures'. They speak different languages, have different motives, face different organizational constraints and incentives and have different world views" (2003: p. 19).

The two communities framework can be seen in several variants and may lead to several metaphors or analogies. The following quote from a reflective positioning paper by Louise Locock and Annette Boaz nicely shows how this perspective works out in such an analogy:

Research, policy and practice can be imagined as neighbouring island states,separated by narrow sketches of water. Each island state is home to a range of different people, but bound together by a common language, norms, tradition and ritual. Citizens of each state have to meet certain obligations to their community; failure to meet these requirements could result in loss of citizenship, and therefore expecting people to act in breach of their obligations would be unreasonable (Locock & Boaz, 2004: 378).

The main elements of the two communities perspective are visible in the assumptions this analogy provides. Lin & Gibson argue that

The two communities construct remains dominant whenever the following assumptions continue: that the researcher and research organizations are outside the policy process; that the point of persuasion is at the interface between the research world and the policy world; and, that the locus of power is in the policy world" (2003: 22).

There are however several problems with the analogy provided by Locock & Boaz. First of all, it provides us with poor analytical rigor. Such an understanding primarily focuses on *non-use* of scientific knowledge. Wingens (1990) provides an interesting historical analysis of this aspect, as his article discusses the historical context in which the two communities theory developed. According to Wingens, this theory developed after a period of "high-flying expectations of political usefulness and rather naive hopes of practical use" (1990: 30). The two communities theory developed after a period of overoptimistic utility expectations, in a period of overpessimistic judgments on the use of scientific knowledge in policy-making. Wingens thus points out that:

The two-communities theory is *rooted historically* in a situation, a feature of which was an *exaggerated negative assessment* concerning the relationship between the sciences and the field of policy making (1990: 30, emphasis added).

This is one of the main explanations for the orientation of this theory toward nonuse.

Furthermore, in many instances such a two communities conceptualization is simply insufficient as organizing conceptual framework. Lin & Gibson (2003), for example, put forward the important question: "[W]hat if the two communities phenomenon was not the real driver of the nexus between research and

policy? What if it was a reasonable *description* of the experience of researchers and policy makers but a poor *explanation* for why there are problems in the research-policy relationship?" (2003: p. 19). Similarly, Wingens (1990) argues that:

> The culturalistic conception of the two-communities metaphor is simply wrong as an empirical statement: many policy makers have usually received at least some scientific education, hold university degrees, and have the assessment of research projects as part of their daily routines, whereas similarly researchers know the world of power and compromise as well as policymakers do (1990: 34).

Van Buuren & Edelenbos (2004) argue that this dichotomy between the 'two worlds' of research and policy is mainly inspired by two considerations: a cultural/empirical one (there are two totally different cultural systems or different 'ways of life') and a normative one (there *has to be* a clear distinction in order to safeguard objective, neutral information). This normative dimension will be further explored in the concluding chapter.

Other public health authors criticize the dominant metaphor of knowledge translation as an instance of analytical a priori separation of research, policy and practice domains (Greenhalgh & Wieringa, 2011), These authors distinguish three problematic assumptions underlying the knowledge translation metaphor. First, they criticize what they label as the 'objectivist approach to knowledge', in which knowledge equates to objective and impersonal research findings and is assumed to be unproblematically separable from the scientists who generate it or the practitioners who may use it. The second (and rather similar) problematic assumption is that knowledge and practice can be cleanly separated both empirically and analytically (as the 'know-do gap'). Third, the authors question the assumption that practice consists of a series of rational decisions, because practices are better viewed as complex social accomplishments than as a collection of decision-moments.

Another important element that is neglected in the two communities construction of the science-policy relationship, is the *process* of scientific knowledge production. Whilst the knowledge translation literature has increasingly focused on unraveling the complexities in policy making (rather than seeing policy making as a rational process in which a distinctive decision to use scientific evidence can be identified) and practice (rather than assuming scientific knowledge will be implemented if it is only sufficiently targeted towards practitioners), the processes of scientific knowledge production seem to be taken for

granted. According to Bekker (2007), this process of knowledge construction is usually left unquestioned in such studies:

[b]y focusing on the 'effectiveness' of research for policy, or 'impact' on policy, Knowledge Utilisation studies reveal a conception of research and policy as separate worlds. Moreover, researching behaviour is often left unquestioned and part of the relationship between research and policy remains a black box (2007: 55).

Building upon this, Van Egmond (2010) argues how such an understanding paradoxically reifies the boundaries it seeks to overcome:

Many KU concepts used in the public health field do not question the standard model of science production. This standard model makes a Popperian distinction between the context of discovery – the realm which produces scientific knowledge – and the context of justification – the realm which proves the usefulness and impact of scientific evidence in relation to political or societal problems. [..] KU scholars argue that policy should be given a more influential role in the context of justification; that is, in the realm where science enters the 'real' world and is judged on its merits in relation to policy problems. Yet policy makers are kept from the context of discovery, where scientific knowledge is produced. Consequentially, such understanding of science-policy interactions, while focusing on their mutual interdependence, reifies instead of overcoming [sic] the boundaries between them (Van Egmond, 2010: 13).

Hoppe (2005) describes this as the user-focused approach of knowledge utilization, whereas an analytically richer and more interesting approach would be to study the *variable boundaries and transactions* between science and policy. The lack of analytical attention towards the process of knowledge production has already been addressed by Van Buuren and Edelenbos (2004), who argue that traditional utilization research studies "underestimate the importance of the processes by which knowledge is created" (2004: 291).

Bijker, Bal & Hendriks (2009) argue that much policy science literature, in which they see Carol Weiss' (1979) distinction between different types of research use as one of the fundamental contributions to the field, does not question the distinction that is made between research and policy. Rather, this distinction is unproblematically taken for granted: Weiss deconstructs the policy

process, but her analysis of the process of scientific knowledge production remains limited to the front stage representation of science.[6]

The two communities framework thus harbors a number of problematic assumptions. What are the implications of an understanding of science/policy/practice relations from within such an organizing framework for the concept of the Academic Collaborative Centres? Firstly, it would lead to a similar conception of knowledge production as something that is taken for granted, the process of which is in no need of further explanation. Consequentially, this could lead to an unequal relationship between research, policy and practice domains within the ACCs, as research (and research demands and criteria) is given an extraordinary status in the sense that its internal processes are accepted without questioning, whereas the internal processes of professional practice and policy making are expected to change within the context of the ACCs.

TWO COMMUNITIES AS A FORM OF BOUNDARY WORK

As discussed above, it can thus be argued that within much knowledge translation literature, the processes of policy making and professional practice are analyzed while the processes of scientific knowledge production are treated as a black box. Furthermore, while much knowledge translation literature addresses the need for collaborative partnerships (Lomas, 2000; Innvaer et al., 2002; Nutley, Walter & Davies, 2003; Jansen et al., 2008; Mitchell et al., 2009; Nutley, 2003; Young et al., 2002; Lencucha, Kothari & Hamel, 2010), empirical analyses of the processes and dynamics within such partnerships (not only in terms of different accountability structures, but also in terms of their development) have been relatively scarce.

One of the fields that has traditionally focused on knowledge production processes, and more specifically on the social mechanisms by which scientific knowledge is created, is the interdisciplinary field of Science & Technology Studies (STS). This field has a rich tradition of research analyzing the processes of scientific knowledge production, ranging from earlier ethnographic studies into laboratory practices (Latour, 1987; Knorr-Cetina, 1995) to more recent approaches investigating scientific advisory work (Hilgartner, 2000; Guston, 2001; Bijker, Bal & Hendriks, 2009).

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6 The distinction between a 'front stage' and a 'back stage' (Goffman, 1990) becomes an analytically important distinction in the analysis of science-policy relations. This concept will be introduced later in this chapter.

Much of the more recent work in this field has focused on areas in which the role of scientific expertise in policy making is crucially important, and where stakeholders, citizens and policy makers continuously request scientific advice. Empirical examples are numerous, as there is a plethora of organizations and organizational structures, both nationally and internationally, that fulfil a role as advisory institutions, think thanks, participatory conferences, citizen conferences, and so forth. These kinds of organizations and structures intermingle, in one way or another, scientific research with political decision making. However, in these settings, the role of scientific knowledge and the status of experts are also increasingly ambiguous. Maasen & Lieven (2006) argue that the increased dependency on scientific knowledge and experts is accompanied by an increased mistrust in those experts whose knowledge can no longer – if it ever could in the first place – be regarded as neutral, objective and reliable. Science and scientific expertise seem to have "lost their reputation as providers of objective and unbiased knowledge that lies outside of interests and power configurations and escapes moral and social influences" (Braun & Kropp, 2010: 773).

Another characteristic of such settings is that the *kind,* or *'nature',* of scientific knowledge that is asked for, changes. These are often settings in which scientific knowledge is asked for that is able to take into account a variety of criteria (such as policy relevance or practical usability). In these examples, the merits of scientific knowledge production are not only discussed in terms of 'traditional' academic quality criteria, but also in terms of effectiveness, societal relevance, and usefulness. Several authors have used different typologies to discuss this distinction.[7] Jasanoff (1995) distinguishes between 'regulatory science' ('science used for regulatory purposes') and 'research science':

> [Whereas research science] tends to be conducted in environments of relative consensus, governed by established paradigms and relatively clear methodological and quality control standards, […] in regulatory science, by contrast, standards for assessing quality tend to be more fluid, controversial, and subject to political considerations (Jasanoff, 1995: 282).

While there is a stringent lack of detailed empirical analyses of collaborative partnerships in knowledge translation literature, much empirical research of

7 Related typologies are 'Mode 2 research' (Gibbons et al., 1994; Nowotny, Scott & Gibbons, 2001), 'triple helix' (Etzkowitz & Leydesdorff, 2000) and 'post-normal science' (Funtowicz & Ravetz, 1993).

scientific advisory work in the STS-field shows how the boundaries between research and policy are often rather fluid and largely rhetorical in such –regulatory- settings. What counts as a 'scientific' issue and what counts as a 'policy-affair' is not given in advance, but actively negotiated. Many authors have argued that in fact, such boundaries are never as clear-cut as they may appear. They are not fixed in advance, but negotiated in practice. More specifically, they are constructions in themselves (Gieryn, 1999). STS research in this field therefore focuses mainly on these processes of transgressing boundaries, as well as separating them again through boundary work, because what needs to be analyzed from this respect is not how the boundaries can be bridged, but *how these boundaries are constructed* and for what purposes (Gieryn, 1995).

From this perspective, the two communities metaphor dominating much of the public health literature is not to be seen as a definitive situation, but as an image that on the one hand is often *strategically deployed,* and on the other hand seems to be either conveniently or unconsciously taken for granted. In both cases, this image needs to be explained rather than accepted as a given. In other words: from this understanding, the two communities perspective can be seen as the outcome of a process in which this metaphor has been constructed through boundary work (and thus needs to be the starting point of the analysis rather than the end-point). Van Buuren & Edelenbos (2004) highlight the vast differences between this conceptualization of science-policy relations as compared to the two communities conceptualization:

> [The assumption] that the production of knowledge is a social process, a social construction, whereby the world of policy-making and the world of research and science meet each other and work together in producing policy-relevant information, […] is in flagrant opposition to the more traditional view of science-politics, in which they are interpreted as two clearly distinct communities […] or two totally different cultures […] (2004: 292).

Also Tuinstra et al. (2006) highlight that operating from a co-production understanding of science-policy relations (in other words: when the analytical point of focus becomes to understand the processes of maintaining and redrawing boundaries, of shaping and re-shaping the science-policy interface) leads to a fundamentally different understanding of such processes than analytically starting from the sharp lines that are drawn within the two communities framework. According to Tuinstra et al.:

[T]his fluid image of the dynamics of the science-policy interface is different from an image in which a "gap" between science and policy exists that has to be bridged, or a manifest boundary between science and policy that has to be crossed. The negotiation and establishment of the boundary itself and the definition of science and policy is part of the science-policy communication process. It is through boundary work that boundaries are made "real" (Tuinstra et al., 2006: 352).

One of the central elements of this thesis is to investigate what can be gained from this 'flagrantly opposed' – or fundamentally different - view on science-policy relations, both in terms of theoretical understanding of science-policy interactions and in terms of practical advises on how to manage interactions at these permeable and flexible boundaries. We may understand the relations between the domains of research, policy and practice differently and identify alternative courses of action or strategies to improve science-policy congruency when we empirically investigate how the domains of research, policy and practice *become* distinctive in some contexts and are brought together in different contexts. The question then becomes *how* to conduct such research and what analytical tools and theoretical concepts are equipped to undertake such an analysis.

CO-PRODUCTION

As argued in the introduction of this chapter, a theoretical perspective that seems particularly useful for an analysis of how the boundaries between science, policy and practice are negotiated (which enables a process-focus of how collaborative research projects are conducted), is Sheila Jasanoff's (2004) *co-production* framework. This framework entails a radically different view on science/policy relations – one that does not start with an *a priori* separation of science and policy as separate domains, but recognizes that there are no *principal* distinctions between research and policy:

The ways in which we know and represent the world (both nature and society) are inseparable from the ways in which we choose to live in it. […] Scientific knowledge [..] both embeds and is embedded in social practices, identities, norms, conventions, discourses, instruments and institutions (Jasanoff, 2004, p. 2-3).

This co-production framework can be seen as a fruitful analytical 'tool' to enhance our understanding of the relationships between research, policy and practice, because an understanding of how natural and social orders are being produced together sheds a different light on the interactions between researchers and policy makers. In opening the 'black box' of scientific knowledge production, the concept further highlights the need to study science *as a social practice*. While the process of scientific knowledge production is rendered a 'black box' in much knowledge translation literature, Jasanoff places this process in the center of attention.

The concept further debunks the traditional distinction between science and policy as distinct domains (with 'facts' and 'values' traditionally being associated with respectively the first and last of these domains). From a co-production perspective, however, science "is understood as neither a simple reflection of the truth about nature nor an epiphenomenon of social and political interests" (2004, p.3). Rather, the notion of co-production points to the "constant intertwining of the cognitive, the material, the social and the normative" (2004: 6). Similar to many other STS-scholars that pointed to the tightly interwoven character of science and policy in many domains (as discussed above), Jasanoff claims that "what happens in science and technology today is interwoven with issues of meaning, value and power" (2004: 15). The question then becomes how to conceptually discuss the relationships between 'the ordering of nature' through knowledge and technology and the 'ordering of society' through power and culture. Jasanoff rhetorically asks:

Does it any longer make sense for those concerned with the study of power to assume that scientific knowledge comes into being independent of political thought and action, or that social institutions passively rearrange themselves to meet technology's insistent demands? (Jasanoff, 2004: 15)

According to Jasanoff, a co-production perspective should not be seen as a 'full fledged theory', but as a way of interpreting complex phenomena. In this sense it can lead to increased explanatory power in research on various themes, as it enables researchers:

to describe the intimate relationship between the production of scientific knowledge and natural and social order, between the making of scientific advice and the advisory institutions [and] between the uptake of scientific advice in policy making and society at large […] (Bijker, Bal & Hendriks, 2009: 43).

Jasanoff distinguishes between four main themes in which research working with a co-production perspective has tended to cluster – and in which such a perspective is arguably most relevant: 1) the emergence and stabilization of new objects or phenomena (whether this refers to a particular site where knowledge is made, or around new technoscientific objects – such as the human genome); 2) the framing and resolution of scientific and technical controversies (the practices and processes by which one set of ideas gains supremacy over competing ones, for example in knowledge conflicts); 3) the intelligibility and portability of the products of science and technology across time, place and institutional contexts (which can refer to the standardization of measures and tools, but also to the ways in which [scientific] credibility claims are transported across different settings and cultures); and 4) the adjustments of science's cultural practices in response to the contexts in which science is done (referring to examinations of the cultural practices of science and technology in contexts that endow them with legitimacy and meaning).

More recently, some public health scholars also seem to have become intrigued by the notion of co-production. Greenhalgh & Wieringa (2011) criticize the traditional 'knowledge translation' metaphor for their narrow focus on the 'know-do gap' and the consequentially identified problem of problematic uptake of knowledge into practice. They argue that such metaphors insufficiently take into account – amongst others - the tactical knowledge of practitioners and the complex links between knowledge production and power exercise. These authors emphasize other conceptualizations of knowledge in non-medical fields, where knowledge production is seen as constructed and collectively negotiated.

Similarly, Nutley (2010) discusses the increased use of notions of co-production within public service management. She also outlines some of the questions that are prompted by a co-production perspective: 1) where does research co-production begin and end?; 2) are there dangers in analyzing the barriers and experiences of co-production through the lens of the 'two communities' view?; 3) is research co-production facilitated by clear boundary maintenance between the relevant communities or do boundaries inevitably become blurred? These are questions that will be picked up in the upcoming chapters. For here, it may be sufficient to point towards the fundamentally different epistemological vantage points of the two communities and the co-production frameworks, which makes them inherently incompatible.[8]

8 This point will be further addressed later in this chapter.

WHAT CAN THE CO-PRODUCTION PERSPECTIVE ADD TO OUR UNDERSTANDING OF SCIENCE/POLICY/PRACTICE INTERACTIONS?

An analysis of the ACCs in terms of this co-production perspective may provide interesting insights into the processes within this collaboration. This section investigates the suitability of the concept for an analysis of the ACCs. There are two reasons for such an assumption, which will be further described below. First, I describe how the context of the ACCs shows many similarities to the four themes Jasanoff identified as themes in which a co-production perspective is most likely to yield additional exploratory power. Second, the co-production perspective has been used in other studies of similar collaborative formats between science, policy and practice, leading to detailed and interesting results.

Similarities with Jasanoff's themes

The ACCs can be seen as sites were an analysis in terms of a co-production perspective seems to make most sense. As experimental settings that require collaborative and new forms of scientific knowledge production, they bear similarities to all of the themes outlined by Jasanoff. In relation to the first theme, the emergence and stabilization of new objects or phenomena in sites where knowledge is made, the ACCs can be seen as obvious examples of such new sites where 'usable' knowledge is being made. The second theme, the framing and resolution of scientific and technical controversies and knowledge conflicts, becomes visible in the different views and perspectives of the actors involved in the ACCs. The involvement of different actors such as university departments, Public Health Services, municipalities, knowledge institutes and other (professional) organizations also brings about different perspectives and perceptions. This makes such knowledge conflicts or controversies, for example about which knowledge is deemed relevant to the different stakeholders, likely to occur.

The third theme, the intelligibility and portability of the scientific products across time, place and institutional contexts, is also an important element in the ACCs. As these eventual products (whether in the form of scientific reports and dissertations or in the form of expanded infrastructures and resources) need to be legitimate to all the organizations involved, much effort is likely to be put into the intelligibility and portability of these reports, infrastructures and resources. The fourth theme, the adjustments of scientific practices to the contexts in which science is done, is also particularly relevant in the context of the ACCs. It is likely that there will be different expectations, quality criteria (for example regarding the balance between scientifically sound evidence and

practical usefulness or relevance), goals and aims between the actors involved, all which need to be negotiated before and during the process if the ACCs want to be perceived as successful to all. In order to produce evidence that is not only of high scientific quality, but also ranks high in terms of practical usability and policy-relevance, research conducted within the ACCs needs to incorporate contextual factors. In other words, in order to come to legitimate and meaningful results, not only in terms of scientific rigor, but also in terms of usability and relevance, scientists will need to adjust their practices in response to the contexts in which science is done.

Scientific advisory work analyzed from a co-production perspective

Within the field of STS, there are several other studies of similar collaborative formats between science, policy and practice that operate, sometimes implicitly, within a co-production understanding. This section briefly discusses some of this work and highlights the analytical results to which this led. For example, recent STS work on scientific advisory work highlighted the added value a co-production perspective can have in understanding the practices of such advisory work.

In his research into the functioning of the US National Academy of Sciences (a highly established scientific advisory institution) and its operating arm, the National Research Council, Stephen Hilgartner (2000) developed a theoretical framework to analyze how such organizations produce credible science advice. Hilgartner uses the metaphor of a theatrical 'performance' to be able to analyze how the Academy works on issues of credibility. This metaphor allows him to distinguish between 'front stage' public performances (such as the publication and presentation of a final report) and the 'back stage' negotiations and discussions that took place in the process of constructing the report. The co-production perspective in this work can be seen in the withdrawal of any a-priori distinction between what counts as 'science' and what counts as 'policy'. Rather, Hillgartner's investigation focuses on describing the ways in which these boundaries are strategically invoked as a 'front stage' image, whereas an analysis of the 'back stage' activities reveals much less rigid and clear boundaries, with many interactions and overlap taking place.

Hillgartner is not alone in his observations. In their book on the ways in which the Health Council (one of the most influential and stable advisory organizations in the Netherlands) is able to maintain its reputation of authoritative scientific institute in an era in which the status of expert knowledge seems to be eroding quickly, Bijker, Bal & Hendriks (2009) develop a more comprehensive framework for analyzing how boundaries between science and policy are

constructed. The authors describe their work as part of an extension of the sociology of scientific knowledge into analyses of the political domain, focusing on micro-level analyses of interactions amongst scientists, engineers, policy makers, and citizens. The authors show how the end product of the advisory committee - the actual advisory report - is identified front stage, but also focus on the 'back stage' coordination work, which they see as a double process of bounding and bridging:

> If we are to understand the social authority of an advisory body, both sides have to be analyzed […] It achieves its authority through boundary work, by making distinctions and producing difference between what counts as scientific and non-scientific advice, in the very act of establishing, hybridizing and orchestrating interactions. It is this dual movement that we […] called "coordination work" (Bijker, Bal & Hendriks, 2009, p. 147-148).

The authors argue that Gieryn's notion of boundary work is too limited for covering all the facets of scientific advisory work, because this advisory work does not only consist of delineating boundaries, but also on transgressing them and creating places where science and non-science can meet. Their book describes the instruments used by the Health Council in this coordination work.

Similar analyses have been provided by Van Egmond (2010) and Scholten (2009). Van Egmond focuses in her analysis of the role of science in policy making on the close interactions between researchers and policy makers in the construction of the Public Health Status and Forecasting Reports at the National Institute for Public Health and the Environment (RIVM). Her work focuses on the different strategies these scientific advisory organizations employ to come to effective and authoritative knowledge for policy, varying from 'contingent strategies of inclusion' to more 'rationalist strategies of exclusion'. Another important element this work highlights is the various 'boundary configurations' between *specific groups* of science and policy actors. Boundary configurations refer to the "strongly situated interconnections between science and policy institutions that share a specific approach to problem definitions and methods and that are embedded in, and at the same time embed, specific social, discursive and material elements" (2010: 69). The concept is relevant as it highlights how boundaries are constructed between various science-policy 'alliances' (or 'advocacy coalitions', see Sabatier, 1988) rather than between science and policy as separate domains.

In his analysis of the Scientific Council for Government Policy (the WRR, another important scientific advisory organization in the Netherlands) as a

boundary organization (cf. Guston, 1999; 2001) facilitating the development of both immigrant integration research and policy in the Netherlands, Scholten (2009) also shows how organizations such as the WRR, whilst often being depicted as organizations constituting a 'bridge' between research and policy, play a much more active role in the coproduction of immigrant integration research and policy than the 'bridge metaphor' acknowledges.

Kemp & Rotmans (2007) offer an interesting insider view on the co-production perspective as they provide a reflection on their involvement as scientists in the co-production of a new strategic framework (the National Environment Policy Plan) for energy innovation policy. Their article documents the events and interactions within a project on transition management the researchers were involved in. In the period of this project, they interacted extensively with Dutch policy makers. Interestingly, the authors reflect on the role of their own values and interests:

[W]e disagree with the view popular among scientists that science (different from policy) is free of values and interests. As shown by many studies in the sociology of science, scientists are not impartial in their choice of methods, the choice of research topics, the criteria they apply, the framing of issues as problems or solutions, and of course in stating recommendations for policy (Kemp & Rotmans, 2007: 304).

Whilst scientists and policy makers are viewed to live in different worlds according to the two communities thesis, these authors thus question this viewpoint. At a later point in the article, they discuss their own roles in the co-production of transition management knowledge:

Reflecting upon our role in the co-production process, we can distinguish various roles. We played a partisan role as scientists, not in the sense of distorting science but in putting forward our preliminary ideas about transition management. We also used our skills in persuasion. The concepts that we used were not neutral devices. […]. We also acted as co-developers. […] The whole process offered us the opportunity to co-develop ideas in interaction with policy makers. […]Policy makers were [also] involved in theoretical discussions, the interpretation of historical evidence and in co-determining the issues for discussion (Kemp & Rotmans, 2007: 315-316).

What this quote shows is that not only policy makers are actively involved in what are considered to be theoretical discussions, but also that the researchers

also used 'political skills': persuasion, co-developing ideas and introducing value-laden concepts. Again in line with the other articles discussed, this article shows the productive processes of blurring *and* demarcating boundaries.

All in all, this work thus sketches a much more detailed picture of the processes within science/policy collaboration than the two communities framework is able to provide. What this work shows, is that there are differences between strict front stage boundaries and back stage processes of collaboration, that scientific advisory work consists of both delineating and transgressing boundaries and that actors involved in such collaborations use both contingent strategies of inclusion and rationalist strategies of exclusion. Further, it shows that there are often boundary configurations of science *and* policy actors rather than predefined boundaries between science and policy, and finally, that policy makers can also be involved in theoretical discussions, whereas researchers also use political skills.

NOT JUST 'A DIFFERENT LOOK', BUT AN EPISTEMOLOGICAL TURN...

Before addressing the main research questions, it is important to reflect briefly on some of the epistemological implications implied by the co-production perspective. This is relevant because both in knowledge translation literature and in national policy discussions, the value of co-production (or co-creation) is increasingly emphasized (cf. Nutley et al., 2003; Best & Holmes, 2010; Davies & Powell, 2012).

Briefly summarized, the epistemological turn relates to two main elements. First of all, it relates to the acknowledgment that from a co-production perspective, scientific knowledge is much more dynamic than the two communities tradition seems to recognize – where knowledge is often seen as static. This static understanding becomes particularly visible when focusing on the 'evidence-*based* policy' discourse that has become dominant in public health (cf. Anderson et al., 2005). Here, 'evidence' almost seems to be seen as an event or situation. From a co-production perspective, the focus shifts to an understanding of evidence and evidence-use as a process. Rather than 'evidence-based' it is the process of 'evidence-*basing*' that becomes interesting from this perspective. This term emphasizes that arriving at 'evidence-based' policy or practice requires an intense and continuous process of simultaneously coordinating and legitimating activities that needs much configuration work and active 'orchestration'.

The second element of this epistemological turn underlying the shift from the two communities tradition to the co-production perspective is a recognition of the normative character of scientific knowledge itself. The co-production perspective – in its most radical form – recognizes the inherently political and normative character of scientific knowledge. Jasanoff summarizes the thrust of the argument vigorously: "the making of science is also political" (2004: 21). Kemp & Rotmans (2007) showed how they – as researchers involved in a process of co-production – also used 'political skills', for example through persuasion, co-developing ideas and introducing value-laden concepts. Furthermore, as other research in the co-production perspective has frequently emphasized, the demarcation of boundaries between science and other domains can also be seen as a social, or even political, act.

In a more general sense, the epistemological turn underlying the shift from the two communities tradition to a co-production perspective can be seen as a turn from a (neo)positivistic to a (social) constructivist philosophy of scientific knowledge production. According to Jasanoff, "the idiom of co-production most readily aligns itself with the interpretive and post-structuralist turn in the social sciences" (2004: 38). However, many authors using the concept do not seem to reflect on these large epistemological differences between the co-production perspective and the two communities tradition, or use some of its main components interchangeably.

For example, many knowledge translation authors emphasizing co-production processes largely remain implicit about the consequences of such an approach and as a result the implications of such a perspective remain largely uninvestigated. For example, Nutley et al. (2003) distinguish between two main frameworks that conceptualize the process of 'research implementation'. The general framework of 'research *into* practice' sees evidence as something *external* to the world of practitioners (or policy makers), whereas the framework of 'research *in* practice' sees the processes of evidence generation and professional practice (or policy making) as much more intimately involved (2003: 131-132). The 'research *in* practice' framework thus radically challenges this understanding of evidence as external to practice:

> No matter how discrete and pre-existent it appears, evidence is always inextricably intertwined with the actions, interactions and relationships of practice. In rejecting the neat separation of research and practice, this view also disputes the hierarchy inherent in this dualism, a hierarchy that privileges the objective 'facts' of research over the subjective 'knowledge' of practice (2003: 133).

Such an understanding relates closely to the co-production perspective. However, although the authors discuss the 'research in practice' framework as critically challenging an understanding of evidence as something unrelated to the actions and interactions of practice, the *consequences* of such an understanding, in terms of analytical questions, signaled problems and perceived solutions, are not discussed.

Similarly, in a more theoretical overview article, De Leeuw et al. (2008) focused on identifying useful theoretical frameworks that can help in identifying the actions to be taken at the 'nexus' of research, policy and practice in order to facilitate more integration. After an extensive literature search, the authors ordered the frameworks intro three general groups, containing a total of seven categories of theories.The theories focusing on *institutional re-design* are about 'changing the rules of the game'. They emphasize the structures ('institutions') in which interactions between researchers, policy makers and practitioners are embedded.The second group of theories focuses on the structural interactions between the actors working at this nexus.The third common group of theories is about ways to communicate at the nexus of research, policy and practice. Whilst the authors give an interesting overview, their conclusion is rather unsatisfactory: the authors conclude that each of these models is effective in a different context. However, with this conclusion De Leeuw et al. overlook the vast epistemological differences that render at least some of these models intrinsically incompatible. For example, the epistemological foundations of the 'blurring the boundaries' model are quite divergent from the 'utilitarian evidence' models.

Thirdly, in his discussion of the systems approach, Best & Holmes (2010) also seem to be ambivalent in the implications they draw from this approach. For example, one of the practical recommendations is that KTA is more likely when co-produced by researchers, practitioners and policy-makers, without recognizing the inherent incompatibilities between the notion of 'co-production' and 'knowledge to action' (if knowledge is co-produced, it is no longer *transferred to* practice, but *simultaneously and interactively produced with* practice).

In sum, it is thus important to realize that the shift from the two communities tradition to a co-production framework also implies an epistemological turn. It is more than a matter of 'switching perspectives'. It should further be clear by now that an analysis of collaboration structures between research, policy and practice departing from a co-production framework differs quite radically from the analysis based within the two communities tradition. It is not only a matter of a different focus, but even the perception of the problem becomes different. This will consequentially lead to different kinds of questions and

different perceived solutions. The next section of the introduction highlights these different kind of problems, different perceived solutions and introduces the main questions that will be answered in the next chapters. First, however, I will outline some of the theoretical concepts I used throughout the chapters.

THEORETICAL CONCEPTS

Previous work operating from a co-production framework shows that a complicated picture arises when empirically investigating collaborations between researchers, policy makers and/or professionals. What kind of theoretical concepts can be used to make sense of the processes going on in such collaborations? This section discusses the most important theoretical notions I used in this thesis. As the notion of co-production can be seen as an alternative overarching organizing conceptual framework to the two communities framework, the theoretical concepts need to give substance to this alternative framework. They are most likely to be of analytical value, then, if they originate from the same *gestalt,* or what Schwartz-Shea refers to as "that bundle of shared epistemological and ontological presuppositions, theoretical commitments, research goals, evaluative criteria, and methodological and reading practices" (Yanow & Schwartz-Shea, 2006: 91).

Broadly speaking, Schwartz-Shea distinguishes the 'interpretive research gestalt' from the 'variables gestalt'. One of the most important characteristics of the 'interpretive gestalt' is its emphasis on *meaning making*. Researchers working within this frame of mind presuppose that meanings are negotiated and constructed. Importantly, the same counts for (the making of) facts and artifacts. Science and technology are seen as *parts* of such meaning making processes. Consequentially, main topics of interest are the variations of meanings across different contexts, and the efforts to promulgate or resist particular meanings. In philosophical terms, the distinction between the 'variables gestalt' and the 'interpretive gestalt' is related to, but does not completely overlap, the distinction between a (neo)positivistic and a (social) constructivist ontology. Jasanoff's notion of co-production (and indeed most, if not all, of the field of STS) is most closely aligned to a constructivist ontology, although it is a marked shift from the more radical understandings of social constructivism, which are criticized for overemphasizing social processes.

The theoretical concepts that give further substance to the overarching co-production framework thus need to reflect the underlying presuppositions of this framework. They need to enable me to explore empirically the process

of meaning making within the context of the ACCs, the ways in which these meanings are negotiated and constructed, and how they might vary. Concepts that enabled me to do this, are Guston's (1999, 2001) notion of *boundary organizations*, Goffman's (1990) distinction between *front stage and back stage regions*, Miller's (2001) concept of *hybrid management,* and Wenger and Lave's (1991) notion of *communities of practice*. I briefly outline the basic characteristics of these concepts, which will be more extensively discussed within the individual chapters. The relationships between these concepts will be explored in the concluding chapter.

Boundary organizations

I draw on Guston's (1999, 2001) notion of *boundary organizations* to conceptualize the organizational structures of the ACCs. The concept has been developed in STS literature and originates from a mixture of sociological investigations into boundary work and political-economic approaches of principal-agent theory (Guston, 1999). According to Guston, boundary organizations coordinate different 'social worlds' while at the same time remaining accountable to each of them. Within the boundary organization there is room for negotiations over meanings, concepts and goals. In this sense, a boundary organization allows for a certain level of instability. However, this instability simultaneously needs to be managed. Characteristic for a well-functioning boundary organization is that therefore that there is internal room to discuss different perspectives, goals and expectations (and to find a balance that is satisfying for everyone involved) while the legitimacy of the activities, products and projects is not questioned in the broader organizations of the participants. Boundary organizations 'internalize' potential conflicts between science, policy and practice resulting from different incentives, priorities and work cycles, while at the same time remaining accountable to its different principals. In this sense, it centres around how meanings are negotiated within the light of different external demands. Figure 1 shows how the ACCs can be conceptualized as boundary organizations.
The ACCs can be seen as examples of such boundary organizations that internalize potential conflicts between science, policy and practice while at the same time remaining accountable to its different principals (which are in most cases local politicians or policy makers, university heads and the directorate of the PHS).

The concept provides me with a useful tool to emphasize both the processes of coordination work and mutual adjustment, while simultaneously addressing the broader accountability structures that influence the collaboration.

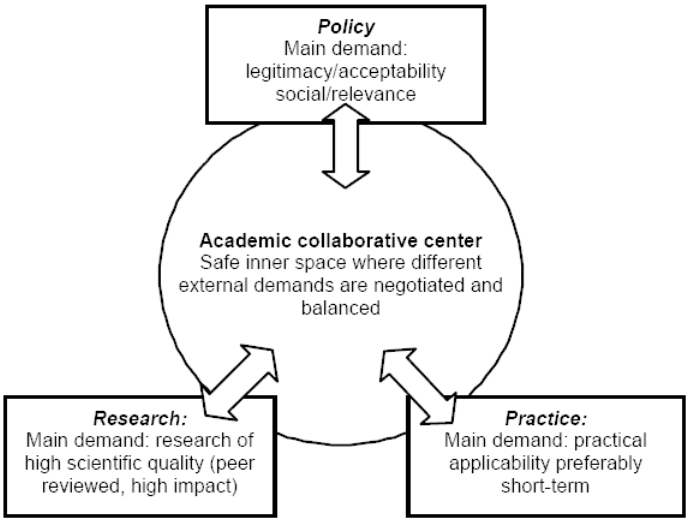

Figure 1 Internal negotiation space provided by the ACCs. A distinction is made between policy, research and practice. However, this distinction does not completely fit with the distinction between the involved organizations. in particular, larger MHSs include multiple domains

Hybrid management

The second theoretical concept that is used in this thesis, is Clark Miller's (2001) notion of *hybrid management*.This concept also originated within STS literature and can be seen as an adaption of the boundary organization concept in order to focus more on the practices and processes within science/policy hybrids rather than their organizational structures.According to Miller, hybrids can be defined as "social constructs that contain both scientific and political aspects, often sufficiently intertwined to render separation a practical impossibility" (2001: 480).With his focus on hybrid management, Miller emphasizes the processes by which such hybrids are constructed, taken apart, and ordered in relation to each other. He distinguishes between four processes of hybrid management: 'hybridization', 'deconstruction', 'boundary work' and 'cross-domain orchestration'. Hybridization refers to the integration or the 'putting together' of scientific and political elements, for example in standards and measures. Deconstruction, in contrast, refers to the separation or 'opening up' of these hybrids to reveal the value-laden assumptions that are imbedded in them. Boundary work builds on the work of Gieryn (1995) and Jasanoff (1990) and refers to the establishment and maintenance of appropriate boundaries between interacting organizations. Lastly, cross-domain orchestration refers to the coordination of activities taking place in multiple domains (even if they appear to be separate).

The hybrid management concept is helpful to understand in detail the processes that are going on in the case studies, where the different actors involved in the collaborative projects all try to manage the different demands they are confronted with. The concept enables me to further focus on how the actors involved in the collaborative projects try to balance their perspectives while also working on accountability issues and provides a useful lens investigate the strategies these actors develop to deal with this 'balancing act'.

Front stage and back stage regions

Ervin Goffman (1990) makes a useful distinction between 'front stage' and 'back stage' regions, discussed already above. Goffman's notion has its origins in sociology and takes a symbolic interactionist view on how people 'manage impressions'. In the front stage, Goffman argues, individuals deliver performances to an (external) audience. These performances make apparent that the activities employed maintain and embody certain standards. The back stage, by contrast, is a room for insiders, "where the impression fostered by the performance is knowingly contradicted as a matter of course" (Goffman, 1990: 114). Goffman's notion helps in emphasizing how within collaborative settings such as the ACCs, where a continuous balance between mutual adjustment and accountability needs to be maintained, the neat distinction between what counts as 'science' and what counts as 'policy' is often a front stage representation of the process, invoked to address the issue of accountability. The concept helps me to direct analytical attention to the distinction between the discussions and debates *within* the collaboration and the ways in which the actors involved in this collaboration strategically position themselves *outside* of this collaboration – to the different principals involved.

Communities of practice

Wenger, McDermott & Snyder (2002) define CoPs as "groups of people who share a concern, a set of problems, or a passion about a topic, and who deepen their knowledge and expertise in this area by interacting on an ongoing basis" (2002:4). The concept was empirically developed from a social learning perspective. It has been a dominant concept in the field of knowledge management. While it may seem to deviate from the origins of the other concepts, the origins of the CoP concept are within grounded, detailed empirical work close to a constructivist approach emphasizing learning in practice (Wenger & Lave, 1991; Orr, 1996; Brown & Duguid, 1991).

In the general definition of CoPs there are clear parallels with the collaborative projects in the ACCs, which also entail groups of people who share the general

concern of a poor 'fit' between research evidence, policy development and professional practice (based on the perceived substandard quality of policy and practice) and who deepen their understanding of this problem by interacting regularly. As one of the main ideas behind the development of the ACCs is that increased interaction and collaboration between researchers, policy makers and professionals will result in an increased synergy between perspectives, goals and aims, the assumption seems to be that the different perspectives of these groups can be brought together through sustained interaction. The ACCs thus function as overarching structures that facilitate different collaborative projects that have the potential of developing into CoPs.

The CoP concept is helpful in exploring the extent to which the ACCs are able to facilitate mutual learning and a synergy between perspectives. In this respect, the concept helps not only in interpreting the processes within the ACCs, but also in investigating some of the outcomes (in terms of CoP-indicators). In a sense, it investigates whether and how the various meanings within the ACCs become more synergized.

THE ANALYTICAL FOCUS AND MAIN RESEARCH QUESTIONS OF THIS THESIS

The co-production framework seems to be a promising way to reconceptualize the relationships between the domains of research, policy and practice. From such a framework, it becomes important to 'break through' the static understanding of science/policy and science/practice relations. This thesis therefore focuses on three important elements in collaboration between research, policy and practice:

1) a focus on *processes* (balancing coordination and legitimation work);
2) a focus on the *structures* in which collaboration takes place (in line with the systems perspective, this means not only focusing on interactions, but also on different accountabilities);
3) a focus on *development* of the collaboration through time (recognizing the fluidity of dilemmas in collaboration, which may change significantly over time).

The following five research questions address these multiple issues and form the core of this thesis:

1) a. How do the actors within the ACCs balance the different perspectives (as researchers, policy makers or practitioners) and the accountability

demands (to participating organizations and external parties such as the funding organization) in the collaborative research projects?
   b. What hybrid management strategies do they use for this?
   c. What are the consequences of these strategies?
2) a. How do the ACCs, as examples of collaborative infrastructures, develop over time?
   b. What kind of dilemmas and problems do they face and how do they try to solve those?
3) To which extent are the ACCs, as institutional incentives, able to meet the goal of facilitating a better synergy (in terms of increased understanding and acknowledgement of each others' perspectives, goals and aims) between researchers, professionals and policy makers?
4) How do the changing accountabilities in research (in terms of increased emphasis on societal relevance), policy (the dominance of the evidence based policy discourse) and practice (an increasingly rationalized focus on health care) affect collaboration within the ACCs?
5) a. How can the relationships between science, policy and practice be conceptualized?
   b. How can the ACCs be conceptualized?

These questions are addressed in the six chapters of this thesis. The discussion and conclusion summarizes the main findings of the articles.

METHODS

In order to answer the research questions, this thesis builds on several methods: semi-structured interviews, document analysis, observations and a focus group.

In order to answer the first three questions, I used a multiple case study approach that consisted of an in-depth investigation of four collaborative research projects conducted within the format of the ACCs. Cases were selected in terms of their variety in themes (youth health care, infectious diseases, healthy public policy, and elderly health care) and locations. More specifically, the main selection criteria were: 1) the innovative character of the project (I aimed to focus on projects that carried at least a promise of innovation; 2) projects in which the structure of the ACC could function as solution for a specific problem (ideally: projects using the infrastructure of the ACC to address problems that were otherwise difficult to address); 3) a variation in the mobilization of new groups; 4) a variation in the history of collaboration.

The data collection methods for the case studies consisted of semi-structured interviews, supplemented with document analysis (which included project proposals, various versions of draft reports, news letters, and in some cases examples of internal communication, such as email exchanges and notes) and observations (in three of the four case studies I was able to observe at several relevant meetings). In total, I conducted 52 interviews with 53 persons. In each case study, I interviewed the main actors and representatives of the relevant groups[9] (in most cases researchers, professionals, policy makers, and advisors). Per case study, I held around 10 to 15 interviews. The interviews were held between April 2008 and December 2009 (depending on the case study). They were semi-structured with much space for the respondents to address issues they found to be important. All interviews were transcribed and coded, based on both the general topic list and emerging topics from earlier rounds of analysis.

The interview questions focused on gaining a detailed picture of how the projects developed, whether the participants faced any problems, how they tried to handle those, which views and expectations they had about the projects, and what their opinions about the final product and process were. The eventual coding of the interview transcripts was also generally based on these themes (such as gaining an overview of how the project has developed, which groups are involved, which communication structures were developed, which challenges and problems the different groups experienced, how the actors involved tried to solve these, and which positive and negative elements they saw in the project). The developed codes were discussed with the researchers of the broader ZonMw-funded project and refined based on their suggestions and comments. The respondents were selected on the basis of their direct or indirect involvement in the project. I used the snowball-method to find all the relevant respondents.

To answer the fourth research question, I held two general interview rounds with the coordinators of the nine ACCs. The first interview round was conducted in November and December 2007.[10] This interview round mainly focused on mapping the organizational structures of the ACCs, their differences

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9 In one of the case studies, the main part of the interviews was conducted by a former colleague also working on the ZonMw funded project. However, we closely cooperated in preparing the interviews. Furthermore, I did conduct the analysis of original transcripts.

10 This interview round was conducted by direct colleagues working on the ZonMw funded research project on the Academic Collaborative Centres, in which I also was involved for the past four years. Although I did not conduct the first interview round myself, I transcribed and analyzed the interviews.

and similarities, the sorts of instruments that have been developed to facilitate interaction between the different domains, the perceived gains, and the preconditions for success that are conceived to be important by the actors involved. The main purpose of this first interview round was to acquire a better general understanding of the similarities and differences between the ACCs and to map interesting tensions and points of attention for a series of in-depth case studies. The second interview round with the coordinators of the nine Centres was conducted between Fall 2009 and Spring 2010. This second round of interviews enabled me to obtain insights into the ways in which the ACCs have developed. The interviews focused on changes in infrastructure (in order to find out whether new parties and organizations became involved and/or new projects were started) as well as whether the Centres were able to generate new ideas and initiatives.

This total of 18 interviews (leading to a total of 71 interviews) was supplemented with an analysis of relevant documents and websites (such as grant application forms, progress reports, news letters, websites and other documents related to developed formats within the ACCs). Next to the document analysis, we organized an additional focus group meeting with the coordinators, which was held in January 2011. During the focus group, several statements about the ACCs and their development were presented to the coordinators. These were partly based on our findings and aimed to generate discussion amongst the coordinators, thus adding an additional reflective layer to the analysis. The focus group provided useful additional information that supplemented the analysis thus far.

OVERVIEW OF THE CHAPTERS

In chapter two I argue that many authors in the public health field identify gaps between science, policy, and professional practice. Solutions are often sought in the facilitation of interactions between policy makers and researchers, or through the establishment of partnership structures. However, there is a lack of empirical research on how these interactions contribute to research utilization by policy makers, and under which conditions. The chapter analyzes the 'Healthy in the City' project as an example of a collaborative project within the ACCs to contribute to this understanding of how such collaborative partnerships work. Although this partnership structure facilitated interactions, it did not automatically render these interactions meaningful. In order to prevent or diminish conflicts, careful issue management on a formal and informal level was

adopted and attention was paid to the role of knowledge brokers, the expectations of science and policy actors, and the ways in which different perspectives could be converged.

In chapter three I argue that discussing issues of 'research uptake' or 'research utilization' in terms of 'gaps' that need to be 'bridged' is unproductive when analyzing structural collaborations or partnerships between researchers, policy makers and practitioners. Rather, within collaborative settings such as the ACCs, where a continuous balance between mutual adjustment and accountability needs to be maintained, the neat distinction between what counts as 'science' and what counts as 'policy' is only one side of the story. In this chapter I build upon Goffman's distinction of front stage and back stage regions to analyze how the clear distinctions between research and policy that are made represent a 'front stage' (Goffman, 1990) presentation, whereas 'back stage' processes reveal much more coordination and mutual adjustment across domains.

Chapter four addresses, in contrast with the second and third chapter which predominantly focus on science/policy relationships, the relation between research and (professional) practice. It argues that the increasing importance given to evidence-based methods is a component of a rationalization process in health care that contains other components as well, such as how prevention programs are set up and how they are expected to disseminate when proven to be successful. The chapter investigates the effects such rationalized health programs on local practices (in terms of the practical dilemmas they may cause, the developed strategies to cope with these dilemmas and how local practices try to reshape the program).

In chapter five I argue that scientific knowledge production has become increasingly opened up to public scrutiny. Consequentially, knowledge production is increasingly assessed in extra-scientific criteria. This article conceptualizes the ACCs as formats in which 'responsive science' is organized and different quality criteria must be taken into account. The chapter provides an empirical investigation into how this balancing act between scientific quality and extra-scientific criteria such as policy relevance and practical usefulness is established. I analyze four case studies of collaborative projects within the ACCs and use Miller's notion of 'hybrid management strategies' as an analytical heuristic to make sense of this process of collaboration (and how the actors involved work on this balancing act). Whereas the second and third chapter also addressed the first research question, this chapter provides a more elaborate and extensive answer to this question, based on multiple case studies.

Chapter six focuses on the potential ACCs have for achieving a better integration of various perspectives. I analyze the four collaborative projects in terms

of their resemblance to 'Communities of Practice' (Wenger & Lave, 1991). However, by also focusing on the tensions and dilemmas within the projects, we develop a more critical stance towards the ways in which this notion has been used in much literature. The chapter further focuses on the relations between the collaborative projects and the structure provided by the ACCs. The ACCs are conceptualized as 'seeding structures' aiming to facilitate interactions and meeting places (and thus provide at least the incentives for potential CoPs to develop). This chapter provides an answer to the second research question.

Chapter seven claims that even though much public health literature has addressed the need to develop structural collaborations between researchers, policy makers and professionals in order to 'reduce the gap' between research and policy, surprisingly little analytical attention has been given to how such structural collaborations *develop over time.* The chapter provides an empirical account of how the Dutch ACCs have developed within the last four years; which dilemmas and difficulties they faced at various 'stages' in their development and how the ACCs tried to deal with these dilemmas. Furthermore, the chapter highlights the fluid and changing character of the dilemmas collaboratives such as the ACCs face and concludes that much can be gained from a more longitudinal perspective on how research-policy partnerships develop and change over time. This chapter provides an answer to the fourth research question.

In the conclusion, I outline the general lessons that can be learned from this study and highlight the main empirical and theoretical contributions. The main questions will be answered on the basis of several underlying themes that become visible in the preceding chapters. Furthermore, the conclusion will explicate the relations between the theoretical concepts used throughout the thesis. Furthermore, I reflect on the strengths and limitations of the study and on my role as researcher in the process.

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Chapter 2

The construction of evidence-based local health policy through partnerships: research infrastructure, process and context in the Rotterdam 'Healthy in the City' program

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ABSTRACT:

Many authors in the public health field identify gaps between science, policy and professional practice. Solutions are increasingly sought in facilitating interactions between policy makers and researchers through the establishment of partnership structures. However, there is a lack of empirical research on *how* these interactions contribute to research utilisation by policy makers, and under which conditions. This article provides such empirical material by analyzing a project conducted within an innovative partnership structure in The Netherlands and shows that although a partnership structure might facilitate interactions, it does not automatically render these interactions meaningful. In order to balance potential conflicts, careful issue management on a formal *and* informal level is needed. Partnership designs aiming to facilitate interactions between researchers and policy makers should pay attention to the role of knowledge brokers, expectations of science and policy actors, and the ways in which different perspectives can be converged.

INTRODUCTION

Many authors in the public health field identify gaps between science, policy and professional practice that result from diverging priorities, work cycles and routines, and institutional incentives (Weiss, 1991; Davis & Howden-Chapman, 1996; Locock & Boaz, 2004; Anderson et al., 2005; Brownson et al., 2006; Goldstein, 2009). Theorizing these gaps has moved from linear models of knowledge production as a purely scientific activity informing policy development to models focusing on interactions, partnerships facilitating two-way exchanges, establishing personal contacts and sustained dialogue (Lomas, 2000a; Innvaer et al., 2002; Nutley, Walter & Davies, 2003; Jansen et al., 2008; Mitchell et al., 2009; Nutley, 2003; Young et al., 2002; Lomas, 2000b; Elliott & Popay, 2000; Hanney et al., 2003).

In recent literature, these partnerships are mainly described as structures that have the potential of facilitating interactions between policy makers and researchers (Young et al., 2002; Lomas, 2000a). These interactions should ensure that both are exposed to the other's worlds and needs. Many authors emphasize that interactions should not be limited to the "product stage", but recognize the importance of early and sustained interactions (Mitchell et al., 2009; Lomas, 2000b). All in all, however, the literature on partnership arrangements seems to be rather programmatic. Although attention focuses on *facilitating interactions* between policy makers and researchers, there is less empirical substantiation about the processes that show *how* these interactions contribute to research utilisation by policy makers, and under which structural conditions (Nutley et al., 2003; Nutley, 2003).

This article illustrates the details and workings of a research-policy-practice partnership in the Netherlands. In 2005, the Netherlands Organization for Health Research and Development started a program for the development of Academic Collaborative Centres (ACC) for Public Health. These form a virtual infrastructure for long-term collaborations between a regional Public Health Service (PHS) and a university research department, aimed at strengthening the usefulness of scientific research for evidence-based policy and practice. In total, nine ACCs have been developed, covering diverse public health issues. The Dutch ACCs manifest themselves in a collaborative agreement and the exchange of personnel as liaisons between the PHS and the university.

This article aims to strengthen the conceptualisation as well as the design implications of the partnership concept. We will investigate how the partnership provides structure for science/policy interactions and which consequences emerge for the content of collaborative research projects. One of the ACCs

(CEPHIR, the Centre for Effective Public Health In the larger Rotterdam area) developed a particularly interesting instrument for policy-oriented projects, the so-called 'Small But Beautiful' procedure. We selected one collaborative project that was conducted within this procedure and is perceived by most participants to have fostered evidence-based local health policy: the public health modelling study for the 'Healthy in the City' policy program in the Rotterdam area (Burdorf et al., 2008). Our case study of this collaborative project within the structure of CEPHIR provided an opportunity for a broad analysis of the relationships between the *structure* of the ACC and the Small But Beautiful procedure, the *process* of interactions of the actors involved and the emerging *content* of the study, in relation to the specific local context of the project.

The results are structured as follows. First, we describe the Small But Beautiful procedure, as well as the development and content of the *Healthy in the City* project. From this reconstruction one particular issue emerges that illustrates the opportunities and constraints of the partnership concept in practice. Despite the structure of CEPHIR and the Small But Beautiful research procedure, expectations of the *Healthy in the City* study diverged between the scientists and policymakers involved. We describe how the expectations evolved and clashed. Then we elaborate on how the different perceptions were managed internally and externally. This issue shows that, although the ACC as a structural partnership provides an incentive, resolving issues in the partnership requires additional and more informal strategies.

METHODS

In order to analyze the partnership concept, we adopted a qualitative research design of a retrospective in-depth case study for interpretive empirical analysis. Data collection consisted of 16 semi-structured interviews, using a topic list derived from exploratory meetings, scientific literature related to our theoretical framework, and 'grey' literature such as project reports, the project start-up paper and other related documents. Interviewees included a diverse range of people from the PHS, the university department and the Rotterdam municipality, including policymakers, managers, and epidemiologists. The interviews were conducted between May and September 2008, with two additional follow-up interviews in 2010. Furthermore, we observed the interactions between the involved parties during several meetings and seminars. The data were synthesised in a thick description, which, along with the interview has been communicated back to the respondents for member checking.

CONTEXT: POLITICAL MOTION

The *Healthy in the City* study was initiated after a political motion had been issued by a local representative in the Rotterdam Council to explore the measures necessary to upgrade the health status of the Rotterdam population to the Dutch average level. In 2006, the local Policy Paper 'Healthy City' showed the relatively low health status of the Rotterdam population as compared to the average Dutch population. The motion was accepted by a majority in the Council and delegated to the agency that authored the paper, the Public Health Service. Having recently established the CEPHIR infrastructure with the academic research department of Public Health of the Rotterdam Erasmus MC, the PHS asked this department to collaborate. The Public Health department agreed to participate in the project because it provided opportunity to experiment with a new modeling technique, and publish about its worth.

STRUCTURE: CEPHIR AND THE 'SMALL BUT BEAUTIFUL'-PROCEDURE

CEPHIR is one of the partnership structures with an overall aim of strengthening and anchoring demand-driven research activities in the area of public health. In CEPHIR 15 researchers work on long-term research projects, together with employees of the Public Health Services of Rotterdam (and two smaller PHS's). PHS employees from different departments are given the opportunity to start a PhD project. Furthermore, the steering committee and advisory board of CEPHIR involve directors and staff members of the PHS. The steering committee acknowledges the important network role of CEPHIR, in facilitating interactions between science and policy actors, organizing meetings in the form of seminars and debates, and communicating relevant information. Within CEPHIR two coordinators are active. One is provided by the PHS, the other by the Erasmus MC. Both are seniors with numerous years of experience. Furthermore, the coordinator provided by the Erasmus MC already had a dual appointment and thus experience in both settings. The Centre developed the Small But Beautiful procedure as an instrument to facilitate closer interactions between policy makers and researchers.

The Small But Beautiful procedure for collaborative policy-oriented research aims to break down common tensions between researchers and policy makers, such as diverging problem perceptions and timelines (Kreuger, 2007). In short (three month) research projects practical policy questions are addressed in interactive rounds of problem clarification and amenability to research, research

design, report discussions and user-focused presentations. The procedure seems highly promising in fostering two-way interactions.

The project structure was set up as follows. At the start up of the project, a supervision group was formed within the PHS, including both CEPHIR coordinators, members from several sections within the PHS and researchers from the Erasmus MC, but excluding the PHS policymakers responsible for the Healthy City program. The project was coordinated by the CEPHIR coordinator based at the PHS.

CONTENT: THE 'HEALTHY IN THE CITY' STUDY

The *Healthy in the City* study is a modeling study in which a Health Impact Assessment (HIA) was made in order to calculate which potential policy measures should be taken to reduce the health disadvantages of the Rotterdam population. The Gothenburg Consensus describes HIA as a combination of methods, procedures and instruments with which a policy proposal or program can be judged in terms of the effects on the health of a certain population, and the division of those effects within the population. The researchers drew up a 'disease model', allowing them to describe the relationships between health determinants, the prevalence of various diseases and the resulting mortality.

The study concluded that unhealthy lifestyles and poor air quality explain the health disadvantages for 15-20% of the population in terms of life expectancy and for 18-34% in terms of healthy life expectancy. Differences in education level and income between Rotterdam and the rest of the population explain 30-50% of the health differences. Coherent policy measures and interventions can lead to substantial health improvements, with a maximal reduction of the health disadvantages of 18% in terms of life expectancy and of 41% in terms of healthy life expectancy (Burdorf et al., 2008).

The next section discusses how the study developed, followed by an in-depth analysis of process interventions to make the study outcomes practicable for policy makers.

PROCESS: A SHORT CHRONOLOGY OF THE STUDY

The project was conducted between May and November 2007. The table below gives a reconstruction of the key moments in the project. (Table 1)

Table 1: a chronology of the *Healthy in the City* study

Date	Event
Dec 2006	Labour party councillor hands in political motion to find out how to reduce health disparities of the Rotterdam population
April 2007	Public Health department of Erasmus MC contacted and involved in the outline of the study
May – Nov 2007	Study is being conducted, PHS supervision group meets regularly with Erasmus MC researchers
Dec 5, 2007	Presentation of first results in broader PHS group, first involvement of the Healthy City project group
Jan 15, 2008	Combined group met for the second time, adaptations are discussed
Jan 22, 2008	Deadline for last changes in the report
Jan 30, 2008	Results discussed with the alderman of Public Health & Welfare
Feb 5, 2008	Results discussed with the alderman of Youth
Feb 6, 2008	Results presented to broader audience in CEPHIR seminar, last final reading round to finalize report
March 2008	External orientation aimed at introducing councillors to most important findings of the report
April 15, 2008	Report discussed by local councillors in a meeting of the Commission of Societal Support, Public Health and Participation
June 4 2008	Results presented in the advisory committee of CEPHIR

Setting up the project

At the start of the project, a clear division of roles was made: the Erasmus MC would 'deliver the facts', whereas the PHS would 'provide the policy translation'. The political motion was translated into three research questions: 1) how large are the health disparities and determinants between the Rotterdam population and the Dutch population?; 2) which reduction in disparities is needed?; and 3) which primary preventive interventions can facilitate this reduction?

Emerging issues and content: Expectations of the domains of science and policy

Through a series of meetings, the PHS supervision group and the Public Health department developed a shared understanding about the study design and division of labour. However, when the primary results of the study were discussed for the first time with the *Healthy City* policy group within the PHS, the policy makers responsible for the implementation of the *Healthy City* policy program articulated very different expectations of the study. They expected the study to result in some sort of 'cookery book' that would describe the best policy measures (Interview cluster manager PHS, 010708). Although one of the research questions referred to the policy measures that needed to be implemented, the

policymakers thus still expected a different kind of answer, that would be much more concrete. This resulted in a chaotic meeting:

> This first meeting […] was like a Babylonian confusion of tongues of researchers on the one side and policy-makers on the other side. The research clearly didn't give answers to their questions, and they didn't know what to do with it. In short: it was two hours of chaos. And there was disappointment: the research did not answer the great questions Healthy City stands for – what should we do to make the Rotterdam population healthier? (Interview coordinator CEPHIR, 270508)

According to one of the policy group members, the presentation consisted of "endless Excel-sheets with all kinds of fantastic formulas, but with no practical implications attached" (Interview *Healthy City* program manager, 300708). Since both the presentation and the outcomes of the study were disappointing to the policy audience, many saw this meeting as a crucial turning point in the project (Interview coordinators CEPHIR, 270508 and 100608).

The idea that science would come up with 'the ultimate solution' was a persistent misconception throughout the study. Members of the policy group were accused of not recognizing the methodological and scientific difficulties and impressiveness of the results, which were "well above the average evidence-standards of policy makers" (Interview head of Public Health department Erasmus MC, 070708). This quote shows that the academic researchers involved in first instance focused more on scientific standards than on the understandability and practical usefulness of their findings. Policymakers at the PHS on the other hand were disappointed by the lack of policy relevance of the results and accused the researchers of being too focused on the scientific questions.

Internal issue management: Managing diverging expectations for a jointly accepted study output

Eventually, the coordinators developed two strategies bringing the perspectives back together: through 'expectancy management' and by developing a 'scenario approach' for the study. The expectancy management consisted of two parts. First, the coordinators undertook various informal discussions between the actors involved in order to put everyone's expectations into broader perspective. Second, the similar viewpoints resulting from this broader perspective were formally confirmed in an email to all involved.

The second strategy that was used to bridge the differences is the development of a scenario approach in the study. The potential health benefits in (healthy) life expectancy were estimated in both an optimistic and a realistic

scenario. The first draft of the *Healthy in the City* study discussed a wide range of specific interventions. In the second draft, these specific interventions were clustered into seven scenarios, which formed 'coherent packages of policy measures and interventions aimed at specific target groups or approaches'. Table 2 shows the scenarios:

Table 2: the seven scenarios of the *Healthy in the City* study

Scenario 1	A Healthy Youth Has A Healthy Future
Scenario 2	Healthy Adults Set The Right Example
Scenario 3	Healthy Air In Rotterdam
Scenario 4	Rotterdam Moves
Scenario 5	Implementation Of National Interventions
Scenario 6	Health Policy Through Primary Health Care
Scenario 7	Work And Poverty Policy

The suggestion for the scenario approach came from the main researcher, who cooperated closely with the coordinator of the project and the supervision group within the PHS to further develop the scenarios. The development of the scenarios required balancing between scientific quality (what is known about the effects) and practical relevance (the scenarios needed to show clear links with the policy program of the PHS) (Interview former coordinator CEPHIR, 060810). According to the policymakers the scenario-approach helped to make the study more useful. Furthermore, the scenarios reduced the complexity of the report to a relatively 'simple' coherent picture of the benefits of different policy measures. The scenarios in this respect formed a language in which both scientists and policymakers could understand the results of the study. All in all, the scenarios were thus very well received. The scenarios, and especially their titles, enabled the policymakers to grasp the main message and conclusions of the report easily. The scenarios were especially praised because of the clear focus they provided. Although they were not translated directly into the new policy program of the PHS, they did contribute to the conceptual development within the PHS (Interview former coordinator CEPHIR, 060810).

External issue management: Legitimizing the findings to external audiences

The PHS communicated the results of the study to different audiences, the most important being the responsible Alderwoman and the Rotterdam Council. After the final report was finished, the PHS tried to enhance the legitimacy of the findings by carefully timing the report presentation to the local Councillors, and by contextualizing the findings in an integral approach to public health.

The presentation was carefully negotiated with the Alderwoman and integrated with the presentation of two other studies in order to create a 'public health momentum' for policymakers.

Besides timing and contextualization, the PHS tried to legitimize the findings by putting the scientists 'on stage'. Although the PHS was responsible for the policy translation of the findings, they deliberately let the Erasmus MC researchers present the results. With this strategy the PHS tried to use scientific rigor as a way to enhance the legitimacy of the findings. An example of this strategy can be seen when the PHS organized a meeting at the Erasmus MC to first inform the Councilors about the results of the study:

> They [the Councilors] found it very interesting. They also enjoyed being put back into the lecture room again. ***We purposively did that***. We even literally tried to arrange one of those classical round lecture rooms, but we did not succeed (Interview assistant Healthy City program manager, 260608, italics added).

Such a setting thus enhances the idea of scientists "speaking truth to power". It implicitly attributes the authority and credibility associated with the academic setting to the results of the study, and it also guards the boundaries of the discussion: the Councilors can ask questions for clarification, but the implicit academic rule is to never dispute the professor's knowledge. It is also a strategy to depoliticize the report in advance through the means of scientific rationalization.

Perceived quality of the output and outcomes

Most participants perceive the collaborative project to have fostered evidence-based local health policy. Not all debates with regard to the study had been resolved, however. For instance, one of the PHS senior advisors regularly expressed concern about underestimation of the *presuppositions* at the basis of the model (Interview Head Development and Implementation, 110608). Nevertheless, the study gained broad support. The *Healthy Cities* program manager argued that the study would serve as important input for the new PHS policy program. Furthermore the study has been influential in the agenda-setting and a broader conceptual awareness of the links between labour and health (Interview main researcher, 270410). The brochure 'Healthier Rotterdam', which is part of the newly formed 'Academic Coalition' shows a broader cross-over of the Erasmus MC and local policy actors. This coalition is an alliance between the Rotterdam municipality and the Erasmus MC, with the specific aim of

connecting research knowledge with local health policy and practice. This coalition is a much broader development than the Healthy in the City project, but the experiences with CEPHIR seem to have helped in its facilitation (Interview main researcher, 270410).

DISCUSSION

This case study shows that the collaborative infrastructure of CEPHIR facilitates more sustainable interactions between researchers and policy makers. Nevertheless, in the course of the project uncertainties and conflicts arose. These conflicts are mostly related to the academic quality criteria that remain dominant. So even though the ACCs can be seen as innovative partnership structures, traditional scientific standards remain dominant in determining design and output criteria. This could only be balanced after careful issue management on a formal *and* informal level.

The Small But Beautiful procedure was developed to achieve a better connection between scientific research and policy development at the local public health policy level. Currently, the actors involved consider it a success story, and the Netherlands Organization for Health Research and Development requires each ACC to develop a similar procedure for the second financing period. However, our case study shows that although this procedure seems promising, much coordination work is required in order to create legitimacy towards different audiences.

The structure of the ACC facilitates a 'secluded' space in which researchers, policy makers and practitioners can discuss different perspectives and goals informally and on equal terms, enabling a consensus before exposing the output to external users and stakeholders of the project. The 'expectancy management' and the development of the scenario approach in this case are internal consensus strategies that strengthen the legitimacy of the output to outsiders and reduce the risk of external criticism and politicization of the study.

CONCLUSIONS

This article aims to strengthen the conceptualisation as well as the design implications of the partnership concept. We gave a detailed empirical analysis of a project conducted within a local partnership structure aimed to facilitate mutual exchange between researchers, policy makers and professionals. Instead

of merely addressing the interactions between the actors involved, we extended our empirical analysis to the relationship between the aspects of *structure*, *process*, and *content* in a specific local context.

While the structure of the ACC facilitates a 'secluded' space, at the same time both researchers and policy makers still face their own organisational accountability demands that limit the room for negotiation. The ACC makes it possible for researchers to work on local questions and enables policy makers of the PHS to use more scientific argumentation to substantiate the quality of their policies. However, this structure does not guarantee that the cooperation will lead to the intended goals. This also applies to the Small But Beautiful procedure. This procedure leads to a focus on local policy questions and makes these achievable in terms of timing for policy decisions, but the procedure itself does not guarantee questions will be answered in a satisfying way. This article showed what is necessary in terms of formal and informal process coordination to achieve useful scientific evidence.

Several elements emerged as crucial conditions for the process. In this project, a broad consensus was missing, which led to diverging expectations about the study, and accordingly, required a great deal of expectancy management to unite these different expectations. In the internal and external management of this issue, the intermediary role of the PHS was an important factor in guiding the project. The PHS, in casu, the ACC coordinator(s) and the PHS director, served as 'knowledge brokers' as well as 'process managers' between the researchers of the Erasmus MC and the local politicians of the City Council. Both researchers and policy makers were positive about this intermediary position of the PHS.

For theories concerning the relationship between research and policy this means two way exchanges are indispensable for reaching mutually experienced qualitative cooperation and output. The current literature on partnership arrangements should extend its focus on the interactions between the actors involved to other relevant aspects, such as the infrastructural arrangements that facilitate how the processes of interaction and coordination take place. Additional research should focus on the role of the 'knowledge broker' (Meyer 2010, 118-127) and provide more empirical examples of *how* different partnership structures both facilitate and limit the possibilities for science/policy interactions.

Implications for partnership design

Although a partnership structure might facilitate interactions, it does not automatically render them meaningful. First of all, it is important to achieve a broad consensus with likely end users about the actual problem statement and study

design, since policy questions are often formulated differently from research questions. Our research shows how an initial consensus may be withdrawn in a later stage if necessary. An important implication is to continuously monitor and adjust expectations. Furthermore, finding innovative ways of converging different perspectives and constructing a language in which scientists and policymakers alike can understand study results is important, as the positive reception of the scenario-approach showed. The intermediary role of the coordinator in negotiating the different groups was crucial. The Small But Beautiful procedure functioned as a pressure-cooker that strengthened the perceived need to reach consensus. Partnership designs aiming to facilitate interactions between researchers and policy makers should pay explicit attention to the role of coordinators, the underlying expectations of science and policy actors, and the ways in which different perspectives can be converged.

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Chapter 3

The Coordination of Research, Policy and Practice: A Case Study of Collaboration in the Field of Public Health

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ABSTRACT

Public policies and services are increasingly scrutinized for their quality and accountability. As part of this development, 'evidence-based' ways of working have become more important in most public sector activities. In the Netherlands this led to the development of Academic Collaborative Centres (ACC) for Public Health: formal, long-term collaborations between a Municipal Health Service (MHS) and a given university department. In this article we argue that discussing issues of 'research uptake' or 'research utilization' in terms of 'gaps' that need to be 'bridged' is unproductive when analyzing *structural* collaborations or partnerships between researchers, policy makers and practitioners. Rather, we argue that within collaborative settings such as the ACCs, where a continuous balance between mutual adjustment and accountability needs to be maintained, the neat distinction between what counts as 'science' and what counts as 'policy' is only one side of the story. We use the notions of 'boundary organization' (Guston, 1999) and 'front stage and back stage settings' (Goffman, 1990) to analyse how this balance is maintained within a case study of a collaborative project conducted within one of the ACCs: the 'Healthy in the City' project.

INTRODUCTION

Public policies and services are increasingly scrutinized for their quality and accountability. As part of this development, 'evidence-based' ways of working have become more important in most public sector activities. Also within the public health sector these developments can be noticed. The last decades have witnessed a spread of the movement of evidence-based medicine to evidence-based public health policy and practice (Olsson, 2007; Lin & Gibson, 2003). Indeed, "the theme of evidence-based public health dominates international, national and regional public health meeting agendas and the term "evidence of effectiveness" has become a central part of public health dialogue" (Anderson et al, 2005).

Accompanying this call for evidence-based policy is considerable debate on what is phrased as the 'knowledge to action gap', which refers to the poor incorporation or uptake of research results in policy and practice settings (Davis & Howden-Chapman, 1996; Locock & Boaz, 2004; Anderson et al, 2005; Brownson et al, 2006; Goldstein, 2009). In the Netherlands, several national policy advisory reports discuss the 'increasing gap between research and policy as well as research and practice' (Algemene Rekenkamer, 2003; WRR, 2004; RGO, 2003). Research uptake by public health policy makers and professionals is said to be insufficient, while at the same time scientific research often neglects relevant factors that can influence prevention practices, interventions and policies (Donker, 2006; de Goeij & Meijer, 2006; RGO, 2003). Within recent theorizing, structural collaborations, interactions and partnership arrangements between researchers, policy makers and other community stakeholders are increasingly seen as potential solutions to narrow or 'bridge' these gaps (Lomas, 2000; Innvaer et al., 2002; Nutley, Walter & Davies, 2003; Jansen et al., 2008; Mitchell et al., 2009; Nutley, 2003; Young et al., 2002; Lencucha, Kothari, & Hamel, 2010).

The aim of the article is not to expand towards a discussion on the different definitions and models of ´research utilization'.[11] Rather, we argue that discussing issues of 'research uptake' or 'research utilization' in terms of 'gaps' that need to be 'bridged' is unproductive when analyzing *structural* collaborations or partnerships between researchers, policy makers and practitioners.[12] These

11 For a general overview of these different models – which include more linear models such as the 'knowledge driven' model or the 'engineering model', but also more dialogical models such as the 'interactive' model, we refer to Hanney et al. (2003), who provide an extensive review on this.

12 Although we are aware of the many different concepts that are used to discuss the ways in which research or evidence impacts or informs policies and practices (see

concepts, first, seem to imply that a neat distinction can be drawn between what counts as 'research' and what counts as 'political'. However, within recent decades an increasing amount of scholars both in STS (science and technology studies) and interpretive policy sciences have criticized this perspective, arguing that this distinction is an *end point* rather than a *starting point* (Latour 1987; Gieryn, 1995; Hajer & Wagenaar, 2003). Specifically in structural collaborations, this distinction between research and policy thus becomes difficult to make in practice. For example, Scholten (2009) argues that organizations operating at the boundaries of science and policy are often portrayed as bridges' between these domains, while in fact they generally have a much more active role in shaping these domains as well. Second, the focus on bridging different 'worlds' through collaboration and prolonged interactions between researchers and policy makers neglects the different incentives that need to be taken into account and, consequentially, the accountability criteria each 'world' faces.

Empirically, the article draws on research into a recently established partnership structure in the Netherlands. The Academic Collaborative Centres for Public Health, developed from 2005 onward by the Netherlands Organization for Health Research and Development (ZonMw), are formal, long-term collaborations between a Municipal Health Service (MHS) and a given university department.[13][14] The overall purpose of the program is to structurally strengthen and anchor demand-driven research activities in the area of public health, broadly defined as infectious disease control, prevention and health promotion. The

Graham et al. (2006) and Nutley, Walter, and Davies (2003) for recent overviews), it is not the purpose of this article to address these differences in detail. Since this is not the main point we want to make with the article, we provide a working definition. In its broadest sense, 'research utilization' refers to 'moving research findings into action'. 'Action' in this sense can refer both to policy and practice settings. Generally, 'utilization' is divided into four main types (see Nutley et al [2003]): instrumental use (changes in behavior and practice), conceptual use (changes in levels of knowledge, understanding, or attitude), mobilization or support (the manipulation of knowledge to attain specific power or profit goals, such as political gain), and wider influence (altering paradigms or beliefs).

13 In total, nine ACCs have been subsidized, with different – but also overlapping – themes such as health promotion, youth health care and infectious diseases. Apart from the variety of themes, differences in contextual factors are highly important, such as the history of relations between a MHS and a university (department) and the number of municipalities a MHS has to 'serve'.

14 In the Netherlands, every municipality is obliged to have a MHS to conduct several public health tasks. Usually the larger cities established their own MHS, whereas MHS's in the more rural areas often 'serve' multiple municipalities (up to 60). Regular task areas of the MHS's range from infectious diseases and youth health care to epidemiology and the development of health promotion activities.

Centres should enable better collaboration between practice, policy, research and education, ultimately leading to products, services and facilities for public health that are both accessible and of high quality (ZonMw, 2005). This article presents an empirical analysis of a collaborative project for evidence-based policy: the 'Healthy in the City study', which is a collaborative project conducted within one of these Centres (CEPHIR). The project is part of an innovative, policy oriented research format called 'Small But Beautiful', which focuses on *short* research projects triggered by policy questions (Kreuger, 2007).[15]

The main argument this article seeks to make is that within collaborative settings such as the ACCs, where a continuous balance between mutual adjustment and accountability needs to be maintained, the neat distinction between what counts as 'science' and what counts as 'policy' is only one side of the story. We argue that it is a *front stage representation* (Goffman, 1990) of the process, invoked to address the issue of accountability. In the front region, individuals deliver performances to an (external) audience. These performances make apparent that the activities employed maintain and embody *certain standards*. However, in order to understand how the different research and policy actors involved were able to reach consensus and discuss different perspectives, additional information of what goes on in the *back stage* is required, since this is where the mutual adjustment and coordination takes place. The back stage, by contrast, is a room for insiders, "where the impression fostered by the performance is knowingly contradicted as a matter of course" (Goffman, 1990: 114). Here the performer can relax and step out of character. We argue that collaborative structures such as the ACCs can work effectively and achieve this balance because they function as *boundary organizations* (Guston, 1999) that internalize potential conflicts into a back stage setting while remaining accountable to its principals on the front stage.

The outline of this article is as follows. The next section positions the article in current debates on theoretical perspectives of science/policy interaction, with a specific focus on two blueprints that can be seen as 'extremes' covering a range of perspectives: a 'transaction model' and a 'transfer model'. Next, we discuss the theoretical concepts we use as analytical tools to make sense of how science/policy interactions develop within the ACC-project we studied. Then we describe the case study and the methods used. The main part focuses on the empirical analysis of the 'Healthy in the City' study. We then reinterpret the empirical analysis in terms of Goffman's front stage / back stage perspective and Guston's notion of boundary organizations. In the discussion, we tie the

15 For a more extensive discussion of this format, see Kreuger (2007).

findings to prior research in current debates on science/policy interactions and the development of partnership models. The conclusion stresses that such an analytical perspective may be helpful to better understand how collaborative structures between research and policy function and the constant work that is needed in bounding and bridging science and policy domains.

BOUNDARY ORGANIZATIONS AS MEDIATORS BETWEEN FRONT STAGE AND BACK STAGE REPRESENTATIONS

At the risk of oversimplifying the vast literature on the relation between science, policy and practice, we would argue that, in general, a shift can be seen from models that presume primacy for either science or policy towards more incremental models that presume dialogue (Scholten, 2009; Van Egmond, 2010). In a recent article in this journal, Pülzl & Rametsteiner (2009) make a useful distinction between two 'extreme' theoretical blueprints of science/policy interaction: a 'transaction model' and a 'transfer model'.[16] The transfer model conceptualizes science and policy as separate domains that are disconnected from each other. From this perspective, thus, the bridging of these domains becomes necessary. Within this model, the production of scientific facts is seen as a value free process. Interactions between science and policy are seen as linear and one-dimensional. The other extreme in the spectrum of perspectives is provided by the transaction model. Here, scientific knowledge production is rendered far from value-free. Scientific policy advice is seen as a hybrid activity where scientific knowledge intermingles with political judgment. Science/policy interactions are here seen as two-sided, non-linear and dynamic processes. Interaction becomes a kind of 'joint knowledge production': an ongoing process of cooperation, competition and confrontation.

We would argue that both extremes – although they employ completely different perspectives on the relations between science and policy – do not necessarily contradict each other. Rather, they *relate to different moments and reflect different purposes*. The transfer model and the 'two worlds' metaphor can be seen as *representations* that are strategically used by organizations operating in the gray areas between science and policy in order to enhance the legitimacy of their work (Stone, 1998). However, when looking at the process of coordinating

16 Although we agree with these authors that this is a highly limited depiction of an enormous body of literature, we also believe that these two extreme examples sufficiently show the breadth of the theoretical perspectives on these relations.

perspectives that takes place, we can see a situation that resembles much more characteristics of the 'transaction model', where science and policy are much more intertwined than the transfer-model would presume. When building on this proposition, it becomes important to find analytical tools that are helpful in investigating how this takes place. Two concepts seem to be especially useful for this: David Guston's (1999) notion of *boundary organizations* and Ervin Goffman's (1990) metaphor of *front stage and back stage regions*.

Boundary organizations, according to Guston, coordinate different 'social worlds' while at the same time remaining accountable to each of them (Guston, 1999). Within the boundary organization it is possible to negotiate over meanings, concepts and goals. In this sense, a certain level of instability is allowed and managed at the same time. Characteristic for a well-functioning boundary organization is that there is internal room to discuss different perspectives, goals and expectations (and to find a balance that is satisfying for everyone involved) while the legitimacy of the activities, products and projects is not questioned in the broader organizations of the participants. The ACCs can be seen as aiming to be such boundary organizations that internalize potential conflicts between science, policy and practice resulting from different incentives, priorities and work cycles, while at the same time remaining accountable to its different principals (see figure 1).

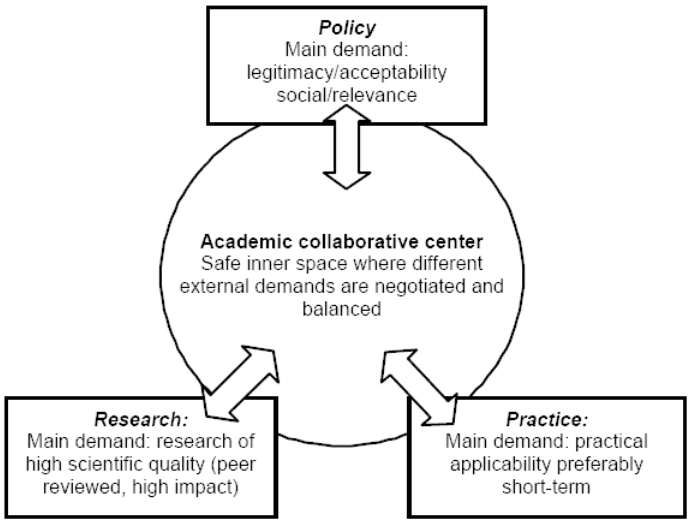

Figure 1 Internal negotiation space provided by the ACCs. A distinction is made between policy, research and practice. However, this distinction does not completely fit with the distinction between the involved organizations. in particular, larger MHSs include multiple domains

Since the ACCs (and the projects conducted within them) are positioned between different domains, they need to balance two common challenges: 1) to coordinate the different perspectives and activities of the different research, policy and practice agents involved (the researchers conducting the study as well as members of the supervision group, which will be discussed later); and 2) to legitimize the activities and compromises to the different principals (local politicians, university heads and the directorate of the MHS, as all of them articulate different demands and criteria to which the project should adjust). The main question for the empirical analysis thus becomes: how do the agents in this project work on this balancing act, what issues do they face and how do they try to solve these issues?

Guston's concept is then especially helpful in understanding how such a balance between concerns about external legitimacy and internal coordination and consensus-seeking is sought for, whereas the metaphor of front stage and back stage regions (Goffman, 1990) provides an additional heuristic to analyze how the agents developed *strategies* for this 'balancing act'. This heuristic has currently structured other empirical analyses of how evidence, knowledge and scientific credibility are constructed as well (see, for example, the work of Hilgartner, 2000; 2004; Sharma, 2006; and Bijker, Bal, & Hendriks, 2009).

METHODS

This article focuses on a project that has been conducted within previously mentioned 'Small But Beautiful'-format. [17] We investigated the Healthy in the City-study, which is a modeling study in which a Health Impact Assessment (HIA) is made in order to calculate which potential policy measures should be taken to reduce the health disadvantages of the Rotterdam population in comparison to the national average. We selected this particular project because of the innovative, policy oriented format in which the project takes place. Projects conducted within this format need to provide scientific answers to questions of policy makers or professionals. Furthermore, this format specifically aims to mediate between the divergent timescales of researchers (usually long term projects) and policy makers (who usually need short-term answers),

17 The original Dutch term is 'Klein maar Fijn', which is also a commonly used phrase to describe something that is good or useful, despite or because its small size. The common English phrasing is "Small but perfectly shaped". However, since the respondents themselves used the phrase "Small but Beautiful", I will follow their translation.

which makes it an interesting case to investigate the 'balancing act' referred to previously.

We used a combination of qualitative research methods for our data collection: we held a range of semi-structured interviews, but supplemented this with a document analysis (studying all relevant documents related to the Healthy in the City study, such as draft reports, internal memos as well as examples of informal emails between the people involved) and observations (we observed the interactions between the involved groups at several occasions, such as meetings and seminars). First we conducted a series of informal meetings with key actors within CEPHIR, in order to get a broad overview of the case study and the persons involved. Next, a series of 14 semi-structured interviews (varying in length from 1 to 1 ½ hour) were conducted, using a topic list derived from the exploratory meetings, scientific literature related to our theoretical framework, and 'grey' literature such as project reports, the start-up paper and other related documents.

The interview questions focused on gaining a detailed picture of how the project developed, whether the participants faced any problems, how they tried to handle those, which views and expectations they had about the project, and what their opinions about the final product and process were. Respondents included numerous agents from all domains: researchers from the department of Public Health at the Erasmus MC (who were conducting the project) and a range of participants from the MHS (members of the direct supervision group as well as policy makers who were informed about the project). Furthermore we interviewed a number of principals as well: the councilor who handed in the proposal that formed the starting point of the study, as well as the head of the university department and the director of the MHS.

The respondents were selected on the basis of their direct or indirect involvement in the project. We used the snowball-method to find all the relevant respondents. The interviews took place at different locations: the PHS, the Erasmus MC, and at local government offices. Most interviews are held by RW, some by RW and RB. The interviews were conducted between May and September 2008. All interviews are transcribed and coded in consultation with the whole research group, based on both the topic list and emerging topics from the interviews. Furthermore, interview transcripts have been sent back to the respondents. Additional checks on interpretation were built in by sending back the thick description (Geertz, 1973) of the case to key respondents for member checking.

One of the disadvantages of interviews is that they are mostly based on recollection. We intercepted this issue in two ways: by talking to a diverse range

of people, which allowed us to spot potential differences in recollection and by triangulation of sources (interviews, formal and informal document analysis, observations).

THE HEALTHY IN THE CITY PROJECT

The *Healthy in the City* study has been conducted within the context of the previously mentioned 'Small But Beautiful'-format. The *Healthy in the City* study proved to be the most ambitious project conducted within this format.[18] It is a modeling study in which a Health Impact Assessment (HIA) is made in order to calculate which potential policy measures should be taken to reduce the health disadvantages of the Rotterdam population in comparison to the national average. The authors define a HIA as "a combination of methods, procedures and instruments with which a policy proposal or program can be judged in terms of the effects on the health of a certain population, and the division of those effects within the population" (Burdorf et al., 2008). Through combining known effects on important determinants of health with the consultancy of epidemiologic studies that investigated the connections between these determinants and public health, the researchers drew up a 'disease model', which allowed them to describe the relations between determinants, the prevalence of various diseases and the consequential mortality caused by these diseases. This model enabled the researchers to calculate which effects potential policy measures can have on the determinants of public health and, accordingly, what the consequences are of the changes in these determinants.

A short chronology of the project

The *Healthy in the City* study builds on the 2006 MHS policy document 'Healthy City', which showed the relatively low health status of the Rotterdam population. This document was discussed in the city council in December 2006, leading a Labour Party-councilor to hand in a proposal to find out exactly which efforts are necessary to get the Rotterdam population on the same health level as the Dutch average. The proposal was accepted and assigned to the MHS, who contacted the public health department of the Erasmus MC, one of the partners

18 Its official name, *GIDSmod*, refers to two elements. GIDS stands for 'Gezond in de Stad' ('Healthy City'), which is the title of the policy implementation program of the MHS Rotterdam Rijnmond. 'Mod' stands for 'modeling' and refers to the method of the HIA that is used in the study.

in the Academic Collaborative Centre, to concretize the proposal to a scientific research project.

In the course of the project, a supervision group was formed within the MHS, including both CEPHIR coordinators as well as several staff members, managers, and epidemiologists. From the public health department the group included an epidemiologist as main (senior) researcher and a PhD student. This group met several times to discuss the 'fine-tuning' of the model and the structuring of the research design and process. In a later stage, when the primary results of the study were available, the study was presented to a larger audience within the MHS, which included not only the supervision group, but also (for the first time) the *Healthy Cities* project group, responsible for the 'process management' of the broader MHS policy program.[19]

The actual project was conducted between May and November 2007.[20] Table 1 gives a schematic overview of the project, from its prehistory until the various presentations of the main findings.

Table 1: a chronology of the *Healthy in the City* study

Date	Event
Dec 2006	Labour party councillor hands in political motion to find out how to reduce health disparities of the Rotterdam population
April 2007	Public Health department of Erasmus MC contacted and involved in the outline of the study
May – Nov 2007	Study is being conducted, PHS supervision group meets regularly with Erasmus MC researchers
Dec 5, 2007	Presentation of first results in broader PHS group, first involvement of the Healthy City project group
Jan 15, 2008	Combined group met for the second time, adaptations are discussed
Jan 22, 2008	Deadline for last changes in the report
Jan 30, 2008	Results discussed with the alderman of Public Health & Welfare
Feb 5, 2008	Results discussed with the alderman of Youth
Feb 6, 2008	Results presented to broader audience in CEPHIR seminar, last final reading round to finalize report
March 2008	External orientation aimed at introducing councillors to most important findings of the report
April 15, 2008	Report discussed by local councillors in a meeting of the Commission of Societal Support, Public Health and Participation
June 4 2008	Results presented in the advisory committee of CEPHIR

19 Interview *Healthy Cities* assistant program manager, 260608

20 The complexity of the theme made it impossible to conduct the study within the three months normally available for SBB-projects.

Balancing consensus and accountability

In order to understand how the participants in this project developed strategies to meet the different external demands (see Figure 1) while simultaneously coordinating their different perspectives to achieve mutual consensus, the analysis of the project will be structured around several core elements. First, we investigated the discussions that took place between the MHS and the public health department during the study, the ways in which different perspectives with regard to the study are managed and the ways in which the coordinators of the project tried to create a general sense of consensus. Second, we focus on how the results of the study are presented towards the different principals, as well as which strategies are used to make sure the results are well-received.

Negotiating a useable question

During the preliminary discussions on the research design, the most important way in which the project team tried to create consensus and coordinate different perspectives was by making use of *personal informal contacts* to create mutual adjustment. A clear example is the way in which the original proposal of the councilor was actually 'co-written' by the MHS. According to several respondents, this is usually a 'messy informal process' of phone calls and emails, without a clear preformatted structure.[21] In this case, the first version of the vote was formulated in a normative mode: the health condition of the Rotterdam population *must* be on the level of the Dutch average within X years. Through informal contacts, the question was reformulated into "which efforts are necessary to get the Rotterdam health condition to the Dutch average." This example shows the importance of informal contacts between the actors involved: it is through these informal contacts that they are able to produce a vote that is useable for politicians as well as the MHS. Importantly, they also rephrase the vote as a question that is amenable to scientific investigation. One aspect of this is that it neutralizes the direct political tone of the earlier version.

The second strategy of the MHS, who faced the challenging demands of the original proposal, was to contact the public health department of the Erasmus MC. Although it was fairly early recognized within the MHS that this proposal could be a very relevant contribution to the work and the goals of CEPHIR, more strategically this would also relieve some of the pressure behind the demands of the proposal. By involving the Erasmus MC and by placing the vote under the

21 Interviews director MHS, 020708; 1st coordinator CEPHIR, 270508; labour party councilor, 240608; local policy official, 190808

structure of the ACC, the MHS tried to create a space in which they could freely discuss with Erasmus MC how to properly answer the vote in a scientific way.

The involvement of the public health department had consequences for the 'tackling' of the councilors' question. The original vote was translated into more specific knowledge questions, emphasizing which specific determinants account for the health disadvantages of the Rotterdam population, and what is the maximum that can be done at these determinants to decrease these disadvantages.[22] The councilors' proposal to find out exactly which efforts are necessary to get the Rotterdam population on the same health level as the Dutch average was thus translated into three specific research questions.

'Babylonian confusions' and expectancy management

After the preliminary discussions on the research design, a small supervision group within the MHS cooperated with the researchers of the Erasmus MC. They met regularly to discuss the general progress of the project. During these meetings, only minor adjustments in the research were made. However, during the meeting on December 5th 2008, when the *Healthy City* project group of the MHS was first involved, it became clear to all parties that the expectations of these policy makers were highly different from the expectations of members of the supervision group:

> This first meeting […] was like a Babylonian confusion of tongues of researchers on the one side and policy-makers on the other. The research clearly didn't give answers to their questions, and they didn't know what to do with it. In short: it was two hours of chaos. And there was disappointment: the research did not answer the great questions Healthy City stands for – what should we do to make the Rotterdam population healthier? (Interview 1st coordinator CEPHIR, 270508)

Many of the respondents saw this meeting as an important turning point in the project. According to the other coordinator, this was mostly due to the fact that the policy makers of the MHS didn't see through the methodological and scientific impressiveness of the results in relation to the short period in which the project was carried out.[23] Furthermore, several respondents highlight that members of the *Healthy City* project group expected that the study would result in some sort of 'cookbook' that would be 1-on-1 transferrable to policy

22 Interview head of Public Health Department Erasmus MC, 070708

23 Interview 2nd coordinator CEPHIR, 100608

decisions.[24] It was only during the presentation of the results of the study that some policy makers at the MHS realized that the study was not going to tell them how to invest their money.[25]

During the project, the supervision group tried to deal with these difficulties in two ways: through *expectancy management* and through the development of a *scenario approach*. The expectancy management consisted of two parts. First of all, many informal discussions between the actors involved took place after the meeting in order to let everyone reorient their expectations and 'let off steam'.[26] Secondly, after this reorientation, a more formal confirmation was sought. The coordinator sent out an email to all participants in order to 'pick up the pieces' and to get everyone's perspective on the same line. The quote below shows the first part of this email:

24 Interview cluster manager infectious diseases, MHS, 010708

25 Interview senior researcher MHS, 110608

26 Interview 2nd coordinator CEPHIR, 100608

Dear all,

The 'Healthy in the City' research is a fine example of the usefulness of CEPHIR: communication between researchers and policy-makers. Sometimes this is a search for everyone involved.

From a scientific perspective, last week […] a special model was presented. Special, because you put an intervention in and then the effect of that intervention on the prevention of certain diseases and on the improvement of our life expectancy is calculated. This doesn't seem special, but to public health researchers nationally and internationally this ***is*** special.

Within the MHS we are interested in what we must do to improve health. Does this research lead to usable advices for us? The memo of 5 December, which names examples of 'possible statements', is going to be the eventual product of the exercises that are now carried out by the researchers. The boundaries of science are explored, because the [statements] should be scientifically justified. We shouldn't settle for statements that aren't scientifically justified (1st coordinator CEPHIR, personal communication).

This email emphasizes the specialness of the study and argued that MHS employees shouldn't be content with statements that lack scientific evidence. Furthermore, the mail acknowledges that the researchers did as much as possible to include elements that were relevant for the MHS ("the boundaries of science are explored").

The second way in which the project team tried to bridge the different perspectives was by developing *scenarios*. Whereas the first version of the study discussed a wide range of specific interventions, the second version clustered these specific interventions into seven scenarios, which formed 'coherent packages of policy measures and interventions aimed at specific target groups or approaches' (Burdorf et al, 2008). This proved to be a very successful strategy that most respondents saw as a highly positive adjustment:

'Healthy in the City' was very much research-oriented. But in the end we have sought to translate that [research] to certain images. It's best if you can turn that [research] into images that people can relate to, something they can literally imagine. ***A Healthy Youth Has A Healthy Future***: that sounds splendid. That is a nice headstand to reveal a whole story about which things are most

effective to emphasize with youngsters (Interview program manager ***Healthy Cities***, 300708).

The success of the scenarios is situated in their potential to provide both groups with a language to mutually discuss the findings of the study, regardlaess of the differences in interpretation. In this sense, the scenario approach is an illustrative example of a specific category of 'boundary devices', labeled by Shackley & Wynne (1996) as 'scheduling into the future'. According to these authors, scheduling 'furthers mediation between science and policy actors' when it contains the possibility of combining joint and individual interpretations. The scenario approach was read by policy makers as a robust prediction of the future ("something they can literally imagine"), whereas the researchers interpret the scenarios with more ambiguity (recognizing the 'relative softness' of the model, in which several presuppositions are made, for example with regard to the sustainability of behavioral changes). However, it provided both with a language to discuss the results of the study.

Presenting the findings and orchestrating perspectives

With the development of the scenarios and the finishing of the project, the results of the project needed to be communicated to the relevant councilors and aldermen. However, the results were not simply handed over. In fact, much work went into *orchestrating* the perspectives of the audience. For the presentation of the study, several elements proved to be important in this orchestration: the *timing* of the report, the *embedding* of the main findings *into a broader context* and *image forming* (or, as Hilgartner (2000) refers to it, "creating impressions").

The first aspect in orchestration is the role of timing. In order to enhance the legitimacy of the findings, the project team acknowledged that the results of the study had to be communicated *at the right moment*. Two other studies – the health survey and the youth monitor - were finished just before the *Healthy in the City* study was finished as well. The MHS however choose to wait with informing the councilors until the *Healthy in the City* study was finished as well, in order to create a momentum to talk about the health status of the Rotterdam population.[27]

The second element in orchestration is the *embedding* (or incorporation) of the results into a broader, more relevant context. It was considered to be important to synthesize the findings of the *Healthy in the City* study with the results of other studies, in order to create a more robust and coherent image

27 Interview *Healthy Cities* program manager, 300708

and to present the *Healthy in the City* study as part of an integral story.[28] The importance of embedding the results of the study into a broader context is also reflected in the development of the different "scenarios" in the report. Furthermore, the results of the study were pre-discussed with the alderman of Public Health, before the results were to be presented to the councilors:

Actually we [have] sat down with [the] alderman when the draft report was [already] finished, to inform her about the [general directions of] the conclusions. Also to see how she could use that, within her own political agenda, and how we eventually should present it […]. Also with regard to timing, because several other researches were carried out […]. To prevent that you send one research to the [city council] in one week, and the other week the press [reports on] the other research. Then everyone loses the thread of the story, so we very carefully attuned with her what we put where on the table and what the [main] message is (Interview director MHS, 020708).

In this sense, the results are also embedded into the political agenda.

The third element that served an important function in orchestrating perspectives relates to *image forming*, or the creation of certain impressions. For example, the MHS organized an "external orientation" for the councilors, in which they were first informed about the results of the study. They were given a presentation about the findings at the Erasmus MC:

They [the councilors] found it to be very interesting. They also liked very much to be put back into the college banks again. ***We purposively did that***. We even literally tried to arrange one of those classical round college rooms, but we did not succeed in that (Interview Healthy Cities assistant program manager, 260608, italics added).

Interestingly, through the setting the actors try to enhance the idea of scientists "speaking truth to power". It is an attempt to already incorporate the credibility of the results in the setting of the presentation. One of the respondents referred to this as the "white coat effect" and explains that this attempt was a deliberate strategy in communicating the results of the study.[29]

The second strategy that was used when the results of the project were presented towards the different audiences can be labeled *scientization* (or the

28 1st coordinator CEPHIR, personal communication

29 Interview Healthy Cities assistant program manager, 260608

process of highly emphasizing the scientific quality of the report). Four aspects exemplify this strategy: the *strict role division* that is employed throughout the study, the actual *design of the final report*, the "*public display of unity*" and the '*fortification' of the text* (in a Latourian sense) by means of citations and increased technicality (models, graphs, et cetera). Scientization is thus not limited to merely letting scientists present the results.

The first aspect in which the tendency towards scientization can be detected is in the boundary work (Gieryn, 1983) that was conducted at the beginning of the project. A clear *demarcation of roles* that has been made during the project: the Erasmus MC was responsible for the scientific content of the study, whereas the MHS was responsible for the policy translation. The second aspect of scientization is the actual *design and composition of the final report*. Several things are noticeable in this context. First of all, the front cover has been illustrated in the traditional colors – blue and white – of the Erasmus MC. The Erasmus MC logo features prominently on the top left of the report. Furthermore, the title of the report[30] does not reflect the way in which the study is referred to in daily discussions (the "*Healthy City* study"). This semi-official name is only mentioned on the second page. The outline of the report differs remarkably from the outline of the other 'Small but Beautiful' reports, which are all illustrated in the same way. The front pages gives no hints whatsoever about the involvement of the MHS in the report. Even the logo of CEPHIR is not depicted. It is only on page seven – after the summary and the index – that the involvement of the MHS becomes clear.

The third aspect of scientization is the *public display of unity*. Following Hilgartner, this refers to a drama of agreement: the report speaks in a single, unified voice, while not addressing all the discussions and negotiations (which were not all solved) that took place during the study. For example, many elements of the study were left uninvestigated due to lack of time and data. However, the final report only briefly touched upon these issues. Furthermore, the *presuppositions* (for example about the sustainability of behavioral changes) at the basis of the model and the *selection* that has been made at the start (the availability of certain outcome measures) are left unrecognized. One of the respondents argues that "the longer you talk and think about it, the softer the model becomes"[31].

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30 "Estimate of the effects of preventive measures on the health of the Rotterdam population".

31 Interview senior researcher MHS, 110608

The fourth aspect of scientization focuses on the textual level of the report: the 'fortifications' (increased technicality, such as models, graphs, et cetera) that are mobilized in the text in order to increase the scientific credibility of the findings (Latour, 1987). The final report of the *Healthy in the City* study finds itself in an ambiguous position. On the one hand, the report is written down in clear, non-scientific (Dutch) language in order to increase the usefulness for policy makers and MHS professionals. A short, comprehensive summary is given at the beginning of the report. The conclusions and recommendations at the end of the report are also clear and to-the-point. However, the analytical part of the report becomes increasingly technical, with many (relatively complicated) models, graphs and tables to answer the main questions. Each of these models, graphs and tables is in its own right a fortification: potential critics should be able to understand these models in order to potentially refute them.

THE HEALTHY IN THE CITY PROJECT: A THEORETICAL REINTERPRETATION

The previous analysis showed how the participants in the *Healthy in the City* study tried to coordinate and negotiate the different perspectives and expectations about the project, while simultaneously trying to 'sell' the results of the project to the local councilors and aldermen. However, the analysis thus far leaves a number of questions unanswered. How can we understand the strict role division between the Erasmus MC and the MHS when at the same time we saw the continuous involvement and discussions of the MHS (first, the supervision group, later also the policy group) during the project? And how does the responsibility of the MHS for the policy translation relate to the active role of the researchers in presenting the findings? By reinterpreting the analysis in terms of Goffman's front stage / back stage perspective and Guston's notion of boundary organizations, we are able to answer these additional questions.

Then we see that the neat distinction between what counts as 'science' and what counts as 'policy' is only one side of the story, a front stage representation of the process, while at the same time continuous back stage negotiations between research and policy actors are necessary to reach consensus and discuss different perspectives. The ACC functions as a boundary organization that internalizes potential conflicts into a back stage setting while remaining accountable to its principals on the front stage.

By 'delegating' the original vote to the Erasmus MC and maintaining a strict *front stage* role division, the MHS tried to release some of the pressure behind the demands of the vote. In fact, they tried to make use of the back stage space

the ACC provides, in which they could freely discuss with Erasmus MC how to properly answer the vote in a scientific way. On the front stage – in weekly discussions between the director of the MHS and the involved aldermen[32] – the study and the ways in which it progressed were hardly entioned.[33] This enabled the Erasmus MC and the MHS to discuss how the study should be structured and which interventions should be investigated, without the need to constantly legitimize each choice. The involvement of the *Healthy City* project group – responsible for the incorporation of the findings into the broader policy implementation program of the MHS – led to heated discussions. However, since the debate took place in the back stage region, it was possible to close the lines in order to orchestrate a coherent front page performance. The email that was sent out after all discussions in this sense can be seen as a more formal affirmation of the informal 'expectancy management', or an attempt to definitely 'close the ranks'.

During the presentation of the study, the participants attempted to increase the credibility of the study through 'putting the scientists on the front stage'. The way in which the external orientation was set up – with its traditional college-like setting – clearly resembles such a front stage 'performance'. The analysis of the *Healthy in the City* project shows that on the front stage, the traditional 'two worlds metaphor' is played out through the strict role division that was made. In the back stage space that is provided by the structure of the ACC, however, we see a transgression of boundaries.

DISCUSSION

The analysis of this case study illustrates how despite a strict formal role division, the boundaries between science and policy in the *Healthy in the City* project were not as clear as they were presented to be. How do the findings of this case study then 'tune in' with current debates on science/policy interactions and the development of partnership models?

For one part, the findings within this case study are in line with previous analyses of how organizations in the grey areas between science, policy and practice function as boundary organizations. Scholten (2009) analysed the Dutch Scientific Council for Government Policy (WRR) as a boundary organization that both

32 These weekly meetings can themselves be studied as backstage spaces of other processes. However, for the *Healthy in the City* study they functioned as a front stage.

33 Interview director MHS, 020708

operates on the science-policy nexus and contributes to its shaping. He argues that the role of these kinds of organizations is usually understood in terms of the so-called 'bridge metaphor'. The organizations are seen as constituting a bridge between different communities. Indeed, this metaphor is particularly dominant in much current talk about the ACCs. However, Scholten argues that organizations operating in-between scientific research and policy, whilst often portrayed as 'bridges' between these domains, generally have a much more active role. They are hybrids of both fields, combining elements of science and politics, but at the same time, it is in the interest of these organizations in general to maintain the myth of a distinction between knowledge and scholarship on the one hand, and politics, policy and interests on the other hand. A similar argument has been made by Bekker (2007), Bijker, Bal, & Hendriks (2009) and Van Egmond et al. (2011). When compared to our case analysis of the *Healthy in the City* project, this is exactly what happened. On the front stage, the 'two worlds' metaphor is played out through the strict role division that was made. In the back stage space that is provided by the structure of the ACC, however, this transgression of boundaries can be seen.

The findings of this case study however also seem to contrast previous perceptions on science-policy interactions. Locock & Boaz (2004) for example have argued that although there are pressures for researchers to make their work more useful and relevant to policy and practice, it is still important to remember that research, policy and practice communities have distinct traditions, skills and obligations. According to these authors, "an artificial suppression or 'blurring' of the boundaries between them can be damaging in the long term" (2004: 375). In contrast, Pohl et al. (2010), who analyzed researchers' roles in knowledge coproduction, focused on the collaborative endeavor of academic and non-academic actors in the public space of the 'agora', where the boundaries between domains are intentionally blurred. Both then seem to employ a rather one-sided perspective on the issue. Whereas Locock & Boaz emphasize the importance of (front stage) separation, Pohl et al. focus on the (back stage) processes in which the boundaries between domains are blurred within the 'agora'.

Although Pohl et al. argue that the collaborative projects they investigated were successful because "the academic and non-academic communities confronted one another's world views in a purposefully open intellectual and social space" (2010: 276), one is left to wonder about exactly the extent to which they are open. Although the 'messiness' of the agora is arguably a more permeable space than a boundary organization, it is still a space *at the intersection of different realms*, where in the end, different criteria need to be maintained.

With regard to the point raised by Locock & Boaz, whilst we would not deny the importance of recognizing the distinct traditions, skills and obligations, we do want to argue that it is exactly this 'blurring' of the boundaries that can be very productive as well.

In that sense, a productive tension between the front stage and back stage is a prerequisite, we would argue, for organizations and actors who have to find a balance between different tasks: coordinating perspectives and legitimizing decisions to meet distinct accountability criteria. Then, it is not the blurring of boundaries that needs to be explained, but the *simultaneous* blurring and separation that seems to take place. As we saw in the *Healthy in the City* project, the back stage process in which the boundaries between science and policy are provisionally blurred helped in achieving consensus in a relatively save, 'sealed' environment (without constantly needing to legitimize each decision). However, this blurring of boundaries 'out in the open' runs the risk of decreasing legitimacy to all communities. Therefore, on the front stage we saw a strict demarcation and a re-invocation of the old and familiar 'two communities' perspective.

CONCLUSION

The main argument of this article is that a perception of research/policy interactions in terms of 'gaps' that need to be 'bridged' may be unproductive when analyzing structural collaborations or partnerships between researchers and policy makers. The main difficulty is that the concepts seem to imply a neat distinction between what counts as 'research' and what counts as 'policy', while specifically in structural collaborations, where a continuous balance between mutual adjustment and accountability needs to be maintained, this distinction becomes difficult to make. Through an in-depth investigation into such a collaborative project, the *Healthy in the City* project, we aimed to show how this distinction is carefully crafted as a *front stage* representation, whereas at the same time within the *back stage* provided by the overarching structure of the ACC as boundary organization, much effort was put into reaching mutual adjustment and consensus.

We argued that collaborative structures such as the ACCs can work effectively and achieve this balance because they function as *boundary organizations* (Guston, 1999) that internalize potential conflicts into a back stage setting while remaining accountable to its principals on the front stage. We showed the front stage / back stage metaphor to be a useful conceptual tool to analyze how the

participants in the *Healthy in the City* project developed strategies to deal with both challenges of adjustment and accountability. Future research focusing on collaborative projects may benefit from more explicit attention towards these kinds of front stage / back stage processes.

This is not to say that the front stage construction is not the 'real' story or 'merely a fraud'. The front stage and back stage regions are mutually dependent on each other: *both* are different sides of the same coin, but with different purposes. In this case, the 'front stage story' deals with issues of accountability and formal coordination, whereas the back stage processes were about informal coordination and preparations. As such, it is a useful starting point to make sense of the discrepancies between the discussions and decisions made in the course of the project and the front stage presentation and legitimation of the results. In this particular study, the back stage space of the Collaborative Centre enabled the participants to "orchestrate" the front stage presentation of the findings. However, the strict front stage role division also led to an increasing scientific (narrow) conceptualization of 'evidence'. This conceptualization partly led to the sacrifice of some standards (practical usefulness, for example with regard to the inclusion of mental health problems) in order to sustain other standards (scientific quality, since the report only focuses on measures for which comparative data is available) in public.

The metaphor should thus not be misread as depicting the work of science advice as fake and window dressing (see Hilgartner (2004)). Although the analysis of the *Healthy in the City* shows which strategies are used to create a legitimate 'front stage presentation', this does not suggest that the study is merely false imagery and rhetoric. In fact, the amount of work, coordination and negotiation that was necessary to create this front stage legitimacy shows that in order to create a product that is legitimate and relevant for scientists as well as policy makers – as the Collaborative Centres are expected to deliver – much back stage work needs to be conducted. However, these front stage and back stage processes do need to be adjusted toward each other appropriately. For example, when the different front stage criteria become too strict, collaborative projects are less likely to succeed in reaching consensus about these in the back stage region. Furthermore, as the case study showed, reaching consensus requires a lot of effort. Therefore, in order for collaborative projects to be successful, this back stage space should be well-organized. We believe that more specific analyses focusing on how this adjustment between front stage presentations and back stage processes is organized in different settings could serve as a welcome addition to current debates on science/policy interaction. With this case study we hoped to contribute a small step in this direction.

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Chapter 4

Health Programs Struggling With Complexity: A Case Study Of The Dutch 'PreCare' Project

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ABSTRACT:

This article aims to understand the effects of rationalized health programs (the basic components of which are efficiency, calculability, predictability and control) on local practices. We discuss how a successful U.S. intervention in preventive early childhood health care (the Nurse Family Partnership) has been translated and adapted within a Dutch setting. The Dutch version of the program is called 'PreCare'. The empirical analysis highlights this program in terms of the amount of work required, how local practices are disciplined and how these programs (re)draw boundaries. We also investigate the 'travel expenditures' involved (meaning the 'costs' involved in the spread of complex health interventions and programs to different settings in terms of local problems with the rigid structure and timeframe of an intervention), the developed 'coping strategies' (ways of dealing with such rigidity), and how local practices (try to) reshape the program.

Our empirical analysis builds on a combination of qualitative methods. We conducted 16 semi-structured interviews with 19 people involved in the PreCare program. The majority of the interviews were conducted between July and November 2008. We also conducted an analysis of relevant documents related to the PreCare intervention and protocol. Furthermore, we observed at several meetings. We used field notes to collect data at these meetings.

The article makes a theoretical and practical contribution to the field. Theoretically, we show how the rationalization process is linked to a broader development of quantification and how both developments are based on a particularly modern ontology and epistemology in which what is considered 'real' and 'knowledgeable' becomes closely tied to what is measurable. The article offers a different conceptualization of rationalized health programs. Practically, we focus on the *tools* that are able to deal with both the need to standardize and the need to be open towards local practices.

INTRODUCTION

Within the field of public health, as well as in other health care and educational settings, evidence-based work processes are growing in importance. Public health policies and practices are expected to use the best available evidence (i.e. meta-analyses, systematic reviews and other synthesis approaches, as available) in order to optimize their activities (Anderson et al., 2005; Bero et al., 1998; Cookson, 2005; Davies, 1999; Grol & Grimshaw, 2003; Lin & Gibson, 2003; Olsson, 2007; Slavin, 2002). This article argues that the increasing importance given to evidence-based methods is not a stand-alone development. Rather, it is a component of a rationalization process in health care that contains other components as well, such as the regular set-up of prevention programs and their expected dissemination when proven successful (cf. Berwick, 2003).

Several authors have noted the increasing rationalization of public health (cf. Hunter, 2003; Porter, 1995). Ritzer (1996) outlines four basic components of a rational system: efficiency (following the steps of a predefined process), calculability (emphasizing quantitative rather than qualitative aspects), predictability (similarity across different times and places, predictable behavior) and control (personnel trained to do a limited number of things in precisely the way they are told to do). Hacking (1990) argues that since the development of statistics in the nineteenth century, the 'taming of chance' has become a central tenet in contemporary society. It seems to be a central tenet in many prevention and health promotion programs as well.

We argue that this tenet neglects the context-specific and often highly complex character of local health practices. Instead of simply 'disseminating' best practices or 'implementing' interventions, numerous authors show the amount of work that is required to make this implementation or dissemination 'successful' (Mathar & Jansen, 2010; Nielsen, 2010; Zuiderent-Jerak, 2007). As is further discussed below, an increasing body of work from multiple disciplines and approaches (sociology, science and technology studies, and ethnographic research in health care), highlight the complex aspects of this rationalized approach to prevention and health care.

This article aims to understand the effects of such rationalized health programs on local practices – in terms of the practical and ethical dilemmas they may cause, the strategies developed to cope with these dilemmas and how local practices try to reshape the program. We discuss how a successful U.S. intervention in preventive early childhood health care (the Nurse Family Partnership) has been translated and adapted within the Dutch setting. The Dutch version of the program is called 'PreCare'.

This article makes both a theoretical and a practical contribution to these issues. Theoretically, we show how the rationalization process discussed above is intimately linked to a broader development of quantification of social phenomena, in the sense that both developments seem to be based on a particularly modern ontology and epistemology in which what is considered 'real' and 'knowledgeable' becomes closely tied to what is measurable. The practical contribution of this article is that it moves beyond merely signaling that rationalized approaches do not sufficiently take the complexities of health care practices into consideration (and therefore lead to a plethora of effects and dilemmas), toward suggesting a fruitful category of tools (Callon's (2002) 'writing and rewriting devices') that can facilitate the delivery of health care programs in new contexts. These 'rewriting devices' (which will be elaborated later) enable health programs to deal with both the need to standardize *and* the need to be open towards local practices.

The next section introduces the PreCare project's trial and intervention designs. After discussing our methods, we provide an empirical analysis of the PreCare project, with an explicit emphasis on the amount of work and extensive infrastructure required to 'manage' the program, an understanding of how the program intervenes and (re)draws boundaries in local practices, its disciplining effects, the strive to balance global coherence as opposed to local specificities, and how local practices are able to reshape the program. The discussion introduces the notion of 'rewriting devices' (Callon, 2002) as potentially fruitful tools to manage complex systems of action without reducing their complexity.

THE DUTCH 'PRECARE' PROJECT

The Dutch 'PreCare' project is based on a U.S. program in the area of preventive early childhood health care: the Nurse Family Partnership program. This program aims at improving the health and development of children in vulnerable ('high-risk') families (Olds et al., 1986). During pregnancy and the first two years of life, young children with risk factors for child abuse and developmental problems are monitored, with assistance being offered to families when needed. The effectiveness of the Nurse Family Partnership program has been demonstrated in the US in three randomized controlled trials (Kitzman et al., 1997; Olds et al., 1986; Olds et al., 1997), which showed significant improvements in health (an increased birth weight of children from teenage mothers, a reduction of rates of pre-term deliveries, and a reduction of child abuse and neglect within the first

two life years) and social effects (50-60% less antisocial behavior at the age of 15).

'PreCare' is the Dutch translation and cultural adaptation of this program. This studied project is the first time that the original program has been used in a non-US context (currently the program is being adapted to other countries, such as the U.K. and Germany). The objective of the PreCare intervention is to improve pregnancy and childbirth outcomes for mother and child, to improve the health and development of the child, and to improve the personal development and opportunities for education and work of the mother (Nederlands Jeugdinstituut, 2010; VUmc, 2006). If the intervention proves to be effective in the Dutch context, the aim is to implement the program nationally. For Dutch standards it is a large program, involving numerous home care organizations in 20 different settings. One of the most important challenges of such large programs is their need to balance program fidelity on the national level while allowing enough practical flexibility on the local level to keep the program workable (cf. Cohen et al., 2008; Glasgow et al., 2003; Godwin et al., 2003; Jansen et al., 2006; Kendall and Beidas, 2007). How this challenge is addressed – and to which ethical issues this leads - will be discussed in the empirical part of the article.

The intervention design

The 'PreCare' intervention is targeted towards a high risk group with multiple problems. The intervention consists of an extensive series of home visits by experienced early childhood health care nurses. The visits begin in the 16th week of pregnancy of the young woman and continue until the child is 24 months old. In total, 60 home visits are made within this time period (De Graaf & Riper, 2006). Corresponding with the US program, 'PreCare' has a detailed protocol for each visit. There are six areas the nurse should address during the home visits: personal health, healthy environment, life history, motherhood, social support and use of municipal services (Oudhof & Prinsen, 2007). The home-visit nurses have three (extensive) manuals to work with: the first manual focuses on the period of pregnancy, the other two on infancy and the toddler years respectively. For each home visit, the nurses use educational materials (information sheets on a variety of topics, ranging from healthy lifestyles to taking care of the baby), and several forms that must be filled in or discussed during the visit.

The total 'PreCare' program (the intervention and trial) involves a range of groups. The main initiator of the program in the Netherlands was a psychiatrist from a large youth health care organization, while the main researchers were from the VU ('Free University') Medical Center. The Netherlands Youth Institute

coordinates the national implementation of the intervention, arranges the formal training that the new 'PreCare nurses' are required to follow and organizes the national case conferences for nurses. Furthermore, the project involves a range of youth health care organizations (20 in total) that facilitate the program in their organizations. Each organization provides a number of PreCare nurses. These organizations are non-profit organizations, financed through the subsidization of local municipalities (who are responsible for providing the conditions under which preventive health care is delivered on the local level).

The trial design

One of the conditions the U.S. originator of the program imposed on the Dutch team was that the implementation of the intervention in the Dutch context should be rigorously investigated by means of a randomized controlled trial (RCT). The trial is pragmatic rather than explanatory as it aims to measure the effectiveness rather than the efficacy of the intervention. The differences between explanatory and pragmatic trials as well as the methodological debates surrounding these differences are well documented (cf. Jansen et al. 2006; Roland & Torgerson, 1998). The trial addresses four main questions:

1) what impact does the 'PreCare' intervention have on risk factors during pregnancy and on short-term outcomes with regard to the birth and first two months of the baby's life;
2) what impact does the intervention have on the development of children and their mothers during the first two life years;
3) which conditions are necessary for an optimal implementation;
4) how cost-effective is the intervention?

The trial design requires a minimum of 456 selected high-risk mothers, who are randomly allocated to a control group or an intervention group. Randomization is organized regionally in order to ensure that all regions participate to the same degree. The trial consists of a screening procedure, followed by random allocation to control or intervention condition.

There are two stages in the screening procedure. In the first stage, professionals (e.g. midwives, general practitioners, obstetricians) referring the pregnant women screen them on formal criteria, such as pregnant with first-to-be-born child, less than 28 weeks gestation, educational level at or less than VMBO-P (the lowest level of secondary education in the Netherlands) or uncompleted education, and able to communicate at least in some degree in Dutch. In the second stage, the PreCare nurse will visit the candidates for an 'intake' (a first meeting

in which the nurse decides whether the candidate matches the most important inclusion criteria, such as the absence of a social network or partner, alcohol- or substance-use, domestic violence, childhood abuse, or mental health problems).

The research protocol prescribes that the candidates allocated to the control group must be referred back to the midwife or other referrer. They will receive 'usual care': the regular care that is offered locally (but which may vary between settings). During the intervention, there are six data collection points, in which trained (female) interviewers with a medical, nursing, or pedagogical background interview the mothers in their homes. Interview topics include physical conditions (diseases, cigarettes, alcohol use), emotional determinants (feelings of angst or depression), relational determinants (social support, partner) and social determinants (education, housing, financial problems) (VUmc, 2006).

Adaptation to the Dutch setting

The adaptation of the Nurse Family Partnership program to the Dutch setting required some work. Two program developers of the Netherlands Youth Institute were trained in the U.S. to become acquainted with the main goals of the program. A crucial element in the adaptation relates to the translation and cultural adaptation of the program materials such that they reflect the Dutch social and cultural context, but without losing the core elements of the intervention (De Graaf & Riper, 2006). During the translation of the materials, several adjustments proved necessary. The two main issues that required extensive revision were the relatively low percentage of hospital births in the Netherlands compared to the U.S. The second issue was related to a specific educational program for the candidates, which was used in the US-context, but would require separate licenses for a Dutch setting. The programs used in the US were Partners In Parenting Education (PIPE) and Nursing Child Assessment Satellite Training (NCAST). Both programs contain education about parent-child interaction. The development team eventually used a different program (Video Home Training) rather than the licensed US-programs (Interview project leader NYI, 22-07-08.).

COMPLEX ELEMENTS OF A RATIONALIZED APPROACH TO PREVENTION AND HEALTH CARE

As mentioned in the introduction, several studies address the increasing rationalization of health care and prevention practice in different settings (cf. Hunter, 2003; Porter, 1995). Although these authors focus on different empirical examples, their similarities on a conceptual level are striking. Mathar & Jansen

(2010), for example, conducted an ethnographic analysis of the Quattro Study (the pragmatic trial of a large prevention program in the Netherlands). They argue that many 'rationalistic' health promotion programs show disappointing results. Solutions for these results, however, are often sought within the same approach, by forcing health care professionals to better perform the interventions as planned and urge participants to comply more closely with the requirements of the programs. From this perspective, it is health care professionals' and participants' non-adherence to the program that causes these interventions to fail. However, Mathar & Jansen argue that understanding this 'messiness' as *confounding* the program rather than an integral part of it stems from a similar rationalistic view.

Similarly, Zuiderent-Jerak (Zuiderent-Jerak, 2007) shows how the rationalistic perspective is also prevalent in research on the development of clinical guidelines, which usually focuses on bridging the perceived 'gap' between medical quality as defined in clinical guidelines and practices of care delivery (cf. Institute of Medicine, 2001). Zuiderent-Jerak argues that aggregated medical knowledge is granted a privileged epistemological status over organizational complexity, leading to perceived solutions that have often proven to be practically ineffective.

The complexities of a rationalized approach to health care and prevention are also noticeable in the discourse on disseminating 'best practices'. Nielsen (2010) uses the theoretical perspective of 'traveling technology' and accompanying 'travel expenditures' to problematize this dominant discourse (cf. Berwick, 2003) and shows that dissemination requires many ongoing efforts of negotiation and stabilization that are usually invisible.

All authors highlight the complex aspects of the rationalized approach to prevention and health care, whether that refers to how intervention protocols aim to reduce the complexity in the settings in which they are introduced, how practices are expected to adhere towards standardized clinical guidelines, or how interventions that are considered evidence-based are expected to be easily disseminated to other settings and contexts. They further argue that the rationalized perspective on health promotion and interventions neglects the context-specific and complex character of local health practices and, consequentially, fail to provide insights into the amount of work that is required to make implementation or dissemination 'successful'.

Quantification and its dimensions

The increased rationalization of health programs, however, is not a standalone development, but ties into broader societal developments, as has been

illustrated by sociologists working on issues of quantification (Alonso & Starr, 1986; Espeland & Sauder, 2007; Espeland & Stevens, 2008; Espeland & Vannebo, 2007; Lave, 1986). These scholars argue that increasing public and governmental demand for quantifying social phenomena (e.g.: counting and categorizing people, macro-economical indicators), and the new regimes of measurement that accompany this development, have become a constitutive feature of both modern science and how society is organized. Both developments seem to based on a modern ontology and epistemology where what is considered 'real' and 'knowledgeable' becomes closely tied to what is measurable. However, as these authors acknowledge, making practices measurable means that they must become *controllable* as well (cf. Foucault, 1991). As the rationalization processes discussed above seem to be intimately intertwined with a broader development of quantifying social phenomena, it is useful to investigate what we can learn from literature focusing on this broader development.

In a comprehensive overview article, Espeland & Stevens (2008) highlight five key dimensions of quantification, three of which are particularly suited as entry points for analyses of the PreCare program. The first dimension is related to the *work* quantification requires. Although it is easy to take quantification for granted, the infrastructure underlying the numbers is often overlooked (although anyone working on a randomized trial, especially in a pragmatic design, will recognize this issue). The second dimension ('reactivity') relates to the *performativity* of quantification. Measurements do more than just measure; they intervene in the worlds they depict: "measures create and reproduce social boundaries, replacing murky variations with clear distinctions between categories of people and things" (2008: 414). The third dimension highlights the tendency of quantification procedures to discipline subjects through its ability to simplify, exclude and integrate information, whereby the comprehensibility and comparability of social phenomena are expanded in ways that permit strict and dispersed surveillance.

Next to these three dimensions, the work of the authors discussed above also provides concrete entry points for the empirical analysis of the PreCare program. For example, Nielsen (2010) builds on the notion of 'traveling technologies', defined as "the translations that occur when an object travels from one place to another, with an explicit focus on the expenditures involved in this translation" (2010: 3). She explicates the 'costs' involved in the spread of complex health interventions and programs to different settings and contexts (e.g. local problems with the rigid structure and timeframe of an intervention), as well as strategies that are used to overcome these costs. How a disease management program becomes 'globalized' is not explained by understanding it simply as a

process of dissemination, but rather as a process of 'traveling', which involves translations and changes as well.

Nielsen considers 'evidence-basing' and 'scripting' as two important strategies in this process. The former refers to the significant efforts put into the process of making a program evidence-based, which increase the possibility for the program to travel, while the latter is a way of ensuring that the program remains the same even as it is imported into different health settings. Scripting can consist of objects (manuals), persons (trained leaders as role models), laws (licensing agreements) and networks. While these strategies aim to maintain global coherence in the program, they cause local tensions and frictions, whereby the differences between global claims and local specificities must be continuously negotiated.

The work of Zuiderent-Jerak (2007) provides the final analytical entry point. Zuiderent-Jerak argues that rationalistic approaches and programs will keep encountering the same problems as long as the privileged epistemological status of aggregated (medical) knowledge over organizational complexity is left untouched. He argues that a conceptualization of standardized health programs as an *outcome of an experimental change process* may contribute to the prevention of 'both implementation and its problems'. This requires a fundamental shift from the notion of 'implementing' guidelines 'into' medical practice towards seeing (the development of) guidelines as a "scientific rallying point in a comprehensive organizational process of change" (cf. Timmermans & Mauck, 2005: 26).

This range of theoretical notions provides us with analytical 'entry points' for the empirical analysis of the 'PreCare' project: 1) the amount of work and the extensive infrastructure that are required to 'manage' the program; 2) the performativity of the program, or how the program intervenes and (re)draws boundaries; 3) the disciplining effects of the program, in terms of how social phenomena are made comprehensable and comparable; 4) the strive to balance global coherence as opposed to local specificities (the 'travel expenditures'); 5) the extent to which local practices are able to reshape the program.

METHODS

Our empirical analysis builds on a combination of qualitative methods. First, we conducted 16 semi-structured interviews with 19 people involved in the PreCare program. These respondents included researchers from the Medical Center, employees of the Netherlands Youth Institute, trainers of the PreCare

nurses, local coordinators and/or staff members, nurses, and the trainer of the interviewers. In this sense, we interviewed at least one person from all groups involved in the program. At the start of our data collection, a senior researcher from the Medical Center functioned as contact person. After an initial meeting with this person, in which we explained our research focus, we were able to contact several key respondents who had an important role in the PreCare project. We selected further respondents through the commonly used 'snowball method' until saturation (in terms of respondents and in terms of new insights into the project) was achieved.

The majority of the interviews were conducted between July and November 2008, with several follow-up interviews in early 2009. The main researcher transcribed and coded all interviews. We intended, through the interviews, to gain insights into the ways in which researchers and practitioners tried to coordinate their activities. The interviews were not aimed to generate or test hypotheses (an approach highly uncommon in qualitative research), but rather aimed to get a detailed and rich understanding of how the project developed, which groups were involved, which communication structures were developed, which challenges and problems the different groups experienced, how the actors involved tried to solve these, and which positive and negative elements they saw in the project.

The initial coding of the interviews was also structured around these themes. The developed codes were discussed with the other researchers and further refined based on their suggestions and comments. We used an inductive analytical approach that did not start out with pre-existing theoretical assumptions. Rather, we used the 'analytical entry points' outlined above to reanalyze our initial interview material in terms of the effects of rationalized health programs on local practices (and vice versa). The material proved to be particularly suitable for such an analysis, as many of the issues addressed in the interviews (such as the dilemmas experienced by the nurses and the coordination structures that have been developed) are closely linked to the theoretical issues discussed above.

Next to semi-structured interviews, the main researcher also conducted an analysis of relevant documents related to both the PreCare intervention and the trial protocol. These documents included the original proposal, the manuals for the nurses, several evaluation studies, examples of letters sent to managers and local policymakers, and local PR documents (such as presentations and flyers). Furthermore, the main researcher observed at several meetings, including case conferences (twice) and management intervision meetings (once). The observa-

tions have been documented (through producing field notes) and sent back to the main contact person, who provided additional information.

The data derived from these three methods were synthesized in a thick description (Geertz, 1973) of the project. This document provided the first basis for further analysis. The interview transcripts were sent to the respondents for a member check (Yanow & Schwartz-Shea, 2006) and the report was sent to key respondents in order to assess potential differences in interpretation and complement the analysis with missing elements.

RESULTS

Work and infrastructure

The PreCare program is a highly complex and ambitious intervention. However, for the trial to succeed, a relatively unambiguous local implementation of the intervention is necessary. In order to keep the PreCare program 'managable', much work is needed and an extensive communication infrastructure has been established to coordinate the activities of the different groups.

One of these formats is the project team meeting, which decides upon the course of the project, possible adaptations, and solves problems where necessary. The meetings are crucial to coordinate all the activities taking place and to make sure the RCT keeps 'on track' (Interview initiator PreCare program, 01-10-08). The second format used in the program is the regular management meeting which involves managers of all participating youth health care organizations. These meetings are important for informing the managers about the implementation of PreCare and for providing the researchers with updates about the (coherence in the) local implementations of the intervention.

The third format is the case conference, held five times a year at the Netherlands Youth Institute. They are partly meant as meetings between peers, providing the nurses from all participating organizations with the opportunity to share experiences and discuss problematic situations with each other. Often, however, the conferences offer additional information on relevant topics (e.g.: how to deal with privacy issues or how to manage aggressive situations). In addition, the conferences have an important social function: they bring together colleagues from different organizations. The case conferences are chaired by the trainers of the PreCare nurses. The fourth format is the expertise committee, which consists of a small group of experts from the Medical Center and the Netherlands Youth Institute. They have the specific task of deciding upon "doubtful cases" for inclusion.

Fifth, many local meetings are organized. Apart from the case conferences, nurses regularly have peer meetings within their own organizations in order to discuss small practical issues and receive feedback on their questions and uncertainties with regard to their approach. In one of the participating organizations these meetings are supervised by a psychologist (Interview PreCare nurse, 28-07-08).

Disciplining

Next to the amount of work, the PreCare program also shows the disciplining effects (in terms of structuring and controlling behaviour) discussed above. From the standpoint of the trial, the activities of the nurses who conduct the intervention at several locations need to be structured. The program relies on numerous elements that discipline the nurses into a relatively unambiguous implementation of the program in different settings.

A first element is the obligatory training when nurses begin working in the program. This training is extensive and focuses on both theory and practice. Secondly, the nurses receive three extensive manuals to use as preparation for their home visits. For each home visit, the nurses use educational material and forms that must be filled in or discussed during the visit. The manuals further contain detailed information about protocols and regular topics in the visits (Oudhof & Prinsen, 2007). Although the trainers and the research team emphasize that the nurses should be able to work with these protocols in a flexible way if the situation requires this, they are still expected to follow these guidelines whenever possible:

> [We emphasized from the start]: it is a manual, it is a very structured program, but it needs to be applied flexibly. And that is obviously a very shaky area: there are guidelines, structures, but you should be able to deviate from those […]. But we do try to guard, especially in the period of research, that the nurses keep on providing PreCare [as it is supposed to be provided]. The manuals are not there for nothing (Interview trainers PreCare program, 17-10-08)

There are still more protocols, such as in the screening procedure of new candidates.

The interviewers who collect the material for the RCT are also disciplined in order to make sure they address the 'right issues'. They receive a standardized list of questions they need to address. They also have to address these issues 'at the right time', as the interviews are held at particular time points. During the intervention, there are six data collection time points, all with specified topics,

in which trained female interviewers with a medical, nursing, or pedagogical background interview the candidates. All new interviewers receive extensive training at the Medical Center:

> The interviewers, who go to both the usual care group and the intervention group to conduct interviews, are specifically trained by us. They have to meet numerous criteria, since we obviously don't allow anyone access to this target group. We also regularly deliberate with these interviewers: what do you do when the client refuses an interview? What do you do when you do not meet them at home? We have all kinds of protocols and schemes for that, how they should respond (Interview former Medical Center project leader PreCare, 22-07-08).

The training starts with a description of the overall goals and philosophy of PreCare, but focuses mainly on practical instructions about how to conduct the interviews. Training the interviewers is important because of the high-risk target group. The training is however also important for the trial design, in order to reach standardized outcomes.

In sum, there is an extensive amount of disciplining in the program to ensure a proper 'execution' of the trial. Disciplining ensures adherence to the intervention through a rich set of trainings, protocols, procedures and guidelines – or, when using the vocabulary of Nielsen (2010), through the *scripting* of objects (the manuals and protocols), persons (the trainers providing the training), and laws (the licensing agreements made with David Olds). Although it is hard for the project team to tie consequences to lack of adherence towards these protocols, the wide range of 'scripts' must ensure that this adherence is achieved when necessary. However, large programs such as 'PreCare' not only structure behavior, but also (re)draw boundaries in practice.

(Re)drawing boundaries

A third element in the analysis of PreCare is how the program intervenes and (re)draws boundaries. At first glance, this may seem awkward: as the program is an *intervention* it is obvious that it *intervenes* in some way. However, it is not this literal aspect of intervening that we are interested in. Rather, we focus on the reactivity or performativity that was discussed above. The program also has a (performative) effect in the sense that it explicitly draws boundaries between groups that were previously difficult to distinguish. In this sense, the program is involved in the process of what Hacking (1990) refers to as 'making up people' – or creating and (re)producing social boundaries that make clear distinctions

between categories of people. How does this happen and what effects does it bring about?

The most literal boundary that is created is the boundary between the intervention group and the control group. Through a randomization procedure, the project team assigns candidates to one of these groups. From the care perspective of the nurses, however, this distinction and the accompanying random attribution of candidates to one group or the other is highly problematic because of its artificial and externally exposed character. In their experience, the potential candidates *all* need the intervention:

They [the nurses] all find it pitiful, and then we have to explain time and again, and that is something we notice stays difficult, PreCare is an expensive intervention, its a costly intervention, but we only have scarce resources. […] The same goes for the control group, there is also discussion about that time and again. They continue to try like "this lady needs [the intervention] badly, can't you make sure she is allocated to the intervention group?" (Interview former Medical Center project leader PreCare, 22-07-08).

A more subtle boundary is drawn between potential candidates falling into the 'grey area' of the inclusion criteria. These 'doubtful cases' conform to most criteria for inclusion, but not all. When in doubt, the nurses can refer possible candidates to the expert committee, who will decide whether or not to include the candidate for randomization. According to one committee member, this decision comprises a balance of absolute and relative criteria:

You obviously have absolute and relative criteria. And we weigh those against each other. […] David Olds [the initiator of the Nurse Family Partnership] asked if we only wanted to include mothers that did not have children before – they might have had an abortion before – with the argument that the first pregnancy is determinative […]. If there is enough money available, many mothers, also those with [higher education] could benefit tremendously from PreCare […], but that is not the situation. […] We serve the worst half percent of all pregnant mothers, because there is a huge clustering of risk factors there. And for now I want to confine to these mothers […]. Otherwise [the program] will become diluted much too fast (Interview initiator PreCare program, 01-10-08)

We see that the criterion 'pregnant with first-to-be-born child' is important criterion, but exceptions are made for candidates who previously had an abortion (or had their child taken into foster care by the social services department). On the

other hand, 'education' is a 'harder' criterion: a potential candidate with a higher level secondary education will not be included because the program would become 'diluted'. Importantly, however, the judgment of the expert committee replaces the similarities of *potential* candidates with many high-risk factors with a clear distinction between '*accepted* candidates' and '*rejected* candidates'.

This shows how the program requires the active formation of (new) boundaries, not only between an inclusion group and a control group, but also between a relatively homogeneous set of potential candidates. Although the latest act of "making up people" causes discussion at times (especially when the nurses experience the desperate situation of the potential candidate), it is mainly the first aspect that causes great difficulties in the project. The boundary between an inclusion group and a control group leads to two persistent dilemmas for the nurses: the dilemma of protocol fidelity versus practical flexibility and the dilemma of science versus care. Both can be seen as examples of what Nielsen (2010) calls 'travel expenditures'.

Travel expenditures

Travel expenditures relate to the frictions that arise in the ongoing efforts of negotiation and stabilization. In this project the expenditures mainly relate to two persistent dilemmas: *program fidelity on the national level* versus *practical flexibility on the local level* and *science* versus *care*.

The first is the most ubiquitous one. While the Medical Center relies on unambiguous implementation of the intervention at the local level, many practitioners emphasized during the interviews that the situations they face are often hectic: appointments are cancelled because the mother is not at home or urgent problems take up most of the time. This dilemma is not specific to this program. Adherence in complex interventions and the differences between adherence in efficacy trials and effectiveness trials are issues frequently addressed in medical literature. Numerous authors (Cohen et al., 2008; Glasgow et al., 2003; Godwin et al., 2003; Jansen et al., 2006; Kendall and Beidas, 2007) raise similar arguments. In this article, however, we reinterpret this issue as 'travel expenditure'.

The 'fidelity-flexibility dilemma' manifests itself in a number of issues. Firstly, the three manuals contain highly detailed information for each home visit the nurse conducts. Although researchers from the Medical Center acknowledge that the manuals can be used flexibly, they were sometimes perceived to restrict the nurses in their actions, especially early on:

In the beginning you feel that you have to work through these manuals as they are [built up], so that is quite a search. That is also something we have

discussed in the case conferences. […] But now I found my own way in that a bit more. […] In practice I continuously try to return to [the manuals], and generally that works out reasonably, but in some situations less. But that does not bother me as much as it did in the beginning (Interview PreCare nurse, 28-07-08).

Conversely, the manual can serve as an anchor in highly hectic and problematic visits, because of its ability to structure the visit (Interview PreCare nurse, 28-07-08). However, many nurses find it difficult to achieve a balance between addressing key issues and showing a flexible attitude when the situation requires this.

Secondly, the dilemma comes to the fore in the selection criteria for inclusion of potential PreCare candidates. The rigid criteria – needed to ensure the eventual program fidelity – sometimes clash with both the practical situations the nurses find themselves confronted with and the pragmatic application of the multi-interpretable criteria. Sometimes the nurses try to 'tinker' with these criteria:

What you of course see is that [nurses] say: "I just want to get started with this client, even though she is a bit too far in her pregnancy or she already has another child, but this woman needs [the program] so badly, ***please*** let me have this client!" (Interview senior project member Netherland Youth Institute, 05-08)

Even when a potential candidate does not exactly match the inclusion criteria, nurses plead to have them included if – based on their practical experience – they consider these candidates to be in need.

The 'fidelity-flexibility' dilemma is not only limited to the nurses. The interviewers also experienced that they need a great deal of flexibility. For example, the standard instruction for interviewers is that the interview needs to be conducted in private, although in practice, the partner of the client sometimes wants to join:

We had the instruction in the beginning that we want to do the interview in private. That was the standard instruction. But then it happened several times that someone joined us. […] Suppose the boyfriend of the mother joins [the interview] and you say to the respondent 'I would actually prefer to talk in private with you', and thereafter the boyfriend says to the respondent 'I don't trust this at all', […] then you might just lose your respondent. So you have to choose what you want. Do you want to maintain strict with the two of you?

With the risk that you could lose that respondent? Or are you more flexible? (Interview PreCare research assistant, 12-03-09)

However, simply choosing the respondents' partner to join the interview may lead to additional difficulties for the interviewers, as the next quote shows:

And then there are for example certain parts [of the interview] that are very privacy-sensitive, or that deal with for example domestic violence. Well then we learn….there are also other ways of dealing with that, for example giving her [the respondent] the list and let her read it for herself, or saying 'we will skip this part and we'll talk about that another time', or 'I'll call you back', but [you have to be] very flexible, also depending on the situation, to estimate what you should do (Interview PreCare research assistant, 12-03-09).

As the questionnaires contain some highly private questions, the interviewers thus need a considerable amount of flexibility to decide the best option in those situations.

The second main dilemma relates to how the nurses experience their identity. The nurses primarily see themselves as *caregivers* and aim to use the program for providing care (Interview Netherlands Youth Institute project leader PreCare, 22-07-08). From the perspective of the Medical Center, PreCare is a high-potential intervention that needs to be scientifically tested. From a scientific perspective, this test can be optimally done by conducting a randomized trial. From the care perspective of the nurses, however, the randomization is highly problematic.The critiques of the nurses do not stem from a lack of understanding of the trial method, but from the distinction between an intervention and control group, which requires them to operate 'against their nature':

I think it is very difficult. At the same time you offer something, a very nice program, and ***actually you offer help*** […], it can also be that you have to say "I am sorry, but you are in the control group". Of course you give her that information in advance, during the intake, but at that moment you are also witness [of the situation], that things are not going well and she needs to be taken by the hand. So you offer something, and at the same time you take it away. That is very strange. Ethically I do not approve that it happens this way. Morally or ethically I do not find this a good way of conducting research (Interview PreCare nurse, 28-07-08).

The trial design also has broader consequences, particularly with regard to the relationship between the nurses and local referrers. Several nurses found that they must put much additional effort in maintaining contacts with the referrers, who sometimes see their applications 'disappear' into the control group (Interview PreCare nurse, 28-07-08).

Which strategies are developed to try to deal with these 'expenditures'? Nielsen (2010) distinguished the strategies of *evidence-basing* and *scripting*. These strategies are used in the PreCare project as well. However, we distinguish two additional strategies: using *future-oriented rhetoric* and *developing new organizational formats*. Both strategies can be seen as attempts to find 'ways of coping' with the trial design.

Evidence-basing can be seen in the official training for the nurses. As discussed, the theories underlying the program are well explained and the nurses are acquainted with the methodical approach in the program. Evidence-basing is also established through the criteria the originator of the program – David Olds – imposes on the Dutch program. One of these criteria is that the RCT-design is obligatory:

[David Olds] sees [the PreCare program] in fact as a fourth trial. Before PreCare there were three trials, all in the US, and he was prepared to let a fourth trial take place in the Netherlands under certain conditions. And therein the reliability and quality of the implementation, and the quality of the research were hard points (Interview Netherland Youth Institute project leader PreCare, 22-07-08).

Related to this research quality is the total number of 456 candidates, which is a crucial element in the strategy of evidence-basing. In order to have sufficient statistical power, a minimum of 228 participants need to be included, with a corresponding number attributed to the control group. This amount of candidates enables the researchers to measure long term effects on the main outcome variables. The scripting can be seen in the above discussion on the training of both nurses and interviewers: the detailed manuals and protocols are examples of this.

The PreCare project maintains several additional strategies to deal with the expenditures, one of which is the use of rhetoric in 'selling' the RCT to the nurses:

When the nurses are trained, I am often called upon to join for an hour or so, and than I explain to the nurses how important it is that we get properly

through this RCT-phase. And I explain them that we need their commitment badly and that I understand from their commitment that they basically want to include all mothers. But that in this phase it just is not possible, and – this is what I literally say – that if I did not bring PreCare to the Netherlands, it would not have been there at all and they would now still be struggling with these mothers. So it might yet not be optimal from their perspective, but we are already a solid end on the way. ***And should we be able to show those positive intervention effects, than we will eventually stand a lot firmer all together.*** And it is merely the phase we are in: we think we know what's best […], [but now we have to] support that with data (Interview initiator PreCare, 01-10-08, italics added).

Here, the *temporary character* of the RCT is emphasized: it is only a phase which, while difficult now, ultimately will pass when the program has proved its effectiveness. The *collectiveness of all parties* is also rhetorically highlighted: the ideas that 'we are all in this together' and 'we will all come out of this stronger'. The emphasis on the temporary character of the RCT is further established through regular updates about the total amount of included candidates, which enables the nurses to actually 'count down' until the 456th candidate is enrolled in the program.

The second additional strategy is the establishment of *new organizational formats*. The expertise committee that has been set up in the course of the program to deal with the problem of multi-interpretable inclusion criteria is the most prominent example of this strategy. Most nurses considered this to be a highly valuable development. The format seems to be successful because it displaces responsibility for an element of the fidelity-flexibility dilemma (the inclusion of potential clients) from the nurses to the experts. However, it also serves the purpose of demarcating this choice from nurses to experts, thereby scientifically legitimizing the decisions.

In the end, the travel expenditures for this program are high: the efforts to achieve adherence (in the form of scripting and disciplining) lead to persistent dilemmas. The last analytical entry point therefore focuses on the extent to which local practices are able to reshape the program and to which extent they see possibilities to start a dialogue, or in terms of Zuiderent-Jerak (2007), 'rallying points'.

Reshaping and rallying points

In their work on complex health interventions, Mathar & Jansen (2010) showed how these interventions, despite their rationalized aura, are mutually shaped in

practice. Within the PreCare program, we also see parts where the nurses are involved in co-shaping the program, as they negotiate practical adaptations. Over the course of the project, numerous practical adjustments and modifications are made, aimed at increasing 'practical applicability'. For example, training nurses now also includes issues brought forward by nurses, such as privacy problems and safety issues (Interview Netherland Youth Institute project leader PreCare, 22-07-08; interview PreCare trainers, 17-10-08).

There are also examples of local adjustments that are more problematic for the researchers conducting the trial. For example, one of the home care organizations developed an additional local component of PreCare. This program was offered to every candidate who was attributed to the control group and consists of several home visits during pregnancy. It shares the same basic ideas with PreCare, but is much less intensive. For the local nurses and referrers the additional program is a way of solving many of the dilemmas and problems they face. However, for the researchers conducting the RCT, the initiative is problematic, as it offers additional care to the control group. Although the Medical Center may aim to 'discipline' the nurses further, there is not much they can officially do to stop these initiatives (i.e. in terms of financial penalties). The research assistant of the Medical Center explains the difficulties the researchers experience with this:

> You are kind of sitting in a split, because you need the cooperation of the people in the field. So on one side you want to keep them [involved], that they cooperate with the research, but at the same time you want to keep the usual care as pure as possible. But in practice…no, we cannot stop [this additional program] from being offered […]. We do try to make an inventory [of the programs that have been developed next to PreCare], or what was already there, because that is important for the analysis, since it obviously has large consequences for the control group (Interview PreCare research assistant, 12-03-09).

The researchers can only try to take these variations into account in their analysis by making an inventory of additional initiatives in each region.

DISCUSSION

The limits of rationalistic approaches

The empirical analysis has highlighted the effects of rationalized health programs on local practices, in terms of the amount of work that is required, how local practices are disciplined, how these programs (re)draw boundaries, the 'travel expenditures' involved (and the strategies developed to cope with these), and how local practices try to reshape the program or work out 'rallying points'.The analysis showed that the rigidity of the design, as a necessary component of the rationalistic character of this program, leads to a rather unproductive process involving high travel expenditures and continued dilemmas at a practical level.

The difficulties related to the rigidity of the rationalistic approach are becoming visible in the medical and health promotion literature and are accompanied by pleas for more flexible approaches that take the complexities of care practices into account. Authors investigating standardization practices in medical settings, for example, argue that protocols always involve active tinkering and re-articulation to make them workable in practice (Timmermans & Berg, 1997). We assert that this is also true for research protocols and therefore agree with Cohen et al. (2008), who argue that the process of tinkering with and adapting interventions in order to fit local circumstances does not indicate a poor intervention, but should be understood as a crucial part of the research process. Furthermore, they conclude that flexibility, rather than rigidity, is needed in order to give practices the possibility to adapt and fit interventions to their own settings (ibid.). Others argue for the "need to embrace and study the complexity of the world, rather than attempting to ignore or reduce it" (Glasgow et al., 2003: 1264). In an influential article on the dissemination of innovations in health care, quality of care scholar Berwick (2003) employs a language that is curiously close to constructivist approaches when arguing that the word 'spread' is a misnomer when talking about dissemination. Berwick argues, rather, that the term 'reinvention' captures the process better, as "in a successful diffusion process the original intervention itself mutates into many different but related innovations" (2003: 1971).

Moving beyond rationalistic approaches: 'rewriting devices' as useful tools?

If we want to shift the current conceptualization of rationalized health care programs and their 'dissemination' towards an understanding of such programs as *outcomes* of an organizational process of change – or 'reinvention' - can we conceive of tools that are able to deal simultaneously with the need to standardize *and* the need to be open towards local practices, and that are able to

deal with the tension between stabilization and negotiation in a productive way? Some frameworks that try to incorporate space for practical flexibility are already developed in the health care field. Examples are the 'replicating effective programs' framework that aims to "maximize fidelity while allowing opportunities for flexibility" (see Kilbourne et al., 2007) or the 'Plan-Do-Study-Act cycle' that is used to test programs on a small scale, while allowing stakeholders to provide feedback (Walley & Gowland, 2004). However, these models are still rooted in the rationalistic approach outlined above. While these models reluctantly provide space for flexibility, it is still an uneasy fit.

One category of tools that goes beyond this approach may be the devices Callon (2002) labels '(re)writing devices', which he envisages as a particularly effective way of managing the dynamics of complex systems of action. Callon develops this category on the basis of his research into how service organizations balance the tension between processes of 'complexification' and 'simplification' (one of his case studies for example focuses on an organization that organizes various cruises over the Seine). It is interesting to notice the similarities with the PreCare program: the tension between complexification and simplification seems to reflect the tension between flexibility (which can be seen as a 'complexification' of the original protocol) and fidelity (an aspect of the 'simplification of practice') in pragmatic trials.

'Writing and rewriting devices' are particularly suited to manage these dual processes, because of their ability to make complex situations manageable without eliminating their complexity: "writing devices […] are the product of a *collective* effort that involves conflict and leads to intense negotiation; and such collective work is *never concluded*, for writing leads to endless rewriting" (Callon, 2002: 203). Examples of such devices are, according to Callon, detailed handbooks ('putting the service into words'), product files (describing the product in detail), or customer cards (describing categories of customers).

Although Callon focuses on a completely different setting, it seems that the underlying dual processes he distinguishes are similar to the process of organizing complex interventions such as the PreCare program. Both Callon's cases and the PreCare program deal with organizing complex systems of action. Indeed, many potential 'rewriting devices' are already in place in the infrastructure that has been developed in the PreCare program, but have only been partly used as such. For example, the extensive training program can be seen as an example of a '(re)writing device' in this program. Similar to the handbook Callon addresses, this program is highly detailed and can be seen as a script in which the role of each player is specified. However, the nurses also have a role in the rewriting of the training program: based on their experiences, they can bring forward

important new issues that need to be included in new versions of the program. The three manuals for the nurses are other examples of (potential) rewriting devices in the program. As discussed above, the manuals contain detailed written instructions for each home visit, based on recurring themes. The manuals also contain numerous forms the nurses need to fill in with their clients.

Several formats in the program thus already have potential to develop into rewriting devices that are able to manage complexity without reducing it. The potential of such (re)writing devices becomes more visible when taking the process of cultural translation and adaptation into account. (Re)Writing devices could then serve an important function as programs such as PreCare become 'reinvented' in new settings. However, two important elements therefore need to be further developed. They relate to the *collectivity* and *continuity* of rewriting devices. Collectivity points towards the involvement of different actors in the process of writing. Involving all relevant actors (thus including the nurses of the different organizations) during the writing process is likely to lead to less 'travel expenditures' later. Writing devices are products of a collective effort that involve conflict, lead to intense negotiation, and constrain the actions of the persons working with them, but this is a constraint *that is defined jointly* by all concerned. The continuity points to the *rewriting* that is a part of these devices. The collective work of writing is never fully concluded. A handbook or protocol does not 'fix the rules once and for all'. Rather, it is the continuous rewriting that is realistic.

CONCLUSION

This article discussed a rationalization process that is occurring within a number of areas in health care. We discussed several authors who focus on the problematic aspects of this rationalized approach to prevention and health care and argue that this perspective neglects the context-specific and complex character of local health practices. Empirically, we investigated the effects of rationalized health programs on local practices by focusing on the Dutch 'PreCare' program, which is an adaptation of the successful Nurse Family Partnership intervention developed in the US. The practical contribution this article sought to make was to identify a category of tools (the 'writing and rewriting devices') that enable the incorporation of practical flexibility in the delivery of health programs in new contexts, without remaining rooted in the rationalistic approach.

It is important to notice that although this article raises serious doubts regarding the increasing rationalization of public health, the aim is not to shift the

focus completely towards a postmodernist embrace of flexibility and fluidity. Rather, the article aimed to offer a different conceptualization of rationalized health care programs, one that acknowledges the need to standardize some elements, but also recognizes the need to be open and flexible towards local practices. Here, we follow the argument by Timmermans & Almeling (2009), who aim to develop more descriptive ways of conceptualizing standardization. These authors argue that, rather than identifying standardization as a weakness per se, a better approach would focus on how standardization transforms work processes, both positive and negative, and often in counterintuitive ways. This article followed a similar approach, with a specific focus on tools that are able to achieve such balance between standardization and flexibility. Callon's notion of rewriting devices offers one such category of tools. Future social science research towards the effects and practices of health promotion programs could benefit from a more specific focus on such tools, both through identifying similar tools in different programs and through detecting other categories of tools.

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Chapter 5

Hybrid management configurations in joint research

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INTRODUCTION

While the role of scientific knowledge has grown in importance for a range of complex problems, the value, trustworthiness, and relevance of scientific knowledge are, simultaneously, increasingly controversial (Bijker, Bal and Hendriks, 2009). As a consequence, the realms of scientific knowledge production and scientific governance have become more opened to external performance and audit measures (Braun and Kropp, 2010; Power, 1997; 2000; Wouters, 1999). In many cases, these audits go further than assessments of academic performance. In addition, researchers are assessed on the societal relevance of their work as they are expected to deliver 'socially robust knowledge' (Nowotny, 2003) that takes into account demands from societal actors outside academia (Etzkowitz and Leydesdorff, 2000; Etzkowitz et al., 2000; Hessels, van Lente and Smits, 2009; Gibbons et al., 1994; Nowotny, Scott and Gibbons, 2001; Funtowicz and Ravetz, 1993).

These additional criteria of 'social robustness' gave rise to a plethora of (novel) organizational formats and forums, often transdisciplinary in character, including multiple stakeholders, in which multiple and often competing demands need to be balanced. These form a "growing patchwork" (Irwin, 2006) of institutional innovations in science governance and knowledge production. Traditionally, boundary organizations (Guston, 1999; 2001) are seen as promising new organizational mechanisms to address such multiple accountability demands from different principal actors.

However, as Parker & Crona (2012) have recently argued, while the concept of boundary organizations has received considerable attention, much less research has addressed the questions of how members of these organizations facilitate collaboration between researchers and policy makers, coordinate their activities and relationships, and meet the diverse needs of the stakeholders. Their article clarifies the kind of challenges boundary organizations face due to the sometimes incommensurable demands the organizations are subjected to, leading to tensions that continuously need to be negotiated by the actors conducting boundary management.

The analytically interesting puzzle then becomes how the actors involved in such boundary organization settings deal with the multiple 'accountabilities' they are confronted with. These may be incommensurable, but are also not always considered equally important (Holland, 2009; Hessels and van Lente, 2010). What kind of challenges do the participants face and what strategies, methods, and negotiation tactics are used in conducting boundary management?

This article primarily focuses on a specific empirical setting in which these additional criteria of 'social robustness' are explicitly organized into a novel organizational format. The Dutch Academic Collaborative Centres for Public Health (ACCs) are settings where the multiple accountabilities (traditional scientific criteria as well as criteria of professional / policy relevance) are explicitly mentioned as quality criteria. The ACCs form an infrastructure for structural collaborations between researchers, policy makers, professionals and other stakeholders within the field of public health. They have been funded by the Netherlands Organization for Health Research and Development (ZonMw) for two periods of four years each. The ACCs are an infrastructure comprising formal, long-term collaborations between a Public Health Service (PHS) and a university department, but also frequently involve other stakeholders, such as research institutes, youth health care organizations, or municipal departments.

Theoretically, we reconceptualise and enhance the concept of boundary organizations by building upon work by Miller (2001) and Parker & Crona (2012). Both works emphasize the need to extend the concept in order to adequately incorporate the processes that actors involved in boundary organizations need to engage in, and the continuous work this leads to. Both authors also recognize the limitations of the boundary organization concept in understanding settings where science and policy communities considerably overlap, and settings where more than two stakeholders are involved. They argue that it is more realistic to conceive of such settings as hybrid spaces "in which science and politics comingle and constituents embody elements of both" (Parker & Crona, 2012: 265).

For this analysis, we build on (and extend) Miller's (2001) notion of 'hybrid management'. According to Miller, hybrids are "social constructs that contain both scientific and political elements, often sufficiently intertwined to render separation a practical impossibility" (2001: 480). With the concept of hybrid management, Miller refers to "the processes by which [these hybrids] are constructed, taken apart, and ordered in relation to one another" (2001: 480). He distinguishes between four hybrid management strategies (which will be elaborated in the theoretical part of this paper). This paper also follows on Parker & Crona's approach by placing into the centre of attention the "continuous process of negotiating among tensions derived from inconsistent demands placed on the boundary organization by different stakeholders" (2012: 267). We argue that an extended focus on configurations of hybrid management strategies (which is an important addition to how Miller uses the concept) adequately captures the dynamics of this process.

Theoretically, this article aims to show that the extended concept of hybrid management configurations is useful to study the different accountabilities

(including the tensions between them and their process of development) encountered in 'hybrid spaces' such as the ACCs. Empirically, this article focuses on four case studies of collaborative research projects conducted within the context of the ACCs. Crucial in this collaboration process is the balancing act that actors need to perform, between working towards mutual coordination and consensus seeking, while maintaining legitimacy to the different stakeholders. In the discussion, we show whether and how the structure of the ACCs is able to provide the space necessary for the collaborative projects to develop.

In this article we describe the Dutch ACCs, exploring some of their main characteristics. We discuss recent critiques on the boundary organization concept and explore some of the conceptual enhancements provided by Miller (2001) and Parker & Crona (2012). After a description of the methods used, we analyse and interpret four collaborative projects conducted in the ACCs in terms of the hybrid management strategies the different actors use, showing how potential configurations of hybrid management strategies are shaped. The discussion elaborates how the diverse accountability demands for hybrid research spaces such as the ACC work out in the collaborative projects and to which consequences. The conclusion summarizes our contribution to the boundary organization and hybrid management concepts.

THE NATIONAL ACC PROGRAM

The ACCs were developed in 2005, after several national reports criticized the lack of integration between the research, policy and practice of public health (Raad voor Gezondheidsonderzoek, 2003; Wetenschappelijke Raad voor het Regeringsbeleid, 2004). In 2005, the Netherlands Organization for Health Research and Development funded the development of nine ACCs on diverse topics and fields (health promotion, youth health care, elderly care, infectious diseases) within public health. The ACCs are an infrastructure comprising formal, long-term collaborations between a Public Health Service (PHS) and a university department, but also frequently involve other stakeholders. They are designed to function as 'coordination structures' between local public health policy, practice and research, with an overall purpose of structurally strengthening and anchoring demand-driven research activities as well as facilitating an evidence-based attitude with professionals and policy makers in the area of public health (ZonMw, 2005). Similar formats are receiving attention internationally, such as the Canadian National Collaborating Centers for Public Health and the UK Collaborations for Leadership in Applied Health Research and Care

(Medlar et al., 2006; Martin et al., 2011). In public health literature, the development of partnership structures is increasingly seen as a promising way of exposing researchers, policy makers and professionals to each other's needs (Lomas, 2000; Nutley, Walter, and Davies, 2003; Innvaer et al., 2002; Jansen et al., 2008; Mitchell et al., 2009; Young et al., 2002; Elliott and Popay, 2000).

The actors involved in the ACCs are explicitly expected by the funding organization to balance a number of different accountability demands. Their work is expected to be of high scientific quality, but other quality criteria (such as practical and policy relevance) are important as well. For this purpose, many ACCs established dual appointments, such as professionals working towards a doctorate in a relevant field and supervised by university researchers. Although the ACCs operate in diverse ways and differ in terms of organizational structures, they share several characteristics.

Within all ACCs, joint research projects are conducted by university researchers and public health professionals. Many ACCs have also developed a more detailed infrastructure aimed to increase interactions and collaboration between university researchers, professionals, policy makers and other stakeholders. Brainstorm groups, workshops, seminars, dual appointments and advanced courses for professionals and policy makers are some examples of instruments and formats that have been developed.

In 2009, a second period of ACCs was funded by ZonMw, with a further emphasis on the criterion of societal relevance. For example, one of the explicit criteria for additional funding was that new proposals should be clearly practice-based and/or policy-relevant. Much emphasis is, as a result, also placed on this new criterion, making the ACCs an interesting example of a hybrid research space (Parker & Crona, 2012) to empirically investigate.

FROM BOUNDARY ORGANIZATIONS TO HYBRID MANAGEMENT CONFIGURATIONS

Although Guston's notion of boundary organizations proved to be tremendously useful for scholars to theoretically conceptualize the wide range of organizations and advisory committees that are positioned somewhere 'at the interface' between science and policy, more recently scholars have begun questioning the concept's suitability to analyze the increasingly dynamic, fluid and shifting coalitions (or 'boundary configurations', Van Egmond & Bal, 2011) that arise between science and policy actors. Moreover, recent work of Parker & Crona (2012) has critically investigated some of the key assumptions within boundary

organization theory, suggesting a significant reconceptualization is in place. This section first outlines the common characteristics of boundary organizations. We then investigate the main shortcomings of this concept, building mainly on the works of Parker & Crona (2012) and Miller (2001). We argue that the ACCs are better conceived of as hybrid research spaces, and that an investigation of the continuous processes of negotiating and 'balancing act' among the tensions involved in such research spaces is best suited by a further enhancement and specification of Miller's hybrid management strategies. We extend the work of Miller by focusing on the *configurations* of hybrid management strategies, recognizing that the questions of who uses them, with what goal in mind, when, and with what effects are crucial questions to understand the full dynamics of collaborative attempts within hybrid research spaces such as the ACCs.

Characteristics of boundary organizations

The main aim of original boundary organization theory was to analyse how the 'potential chaos' of the science/policy boundary can become stabilized in organizations located at the interface of these domains. Boundary organizations "internalize the contingent character of the science/politics boundary" (Guston, 1999: 90-91) and, by doing so, stabilize the interface between these domains. Negotiating such contingencies is an important element in the work of these organizations and the more successful the organization is in doing this, the more stable the boundary appears. According to Guston, boundary organizations have three characteristics: 1) they provide a space that legitimizes the creation and use of boundary objects and standardized packages; 2) they involve the participation of both principals and agents, as well as specialized (or professionalized) mediators; 3) they exist on the frontier of two relatively distinct social worlds with definite lines of responsibility and accountability to each (1999: 93). In sum, Guston argues, the boundary organization fulfils an important function in its distinctive accountability lines to two sets of principals (Guston, 2001: 401).

Recent critiques on boundary organization theory

Whilst Guston's ideas have been influential, some scholars pointed towards a number of unresolved issues, assumptions and tensions within the boundary organization concept. Specifically, in their recent work on contemporary university-based boundary organizations, Parker & Crona (2012) discussed three key assumptions that require further amendment. First, boundary organization theory assumes the existence of two clearly separated groups of principals. This distinction – which is also still highly dominant within public health discourse (see Wingens (1990) and Lin & Gibson (2003) for critical examinations) – has

become increasingly problematic to maintain, as in many settings there is considerable overlap. Another problematic element in this assumption is that this bilateral approach cannot address complex situations with an increased number of stakeholders. The second assumption of boundary organization theory is that it considers the accountability relations towards different stakeholders as equal (Parker & Crona, 2012). However, this assumption does not take into account potential role tensions that influence the organization's efforts to fulfil multiple demands that may be difficult to integrate (cf. Holland (2009), Hessels and van Lente (2010)). Thirdly, boundary organization theory assumes that lasting stability can be achieved through the (symmetrical) reconciliation of stakeholder demands, thereby neglecting the potential incommensurability of these demands (which can lead to tensions and forced choices amongst incompatible outcomes).

The authors conclude that there has not been sufficient attention to the processes of boundary management, which is not, they argue, about "stabilizing the 'boundary' between abstract sets of principals in either the science or policy domain, [but rather about] a continuous process of negotiating among tensions derived from inconsistent demands" (Parker & Crona, 2012: 267). It is exactly this continuous process our analysis focuses on. The most useful concept to explore these issues, we argue, is an extended notion of hybrid management (Miller, 2001).

Hybrid management strategies

In his well-known article, Miller (2001) argued for a refocus of the boundary organization concept in order to explain the activities of such organizations in more complex, contingent and contested circumstances. Miller proposes a reorientation of Guston's boundary organization concept towards the study of processes of hybrid management. This theoretical approach is more explicitly concerned with processes and dynamics. The context of the ACCs shows clear similarities with the context in which Miller distinguished the hybrid management strategies (the boundaries between science, policy, and professional practice are not given in advance, but actively negotiated, and a more complicated set of principals is involved than assumed within boundary organization theory).

The hybrid management concept enables us to analyse how the ACCs work as hybrid research spaces and how the actors involved in the collaborative projects try to balance their perspectives while also trying to handle the different forms of accountability they are confronted with. Miller distinguishes four of these strategies of hybrid management:

1) Hybridization: the integration of scientific and political (or normative) elements, for example in economic forecasts or Health Impact Assessments).
2) Deconstruction: the 'opening up' of these hybrids to reveal the value-laden assumptions embedded in them (e.g. critically examining assumptions in climate models).
3) Boundary work: the establishment and maintenance of dynamic boundaries between science and other domains (e.g. explicitly designating certain activities as political or scientific, cf. Gieryn, 1995; Jasanoff, 1990).
4) Cross-domain orchestration: the coordination of activities within multiple domains, even if they appear to be separate (e.g. informal working groups).

Based on this concept, we investigate how the actors involved in collaborative research projects within the ACCs balance the different perspectives and their associated accountability demands, and what the role of hybrid management strategies is in this process. In addition, we investigate the potential consequences of these strategies (in terms of who uses them, with what specific goal in mind, and with what effects?).

METHODS

This cross-case analysis compares four collaborative projects conducted within the context of the ACCs. Cases were selected on the basis of variation across several criteria, including theme, duration and history of collaboration between the partners. On these bases, four cases were selected:

1) the 'Healthy in the City' study (conducted within the ACC CEPHIR);
2) the 'PreCare' project (conducted within the ACC Youth Health Care North-Holland);
3) the project 'acceptance of vaccination amongst orthodox protestant groups' (conducted within the ACC Amphi);
4) the 'Primus' project (conducted within the ACC Public Health Northern South-Holland)

Methods for data collection included document analysis (project proposals, draft reports, newsletters, emails), observations of meetings and interviews with the main actors and representatives of the relevant groups in each case study. The document analysis had an exploratory function: we were able to trace the development of the project and identify key actors to interview. We analyzed

the documents according to this purpose, by focusing on items that seemed remarkable and required further explanation through interviews.

In addition to the document analysis, we held around 10-15 interviews per case study with all relevant actors. In total, we conducted 52 interviews with 53 persons. We conducted the interviews between April 2008 and December 2009 (depending on the case study). All interviews were transcribed and coded, based on both the topic list and emerging topics from the interviews. The interview questions focused on gaining a detailed picture of how the projects developed, whether the participants faced problems, how they tried to handle them, their project views and expectations, and their opinions about the final product and process. The eventual coding of the interview transcripts was also based on these themes. The interview transcripts and the thick descriptions (Geertz, 1973) that we made for each of the case studies were sent back to the (key) respondents for 'member checking' (Yanow and Schwartz-Shea, 2006).

The subsequent analysis focuses on reconstructions of the four collaborative projects. This requires some methodological justification, as such reconstructions highlight particular elements in the collaboration while leaving other aspects invisible. For example, the analysis mainly centers around the balancing act between mutual adjustment and different accountability demands that the actors within the projects need to conduct. Such an empirical focus necessitates analytical attention towards the tensions, dilemmas, controversies, and changes that are made in the projects, while the process-focus makes it harder to say anything about how the final outcomes of the projects are perceived. However, despite the inevitable consequences such choices have, we believe that much can be learned from a focus on how the actors in the research projects deal with the multiple 'accountabilities' they are confronted with and the strategies and negotiation tactics they use.

ORGANIZING RESPONSIVE SCIENCE IN FOUR COLLABORATIVE RESEARCH PROJECTS

As described in the introduction, the main goal of the article is to provide an empirically grounded analysis of how the ACCs, as 'hybrid research settings' where various accountabilities need to be balanced, work, or in other terms, how this balancing of different accountabilities is handled in practice. Below we present the reconstructions of the four collaborative projects, analyzing them in terms of the various 'configurations of hybrid management strategies'

that can be seen. For each case, however, we start with a quick overview of the projects in order to provide the necessary background information.

The Healthy in the City study

Main goals:
To investigate which policy measures are necessary to reduce the health disadvantages of the Rotterdam population in comparison to the Dutch average.

Through combining known effects on important determinants of health and epidemiologic studies investigating the connections between determinants and public health, the researchers drew up a 'disease model' describing the relations between determinants, the prevalence of various diseases and the consequential mortality caused by these diseases.

This model enabled the researchers to calculate which effects potential policy measures can have on the determinants of public health and, accordingly, what the consequences are of the changes in these determinants.

Context:
Project has been conducted within the Academic Collaborative Centre CEPHIR (Centre for Effective Public Health In the larger Rotterdam area).

Long history of collaboration between PHS Rotterdam-Rijnmond and Erasmus Medical Centre

This project occurred within a specific policy-oriented research format ('Small But Beautiful': SBB) aiming to scientifically investigate questions of policy makers and professionals within a relatively short time period of three months (Kreuger, 2007).

Practitioners and policy makers are enabled to formulate questions that can be 'taken up' by scientists. Within three to six months, the answer to the question – in the form of a short report – is communicated back.

Directly involved actors in the collaboration:
- Erasmus Medical Centre (Public Health department)
- PHS Rotterdam-Rijnmond
  Supervisory group including several PHS-employees from different departments (including the coordinators of the ACC and several heads of departments) who met with the researchers on a regular basis.
  Healthy Cities policy group (responsible for broader policy program of the PHS)

Main accountability lines:
Local councilors (project based on political vote from local council member) and aldermen expect quick results that are usable

Directorate of PHS (research results need to be usable for new policy program of the PHS)

Directorate of Medical Centre (expects scientific quality and high-level peer reviewed publications)

Funding organization (ZonMw) (expects projects within the ACCs to adhere to several criteria; SBB-format seen as successful way to reconcile scientific research with policy demands)

Box 1: characteristics of the 'Healthy in the City' project

Navigating between consensus and legitimacy: hybrid management strategies in the 'Healthy in the City' project

Important elements in this case study relate to the political setting in which the study has been conducted, as well as the short time period that was available for the researchers. As the table shows, a political vote formed the starting point of the project. This vote was assigned to the PHS, who contacted the public health department of the Erasmus MC (one of the partners in the ACC) to ask whether they would be willing to concretize the proposal to a scientific research project.

In terms of hybrid management strategies, we then see a strong emphasis on the strategy of *boundary demarcation and maintenance*. Both the PHS and the Erasmus MC felt comfortable by a strictly maintained (formal) role division: the researchers of the Erasmus MC were responsible for the *scientific content,* whereas the PHS would be responsible for the *policy translation* of the findings. However, while Miller does not discuss to what (un)intended consequences this may lead, this case study shows how the boundary demarcation strategy had mixed effects on the collaboration. While the strategy proved to be useful for legitimation purposes (and gave the PHS the opportunity to release some of the pressure of the challenging proposal they faced[34]), it also led to a divergence of the different accountability criteria the project needed to adhere to. As the criteria of 'evidence' and 'relevance' became officially separated by the role division, their conceptualizations diverged as well. While 'evidence' gained a strong scientific connotation (a focus on a small, demarcated, scientifically sound study), 'relevance' became strongly policy-oriented (the project had to incorporate as many relevant policy issues as possible).

After the established role division, the researchers from the Erasmus MC worked on the actual conduction of the study. During this period, the coordinator of the ACC, together with the main researchers, established a supervisory group consisting of several PHS-employees. They met on regular basis with the researchers. While this collaboration worked smoothly and only led to minor discussions about the structuring of the research design[35], the *Healthy Cities policy group* within the PHS only became involved when an internal meeting was organized to present the preliminary results of the study. Here, however, the divergent conceptualizations of the quality criteria rose to the surface, as the meeting proved to be the most important source of disagreement in the project. According to the *Healthy Cities* project group, the study did not meet their expectations and the results were not considered very useable for the policy program:

This first meeting […] was like a Babylonian confusion of tongues of researchers on the one side and policy makers on the other side. The research clearly didn't give answers to their questions, and they didn't know what to do with it. In short: it was two hours of chaos. And there was disappointment: the research did not answer the great questions Healthy City stands for – what

34 Interview project coordinator (27-05-08)

35 Interview main researcher (14-05-08)

should we do to make the Rotterdam population healthier? (Interview project coordinator, 27-05-08)

Many of the respondents saw this meeting as a crucial turning point in the project[36]. The supervisory group consequently tried to manage this issue in two ways: through 'expectation management' and through the development of a 'scenario approach'. The 'expectation management' consisted of a range of informal discussions between the actors involved that took place after the critical meeting discussed above and helped to clarify – and make explicit - the expectations of the different groups. In the scenario approach, specific interventions (and their effects on known health determinants) were clustered into scenarios that were closely connected to the PHS policy program.

In terms of hybrid management, we thus see that the strategies shifted from boundary work to a combination of cross-domain orchestration and hybridization. The expectation management is a nice example of *cross-domain orchestration*. It consisted mainly of the two coordinators spending much time in discussing the aims of the project and making explicit the underlying expectations about the kind of results the project would lead to. The development of policy relevant scenarios shows how successful *hybridization* can take place. The scenarios consisted of both scientific elements (they are based on the model of the Erasmus MC) and political elements (they are linked to the policy program of the PHS), which were fully intertwined. The scenario approach clustered a wide range of interventions and their potential health effects into coherent packages of policy relevant scenarios. This proved to be a very successful strategy that most respondents saw as a highly positive adjustment[37]. The program manager of the PHS policy group embraced the practical usability of the scenarios:

[The Healthy in the City project] was very much research-oriented. But in the end we have sought to translate that [research] to certain images. It's best if you can turn that [research] into images that people can relate to, something they can literally imagine. ***A Healthy Youth Has A Healthy Future*** [the title of one of the scenarios, RW]: that sounds splendid. That is a nice headstand to reveal a whole story about which things are most effective to emphasize with youngsters (Interview manager PHS policy department, 30-07-08).

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36 Interviews project coordinator (27-05-08) second coordinator Cephir (10-06-08)

37 Interviews project coordinator (27-05-08), main researcher (14-05-08), manager PHS policy department (30-07-08).

When these issues were solved, the joint group needed to convince the local aldermen and councillors of the results of the project. Interestingly, the hybrid management strategies shifted again in this latest phase of the project. In this phase, the strategy of *boundary demarcation* again became crucial: the scientists were – almost literally – put on stage (cf. Hilgartner, 2000) and much effort was put in separating the responsibilities of the PHS and the Erasmus MC again. This becomes apparent when one of the members of the policy department within the PHS discusses how the PHS organized a presentation for the local councilors, at the Erasmus MC:

They [the councilors] found it to be very interesting. They also liked very much to be put back into the college banks again. ***We purposively did that***. We even literally tried to arrange one of those classical round college rooms, but we did not succeed in that (Interview policy maker PHS, 26-06-08, italics added).

Interestingly, through the setting the actors try to invoke the familiar notion of scientists "speaking truth to power". It is also a very revealing example of the strategy of boundary work. Partly, this strategy was successful: the (quality of the) results were not questioned by local policy makers. However, some respondents also questioned to which extent these policy makers used the results and the councilor triggering the study argued that in the end, the cost-effectiveness question he was most interested in was not addressed[38].

38 Interviews senior researcher PHS (11-06-08), member of city council initiating the study (24-06-08)

The PreCare project

Main goals:
The main aim of the total PreCare program is prevention of child neglect by high-risk teenage mothers.

The goal is twofold: first investigating the effectiveness of the PreCare intervention in the Dutch context through a randomized trial design, and second, to implement the PreCare intervention (nationally) if it is shown to be effective.

More specifically, the goal of the intervention is to improve pregnancy- and birth-outcomes for both mother and child, improve the health and development of the child, and improve the personal development and possibilities for education and work for the mother.

Context:
This project has been conducted in the ACC Youth Health Care North-Holland.

The intervention originates from the American program Nurse Family Partnership (NFP) and aims at improving the health and development of children in vulnerable ('high-risk') families. The NFP has proven its effectiveness in the US in three randomized controlled trials (Olds et al, 1986; Kitzman et al, 1997; Olds et al, 1997).

'PreCare' is the Dutch translation and cultural adaptation of the NFP.

It is an intervention in the realm of primary prevention, in which during pregnancy and the first two years of young children risk factors for child abuse and severe growth and development problems are systematically dealt with.

The intervention focuses on a highly difficult target group and consists of an extended series of home visitations (+/- 60) over a broad period of 2 ½ years.

Directly involved actors in the collaboration:
- Researchers and interviewers of the Free University Medical Centre conducting the trial,
- Employees of the Netherlands Youth Institute coordinating the implementation
- Managers of the involved youth health care organizations (20 in total) facilitating the program in their organizations
- Nurses conducting the intervention
- The trainers of the nurses

Main accountability lines:
US program developers → tight restrictions on Dutch version of the intervention, in that program developers see 'PreCare' as fourth major trial; minimum number of inclusions (456) is a non-negotiable criteria

Free University Medical Centre → 'robust' scientific quality through trial design considered of crucial importance, not only to maintain strong position in area of youth health care, but also to be able to make large-scale implementation of PreCare in The Netherlands possible.

Municipalities funding (parts of) the program → want to see visible results (in terms of number of participants included in the intervention)

Other (local) professionals → these are called upon to refer potential candidates to the PreCare-nurses; they want to see result of their efforts rather than seeing potential candidates 'disappear' into the control group

Box 2: characteristics of the 'PreCare' project

While the 'Healthy in the City' project entailed a collaboration between researchers and policy makers, the 'PreCare' project mainly focused on collaboration between researchers and practitioners (although as the table shows there are distinctive accountability lines to municipalities as well). Compared to the policy-oriented format of the previous case study, this case study also saw scientific accountability criteria being relatively strictly defined, as one of the conditions the US initiator of the program imposed on the Dutch team was that the implementation of the intervention in the Dutch context should be rigorously investigated by means of a controlled trial design.

Navigating between consensus and legitimacy: hybrid management strategies in the 'PreCare' project

One of the things that makes the PreCare project a fascinating case, is the mutual dependency of researchers and professionals (nurses). The researchers need the professionals to comply with the RCT-design and to provide feedback on the intervention design, but at the same time the professionals need the researchers to legitimize the costly intervention to municipalities and other care professionals. The clear accountability demands placed on the project by the US developer, as well as the Free University's demands, necessitated a strict research design in which potential candidates are randomly attributed to a control group or an intervention group. Furthermore, the intervention program is highly structured: the nurses have three extensive manuals (containing detailed protocols for each visit) to work from. The project is characterized mainly by a clash between the strict character of the trial design and the practical situations the nurses saw themselves confronted with (i.e. facing a group with multiple problems, such as poor housing, substance abuse, violence). The fundamental difficulties nurses experience are explained by one of the nurses:

I think it is very difficult. At the same time you offer something, a very nice program, and actually you offer help […], but it can also be that you have to say "I am sorry, but you are in the control group". […] So you offer something, and at the same time you take it away. That is very strange. […] Morally or ethically I do not find this a good way of conducting research (Interview PreCare-nurse, 28-07-08).

These fundamental difficulties proved to be unsolvable as the nurses continuously kept questioning the trial design. In terms of hybrid management strategies, we see that the nurses continuously try to *deconstruct* the RCT design (especially the accompanying distinction between a control group and an intervention group). They aim to reveal the assumptions of this design (the idea of a universal application of the intervention and the assumption that the highly complex and problematic practices can be standardized) and point to the ethical implications incorporated in the design (high risk teenage mothers in need of care are withheld from a potentially very successful intervention). In essence, they try to show that *every* choice in the design is necessarily political or ethical. However, while they question the design as such, they are not able to generate many changes.

Although the nurses were not able to find alternative ways to conduct the trial, that does not mean that the researchers were completely oblivious to

their complaints. As the researchers are also dependant on the motivation and 'goodwill' of the nurses, the research team had to try and find ways to manage this 'fidelity-flexibility dilemma' (cf. Cohen et al., 2008; Glasgow, Lichtenstein and Marcus, 2003; Godwin et al., 2003; Jansen et al., 2006; Kendall and Beidas, 2007). They did so in several ways. First, by relying on an extensive formal infrastructure, such as regular management meetings, case conferences (to bring together PreCare nurses of different organizations) and basic trainings and local peer groups. These attempts can be seen as examples of *cross-domain orchestration* and consist of a large variety of procedures and meetings (which are all elements in the coordination of activities and the 'orchestration' of professional behavior in line with research demands; see Wehrens and Bal, 2012).

The strategy of cross-domain orchestration was however not the only strategy used by the researchers. Perhaps even more effort was put into preventing the deconstruction of the research design through *boundary demarcation and maintenance*. For one, the boundaries of the trial design are hard and non-negotiable. Even though flexibility is emphasized, this can only take place within the limits of these strictly set boundaries. Another instance of boundary demarcation can also be seen in the establishment of a specific expertise group (a small group of key actors, such as the program developer in the Netherlands), who decided on 'ambiguous cases' not fitting all selection criteria. The rigid criteria – needed to ensure the program fidelity –sometimes clash with both the practical situations the nurses find themselves confronted with and the pragmatic application of the multi-interpretable criteria. Nurses could sign up these ambiguous potential candidates for discussion in the expertise group. While the nurses were positive about this, it can also be read as an attempt to *scientifically judge* whether potential candidates in the 'grey area' can be incorporated in the program or not. It thus serves a clear purpose: the demarcation of this choice from nurses to experts, thereby scientifically legitimizing the decisions. Although both the case conferences and the expertise group were highly appreciated by the nurses, the project still encountered an uneasy fit between scientific accountability demands and local support.

The preceding analysis mainly addressed the ways in which the actors in the PreCare project tried to balance scientific accountability criteria and the concerns of the nurses. Another accountability line, that has not been addressed yet, is related to the costs of the program. How do the researchers legitimize these costs to the local financers – in this case, the municipalities? Here, two main strategies can be distinguished. First, the researchers offered the program as a 'package-deal' only, which means that municipalities interested in the program commit themselves to participate in the RCT. In a way, this approach can be

interpreted as an instance of *hybridization*: the preventive program and the accompanying research become intertwined. Second, the project team made clear arrangements with the local youth health care organizations about when to establish contact moments between the researchers and municipal actors. The rationale behind this was that local youth health care organizations would be best suited for maintaining productive contacts with municipalities. Direct contact between the researchers and local municipalities was considered to be counterproductive.[39,40] Interestingly, this reflects the hybrid management strategy of *boundary demarcation*. We then see that the actors involved need to conduct different forms of hybrid management, at different moments and for different purposes.

39 Interview Dutch initiatior of PreCare (01-10-08)

40 Interviews senior researcher VUmc (03-07-08) and (former) project coordinator (22-07-08)

The 'acceptance of vaccination' project

Main goals:
The project Acceptance of vaccination amongst orthodox Protestant groups has been conducted within the ACC Amphi (Nijmegen area)

It aims at mapping the motives of (different denominations of) orthodox Protestants to apply for – or refuse – vaccination against common infectious diseases.

As a high percentage of these orthodox Protestants refuse to apply for vaccination against common infectious diseases, this frequently leads to infection outbreaks (Ruijs et al., 2011).

Context:
Target group of orthodox Protestants is extremely difficult to enter.

The project is characterized by a high level of political sensitivity and receives much media-attention.

Directly involved actors in the collaboration:
- The PHS Tiel-Rivierenland (where the main researcher is located)
- The researchers of the UMC St. Radboud (who supervise the main researcher)
- The Netherlands Patient Organization (a large patient centered organization with a Biblical foundation who have an important advisory function in the project).
- The external advisory committee consisting of a diverse range of people (including professors in various departments, as well as a director of a Public Health Service and 'respectable' persons from the target group – such as an ex-mayor and a general practitioner).

Main accountability lines:
Target group that is skeptical about the research and needs to be convinced about the usefulness of the project

Box 3: characteristics of the 'Acceptance of vaccination' project

While the issue the 'PreCare' project aimed to address was appreciated by both researchers and practitioners, the third case study showed a more ambivalent attitude towards the added value of the collaborative project – at least from the perspective of the target group. This critical target group can be seen to constitute the most important accountability line in this project, as there are no rigid quality criteria placed upon the project from external developers. Similarly, although the project is characterized by its politically sensitive question, there is little immediate political (time) pressure behind the project, as was the case in the 'Healthy in the City' project.

Navigating between consensus and legitimacy: hybrid management strategies in the 'Acceptance of vaccination' project

In terms of coordination and mutual adjustment, however, the project had to balance a wide range of issues. The PHS, the intermediary groups and the university researchers had different motivations to participate in the project. For the researchers, the main goal of the project was to gain *insights* into the extent of vaccination acceptance of orthodox Protestants, as well as their motives (social as well as individual) to accept or refuse vaccination. However, the NPV mainly aimed to inform the members of their organization, to enable them to

make a *well-informed* decision with regard to vaccination. These different goals were coordinated by the NPV and the researchers through accentuating common ground between these groups (while downplaying differences), but also by developing a digital questionnaire, which became an important boundary object (Star and Griesemer, 1989). Star & Griesemar define boundary objects as "objects which are both plastic enough to adapt to local needs and the constraints of the several parties employing them, yet robust enough to maintain a common identity across sites" (1987, p. 393). The web-based questionnaire, which was developed in close cooperation with the NPV, clearly resonates with this concept. The questionnaire also has a solid basis which makes it robust enough to be recognizable: it is a questionnaire aimed to gain insights into the target group of orthodox Protestants. At the same time the questionnaire is plastic enough to adapt to diverse needs. For the researchers, it is an important research method that leads to reliable information which can be used to answer the research questions, whereas for the NPV it is more important as a PR-tool to gain insight into the information needs of the target group:

> With these youngsters we actually only wanted to know: what is your denomination, and which vaccinations did you get? But the NPV […] wanted to know what their information needs are. So a couple of questions were added. That is also the 'decoration' of the question: if you only ask these two questions, people will obviously become suspicious. But if you add these kinds of questions concerning information needs, than the questionnaire will only become more acceptable for the target group, while at the same time the NPV could also make use of it (Interview senior researcher 25-03-09).

This quote also illustrates the *scientific importance* of the additional questions (or the 'decoration' of the survey) the NPV asked – not in terms of content, but in terms of acceptability: more acceptability will lead to more respondents, which increases the 'robustness' of the findings. In terms of hybrid management strategies, then, the development of this questionnaire can be seen as a particularly successful instance of *hybridization.*

One of the main characteristics of the project became the struggle for legitimacy by a critical target group. The target group formed the main accountability line in this project. This group, having grown weary of research into their motivations and fearing policy and media controversy, needed to be convinced about the researchers' intentions. In a way, the target group employed the strategy of *deconstruction* by criticizing the research because of its perceived 'hidden', normative dimension. One of the main critiques and fears of the target group

is that the research was an attempt to force orthodox Protestants to become vaccinated. The strategy used by the project group to counter this is *boundary demarcation*: they tried to establish and maintain clear boundaries by shielding off the project. The project team aimed for seclusion as much as possible without becoming too suspicious.[41]

Seclusion was not the only strategy used, however. At some moments in the project, other strategies became important. One of these moments necessitated crucial changes in the project and made the importance of the legitimacy question quickly visible for the researchers. In the second year of the project, the original method of a questionnaire for pupils of orthodox Protestant secondary schools had to be abandoned by the researchers, as the schools refused to participate. Consequentially, the project team needed to change its original research protocol while 'selling' the research as sincere and genuine towards their target group. Collaborating with intermediaries was important for the project team, as it positively influenced the ways in which the research was perceived by the target group.

The involvement of the NPV was crucial in several ways. First, they provided detailed insights into how the target group should be approached, including subtle, tacit knowledge about which formulations to use and which ones to avoid. For example, the scientific phrase 'chance reduction' (a perfectly legitimate scientific way of describing the prevention of infectious diseases) was considered highly problematic for the target group, since the phrase leaves no space for the Providence of God. Therefore, the NPV recommended using the term 'precautionary measure' instead.[42] Second, the researchers could build upon the trustworthy status of the NPV and the advisory committee. In this, we can see the strategy of cross-domain orchestration: even though the research is secluded as much as possible, the project team closely collaborates with representatives from the target group.

41 Interviews senior researcher (25-03-09a) and professor of Public Health (25-03-09b)

42 Interview external advisor, NPV (21-04-09)

The Primus project

Main goals:
The main aim of the 'Primus' project is to develop evidence-based programs for health promotion in older people, based on the needs of the various target groups and the state-of-the art in international literature.

The project specifically focuses on the development of a preventive health centre for the elderly.

In the end, the project is expected to result in practical tools for PHS's to enable them to make informed choices with regard to the question of whether to start with preventive health centres, and if so, for which target group and with which content (Grant application form).

Context:
Collaboration between the Leiden University Medical Centre (LUMC), several PHS's and TNO (a national institute with expertise on elderly health care). It is part of the Academic Collaborative Centre Public Health Northern South-Holland.

The project is conducted in an ACC that lacks the pre-existing collaborative relationships between the PHS's and the university/Medical Centres, especially when compared to some of the other ACCs.

The project is carried out by two researchers, one with a background in psychology and epidemiology and the other a trained MD, specialized in social medicine.

Directly involved actors in the collaboration:
- The LUMC (collaboration between the disciplines of primary care and public health)
- 3 Public Health Services (The Hague, Holland Central; and Western South-Holland)
- TNO Quality of Life (a national health care expertise centre)

The researchers are supported by a scientific committee referred to as 'Large Primus', in which five experts participate, among which the supervisors and co-supervisors of both researchers.

Main accountability lines:
The Leiden University Medic al Centre → The public health department involved in the collaboration within the ACCs was a new department in the Medical Centre. This department still needed to establish itself within the Medical Centre.

Directorates of PHS's (who expect practical tools in order to establish preventive health centres)

Box 4: characteristics of the 'Primus' project

The previous case studies discussed collaborative projects that all struggled to deal with the multiple accountability demands (that are often perceived as unequal in terms of their importance) they are facing in the context of the ACCs. Working within hybrid research spaces turned out to be difficult, but we also saw that solutions were possible. In the fourth case study, however, workable solutions proved difficult to find.

Navigating between consensus and legitimacy: hybrid management strategies in the 'Primus' project

Within this project, it proved difficult for the actors involved to balance their different perspectives with the accountability demands the project is confronted with. The different perspectives relate to the different backgrounds of the PhD researchers, which gave rise to different *scientific* perspectives. In terms of accountability demands, this project is mainly occupied with the dominant accountability demands of the Medical Centre.

The difficulties in balancing perspectives became most visible during the remarkable decision within the course of the project to have the two main researchers and their supervisors pursue different trajectories. The main causes for this separation related both to the difficulties of coordinating the different scientific perspectives and the dominant accountability demands (which were enhanced due to the strategic interests of the Medical Centre). The first cause relates to the *different scientific perspectives* (which can be labelled a 'medical perspective' and a 'health promotion perspective') that prevailed in the project. These perspectives did not match very well, due to their different focus (a narrow focus on preventive screenings versus a broader focus on acceptability and outreach). During the project, these differences led to several discussions between the researchers and their supervisors about important issues, for example with regard to screening (where to screen for, which screening methods are evidence-based, but also how to motivate people to take appropriate actions based on the screening results). It also led to ongoing discussions on other elements, such as the definition of the notion of 'intervention':

That was the cause of miscommunication all the time, because when we were discussing the intervention, the question was always: 'in which setting are we going to do that'? And that is something else than [the question of] ***what*** are you going to do specifically? […] You can think about which group you want to reach and where you want to screen them for. [But] you can [also] think about how you are going to motivate people to show up [and] do something with the screening result? That were things that were less relevant [from a medical perspective], but should have a key role from a [health promotion perspective] (Interview supervisor PhD student 2, 16-03-09).

From a medical perspective the most relevant question is what to screen for, whereas from a health promotion perspective this question is not relevant unless the target group is properly reached and motivated. Whilst these different questions seem to complement each other quite well, in this project they remained examples of diverging perspectives.

Another important example in which the diverging perspectives become visible, relates to the ways in which the criteria of 'scientific quality' and 'practical relevance' are conceptualized. During the project, there was a lack of agreement between participants on the definition of 'science based' and 'practical relevance'. According to some, the project was not science-based at all, since it

originated from a question that was put forward by one of the PHS's.[43] However, other respondents argued that although the project may have originated from a practical question, the role of the LUMC had become too dominant. From their perspective, whether a project is 'practically relevant' or not depends on more than 'who asks the question'.[44] In terms of hybrid management strategies, the project is characterized by an overarching focus on the strategy of *boundary demarcation*. Interestingly, in this project it is not mainly boundary work in terms of cultural groups (distinguishing 'science' from 'professional practice') that is being enacted, but boundary work *between scientific disciplines* (the diverging medical and health promotion perspectives). Especially during the later phases of the project (with the development and testing of pilots) this boundary work became eminent. Whereas the researchers from the 'medical group' focused primarily on evidence based medical screening methods, the 'health promotion group' emphasized issues of lifestyle and proper design of the pilots.

The reasoning behind this approach becomes clearer when taking the context of the ACC and the still relatively unstable position of the public health department into consideration. With regard to the collaboration between the LUMC and the different PHS's within the ACC, several respondents noted that the lack of pre-existing relationships made the starting conditions suboptimal.[45] The unstable departmental position led to an overarching emphasis on the (rigid, medically oriented) accountability criteria of the Medical Centre, leaving little to no room for concessions. For the researchers of the public health department, it was crucial that their new department gained a strong and stable position in the organization. Although the ACC could count on support from the strategic level of the LUMC, this support was also fragile – and in terms of overall performance based on research output, the ACC did not rank high.[46]

The difficulties in reconciling different perspectives in the project then do not (only) depict an unwillingness (or unease) to engage in transdisciplinary science, but they also reflect limitations through rigid and dominant accountability lines to the LUMC as well. For the public health department, the need to rigorously maintain scientific criteria was particularly high, given their relatively unstable position. At the same time, however, the participants did not put much

43 Interview head of Public Health department (27-02-08)

44 Interview head of department Health Promotion, PHS (13-02-09)

45 Interviews program manager Tno (06-04-09) and head of department Health Promotion, PHS (13-02-09)

46 Interview head of Public Health department and ACC coordinator (25-06-10)

effort into the strategy of *cross-domain orchestration*. There was for example little contact between the PHS's and the Medical Centre. The researchers only provided an occasional news letter to keep professionals from the diverse PHS's informed, but this news letter appeared very infrequently. From the other side, many professionals from the PHS's did not seek active involvement (or stopped doing so). Possibly because of this lack of mutual involvement, we see no traces of hybridization or deconstruction in this project.

DISCUSSION

The case studies reveal various hybrid management strategies, often applied by different groups and with different aims in mind. They had in common that they managed the dual process involved in hybrid research spaces such as the ACCs (to coordinate the activities and relationships between the participating actors whilst simultaneously struggling with the sometimes incommensurable accountability demands they are subjected to). Hybrid management is what constitutes the work that is done to manage or balance these tensions.

Configurations of hybrid management strategies

The analysis showed how hybrid management strategies featured in *various configurations* in the case studies. They were not employed in isolated ways. This is an important addition to the way in which Miller (2001) explored the concept. While Miller distinguishes between four forms of hybrid management, he hardly explores how they relate to each other in different contexts, how they were used, and for what specific purposes. Each case study provides valuable insights that enrich our understanding of the hybrid management concept.

The first addition of this article to the hybrid management concept is that it showed how hybrid management strategies can lead *to different results in different moments*. The *Healthy in the City* case study, for example, showed how the strategy of boundary demarcation and maintenance was more effective at the end stages of the project (the results were never questioned by the local councillors due to the emphasis on scientific rigour) than at the starting phases (where it led to the exclusion of the crucially important policy group within the PHS). In contrast, the *Primus* case study showed how the strategy of boundary demarcation became increasingly problematic during the course of the project, as several groups began to feel more and more excluded.

The second addition of this analysis is that it highlighted how hybrid management strategies can *simultaneously be useful and problematic* for different

aspects. The *Healthy in the City* case study showed how the boundary demarcation strategy had clear disadvantages (a divergence of accountability criteria), but it also had the advantage that the PHS was able to release some of the political pressure behind the proposal. A related example can be seen in the *Acceptance of vaccination* case study. In order to prevent the research from becoming too politicized and open to critical scrutiny from the target group, the project group employed the strategy of boundary work to seclude the research as much as possible. Whereas this worked quite well in 'sealing off' the research to the critical target group, the project group was also very much aware of the need to carefully apply this strategy in order to avoid becoming too secretive (which would lead to more scrutiny).

The third addition of our work is that it showed how *hybrid management strategies can be divergent or even opposite* to each other when they are used by different groups. In the *PreCare* case study we saw how the nurses continuously tried to deconstruct or open up the RCT design, while the researchers countered this strategy with a combination of cross-domain orchestration and boundary work. Similar to the *PreCare* project, the *Acceptance of vaccination* case study also showed how different strategies are employed by different groups. The strategies of the participants collaborating in the project are examples of cross-domain orchestration and hybridization (e.g. the questionnaire). However, with regard to the relation between the participants and the target group, a different set of hybrid management strategies can be seen. Here, boundary work was the main strategy used in order to seclude the research as much as possible. In this case study, then, hybrid management strategies are not so much opposed to each other, but rather enacted for different purposes towards different groups.

The potential and limits of hybrid research spaces

When reflecting on these findings, it is important to position them within the specific context of the ACCs. The ACCs need to take into account different criteria (academic quality *and* 'socially robust knowledge'), which may not be always easily intertwined or considered equally important. In theory, however, they do provide the space necessary for the collaborative projects to develop. We argue that there, however, that there are also clear limitations to what hybrid research settings such as the ACCs can achieve.

One of the main issues that appears from our analysis is the paradoxical and disproportionate character of how these different accountabilities work out in the context of the ACCs. The paradoxical character relates to the balance between reaching consensus and maintaining legitimacy such collaborative

projects need to establish. When the processes and products of such settings are put under a magnifier, however, this may have counterproductive effects, because the balance shifts to issues of legitimacy and the room for negotiations and mutual adjustments becomes threatened. This can be seen during the first funding period of the ACCs, when the ACCs faced challenging accountability pressures from the funding organization, such as through regular annual progress reports, visitations, and journalists, all focusing on the achievements that were reached. In other words: when each decision needs to be legitimized, it is hard to reach consensus about anything.

The cross-case analysis also showed the *disproportionate* ways in which the different accountabilities were weighed in the ACCs. The criterion of societal relevance is expected to be a primary part of the ACCs, as the funding criteria and the official documents accompanying the program explicitly mention. However, our analysis showed that scientific quality criteria are still decisive in many instances. Whereas adjustments to scientific criteria are often seen as *improvements* of the collaborative study design, adjustments to policy and/or practice quality criteria are often seen as (potential) *deteriorations* of the design and usually required a substantial crisis before they were included. This resonates with the analysis of Parker & Crona (2012), who show that actors within hybrid research spaces often face tensions between different demands, some of which are considered more urgent, and therefore some demands are prioritized over others.

The ACCs have high potential as hybrid research settings that co-mingle and reconcile a variety of demands from different stakeholders. There are, however, also inherent limitations to what can be achieved. The different accountability criteria are not so flexible that any compromise is possible in the collaborative projects. In theory, the ACCs are able to provide an experimental and relatively 'sealed' safe interior space in which the different actors can freely discuss and balance their different perspectives in order to reach a compromise that would satisfy all involved. However, the case studies show that the structure of the ACC has not been sufficiently positioned as such an experimental space, which would consequentially assess projects on different criteria than regular research projects. Such a more explicit acknowledgement of the experimental character of the ACCs would render the different accountability criteria more equally important. Now, the emphasis on scientific quality criteria (which were also decisive in the funding of new collaborative projects) and the continuous meddling by ZonMw, provided policy and practice actors in the case studies with little opportunities to incorporate other criteria.

CONCLUSION

This article started with the observation that additional criteria of 'social robustness' in science governance gave rise to a plethora of (novel) organizational formats and forums, often transdisciplinary in character, including various stakeholders, in which multiple, often competing demands need to be balanced. Guston's (2001) notion of boundary organizations has traditionally been seen as one of the major concepts to make sense of such settings. In this article, we questioned whether this concept is able to explain in detail how the actors involved in such boundary organization settings actually deal with the multiple 'accountabilities' they are confronted with. We followed the recent contribution of Parker & Crona (2012), whose article explicates the kind of challenges boundary organizations face due to the sometimes incommensurable demands they are subjected to. Similarly, in our analysis of the collaborative projects within the ACCs, we focused on the tensions that continuously need to be negotiated.

Extending Miller's (2001) analysis of hybrid management strategies, our empirical material highlighted the various *configurations* in which these hybrid management strategies occur. The main theoretical contribution lies in its in-depth empirical exploration of these configurations. This article showed that hybrid management strategies can lead *to different results in different moments*, that they can *simultaneously be useful and problematic for different aspects*, and that they can be *divergent or even opposite to each other* when they are used by different groups. An analytical focus on the various hybrid management configurations in collaborative research projects deepens our understanding of what is going on within hybrid research settings such as the ACCs.

Future empirical analyses of these kinds of settings need to pay more explicit attention towards such hybrid management configurations, as they provide a lens to understand the different accountabilities that are present in different levels and equalities. We showed that the hybrid management concept can be used to explore much more of the 'balancing work' within collaborative research settings than hitherto has been the case. There remain several future challenges for this kind of work. One of the most interesting questions for future research is to investigate whether it is possible to distill or differentiate between more and less successful strategies. Can we find regularities in which hybrid management strategies work best at which moments? The complexities and divergence in the empirical case studies do not allow for a synthesis of this kind, but future work may be better equipped for this.

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Chapter 6

The possibilities and limitations of fostering CoPs through organizational incentives: an analytical and empirical exploration

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ABSTRACT

The 'Community of Practice' notion gained considerable attention in diverse fields as key aspect to organizational learning and informal problem-solving. Simultaneously, there are many scholars who are criticizing the 'managerial shift' within CoP-literature. In this article we argue that further debate on this level of 'pro/con'-arguments about whether or not CoPs may be managerially fostered is not a fruitful way to proceed.

Regardless of these theoretical debates, organizations *are* investing in the development of CoPs. Settings where such attempts are made provide fertile ground for (social science) researchers to investigate the possibilities and limitations of fostering CoPs through organizational incentives more empirically. This article provides such an empirical analysis by focusing on the main characteristics of CoPs as well as the main neglected issues (the role of power relations, the development of trust, and the influence of predispositions) that have been identified by critical scholars. We argue that managerial approaches more likely lead to specific tensions and dilemmas that, although hitherto recognized by some critical scholars, remain underexplored in terms of how they relate to each other.

This article aims to understand how these specific tensions and dilemmas work out in managerial settings facilitating CoPs. Empirical accounts of this kind have been relatively rare. Rather than trying to distil quick 'lessons learnt', this article aims to show the complex and often highly divergent ways in which these issues need to be navigated. We build on a cross-case study design in which four collaborative research projects are investigated.

INTRODUCTION

Since its development in the 1990s, the notion of Community of Practice (from here on: CoP) (Wenger & Lave, 1991) has gained considerable attention within the knowledge management literature and other fields, such as education. CoPs are generally defined as "groups of people who share a concern, a set of problems, or a passion about a topic, and who deepen their knowledge and expertise in this area by interacting on an ongoing basis" (Wenger et al., 2002:4). They are understood as groups of people who informally interact around shared problems, and through this process are able to build mutual relationships and develop specific forms of knowledge. Over the years, CoPs have been attributed an almost panacea-like quality as key aspect to organizational learning, informal problem-solving, building mutual commitment and integrating research and practice (Wenger et al., 2002; Hildreth & Kimble, 2004; Lesser & Storck, 2001; Buysse et al., 2003).

The high visibility of the concept within these research domains also led to a more critical investigation into the ways in which the concept has developed. One of the most widely uttered critiques relates to the ambiguities inherent within the concept, which may be related to the large differences in how different scholars define its key elements. Two reviews of how the CoP concept developed in recent decades highlight the tensions between these different conceptualizations over time (Cox, 2005; Li et al., 2009). Li et al. (2009) argue that the lack of uniform operating definitions in the CoP concept has resulted in large variation in the structure and function of these groups, which makes evaluating their effectiveness problematic. A similar argument has been made by Cox (2005), who compared four seminal publications on CoPs (Brown & Duguid, 1991; Wenger & Lave, 1991; Wenger, 1998; Wenger et al., 2002).

In addition to conceptual ambiguities, other scholars point out that several important elements are structurally neglected in almost all literature building on the concept (Roberts, 2006). First, the concept does not sufficiently take issues of power into account, even though power is considered a vital element in the process of negotiating meaning within CoPs (cf. Fuller et al., 2005). The role of trust is also neglected, even though it is considered to be of crucial importance in CoPs (but may be much harder to achieve than is presumed). Thirdly, the role of predispositions is underrepresented. Whereas according to Wenger (1998) meaning is negotiated within CoPs, other authors, such as Bourdieu (with his concept of 'habitus') argue that meaning is mediated through predispositions – and is thus much less amendable than presumed by much CoP-literature (cf. Handley et al., 2006).

Most critiques are specifically concerned with the managerial direction in which the concept appears to be developing (cf. Wenger et al., 2002, Hildreth & Kimble, 2004, Lesser & Everest, 2001). While the concept was initially developed through grounded, detailed empirical work, emphasizing the situated character of learning in practice, this clashes with the normative character of later work that represents CoPs as a managerial tool to improve an organization's competitiveness (cf. Peltonen & Lämsä, 2004). Several authors have forcefully criticized this 'managerial shift', arguing that this shift obscured much of the original richness of the notion. Amin & Roberts (2008), for example, argue:

> As CoPs thinking proliferates, the original emphasis on context, process, social interaction, material practices, ambiguity, disagreement – in short the frequently idiosyncratic and always performative nature of learning – is being lost to formulaic distillations of the workings of CoPs and instrumentalist applications seeking to maximize learning and knowing through CoPs (2008: 353-354).

Similarly, Swan et al. (2002: 478) pointed towards the 'growing tension in the literature' around the question of whether CoPs are manageable. In contrast to what the managerial approach seems to presuppose, many critical scholars are aware that CoPs are not easy to create or 'foster'. Some empirical evidence for this has been provided by Alatta (2003). These critical scholars also acknowledge the difficulties and ambiguities within the concept.

However, in this article we argue that further debate on this level of 'pro/con'-arguments about whether or not CoPs may be managerially fostered is not a fruitful way to proceed. Regardless of these theoretical debates, organizations *are* investing in the development of CoPs. A comprehensive literature analysis showed that many claims about the values of CoPs in terms of work satisfaction, high performance, and other perceived benefits tend to be theoretical or conceptual rather than empirical demonstrations (Braithwaite et al., 2009), but simultaneously, these and other authors (Ranmuthugala et al., 2011) observe that organizational investments in elements of the CoP-concept are often being made, despite this absence of empirical evidence. Settings where such attempts are made provide fertile ground for (social science) researchers to empirically investigate the possibilities and limitations of fostering CoPs through organizational incentives. It would seem logical that the emergence of CoPs through such organizational incentives is more difficult to achieve than proponents of the concept argue, yet not as impossible as is sometimes applied by critical commentators on the notion. Crucially, however, this article

argues that these neglected issues, which have been outlined by other scholars, *become much more urgent to investigate* in 'managerial settings' as compared to settings where CoPs develop more naturally or spontaneously. Whilst the role of power relations, the development of trusting relationships, and the influence of predispositions are also important elements to investigate how CoPs develop naturally, these issues become of crucial importance in understanding attempts to managerially foster CoPs. They are thus elements that need to be explored empirically in order to analyze the possibilities and limitations of fostering CoPs through organizational incentives.

There are several reasons for this. When CoPs are being established or fostered with a specific organizational aim in mind, the influence of power relationships within the process of negotiating meaning is likely to become more important (as these kind of CoPs are more likely to be closely monitored and evaluated in terms of the organizational aims for which they are fostered, thus shifting power relations). Likewise, in such settings the development of trustworthy relationships is likely to be harder. While trust is a prerequisite for spontaneously emerging CoPs, it still needs to develop in managerial settings and a managerial approach might often produce distrust. Similarly, the role of predispositions (in terms of preconceived notions, for example about evidence criteria) becomes more important to investigate in these settings. The diversity of the predispositions actors bring to managerially fostered CoPs is likely to be greater than within spontaneously emerging CoPs, which often develop within niche groups with a larger amount of homogeneity. Predispositions say something about the tensions within CoPs rather than assuming such homogeneity (see Handley et al. (2006) for a similar point). Thus, the ways in which different predispositions influence the process of knowledge sharing and problem solving within potential CoPs may be crucial. Lastly, in such managerial settings it becomes more important to investigate the relations between (potential) CoPs and the broader organizational environment in which they need to operate, as the tensions between organizational demands and internal group dynamics are likely to become more pressing in managerial settings. The extent to which these tensions may become problematic or remain 'workable' may also be related to the openness towards contingency within such approaches. The social learning perspective underlying the CoP-concept in this sense contrasts markedly with a more narrow, rationalistic focus assuming universality.

In sum, managerial approaches to CoPs are more likely to lead to specific tensions and dilemmas that, although hitherto recognized by some critical scholars, remain underexplored in terms of how they relate to each other. This article focuses on exactly these issues, trying to understand how these specific

tensions and dilemmas work out in managerial settings that aim to facilitate CoPs. Empirical accounts of this kind have been relatively rare. Indeed, maybe one of the most striking aspects of the abundance of CoP literature is that little in-depth, grounded empirical research has been conducted to show how the concept actually works out in different settings (an exception being Barab et al. (2002)), and in which broader organizational structures CoPs are embedded. Although the concept has originally been developed through grounded empirical research (Lave & Wenger, 1991; Orr, 1996; Brown & Duguid, 1991), the later work of Wenger et al. (2002) provides only 'snapshots' that serve as examples, but lack empirical depth. The few other empirical studies remain superficial in terms of empirical depth (Boud & Middleton, 2003) and level of methodological and analytical detail (Breu & Hemingway, 2002).

This article aims to provide a detailed empirical analysis of how attempts to managerially foster CoPs work out in relation to the above discussed issues of power, trust, predispositions and broader organizational contexts. It has been argued that managers can, at best, seed a group in hopes of enabling the development of a CoP, but that they cannot *make* a CoP (cf. Brown & Duguid, 2001). In order to understand the extent to which CoPs might emerge from such managerially created groups if they succeed in adequately handling some of the issues outlined above, in-depth analyses of the kind being offered here are particularly needed. This article shows how for managerially fostered CoPs, several neglected issues become crucially important to manage. Rather than trying to distill quick 'lessons learnt' or 'action plans', this article aims to show the complex and often highly divergent ways in which these issues need to be navigated.

In terms of methods, this article builds on a cross-case study design in which four collaborative research projects are investigated. These collaborative projects have developed within the context of structural, interorganizational collaboration structures between university researchers, municipal policy makers and public health service professionals in so-called Academic Collaborative Centres for Public Health (ACCs). The ACCs are developed through a financial incentive of the Netherlands Organisation for Health Research and Development (ZonMw) that sponsored an eight year program for the development of nine ACCs. The overall goals of the program are to promote evidence-based policy and practice, as well as socially relevant research. Although the actors in the collaborative projects are usually working in project groups, which are often distinguished from CoPs (Wenger et al., 2002), it can nevertheless be expected that the actors can develop towards CoPs. The potential of CoPs in collaboratives between research producers and research users has been shown

by other authors (McDonald & Viehbeck, 2007). Furthermore, the overarching structure of the ACC explicitly aims to facilitate mutual learning and integration of perspectives. Due to the long-term character of this overarching structure, its aim to develop increased understanding, knowledge sharing and convergence of perspectives, and its multiple developed formats and instruments aimed to achieve this, the ACCs can be seen as examples of organizational incentives that allow specifically for the emergence of CoPs. This formalized infrastructure offers the opportunities for CoPs to develop and can be seen as a managerially produced setting that may foster the development of CoPs. This article addresses whether CoPs can be fostered within the organizational intervention of the ACCs.

The remainder of the article is structured as follows. First, we introduce the format of the ACCs and the specific projects we have studied in this context, arguing why these project groups have the potential to develop into CoPs. In the next section, we delve into the CoP literature in order to analyze the structural characteristics associated with the CoP concept, and further discuss the main neglected issues within this concept. After describing our methods, we provide an empirical analysis, through four narratives, on how these characteristics and neglected issues work out in the four collaborative projects under investigation. The discussion links the findings of the case studies to the broader organizational structures of the ACCs, showing the complex and often highly divergent ways in which these issues need to be navigated in order to utilize the potential of managerially fostering (spaces for) CoPs to develop. The conclusion outlines the consequences of our analysis for the CoP concept.

ACADEMIC COLLABORATIVE CENTRES AS ORGANIZATIONAL INCENTIVES FOR THE EMERGENCE OF COPS

In the mid 2000s, the Netherlands Organization for Health Research and Development (ZonMw) developed a program for Academic Collaborative Centres (ACC) for Public Health. The ACCs are long-term collaborations between one or more regional Public Health Services (PHS), university departments, and other knowledge institutes or professional organizations, aimed to increase the relevance of public health research for local policies and professional practices, and to increase the use of evidence-based methods and results within these settings. Nine ACCs were funded, covering a wide range of public health issues. The format is also receiving attention in other sectors, such as youth care and home nursing care.

One of the main ideas behind the development of the ACCs is that increased interaction and collaboration between researchers, policy makers and professionals will result in an increased understanding of each other's perspectives, goals and aims. The lack of convergence in terms of perspective, routines and goals has been criticized in several national advisory reports discussing the 'gaps' between research, policy and practice in the Dutch public health domain (Raad voor Gezondheidsonderzoek, 2003; WRR, 2004). The intention therefore has been to bring the different perspectives of these groups together through sustained interaction.

Such sustained interactions are facilitated in several ways. Within all ACCs, research projects are conducted in which university researchers and public health professionals collaborate. In many cases, professionals are part-time located at a university in order to conduct PhD research while being supervised by university researchers. When we compare these collaborative projects in the ACCs with the general definition of the CoP concept outlined above, the parallels are obvious. Similarly to this definition, the ACCs entail groups of people who share a general concern (the poor 'fit' between research evidence, policy development and professional practice) and who deepen their understanding of this problem (by interacting regularly).

Moreover, many ACCs developed a more detailed infrastructure aimed to increase interactions and collaboration between university researchers, professionals, policy makers and other stakeholders. Brainstorming groups, workshops, seminars, dual appointments, courses and Masterclasses for professionals and policy makers are some examples of instruments and formats that have been developed. The second funding period of the program (2009-2014) explicitly acknowledges the need to 'structurally secure' the developed infrastructure, which is based on a 'durable and continuous, equal interaction' in the triangle between research, policy and practice (ZonMw, 2009).

As explained in the introduction, the ACCs can be seen as examples of organizational incentives that allow specifically for the emergence of CoPs. This is due to their formalized infrastructure with its explicit aim to develop increased understanding, knowledge sharing and convergence of perspectives, which offers the opportunities for CoPs to develop. The ACCs can therefore be seen as managerially produced settings that may facilitate the development of CoPs. Before moving to the empirical analysis, however, it is important to unravel the main characteristics and the previously discussed neglected issues within the concept, as the definition given so far is too general to be of analytical use.

COMMUNITIES OF PRACTICE: STRUCTURAL ELEMENTS AND NEGLECTED ASPECTS

The CoP concept is one that appears to be difficult to pinpoint. The book in which the term is first introduced centered mainly around the idea of apprenticeship and learning in practice (through a process labeled 'legitimate peripheral participation') (Wenger & Lave, 1991). Within the literature, several definitions are given. As outlined above, Wenger et al. (2002) define CoPs as "groups of people who share a concern, a set of problems, or a passion about a topic, and who deepen their knowledge and expertise in this area by interacting on an ongoing basis" (Wenger et al., 2002: 4). In an older definition, CoPs are perceived as "a flexible group of professionals, informally bound by common interests, who interact through interdependent tasks guided by a common purpose thereby embodying a store of common knowledge" (Jubert, 1999:166).

Most of these definitions, however, remain general, leading to conceptual ambiguities. Furthermore, Wenger's own definition seems to be rather fluid and therefore hard to pinpoint (Johnson, 2001). Iverson & McPhee (2008) argue that the CoP notion suffers from several conceptual problems, such as the self-evident way in which many scholars use the notion (as though the nature of a CoP and the fact that a group or collective qualities as such needs no further empirical substantiation) and the treatment of the processes within the CoPs as black boxes (thereby neglecting the large differences that may exist between CoPs – see also Boud & Middleton (2003) and Handley et al. (2006)). These authors claim that if the concept of CoP is to have analytical value, its central enabling elements should be identified before the label is applied.

This article builds on this critique. As the definitions of the CoP are too general to be of specific analytical use, we operationalize the notion of CoP based on its three core elements (cf. Wenger, 1998): *mutual engagement*, *joint enterprise* and *shared repertoire*. While Barab et al. (2002) distinguish slightly different features (history, shared cosmology, the collective whole of the community and the evolving character), the above mentioned structural elements are used in other work on CoPs as well (Iverson & Mcphee, 2002; 2008; Vaast, 2004). Therefore, they seem to provide a useful first step in operationalizing the concept in order to make it empirically usable. These can be linked to another distinction Wenger (1998) makes between the *community* of people involved, the *domain* of knowledge, and the shared *practice*.

Mutual engagement entails the level of communication and interaction (Iverson & McPhee, 2008). It leads to the sharing and enacting of knowledge: members can offer insights, adopt or critique others' practices and share frustrations

(Iverson & McPhee, 2002). This can be done through various means, including face-to-face interaction, technological connection, professional associations and other forms of communication (ibid.). Mutual engagement relates to the *community* of people involved in the CoP. Strong communities foster interactions and relationships based on mutual respect and trust, encourage a willingness to share ideas and ask questions. These 'thick' relationships are crucial: "a community of practice is not just a website, a database, or a collection of best practices. It is a group of people who interact, learn together, build relationships, and in the process develop a sense of belonging and mutual commitment" (Wenger, 2002:34).

The establishment of a *joint enterprise* can be seen as the outcome of frequently repeated interactions, which gives members a sense of their professional duties and occupational goals. The negotiation of a joint enterprise gives a sense of coherence and purpose to the CoP. It is about the interaction of members to define significance, shape practices, and react to a larger context (Iverson & McPhee, 2002). The joint enterprise also entails a common set of tasks (Iverson & McPhee, 2008) and implies a regime of mutual accountability (Davenport & Hall, 2002). It then relates to the *domain* of knowledge in a CoP, which defines a set of issues, creates common ground and a sense of common identity. A well-defined domain affirms the purpose and value of the CoP to its members, legitimizes the community and gives meaning to the actions of its members. This domain is not an abstract area of interest, but consists of experienced problems and issues that members see as crucially important (Wenger, 2002).

A *shared repertoire* articulates the shared experiences and history of collaboration. It includes the knowledge, capabilities, and shared objects within a group of people. The repertoire also serves as a communicative vocabulary (Iverson & McPhee, 2008). Examples are stories, jargon, theories, forms and other resources that form a stock of mutually understood information and techniques that can be utilized by members. Knowing this shared repertoire can also be seen as a proof of community membership (Iverson & McPhee, 2002). The shared repertoire is gradually constituted and regenerated through engagement in practices (Vaast, 2004). The shared repertoire refers to the shared *practice* in a CoP: the "set of frameworks, ideas, tools, information, styles, languages, stories and documents that community members share" (Wenger, 2002:29). It is about the specific knowledge and tools the community develops, shares and maintains, not only knowledge with regard to the domain, but also process-based knowledge: a "set of socially defined ways of doing things" (ibid.: 38).

Taken together, these three structural elements provide us with sufficient resources to empirically analyze the collaborative projects within the ACCs. In their analysis, Iverson & McPhee (2008) showed the construct validity of these elements for describing gradations of CoPs. They maintain that "the CoP elements of mutual engagement, shared repertoire, and negotiation of a joint enterprise communicatively enact a CoP. Even low levels or limited aspects of each element indicate a certain level or measure of CoP dynamics, even if only as a marginal one" (Iverson & McPhee, 2008:179). These elements therefore form an important thread of analysis (and will be further operationalized in the methods-section).

Neglected issues

Besides these structural elements, the literature on CoPs also discusses several neglected issues in the notion. As argued in the introduction, these issues become much more urgent to investigate in managerial settings such as the ACCs, which provide the organizational incentives that may facilitate the emergence of CoPs. These specific tensions and dilemmas, and how they relate to each other and to the development of the main CoP indicators, are underexplored, especially in such managerial settings. Therefore, they form a second thread in the empirical analysis of the collaborative projects.

In his discussion on different strands of critiques on the CoP notion, Roberts (2006) distinguishes three returning elements that are all related to neglected issues the concept should empirically address. These issues can be summarized as 'power', 'trust' and 'predispositions'. First, the concept does not sufficiently take issues of power into account, even though power is considered a vital element in the process of negotiating meaning within CoPs. While Moore (2006) provides an empirical analysis of power inequalities *within* a CoP, there is not much attention towards power relations between CoPs and broader organizational demands (Fuller et al., 2005). This is important, however, as Swan et al. (2002) show how managers can exploit CoPs as rhetorical device to pursuit organizational objectives or legitimize new practices. An analysis of power relations becomes more urgent in managerial settings where organizational incentives may influence the development of CoP indicators.

Second, the role of trust is neglected, even though it is considered to be of crucial importance in CoPs (but may be much harder to achieve than is presumed). Especially contexts that are characterized by adversarial relations between workers and management, as well as strong hierarchical control, may prove problematic in encouraging the kind of mutual trust that is crucial for CoPs to flourish (cf. Hughes et al., 2007). The role of trust is also crucial in

online CoPs (Preece, 2004), but often neglected (cf. Davenport, 2001) or only briefly touched upon (Dubé et al., 2006). In managerial settings, furthermore, the development of trust is not self-evident as groups are deliberately brought together rather than naturally come together. Therefore, this development may take longer than is assumed by many CoP scholars. If – and how – trust is developed in such settings therefore becomes an important thread to investigate empirically.

Third, the role of predispositions is neglected. Whereas according to Wenger (1998) meaning is negotiated within CoPs, other authors argue that meaning is mediated through predispositions – and is thus much less amendable than presumed by much CoP-literature. The importance of predispositions is also noted by Mørk et al. (2008), who emphasize the need to focus on knowledge production *across* different CoPs with varying 'epistemic cultures' (Knorr-Cetina, 1999). Similarly, Handley et al. (2006) argue that scholars should pay attention to the tensions within CoPs instead of assuming that they represent a homogeneous community. Also here this element becomes more important to investigate within managerial settings where CoP indicators may be fostered through the organizational incentives provided by the funding organization, because within such settings, different predispositions are more likely to occur and thus warrant empirical investigation.

METHODS

This article builds on four case studies of collaborative projects conducted under the umbrella of the ACCs. We strived for variety in terms of themes and locations. More specifically, the main selection criteria were: 1) innovation (we wanted to address projects that carried at least a promise of innovation; 2) the ACC as solution for specific problem (ideally: projects using the infrastructure of the ACC to address problems that were otherwise difficult to address); 3) a variation in the mobilization of new groups; 4) a variation in the history of collaboration. These criteria are relevant for distinguishing the projects where potential CoPs are likely to develop. As CoPs are closely related to innovation and problem-solving potential (Wenger et al., 2002; Brown & Duguid, 1991), projects scoring high on these criteria are likely to facilitate potential CoPs to develop. As the history of collaboration is also likely to be an important indicator, we strived for variety in this criterion.

Table 1: selection criteria case studies

Cases Selection criteria	Small But Beautiful / Healthy in the City (ACC Cephir)	PreCare ("Voorzorg") (ACC YHC North-Holland)	Acceptance of vaccination amongst orthodox protestant groups (ACC Amphi)	PRIMUS (ACC Public Health Northern South-Holland)
Innovation	Innovative, short term research procedure, knowledge brokering function	Large amount of involved practice organizations	Research on group that is highly difficult to reach	Establishing evidence-based preventive health center for elderly
ACC as solution for specific problem	Research for support of questions originating from policy or professional practice	Implementation of evidence-based intervention, national adjustment necessary	The topic is politically sensitive and prone to media attention	Facilitating preventive elderly care
Mobilization of new groups	Localcouncilors	Not only PHS's involved, but also youth health care organizations, home care organizations and the Netherlands Youth Institute	Netherlands PatientOrganization	No new groupsinvolved
History in collaboration	Yes, long history	Yes, short history	No history	No history

The methods for data selection included semi-structured interviews, supplemented with document analysis and observations. In total, we conducted 52 interviews with 53 persons. In each case study, we interviewed the main actors and representatives of the relevant groups, including researchers, professionals, policy makers, and advisors. Per case study, we held around 10-15 interviews (of 1 to 1,5 hours). The interviews were held between April 2008 and December 2009 (depending on the case study). They were semi-structured with much space for the respondents to address issues they found to be important. As well as the case-related interviews, we held two general interview rounds with the coordinators of all ACCs (9 interviews in 2007 and another 9 in 2010). This article also makes use of some of these interviews, specifically when discussing the links between the collaborative projects and the organizational structure of the ACCs. All interviews were transcribed and coded, based on both the general topic list and emerging topics from earlier rounds of analysis. Furthermore, the interview transcripts as well as the draft reports that we made for each

of the case studies have been sent back to the (key) respondents for 'member checking' (Yanow & Schwartz-Shea, 2006).

We also conducted a study of relevant documents in all case studies. These documents included project proposals, various versions of draft reports, newsletters, and in some cases examples of internal communication (such as email exchanges and notes). In addition, in three of the four case studies we were able to observe at several relevant meetings. The first author produced field notes based on these observations, which were also sent back to the contact persons for member check. For the empirical analysis, we further operationalized the three structural elements (mutual engagement, joint enterprise, shared repertoire) of the ACCs into sets of questions that structure the analysis. Table 2 serves as a guide for the empirical analysis.

Table 2: Operationalization of structural CoP elements

Structural element	Related questions
Mutual engagement	What kind of communication / interaction takes place? · How frequent? · Informal / formal? · What is negotiated? · What kinds of insights and/or critiques are shared? · Which mediums are used? · Can we see the development of a sense of belonging?
Joint enterprise	Can we see a shared sense of coherence / purpose develop? · Is there agreement on professional duties and occupational goals? · Can we see a common set of tasks? · Are there traces of mutual accountability? · Is there agreement on the experienced problems and crucially important issues?
Shared repertoire	Can we see the development of shared experiences and resources? · Are shared objects used? · Are there traces of a common vocabulary (stories, jargon, etc)? · Is there a stock of mutually understood information? · Can we see tangible and intangible examples (files, forms, symbols, routines)?

COLLABORATIVE PROJECTS WITHIN THE ACCS: POTENTIAL COPS?

This section presents four narratives of collaborative projects that have been developed within the context of the ACCs. The narratives focus on the possibilities and limitations of fostering CoPs through organizational incentives. Therefore, this section provides an analysis of how the previously discussed CoP indicators and neglected elements relate and interact with each other in the case studies. The general outline of each narrative is as follows: first, we give a short description of the project and chronology; second, we highlight the elements where the indicators and neglected issues become most visible[47]; and third, we analyze how the indicators and neglected issues relate to each other in the case studies.

47 Obviously, we can only highlight certain elements of the case studies. More detailed reports on the individual case studies are available from the first author on request.

Narrative 1: The 'Healthy in the City' project

Chronology

The Healthy in the City project has been conducted within the Academic Collaborative Centre (ACC) CEPHIR (the larger Rotterdam area). The study is conducted within the so-called 'Small But Beautiful'-format – an experimental, policy-oriented research format aimed at tackling (within a limited timeframe) concrete questions that are of concern to policy makers and practitioners. This project consists of a modeling study in which a Health Impact Assessment is made in order to calculate which potential policy measures should be taken to reduce the health disadvantages the Rotterdam population shows in comparison with the national average. The project involves members from the Public Health Service (PHS) Rotterdam-Rijnmond and members from the Erasmus Medical Centre. The project was triggered by a local city council member, who handed in a proposal to find out exactly which measures are necessary to get the Rotterdam population on the same health level as the Dutch average. This proposal was assigned to the PHS, who formed a supervision group consisting of the researchers and a variety of persons from the PHS that met on regular basis. The main foci of these meetings were the 'fine-tuning' of the model and the structuring of the research design. During presentation of the first results, a broader PHS-policy group (responsible for the incorporation of the findings into the policy program of the PHS) became involved. Following the discussion, the researchers had some time to think through the suggestions and comments that were made. Hereafter, the PHS organized a meeting for local councilors to become acquainted with the results of the study.

Indicators, neglected issues and their relations

Within the 'Healthy in the City' project, the most visible indicator of CoPs was the indicator of 'shared repertoire'. Although the time frame in which the project had to be conducted (which was less than six months) left the project members with little time to develop shared experiences, they did put much effort into developing shared resources. The best example of these shared resources can be seen in the *development of policy relevant scenarios*. The first version of the research report discussed a wide range of specific interventions. For each intervention, the potential effect on (determinants of) health disadvantages was calculated. However, this was not conceived as very useful by the policy group of the PHS, as it resulted in large files filled with numbers. Therefore, in the new version of the report, these specific interventions were clustered into several scenarios, which formed coherent packages of policy measures and

interventions aimed at specific target groups or approaches. It is exactly the shared repertoire that is developed in this approach that is appreciated:

The 'Healthy in the city' project was very much research-oriented. But in the end we have sought to translate that [research] to certain images. It's best if you can turn that [research] into images that people can relate to, something they can literally imagine. A Healthy Youth Has A Healthy Future [one of the scenarios, RW]: that sounds splendid. That is a nice way to reveal a whole story about which things are most effective to emphasize with youngsters (Interview coordinator policy program, PHS Rotterdam, 30-07-08).

The scenario approach connected to the policy group and enabled all participants to develop the same vocabulary. This common vocabulary was important for linking the research findings to the policy program of the PHS and enabled the participants in the study to better understand each other's perspectives.

Another example of shared repertoire can be seen in the strategies to present the findings of the study to the councilors and local aldermen. Here, much effort was put into creating a shared story in order to convince these councilors and aldermen of the findings. Many respondents emphasized that they considered it crucial to present the results of the study as part of an integral story. Rather than presenting the findings separately, the PHS waited for the right momentum to synthesize the results of this study with two other public health studies:

At the moment the draft report was done, we sat down with [the alderman] to discuss the direction of the conclusions with her. And also to probe what she could do with that within her political agenda, and how we might have to present that. Also in terms of timing, because there were also some other research projects being conducted. So you fine-tune with her: what is this research about […], what is that research about, how does it hang together […]? So we did, amongst others, very precisely fine-tune what we will bring to the table where, and what is the central message. And tried to connect that as much as possible, that was an important theme (Interview former director PHS Rotterdam, 30-07-08).

The findings were thus 'synthesized' with other studies in order to create a more robust and coherent image, a shared repertoire as it were.

In terms of neglected elements, the Healthy in the City project shows most clearly how different predispositions can form barriers for CoPs to develop when they are not made explicit. An example of how these predispositions

became important in the project was related to the different views on scientific knowledge and its role within the project, and consequentially, about what scientific knowledge can and cannot 'deliver'. There were marked differences here between parts of the PHS. The policy group of the PHS employed a rather stereotypical view of science, which also led to different ideas about the added value of the scientific research:

There was the expectation with some people that the project would result in some sort of cookery book or a kind of recipe, like we should do intervention 'a' or we should do intervention 'b', and that will lead to the solutions to reduce that health difference. And that is something that does not come out of the study. At the same time I think, well…that was not the design of the study so you cannot expect that from it (Interview manager infectious diseases department, PHS larger Rotterdam area, 01-07-08).

These different views on the role of science can explain the differences in expectations that have risen during the study. According to several respondents, this was mostly due to the fact that the policy group in the project did not see through the methodological and scientific impressiveness of the results in relation to the short period in which the project was carried out. Consequentially, in the meeting in which these different predispositions came to the foreground, this led to a small crisis in the project. However, this case study also showed that through reflection on these predispositions, it is possible to overcome the different understandings, and even facilitate the development of a shared repertoire. When there are opportunities and willingness amongst members to make their predispositions explicit and reflect upon them, this can also lead to increased mutual understanding. In the 'Healthy in the city' project, the coordinators succeeded in achieving this through extensive 'expectancy management', albeit after the differences became visible.

Narrative 2: The PreCare project

Chronology

The PreCare project has been conducted at the Free University medical centre Amsterdam within the context of the Academic Collaborative Centre (ACC) youth health care North-Holland. The total project consists of an intervention in the area of preventive youth health care, which is targeted to a specific high risk group of pregnant (mostly teenage) women with multiple problems, and a research component. The intervention consists of an extensive series of home

visits by experienced youth health care nurses (total of 60 house visits over period of 2 ½ years).The aims are to improve pregnancy and childbirth outcomes for high-risk mothers and children, to improve the health and development of these children, and to improve the personal development and opportunities for education and work of the mothers. Coupled to the intervention is the research conducted at the medical centre, which consists of a randomized trial design. The trial design aims at verifying whether the originally U.S.-based intervention (the program is an adaptation from the U.S. Nurse Family Partnership program) is also effective in the Dutch context.The total project involves several groups: researchers and interviewers of the medical centre who are conducting the trial, employees of the Netherlands Youth Institute involved in coordinating the implementation of the intervention, managers of the involved youth health care organization facilitating the program in their organizations, professionals/nurses conducting the intervention, and the trainers of the nurses.The procedure for selecting participants requires fine-grained local networks: midwives and other professionals (such as general practitioners and gynaecologists) are expected to screen pregnant women on several criteria and refer potential candidates to the PreCare nurse.The nurse will then visit potential candidates for an intake. Through a randomization procedure, the pregnant women are then randomly assigned to either the control group or the intervention group. For the trial design a minimum of 456 selected high-risk mothers is required to be able to show long-term effects.

Indicators, neglected issues and their relations

Within this case, the most visible CoP indicators are 'joint enterprise' and 'shared repertoire'. The project showed a shared sense of coherence and goals, especially amongst the participating nurses of the different organizations.There is a definite shared sense of problem ownership as everyone involved in the project realizes that the intervention can have a highly positive effect on a target group that is otherwise extremely hard to reach. Every respondent is convinced of this added value of the program, researchers and nurses alike. Especially the intrinsic motivation and shared commitment on the level of the nurse practitioners who had to implement the intervention was crucial for the project. The case conferences, which are nationally organized meetings for the nurses of all home care organizations and which are held several times each year, are highly important in this respect. Both throughout the interviews with nurses and through observations during these case conferences it became clear that they saw themselves as a community, facing the same challenges and problems:

It is mostly the recognition, because […] their colleagues within the youth health care [organization] recognize this difficult target group [much less], and at a case conference, when everyone is telling their story, it's like 'oh, so you also face that [issue], I thought I was the only one experiencing this!' Really this recognition, and acknowledgement, is something that makes these case conferences very pleasant. To hear […] how other [PreCare nurses] experience this and do this, and that is why you also have a bond with each other (Interview PreCare trainers, 17-10-08).

The PreCare nurses seemed to see themselves sometimes more as colleague 'PreCare' nurses than as nurses from different organizations (Observations 18-09-08 / 01-12-08).

The case study also showed prime examples of the development of shared repertoire. Especially the level of the nurse practitioners is characterized by a huge sense of shared experiences, but this is also recognized by the other groups that are involved in the project. The regularly held case conferences fulfil an important function in the further spread of shared experiences. The same goes for the basic training all nurses share. The case study also shows traces of common vocabulary, which can be seen in the wide spread of specific terms for describing the essence of the PreCare program (and its added value). In their discussions and talks, all respondents used described the program in similar terms: it offered 'continued help', it is about 'lasting involvement', about 'developing a trustful relationship with the mothers' and 'standing next to them'. Everyone shares these same basic notions about what the intervention entails.

In terms of neglected issues, power issues played an important impeding role in the project. The possibilities for including candidates in need of the intervention are for example strictly limited by the external demands the US program developer placed on the project: a controlled trial design was a hard criterion for granting permission to adapt the program to the Dutch context:

[David Olds] sees [the PreCare program] in fact as a fourth trial. Before PreCare there were three trials, all in the US, and he was prepared to let a fourth trial take place in the Netherlands under certain conditions. And therein the reliability and quality of the implementation, and the quality of the research were hard criteria (Interview NYI project leader PreCare, 22-07-08).

Important in respect to this external criterion is the total number of 456 candidates that need to be included in order to have sufficient 'statistical power'. While this amount of candidates enables the researchers to measure long term

effects on the main outcome variables, it lengthens the phase in which a control group is used, which was considered problematic by the nurses involved in the project. The control group design led to problems for the nurses, who had to neglect a highly promising intervention to participants that are clearly in need:

I think it is very difficult. At the same time you offer something, a very nice program, and actually you offer help […], it can also be that you have to say "I am sorry, but you are in the control group". Of course you give her [the potential candidate] that information in advance, during the intake, but at that moment you are also witness [of the situation]. So you offer something, and at the same time you take it away. That is very strange. Ethically I do not approve that it happens this way. Morally or ethically I do not find this a good way of conducting research (Interview nurse practitioner, 28-07-08).

The shared goals thus seem to be under pressure by the controlled design and the accompanying distinction between a control group and an intervention group.

In sum, what this case study then shows how power issues (in the form of non-negotiable external demands) can have an important impact on the mutual learning and shared sense of coherence that were developing in this project. The shared goals were put under pressure by the controlled design and the accompanying distinction between a control group and an intervention group. What is interesting, however, is how these additional pressures created by this external demand also seemed to have strengthened the relations between the professional nurses, who all face similar issues. The case conferences partly fulfill a function of 'letting off steam' and sharing frustrations (Observations 18-09-08/01-12-08). This example shows that the main indicators of CoPs often interact in unexpected and complex ways with issues of trust, power and predispositions, which therefore need to be included in the analysis.

Narrative 3: The 'acceptance of vaccination' project

Chronology

The project 'acceptance of vaccination amongst orthodox protestant groups' has been conducted within the context of the Academic Collaborative Centre Amphi (Nijmegen area). It involves a collaboration between the PHS Rivierenland, the Radboud Medical Centre (Primary and Community Care department) and the Netherlands Patient Organization (a patient organization with a Biblical foundation that has an important advisory function in the project). The aim of

the project is to gain insights (both quantitatively and qualitatively) into the extent in which orthodox Protestant groups accept vaccinations as a way of preventing (the spread of) infectious diseases. The project is characterized by a high level of political sensitivity and receives much media-attention, which is due to its rather controversial topic. Therefore, the project is also characterized by its struggle to win the acceptability of the target group (who fear stigmatization) and the large adjustments in research design that proved to be necessary. In order to win the trust of the target group, the project team put much effort into involving intermediaries of the target group and established an external advisory committee consisting of a diverse range of people (including 'respectable' persons from this target group). The issue of target group acceptability became most visible during the preparations of the quantitative part of the study. Originally, the researchers developed a questionnaire that was planned to be spread amongst pupils of orthodox Protestant secondary schools. While the main researcher put much effort in discussing the aim and content of the project in several face-to-face meetings with the directors of these schools, they decided eventually not to authorize the spread of the questionnaire among their schools. This decision prompted the researchers to work out a new study outline, which resulted in a web-based survey.

Indicators, neglected issues and their relations

Within this case study, the most visible CoP indicator is 'mutual engagement'. The project is characterized by the construction of a strong network with different intermediary groups in which sharing knowledge and mutual learning are crucial elements. For example, the developed communication structure (which includes the advisory group with target group members and another advisor who operated in-between) and the involvement of the NPV greatly facilitated mutual learning. The advisors had a vital function in the project as they advised on how to formulate the research towards the target group in order to become acceptable. Here, even the use of some words in favor of others becomes important:

[Reducing the chance:] how do you say that? Because 'reducing the chance', that is common in regular speech, but you do not say that within orthodox protestant circles.

[First researcher:] And why couldn't you say this then?

Because if you speak about chances, you do not take into account the Providence of God. So you would speak about 'precautions'.

[First researcher:] But that is obviously a tension…'reducing chances' is a universal, quantitative way of expressing…

Yes, that is why we also have to filter [on language], and nine out of ten times I correct [these things], but then [another NPV employee] still removes other things (Interview member external advisory committee, 21-04-09).

This example nicely shows the learning element in the project. The NPV possesses distinct and sophisticated knowledge of the target group, but their involvement also proved to be highly beneficial to the acceptability of the project:

[The NPV is] important in order to find a connection with the target group. You see, it is very difficult to gain access to the target group. That is something we just see here as PHS on the work floor. It is a very closed community, and the NPV does fulfill an important role. So through them the entrance to the target group has been established. […] They were very important as a spider in the network to the Reformed community (Interview Research assistant PHS Rivierenland-Tiel, 021209).

In terms of mutual engagement, therefore, this case study shows an interaction structure that is not very frequent, but nevertheless of crucial importance. In a sense, the example of the use of specific terms also relates to the indicator 'shared repertoire', but while in this project finding the 'right' vocabulary is of crucial importance, it cannot be seen as common vocabulary (but rather as connecting to the target group).

Also in this case study, neglected issues play an important role. Most specifically, the role of trust is crucially important, albeit in a slightly different sense than the mere presence or absence of trusting relationships. What this case study shows, is how trust is something that is hard to obtain and requires continuous work.The issue of trust here mainly relates to the trust perceived by the target group: do they perceive the research and researchers as 'trustworthy'? The project team seems to have been able to shift the initial distrust of the target group. Indeed, the involvement of the NPV and the external advisory committee – both consisting of members from the target group – point towards an increased trust that has developed in the course of the project.Through their

involvement, both groups show confidence in the integrity of the project team. In other words: they trust the researchers in their respectful attitude toward the target group:

[The researchers have] a very solid stance, purely scientific [within the project]. Value judgments are not addressed. And justifiably so. They do that very well. But I must say that I know [the main researcher] [very long]. She always had much respect for the target group. […] And without mutual trust things would not have gone so smoothly. It is precisely knowing each other well and trusting each other – and also have [a firm debate] sometimes, but that is also possible, in a good relation that is no problem (Interview member external advisory committee, 21-04-09).

However, trust is also something that needs to be continuously negotiated, as the goodwill of the target group remains an important point of attention – something the researchers clearly acknowledge. For this purpose, the intermediary position of NPV is crucially important, as it enables the project team to 'lift along' with the reliable status of this organization in the target group:

Already during the setup of the study […] we noticed that it was useful to conduct the study throughout the NPV, because the whole target group knows where the NPV stands for. They know the organization and trust it: "the NPV is our patient organization and it is good, it meets our way of thinking". So it was already clear for us soon: this is what we should do (Interview senior researcher, UMC St. Radboud, 25-03-09).

The cooperation with the NPV was thus also of strategic importance in order to gain the acceptance of the target group. However, this trust needs to be constantly guarded. For example, the 'leaking' of the research to public media could have direct repercussions, as it would undermine the credibility and respectful attitude of the researchers.

To conclude, this case study thus highlights that trust is something that is hard to obtain and requires continuous work, but which also turned out to be an important element that can influence the development of CoPs and therefore needs to be taken into account in empirical analyses.

Narrative 4: The 'Primus' project

Chronology

The fourth case study is a project conducted within the context of the Academic Collaborative Centre Public Health Northern South-Holland. This project (Primus) focuses on health promotion for elderly, and investigates the 'pros and cons' of a preventive health centre for the elderly. The main aim of the project is to develop evidence-based programs for health promotion in older people, based on the needs of the various target groups and the state-of-the-art in international literature. There are different groups involved in the project: the Leiden University Medical Center (LUMC) (where the main researchers are located), the Public Health Services of The Hague, Holland Central; and Western South-Holland, and TNO Quality of Life. Two researchers from different backgrounds started working together on the project. One of them worked for several years at the LUMC and has a background in social medicine, whereas the other researcher has a long career within a PHS as epidemiologist. The researchers are supported by a scientific committee referred to as Large Primus, in which five experts participate, among which the supervisors and co-supervisors of both researchers. The project is expected to result in practical tools for Public Health Services. This could take the form of a plan of action that is differentiated towards the specific target groups and provides insights into the best ways to establish a preventive health program for elderly. In this sense, the project is expected to result in tools that enable the PHS's to make informed choices with regard to the question of whether to start with preventive health centres, and if so, for which target group and with which content.

Indicators, neglected issues and their relations

The Primus case study hardly bears any traces of CoP indicators. In terms of mutual engagement, the project has been criticized by several respondents for the apparent lack of communication and interaction between the groups involved. There are also no traces of 'joint enterprise' developing, as the tasks, problems and issues differed largely between two distinct perspectives that diverged in the course of the project. Rather than shared repertoire, the project furthermore consisted of large differences between the vocabularies used by different groups. This turned out to be especially related to the different understandings of important concepts, such as the definition of the term 'intervention'. Importantly, in terms of neglected issues this project shows how power issues can severely limit the space for negotiating different perspectives and working towards mutual engagement, joint enterprise or shared repertoire.

Within the project, the strategic incentives of the medical center played an important role in the collaboration. The involved Public Health department was a new department in the medical center and needed to gain a stable position. The involvement within the structure of the ACC, and thus the collaboration with the PHS's, was thus at least partly based on strategic motivations:

One of the reasons why the LUMC started with Public Health, is because we felt that from a societal perspective this is a vulnerable part of this organization. So if you start with [a] public health [department] partly for strategic reasons, and if you know in advance that you have good strategic partners in that – the three PHS's – and if you also know that in the research you are doing you are addressing a question of your partner, that is much more comfortable than saying 'we will contrive of something ourselves' (Interview head of Public Health and Primary Care department, LUMC 27-02-08).

For the researchers involved, it was crucial that their new department gained a strong and stable position in the medical center. The department needed to establish itself and the collaboration with PHS's in the ACC was seen as an opportunity to build expertise in this previously neglected area of public health. The three PHS's involved in the ACC were thus seen as important strategic partners. However, since this department still needed to establish itself it was also crucial to rigorously maintain scientific criteria. This in turn then led to limited room for concessions within this project whereby scientific accountability criteria came to supersede professional criteria (Interview coordinator ACCPH Northern South Holland& head of Public Health and Primary Care department, 01-03-11). In this project, the way in which these power issues played out made the collaboration between the participants from the different groups problematic. It left the different PHS's with the feeling that their suggestions were not taken into account.

This case study also particularly highlighted the influence of different predispositions on collaboration. In this case study, the predispositions relate to two different groups (one with a medical background and one with a background in health promotion) within the project, both operating from a different framework or perspective. Consequentially, this led to ongoing discussions on the definition of important terms, such as the meaning of an 'intervention'. Based on different predispositions, this term had different meanings to the different groups:

That was also the constant miscommunication: if you are talking about an intervention, than the question always was "in which setting are we going to do that?" And that is something else than [the question] "what exactly are you going to do?" You can also think about which group you want to reach and where you want to screen them for, but how are you going to motivate people to do something with the screening result in the first place? That was really a mismatch in the communication of what an intervention means (Interview member 'Large Primus', 16-03-09).

This mismatch on concepts that are fundamental to the project made it more difficult to work towards some kind of mutual understanding within the project, even more since both perspectives clashed in terms of scientific predispositions. Whereas participants from the medical perspective focused mostly on evidence based screening methods, participants with a health promotion perspective emphasized issues of lifestyle and proper design of the pilots.The two perspectives diverged more and more in the later phases of the project and eventually led to a separation in the project. In terms of predispositions, these examples show that participants with a medical background are not used to think in terms of group interventions, whereas participants with a health promotion background focus less on medical components.This case study thus shows how different predispositions of groups can complicate the collaboration, especially when they are not adequately addressed or reflected upon.

DISCUSSION

The four narratives showed how in all case studies, the development of CoP-characteristics (mutual engagement, joint enterprise and shared repertoire) were closely related to the power-, trust-, and predisposition-factors that were distinguished by critical scholars of the CoP-notion. Rather than taking a normative stance on the managerial direction to which the CoP-concept has developed throughout the years, this article aimed to show empirically how the neglected factors interacted in situated and complex ways with the CoP indicators identified by other scholars. In the remainder of this article we set out to accomplish two more things. First, it is important to elucidate the relations between the collaborative projects and the broader organizational structures in which these potential CoPs operate. This enables us to understand the extent to which CoPs might emerge from such managerially created groups if they succeed in dealing with some of the issues outlined above.This will be the focus

of this discussion. In the conclusion, we focus on how this research helps us in gaining new understandings about cultivating CoPs.

In order to better understand the relations between these collaborative projects and the broader organizational structures of the ACCs, we build on a useful distinction that has been made by Thompson (2005). Thompson distinguishes between 'seeding structures' and 'controlling structures' in order to clarify the relations between CoPs and the organizational structures in which they are embedded. With seeding structures, Thompson refers to organizational structures that are nonprescriptive, which indirectly 'seed' future collaboration and provide people with the instruments and points of focus that are required as a basis for communicative interaction. Controlling structures, on the other hand, attempt to directly control collaboration by introducing control mechanisms such as best practices and targets. Thompson argues that an organizational structure supporting interactive communication and strong personal identification is likely to be more successful in cultivating CoPs than one emphasizing centralized, top-down control (2005:162).

The overall structure of the ACC can be seen as attempts to provide such seeding structures for CoPs to develop. However, when we analyse the organizational structures of the ACCs in terms of Thompson's typology, we can see that the ACCs seem to be contradictory. On the one hand, this organizational structure aims to increase mutual understanding and knowledge sharing. Within the ACCs, many formats have been developed that can be interpreted in the framework of seeding structures (such as intervision meetings, theme groups, brainstorm groups, etc.). The ACC can be argued to 'seed' collaboration by organizing the formats through which the different groups can meet and exchange ideas. However, other developments seem to contradict this aim. Especially in the early stages of development (Wehrens, Bekker & Bal, 2012), many ACCs developed formal rules and criteria to which projects should conform. Furthermore, there is much emphasis on formal evaluations of the ACCs. The funding organization conducted an evaluation of each individual ACC, consisting of separate visitations. Some ACCs also show increasing formalization in terms of guidelines and criteria.

The tension between elements resembling controlling structures and seeding structures can also be seen in the consolidation strategies of the ACCs. In another article (Wehrens, Bekker & Bal, 2012), we showed how the coordinators of the ACCs generally used two strategies in terms of consolidating the activities of the Centre in their later stages of development. We labeled these strategies 'organizational consolidation' and 'conceptual consolidation'. The first strategy entails that the ACC strives to consolidate its activities through formalizing

them within the connected organizations, for example through positioning the agreements and working methods of the ACC within the existing procedures and task descriptions of the involved organizations or by connecting to already existing formats for facilitating interaction. The second strategy can be labeled the strategy of conceptual consolidation. Here we see less emphasis on formal arrangements, but more attention toward establishing the concept of the ACC. One of the coordinators argues that the self-evident nature with which researchers, professionals and policy makers seek contact with each other is a crucial element in the consolidation of the ACC (Interview 2nd coordinator ACC Cephir, 10-06-08).

The difference between these two strategies seems to reflect the tension between an approach resembling the controlling structure and an approach resembling the seeding structure. The second round of interviews we held with coordinators showed that almost all ACCs are struggling with this tension. There is no easy solution for this, but Thompson's distinction can help in further analysing the tensions that may exist between CoPs and the organizational structures in which they are embedded. In the case of the ACCs they can explain the difficulties participants face, but also the long-term character of cultivating CoPs. Although we expected that the ACCs would provide the seeding structures for CoPs to develop, in practice they turn out to be more difficult to establish. Although the case studies of collaborative projects showed how the group members started to resemble CoPs in some ways, it also highlighted where this did not work out yet. Similarly, our broader analysis of the development of the ACCs shows that the structure of the ACCs did develop over time, but – due to the different accountability criteria – was not able to fully provide the seeding structure we expected in advance.

Thus, the neglected power-, trust-, and predisposition-elements do not only relate to the level of (potential) CoPs, but within managerial settings these elements are also *implicated in the design principles* that provide the seeding or controlling structures Thompson refers to. A more specific focus on the relations between CoPs and their organizational structures in such managerial settings thus shows that the previously identified neglected issues do not only need to be part of the analysis of CoP development in the collaborative projects, but also need to be analysed on the 'meta-level' of design principles. In the case of the ACCs, such a focus highlights similar ambiguities with regard to how elements of power, trust and predispositions play a role in the design principles.

One concrete example can be given in respect to the ACC Public Health Northern South-Holland (but similar ambiguities can be seen in most of the ACC designs). This ACC developed, as part of its infrastructure, several interdisciplinary

theme groups. On the one hand, these theme groups are expected to function as 'incubators' for the development of new research projects and themes, in which different participants have a place to freely brainstorm and generate new ideas. In this sense, the theme groups can be seen as instances of a 'seeding structure' where in terms of the neglected issues there is ample room for the development of trusting relationships and unequal power relations appear to be deliberately designed out of the format. On the other hand, however, the way in which these theme groups are expected to function is quite formalized in terms of guidelines and procedures, for example about procedural requirements for discussing and developing new research ideas (Interview coordinator ACCPH Northern South Holland& head of Public Health and Primary Care department, 01-03-11).In this sense, then, the theme groups also resemble elements of Thompson's 'controlling structures'. In terms of neglected issues, this approach seems to signal more limited trust and a more strongly designed way of exerting control over the developments within the theme groups.

To summarize, the extent to which CoPs might emerge within 'managerial settings' such as the ACCs does not only relate to the extent to which the collaborative projects succeed in working with some of the neglected issues outlined above. It also depends on the ways in which these elements work out on a 'meta level' (in other words: whether they are successfully 'built into' the design principles).Thompson's distinction between seeding and controlling structures shows that the former are most likely to successfully incorporate these issues in managerial design principles for the fostering of potential CoPs.

CONCLUSION

The CoP-concept has gained considerable attention within many different fields, and sometimes has even been attributed an almost panacea-like quality for facilitating mutual learning, informal problem-solving and organizational innovation. Simultaneously, the concept came under scrutiny by several scholars, who criticized, amongst others, the ambiguities within the concept.Another important strand of critique focuses on the neglect of issues of power, trust and predispositions in the concept (Roberts, 2006). Specific critiques have focused on the managerial direction the concept appears to be developing towards and questioned the feasibility (and desirability) of this direction.This article argued that further debate on this level of 'pro/con'-arguments about whether or not CoPs may be managerially fostered is not a fruitful way to proceed. Regardless of these theoretical debates, organizations *are* investing in the development of

CoPs. These kind of settings provide fertile ground for (social science) researchers to investigate the possibilities and limitations of fostering CoPs through organizational incentives more empirically and are thus able to provide a more detailed and nuanced picture of how managerially fostered CoPs may develop or not, and in which contexts.

Crucially, however, this article argued that the most important neglected issues that have been outlined by other scholars become of crucial importance to understanding attempts (as well as failures) to managerially foster CoPs. Managerial approaches to CoPs are more likely to lead to specific tensions and dilemmas that, although hitherto recognized by some critical scholars, remain underexplored in terms of how they relate to each other. This article focused on these issues and analysed how they work out in managerial settings aiming to facilitate CoPs.

The conclusions that can be drawn from this analysis are that all case studies indeed showed how the development of CoP-indicators was closely related to the power-, trust-, and predisposition-factors that were distinguished by critical scholars of the CoP-notion, but differently and more complicated than might be expected. Rather than seeing these factors are mere 'impeding factors' to the fostering of CoPs, the case studies paint a more nuanced picture in which these factors have unexpected links with the development of CoP-indicators. The Healthy in the City case study, for example, not only highlighted the importance of explicit reflection on diverging predispositions that might decrease the level of mutual understanding. It also showed that exactly the reflection on these predispositions facilitated the development of a shared repertoire. When there are opportunities and willingness amongst members to make their predispositions explicit and reflect upon them, this can also lead to increased mutual understanding. Similarly, the PreCare case study not only showed how power issues (in the form of non-negotiable external demands such as the controlled trial design) can have an important impact on the mutual learning and shared sense of coherence. It also showed how these additional pressures paradoxically seemed to have strengthened the relations and mutual engagement between particular groups (in this case, the nurses). The 'acceptance of vaccination' case study emphasized that the development of trust is a continual and fragile operation that requires incessant work, but which also turned out to be an important element that can influence the development of CoP characteristics. The 'Primus' case study showed how different predispositions of groups can complicate the collaboration, especially when they are not adequately addressed or reflected upon.

However, the discussion showed that within managerial settings such as the ACCs, these factors did not only relate to the level of (potential) CoPs, but were also implicated in its design principles. The extent to which CoPs might emerge within managerial settings such as the ACCs therefore does not only relate to the extent to which the collaborative projects succeed in working with some of the neglected issues outlined above, but also depends on the ways in which these elements work out on a 'meta level' (in other words: whether they are successfully 'built into' the design principles).

This analysis has several implications for our understanding of how CoPs may emerge from managerially created groups. In contrast to what many critical scholars seem to suggest, our empirical cases show that it is possible to foster the development of at least a certain level of social or organizational learning resembling CoPs through an organizational intervention. However, this process is much more entangled with issues of power, trust, and predispositions than hitherto recognized: not only on the level of the collaborative projects themselves, but also on the 'meta-level' of design principles. The design of the ACCs is ambiguous in this sense, as it entails both elements of Thompon´s (2005) seeding structures and controlling structures. Whereas seeding structures are mainly directed towards a levelling of power relations and the development of trust and consensus within the collaborative (and thus heighten the chance for CoPs to develop), the controlling structures emphasize traditional power relationships and managerial top-down incentives. However, we should not be fooled into thinking too simplistic about these power-, trust-, and predisposition-elements as mere 'impeding factors' that hinder the development of CoP-indicators. Rather, what this analysis showed is that the ways in which these elements impact the development of such CoP-indicators for social learning are much more complex and divergent than the notion of 'impeding' or 'hindering' factor acknowledges.

To sum up, this article showed that there is a wealth of empirical material to explore in investigating managerial efforts to cultivate CoPs. Future empirical analyses could build on this, for example by further investigating the double level of entanglement between the notions of power, trust and predispositions and (the cultivation of) CoP indicators. The main question is not whether or not managerial attempts to foster CoPs are or are not possible (or desirable), but rather to explore such attempts empirically in all their detail and diversity.

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Chapter 7

Dutch Academic Collaborative Centres for Public Health: Development Through Time – Issues, Dilemmas and Coping Strategies

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ABSTRACT

While much research utilization literature shows an increasing emphasis on the added value of structural partnerships that should facilitate prolonged interactions between researchers, policy makers and professionals, the question of how such collaborative structures *develop over time* and what consequences that has in terms of collaboration is usually neglected. This article offers an empirical analysis of a Dutch partnership format (the ACCs) developed over a period of four years, based on two interview rounds conducted between 2007 and 2010, supplemented with document analysis and a focus group. We focus on changing challenges and dilemmas in different development stages and outline which strategies are used.

INTRODUCTION

One of the most crucial challenges currently identified within the area of public health relates to the coordination of scientific research, policy, and practice. Public policies and services in this area are increasingly expected to incorporate 'evidence-based' ways of working in their activities (Olsson, 2007; Lin & Gibson, 2003; Anderson et al., 2005). Furthermore, the current incorporation of research results in policy and practice settings is seen as insufficient both nationally and internationally (Donker, 2006; Davis & Howden-Chapman, 1996; Locock & Boaz, 2004; Anderson et al., 2005; Brownson et al., 2006; Goldstein, 2009). Many authors identify diverging priorities, work cycles and routines, and institutional incentives as causes for these perceived gaps.

Within the research utilization literature, increasing emphasis is placed on the development of *structural* partnerships that aim to facilitate continued interactions, two-way exchanges, and establish personal contacts and sustained dialogue (Lomas, 2000a; Lomas, 2000b; Nutley, Walter & Davies, 2002; Innvaer et al., 2002; Nutley, 2003; Jansen et al., 2008; Mitchell et al., 2009; Young et al., 2002; Elliott & Popay, 2000; Hanney et al., 2003). A variety of research-policy-practice partnerships are being developed that are expected to facilitate these sustained mutual exchanges. Examples of such structural partnerships are the Dutch Academic Collaborative Centres for Public Health (ACCs): long-term collaborations between regional Public Health Services (PHS), university departments, and sometimes other relevant groups, such as national institutes. These Centres have been developed in the Netherlands since 2005 through a program financed by the Netherlands Organization for Health Research and Development. Nine ACCs are currently operative, covering diverse public health issues.

This article argues that the literature on partnerships neglects a number of important aspects. Although many articles focus on facilitating interactions between policy makers and researchers, there is less empirical attention towards the underlying processes and structural conditions that should facilitate these interactions (Nutley, 2003; Mitchell et al., 2009), with the work of Van Egmond et al. (2011) and Newman et al. (2011) being exceptions. Previous research showed that although a partnership structure might facilitate interactions, it does not automatically render those interactions meaningful (see Wehrens, Bekker & Bal (2010) for a further development of this argument). The partnership structure as such thus does not automatically lead to a better integration of different perspectives.

This article aims to address another element that is often overlooked in literature focusing on partnerships as potential solutions to problems of integrating

perspectives of researchers, policy makers and professionals – namely how such collaborative structures *develop over time*. There seem to be few articles that explicitly take into account how these partnerships may change or develop over a longer period of time – and what consequences that has in terms of collaboration. However, it is highly likely that there will be important changes in structure, involved groups, developed formats, perceived dilemmas, and strategies to solve these dilemmas over time. This lack of consideration of the developmental aspects over time is remarkable given the fact that many authors argue for longer lasting relationships. How such relationships develop over time has however hardly been studied. This article addresses these issues through an empirical analysis of how the Dutch ACCs developed over a period of four years. The empirical material, with interviews conducted at the start of the ACCs as well as three years after their original setup, is perfectly equipped for such an analysis focusing on such development.

Theoretically, we build on the concept of *communities of practice* (Wenger & Lave, 1991; Brown & Duguid, 1991; Wenger, 1998), which offers a useful starting point for our purposes. Wenger, McDermott & Snyder (2002:4) define communities of practice (CoP) as: "groups of people who share a concern, a set of problems, or a passion about a topic, and who deepen their knowledge and expertise in this area by interacting on an ongoing basis." In this general formulation, parallels with the ACCs are obvious, as these also entail groups of people who share the concern of a poor 'fit' between research evidence, policy development and professional practice, and who deepen their understanding of this problem by interacting regularly.

However, here we want to use the concept in a different way. We argue that for the purpose of analyzing the development of partnerships, an important analytical perspective can be gained from a focus on how such CoPs develop over time. Wenger et al. (2002) distinguish between 'early' and 'advanced' communities of practice. In total, they distinguish five developmental stages of CoPs, which may provide input for the analysis of the ways in which the Academic Collaborative Centres have developed in recent years. Wenger et al.'s (2002) distinction between different development stages of CoPs may thus serve as input for analyzing how the ACCs as structural partnerships have developed, as well as the different dilemmas they face in different stages, thereby addressing one of the missing elements in much work on structural research/policy collaborations.

The aim of this article is then to explore how partnerships such as the ACCs develop and which challenges and dilemmas the actors in them face *at different stages* in this development. The different development phases identified in the

CoP literature (with different dilemmas and solutions in different moments of development) serve as analytical tools to emphasize the fluidity of these dilemmas. The next section discusses the format of the ACCs. After describing how we use the community of practice concept, we turn to a general description of our methods. The main part of the article focuses on an empirical analysis of the nine Dutch ACCs and their development over the last years, the different dilemmas the participants encounter and how they try to solve these dilemmas. The discussion contrasts two dominant development strategies that are used and explicates the advantages and disadvantages of both. The conclusion compares the identified development stages of the ACCs with the phases described in the CoP literature and explains how we can interpret some of the differences.

ACADEMIC COLLABORATIVE CENTRES AS STRUCTURAL PARTNERSHIPS

In 2005, the Netherlands Organization for Health Research and Development (ZonMw) developed a programme for Academic Collaborative Centres (ACC) for Public Health. The ACCs are long-term collaborations between one or more regional Public Health Services (PHS), university departments, and other institutes. They aim to facilitate structural interactions between researchers, policy makers and professionals in Dutch public health. The main goal of the ACCs, according to the funding organization, is that they "should enable better collaboration between practice, policy, research and education, ultimately leading to products, services and facilities for public health that are both accessible and of high quality" (ZonMw, 2005). This is seen as a twofold process: for one, scientific research within the public health sector should become more relevant for local policies and professional practices, and second, the use of evidence-based methods and results within these settings should be increased. In total, nine ACCs have been developed, covering diverse public health issues. Of these nine ACCs, several saw the ZonMw programme as an opportunity to further structure already existing interactions and collaborations.

The original programme financed the development of ACCs for a period of four years. In 2010, ZonMw – acknowledging the long-term character of successfully developing structural collaborations - financed a second period of four years. All ACCs who were funded in the first period also received funding for the second period. The main aim of the second period was to increase the financial independence of the ACCs. After the total period of 8 years, the ACCs should be financially stable (and thus would be able to continue their activities without

ZonMw funding). Our research project enabled us to focus on the general development of the ACCs over the first period of four years.

DEVELOPING STRUCTURAL COLLABORATION: SHIFTING ISSUES, DILEMMAS AND COPING STRATEGIES

As outlined in the introduction, much research utilization literature fails to address how the structural partnerships they advocate develop over time. It is likely that the dilemmas and strategies to deal with these dilemmas change over the course of this development. A commonly used theoretical concept that has long been used by scholars to analyze how networks of practitioners and new organizational forms in health care settings develop, is the Organizational Life Cycle (OLC) theory (see Cameron & Whetten (1981) and Quinn & Cameron (1983) for early examples). More recent adaptations of OLC theory have been provided by Goodwin et al. (2004) and Guthrie et al. (2010).

Guthrie et al. (2010) analyzed how 'managed clinical networks' (linked groups of health professionals and organizations from primary, secondary and tertiary care) develop and mature through a series of distinct stages that are characterized by differing needs, goals and activities and methods of engaging key stakeholders. For this purpose, they discussed several forms of organizational life cycles, of which the Goodwin et al. (2004) summary of network stages provides the best overview. Within this framework, six stages are distinguished: 1) Objective negotiation (developing aims, norms and values); 2) Design (establishing network structures and rules); 3) Environment management (securing legitimacy and resources among external stakeholders); 4) Joint production (collaborating to produce goods or services); 5) Adjustment (making changes in the course of the life of the group); 6)Termination (transfer or fundamental change: ending the network, moving its functions elsewhere, or transforming its nature). However, survey data did not lend easy support for this sequence. Rather, the data suggested that the managed clinical networks did not develop in linear or discrete stages.

Although these OLC-models are helpful in their focus on different development stages, they nevertheless do not seem to be fully equipped to address the specific format of the ACCs. For example, the stage of 'environment management' is not limited to one stage in the context of the ACCs, but something the actors are continuously involved in as they need to adhere to different account-

ability criteria.[48] The same goes for 'joint production', which is also a continuous element in the activities of the ACCs. Moreover, the specific character of the ACC, with its long-term character and explicit aim to develop increased understanding, knowledge sharing and convergence of perspectives, resonates with another concept that gained particular influence in knowledge management literature: Wenger & Lave's (1991) notion of 'communities of practice'. We argue that based on the aims mentioned above, the organizational structure of the ACC may be likely to facilitate the development of CoPs. We therefore focus in our analysis on the several development stages in 'early' and 'advanced' CoPs as identified by Wenger et al. (2002), which serve as useful input to empirically analyze the ways in which the ACCs have developed in recent years. Another advantage of this development model over the OLC-models is that it better emphasizes the fluid and shifting character of dilemmas that collaboratives such as the ACCs face.

It is important to acknowledge that the way in which we use the concept here does not entirely reflect the large amount of scholarly work that focused on both developing the concept further and criticizing some of the main tensions the concept harbors. The tensions and dilemmas within the concept are both theoretically and empirically explored elsewhere (Wehrens et al., in submission[49]). This article, instead, focuses on one particular aspect of the CoP concept: the development stages.

Wenger et al. (2002) distinguish between 'early' and 'advanced' CoPs. They emphasize that, although CoPs continually evolve, overall five stages of development can be distinguished. CoPs can be in the stage of potential, coalescence, maturing, stewardship, and transformation. The added value of this approach is that the authors distinguish several central challenges accompanying these phases, thereby understanding the diverse and evolving character of these dilemmas and challenges the members face in the process.

The first stage, the stage of potential, usually starts with an informal group of people who are interested in a particular issue or problem and who begin networking. At some point, members in this loose network start to see their network as a potential community, leading to the development of a shared domain and an emergence of the need for more systematic interactions. The key issue in this stage is to find enough common ground amongst members for them to feel connected and see the added value of sharing information (Wenger et al., 2002: 71). In the second stage, coalescing, developing activities is seen as crucial, as it

48 See Wehrens, Bekker & Bal (2011) for a further elaboration of this point.

49 This article is available through the first author on request.

enables members to build relationships, trust, and an awareness of overlapping interests and needs. The main challenge in this stage is finding a proper balance between allowing time for members to develop relationships and mutual trust, and the need to show the added value of the community. In this stage many events are organized, such as meetings, seminars, et cetera.

The third stage is the maturing stage. This is the stage in which the community has proven its value and grows quickly. Usually this stage is characterized by large physical growth. Many new members seek to join the community and may bring new interests. In this stage, it is not crucial for the community anymore to establish value, but to clarify the community's focus, role and its boundaries (Wenger et al., 2002: 97). One of the key tensions here is the tension between welcoming new members and maintaining the original focus. The fourth stage is the stage of stewardship. In this stage, the community's main task is to sustain its momentum through the natural shifts that occur in its practice and members. The community needs to find a balance between maintaining a sense of ownership and being receptive towards new people and new ideas.

The fifth and final stage is the stage of transformation. Here, transformation may refer to the splitting of a community into distinct communities, the merging of communities, the institutionalization of a community, or the 'death' or fading away of communities. There are several causes for this: large organizational or societal shifts can render the community irrelevant, the issues that spawned the community may get resolved, or the member divergence becomes too large to maintain a common base (Wenger et al., 2002: 109).

These stages show that CoPs are not static entities, but change over time. More importantly, these changes are accompanied by new challenges, which in turn require different strategies. The lesson we can draw from this is that an explicit attention towards these changing challenges and strategies is necessary when analyzing the development of structural partnerships such as the ACCs.

METHODS

We held two general interview rounds with the coordinators of the nine ACCs. The first interview round was conducted between November 2007 and January 2008. We conducted nine interviews with 15 coordinators and other actors closely involved with the ACCs (see Table 1 for a full overview). This interview round mainly focused on mapping the organizational structures of the ACCs, their differences and similarities, the sorts of instruments that have been developed to facilitate interaction between the different domains, the perceived

Table 1: Interview codes

Name	First interview	Second interview
Academische Werkplaats Agora	07-12-2007 (Code: 1.1) A.H. (Coordinator) J.B. (Director PHS Gelre-IJssel)	19-01-2010 (Code: 1.2) A.H. (Coordinator) I.C. (PHS Gelre-IJssel)
Academische Werkplaats Amphi	30-11-2007 (Code: 2.1) J.H. (Coordinator) K.V. (Chairman steering committee)	03-12-2009 (Code: 2.2) J.H. (Coordinator) K.V. (Chairman steering committee)
Academische Werkplaats CEPHIR	19-11-2007 (Code: 3.1) J.H.R. (Coordinator) C.P. (Coordinator)	26-01-2010 (Code: 3.2) J.H.R.(Coordinator) A.V.(Coordinator)
Academische Werkplaats GGD / AMC	20-12-2007 (Code: 4.1) J.J. (Coordinator) A.V. (Coordinator) M.P. (Coordinator)	07-01-2010 (Code: 4.2) A.V. (Coordinator) M.P. (Coordinator)
Academische Werkplaats Jeugdgezondheidszorg Noord-Holland	13-12-2007 (Code: 5.1) F.L.(Coordinator)	20-01-2010 (Code: 5.2) M.K. (Coordinator)
Academische Werkplaats Medische Milieukunde	17-12-2007 (Code: 6.1) P.H. (Coordinator)	04-03-2010 (Code: 6.2) P.H. (Coordinator)
Academische Werkplaats Publieke Gezondheid Brabant	24-01-2008 (Code: 7.1) I.G. (Coordinator)	10-12-2009 (Code: 7.2) I.G. (Coordinator) J.W. (Chairman steering committee)
Academische Werkplaats Publieke Gezondheid Limburg	29-11-2007 (Code: 8.1) J.C. (Alderman) M.J. (Coordinator)	16-12-2009 (Code: 8.2) M.J. (Coordinator)
Academische Werkplaats Publieke Gezondheid Noordelijk Zuid-Holland	30-11-2007 (Code: 9.1) B.M.(Coordinator)	10-05-2010 (Code: 9.2) B.M. (Coordinator) P.A. (LUMC)
Focus Group coördinators	24-01-2011	

gains, and the preconditions for success that are conceived to be important by the actors involved. These interviews mainly served the purpose of acquiring a better general understanding of the similarities and differences between the ACCs and to map interesting tensions and points of attention for a series of in-depth case studies.

The second interview round was conducted between November 2009 and May 2010. These interviews were also held with the coordinators of the ACCs. In most cases this was the same respondent, although in some ACCs the function of coordinator shifted to another person or included an additional person (see appendix 1). We conducted 9 interviews with 15 persons during this interview round. Through this second round of interviews we were able to obtain insights into the ways in which the ACCs have developed over this period. We addressed

the development of the infrastructure in order to find out whether new parties and organizations became involved and/or new projects were started, as well as whether the ACCs were able to generate new ideas and initiatives. We thus explicitly focused on the changes and developments of the partnership structure, as well as the consequences of these changes and developments in terms of experienced gains and bottlenecks.

As we interviewed all coordinators, the interviews can be seen as representative. However, as the interviews are meant to provide a general overview of the development of the ACCs, they cannot capture all the activities that take place within the collaborative projects conducted within the ACCs. This has been the focus of four case studies, which are discussed elsewhere.[50] All interviews were recorded and fully transcribed. They were inductively coded, including themes from the topic list, as well as emerging themes. Furthermore, the interview transcripts as well as the draft report have been sent back to the (key) respondents for 'member checking' (Yanow & Schwartz-Shea, 2006).

In the analysis, we used codes to indicate from which ACC (and which interview round) the data came. See the appendix for more details. As the appendix shows, some of the interviews were conducted with multiple respondents. However, this choice primarily came from the staff at the ACCs. Some of the ACCs have multiple coordinators or other main actors that wanted to participate in the interview. However, we did not distinguish between them in the coding, as we were primarily interested in the differences between ACCs (of which the respondents were all representatives) and less interested in the differences between perspectives within the individual ACCs.

We supplemented the 18 interviews with an analysis of relevant documents and websites. We studied, amongst others, the grant application forms, progress reports, news letters, websites and other documents related to developed formats within the ACCs. These were used as background material for our analysis. Next to the document analysis, we organized an additional focus group meeting with the coordinators, which was held in January 2011. During the focus group, we presented several statements about the ACCs and their development, which were aimed to generate discussion amongst the coordinators. The focus group provided us with useful additional information that supplemented the analysis thus far.

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50 See for example Wehrens, Bekker & Bal (2010, 2011, forthcoming) for reports on these cases). Further reports are available on request.

RESULTS: DEVELOPMENT STAGES IN THE ACCS

When analyzing the ways in which the ACCs have developed throughout the last years, several general trends become noticeable. First of all, there are large similarities in the basic structure, which in almost all cases consists of a steering committee, regular work meetings and periodical gatherings in which practical experiences and research results are shared. About half of the ACCs also developed an advisory committee and periodical educational activities as part of their infrastructure. A second general trend is the increasing number of dual appointments, e.g. public health professionals working part time at a university or university researchers working part time at a PHS. According to respondents, the added value of these dual appointments for the PHS is located in relationship-building and gaining access to scientific facilities (e.g. university libraries), whereas the university finds added value in spreading knowledge, as well as building relationships with the field and data access. An experienced disadvantage of the dual appointments is the increased working pressure. A third similarity in general development is the increasing use of knowledge brokers who intermediate between the different groups involved. By now, three ACCs have appointed such knowledge brokers, although sometimes with slightly different functions (some primarily acting as an intermediary between researchers and policy makers, and thus facilitating interaction through ´linkage-and-exchange', others mainly gathering and sharing relevant knowledge).

Despite these similarities, when analyzing the ACCs in terms of their general development, there are many differences that come to the fore. Some of the ACCs seemed to be working on very different problems or had a different understanding about the kind of problems in need of attention. Whereas within some ACCs, for example, interactions with policy makers were highly limited or not considered a priority, other ACCs already developed quite refined formats to facilitate this interaction. Moreover, some ACCs were also already critically evaluating previous formats they developed in order to keep on refining and adjusting their efforts towards the needs of professionals and policy makers. The interviews not only showed differences in development, but also highlighted the different kinds of dilemmas the ACCs were facing.

In general, the interviews thus presented us with an image of the ACCs in totally different *development stages*. Those stages are not only characterized by different elements, but also by the *different dilemmas and problems* actors face. Figure 1 gives a schematic overview of the five main development stages that can be distinguished.

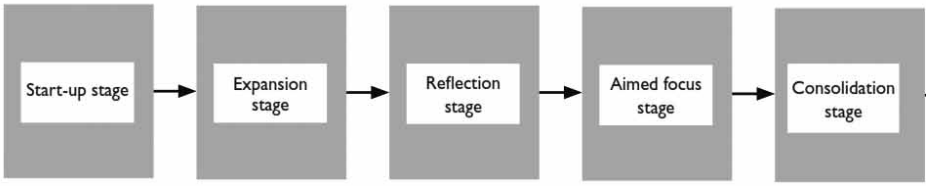

Figure 1 Stages of development of the Academic Collaborative centres

This table shows five main development stages that can be distinguished within the ACCs. In the *start-up* stage the ACC is formed, collaborative agreements between parties are written and signed, and a first infrastructure is developed. In the stage of *expansion* the ACC starts to grow, expands its network and sees new groups and organizations joining and new projects being developed. The stage of *reflection* is characterized by a temporary pause and a reorientation of the ACC towards its initial goals. In the stage of *aimed focus* there is room for further expansion, albeit now focused on specific elements. In the stage of *consolidation* the consolidation of results and processes becomes a central element.

Before proceeding with a more detailed analysis of these stages, three important side marks need to be made. First of all, although Figure 1 presents the development in a rather linear way, this does not automatically mean that ACCs in later stages are necessarily 'better' than ACCs in an earlier stage. The difference is mainly located in the *kinds of problems and dilemmas* they face. The development stages help in understanding these differences and should be seen as such, as within *each stage* more and less successful strategies can be distinguished. Second, although we did see a general sequence in the ways the ACCs developed, this does not mean that there is a clear moment in which an ACC 'completes' one stage and proceeds to another. The interview transcripts showed how ACCs were struggling with themes that could relate to several stages. However, the *emphasis* shifts: some ACCs were mainly occupied with issues related to a 'later' stage, whereas other ACCs were still dealing with matters related predominantly to 'earlier' stages. Theoretically, the emphasis could also shift back to 'earlier' stages, but we did not see this empirically. Thirdly, for analytical purpose, we presented the distinctions between different stages in this scheme more clear cut than they are in practice. As outlined above, the development of the ACCs can be seen as a fluid process: there are no clear-cut boundaries. However, despite these side marks we consider this scheme to be a highly useful heuristic for analyzing the *general* development of the ACCs, as it enables a more specific analytical attention towards the shifting issues, strategies and dilemmas ACCs encounter in their development.

The start-up stage

The start-up stage is the stage in which the ACC is formed, collaborative agreements between parties are written and signed, and a first infrastructure is developed. The analysis focuses on the goals of the collaborative that are distinguished by the coordinators, as well as the general infrastructure that is developed. From their initial start-up, the ACCs mention four main categories of goals: structuring cooperation, facilitating knowledge transfer or knowledge exchange, developing demand driven research activities, and 'upgrading' professional practice (Document analysis grant proposals). The goal of structuring cooperation stems from a recognition of the ad-hoc character of many previous relationships between PHSs and universities:

> What I think the added value was, was that it previously was very much ad hoc or person bound how this collaboration functioned. And you do see that such an ACC is much more an instrument that also opens doors (Interview code 4.2).

The goal of the ACC then is to develop a more structural relationship. Secondly, facilitating *knowledge transfer* or *knowledge exchange* is frequently mentioned as a main goal. The ACC is seen as a structure that can facilitate the exchange of knowledge between universities and PHSs. Goals are frequently described in terms of "enhancing knowledge exchange" (Code 5.1), "developing a coordinated knowledge transfer" (Code 2.1) and "disseminating research findings" (Code 3.1). Thirdly, developing *demand-driven research activities* is seen as an important goal. Several ACCs emphasize that research activities should explicitly focus on questions and problems policy makers or professionals face. Fourthly, the *upgrading of professional practice* is mentioned as a goal by several ACCs, usually referred to in terms of facilitating evidence-based ways of working (Code 5.1, 9.1). Here, the goal of the ACC is thus described in terms of upgrading professional practice through making practitioners more acquainted with scientific methods and evidence-based ways of working.

Next to these main goals, this stage is also characterized by the general infrastructure that has been developed. Within this phase, mainly the *formal* arrangements and structures are considered to be important. Formal structures such as advisory boards, steering committees, theme groups were rapidly developed within most ACCs (Document analysis grant proposals). Furthermore, many coordinators considered the *dual appointments* of employees a promising way of working toward the goals of the ACCs. Therefore, the developed infrastructure also focused on facilitating these dual appointments, for example in the

form of science practitioners that function as linking pins between PHSs and universities. Many coordinators themselves fulfilled these dual roles of working part time at a university and part time at a PHS. During this phase, several ACCs also developed bottom-up initiatives to gather new ideas, through the development of project groups, theme groups, or 'brainstorm groups' and developed formal rules and criteria to which projects should conform (Document analysis grant proposals).

The expansion stage

In the expansion stage the ACC usually grows rapidly, both in size and in the expansion of its network. New groups and organizations become involved and new projects are being developed. In a general sense, within this stage the ACC seems to be in a situation where many changes and developments are taking place. The analysis here focuses on infrastructural changes and the factors that helped to facilitate these developments.

With regard to general development and progression, the coordinators almost unanimously emphasize the large progress the ACCs made in the last years. This progress seems to be most particularly felt by the ACCs that could not build on previous relationships between PHSs and universities. However, almost all ACCs emphasize how much they have grown over the past years, not only in terms of included partners, but also in terms of new projects and newly initiated formats (Code 2.2, 3.2 and 7.2):

I think that certainly in the last two years […] there has been a large widening and deepening, in any case conceptually – what is the ACC – but also how to consolidate this even more? […] We have found ourselves in the last year in quite an acceleration in terms of developments (Interview code 3.2).

Related to this general growth is the perception of a *shift in dynamics* by several coordinators. They maintain that the growth has been exponential. Whereas the first two years were characterized by building up a structure, the last years saw an acceleration of these developments:

I think that much has been developed, that we made a very good start. We had to start from zero, so that means that everything that worked already is an added value. […] You notice that especially now, in the last year, we made some very large leaps. First, we only focused on infectious diseases, but now it is like an avalanche of new ideas, projects and…it is swinging! (Interview code 2.2).

The extent to which the developing ACCs are able to grow further is partly dependent on contextual factors. Positive local developments mainly relate to additional local financing possibilities and broadly carried local support. In some ACCs, favorable financing possibilities are available, which may be related to additional financial resources within the PHS, but also to specific themes. For example, for the theme of infectious diseases, the National Institute for Public Health and the Environment provides regional funds. One of the ACCs gladly makes use of these funds, specifically for financing smaller projects that are relevant for local policy makers and professionals (Code 2.2).

Next to these additional financial structures some ACCs can also benefit from increasing local support. One of the ACCs benefits from the new strategic plans of the involved university, in which knowledge utilization is explicitly mentioned as an important goal (Code 7.2). Another ACC greatly benefits from developments at the municipal level, where a collaborative agreement has been made between the city council and the university and medical centre. This coalition aims to connect research-based knowledge with health policy and practice. This development has been very fruitful for the further expansion of this particular ACC (Code 3.2).

The reflection stage

The *reflection stage* is characterized by time for reflection, where the actors within the ACC look back on the developments so far. After a phase of rapid growth, many ACCs find themselves in need to reorient themselves towards their most important goals. This stage is therefore usually characterized by a strong focus on critical reflection and an evaluation of the activities employed. The analysis here focuses mainly on the perceived added values of the ACCs. One of the elements in which this added value became most visible, according to several respondents, was in the high amount of spin-offs or new initiatives that emerged out of the ACCs. One of the respondents framed the ACC as a 'lubricant' that smoothens both the use of evidence in policy and practice settings as well as the increasing societal relevance of university research (Code 2.2).

When focusing on the added value of the ACCs for universities, several respondents addressed the access to local data sets, for example municipal data:

In our area [the added value for the universities] is that the PHSs have access to local data […]. And we have short lines to the municipalities. […] So [the university] has much more difficulties when they want to conduct research

on a certain topic, to arrange all of that logistically, than when we are also involved (Interview code 6.2).

The added value of the ACCs for local municipalities, however, is something most coordinators find more difficult to explain. Many argue that the municipalities that are involved in the ACCs do not yet see clearly what these benefits may be. In some cases, specific products from the ACC are highly valued by municipalities, but are seen as 'regular' products of the PHS:

What we have to offer, we usually offer through the PHSs, so in that way we do offer municipalities quite some things. Sometimes that is not even clear for municipalities. [Some of our projects] received many positive reactions at the municipality, but they think of it as a PHS-product. And actually that is also fine, in my view that could be the way in which [the ACC] could develop. The ACC supports the PHS in developing evidence-based instruments and interventions, with which they can profile themselves more professionally towards their municipality (Interview code 7.2).

The visibility towards municipalities thus remains difficult. Although some ACCs try to make themselves more visible towards policy makers at local municipalities, they also recognize the difficulties this brings about (Code 2.2).

The added value of the ACCs for professionals working at PHSs is more widely seen. Many coordinators experience quality improvement of PHS professionals, who are developing a more critical and reflexive attitude towards their own activities:

You do notice that [within the PHS] there is much more emphasis on the way of working. That it is necessary to have more evidence. People are much more searching how effective they are [in their work], and how they can improve their own work process. That attitude has become much more widespread. […] And in the beginning, people are not that occupied with this, they just want to do their work and are not that interested in what the result is. But you don't see that attitude anymore (Interview code 1.2).

Also other coordinators emphasize how the ACC has increasingly facilitated a reflexive attitude in (part of) the PHS (Code 3.2 & 8.2).

The 'aimed focus' stage

In the stage of *'aimed focus'*, there is again room for further development and expansion of activities, but the main difference with the stage of expansion is the current focus on *specific elements* that are in need of improvement. In this stage, the ACC usually gains strong insights into its own strengths and weaknesses and tries to deliberately address these by developing *specific* new activities, formats and ideas. The ACC might specialize into their 'best practices' or try to deliberately overcome some of its signaled flaws. The analysis here mainly focuses on new initiatives and future plans.

Two general categories of new initiatives can be distinguished in this stage. The first category relates to the spread of best practices, whereas the second category relates to new forms of knowledge transfer. With regard to the first category, two previously developed formats are perceived as highly successful: the Masterclass-format (aiming to teach public health professionals and policy makers how to translate practical problems to research questions with a fitting research outline) and the 'Small But Beautiful' format (short, 3-month research projects focusing on practical policy questions that are addressed in interactive rounds of problem clarification; see Wehrens, Bekker & Bal (2010) for further discussion).

Both formats are starting to spread to other ACCs as well. The funding organization even required each ACC to develop a 'Small But Beautiful' format in the second funding period. There are however some differences in how this format is filled in. Whereas some ACCs require municipal actors to hand in their questions or suggestions for research questions, other ACCs follow a more active approach through conducting interviews with municipal actors from which the 'hot topics' are distilled (Code 7.2).

The second category of new initiatives relates to newly developed formats for knowledge transfer. Some initiatives focus on new functions, whereas other initiatives focus on new structures. Examples of the latter are the *promotion symposia* in one of the ACCs, which are developed as a response to internal critiques on the lack of policy and practice implications of the PhD theses thus far (Code 3.2). These meetings thus aim to open up a debate about research findings and broaden the discussion. A specific purpose is to concretize the recommendations that are made in the dissertations. Another initiative that has been developed is the regional "Public Health Status Forecasting Plus", a regional database that can facilitate many new research projects:

We have a youth monitor, an adult monitor and an elderly monitor, so regular work of the PHS. We are now rearranging these monitors on a cohort basis.

[…] Such a cohort will deliver much more data than we could gather with the transversal monitors. […] I always compare it with a photo or a film: we now have a photo of the population and we are going to make a film. […] It is an enormous data file, where a huge amount of new research can be based on (Interview code 8.2).

The ACC in this way leads to new research infrastructures.

Also with regard to new functions several examples can be seen. One of these is the creation of a new intermediary function labeled the "BOP functionary".[51] These functionaries have several specific aims. They need to facilitate a better dialogue between the domains of science, policy and practice on the tactical level between directorates and the 'work floor'. Furthermore, they need to establish better connections with municipal actors. The function requires persons who are well acquainted with the different domains (Code 8.2). Another example of new functions is the function of *local coordinators*, who have an intermediary role in the professional organizations in which they work. They are expected to function as a 'spider in the web', maintain contacts with managers and municipal actors, and make an inventory of new ideas. On top of that, they have an important function as chairs of the 'high potential' work groups. These (small) groups are formed within each involved home care organization, with the aim to enable persons with affinity and 'a more than average talent' for conducting research to generate ideas for future research (Code 5.2).

The consolidation stage

In the *consolidation stage*, the main focus of the ACC becomes the consolidation of its structure and activities. Although this is a theme that is constantly on the agenda of many ACCs, it here becomes the central element. The analysis here mainly focuses on the quest to institutionalize the ACC within existing organizational structures. The way in which the coordinators struggled with ways to achieve this turned out to be an important aspect that emerged from the second interview round.

The interviews show several ways in which ACCs tried to consolidate their activities. Some respondents argue that the ACC should obtain a distinguishable, formal position within a PHS (for example as an independent research unit), whereas others argue that it should be incorporated into the PHS in a more conceptual sense - through the ways of thinking and working of the employees

51 "BOP" is a common way of referring to "beleid, onderzoek, praktijk" in the Dutch setting. It refers to "policy, research, practice".

(Code 2.2 & 3.2). In one of the ACCs we see a concrete example of how the ACC obtained a formal position in a distinctive part of the PHS that focuses on quality improvement in the whole organization. It is also the part of the PHS with most connections to both research and policy (Code 1.2). In another ACC, however, one of the coordinators argues that the ACC should obtain a self-evident place within the PHS, not as a distinct structure, but within the way of working and thinking in all layers of the PHS:

If the ACC wants to succeed, it has to gain a very self-evident place in the whole way in which the PHS functions. […] That means that the idea has to be embraced by many people, but also that it has to become a self-evident part of their thinking. The concept needs to land in the heads of many different people, not only a small club of researchers and policy makers. It has to become an essential part of the functioning of a PHS (Interview code 3.2).

This coordinator emphasizes that it is not enough for the ACC to succeed if it merely remains an idea of a small group of people. Instead, it should be a concept that is known to everyone and functions self-evidently throughout the PHS. Arguably, the ultimate consolidation is when the ACC dissolves into the organization.

Dilemmas in different stages

An understanding of the different stages of development of ACCs has as main advantage that it enables the recognition of the fluid character of dilemmas the ACCs face at different moments. These problems and difficulties relate to specific periods. This section therefore discusses the dilemmas in each of the stages outlined above.

The transition from the start-up stage to the expansion stage can be hindered by several bottlenecks. One of the most important bottlenecks relates to the size of the ACC. In this stage, the ACCs generally are still small in terms of size, which limits the number of projects that can be started (Code 2.2). Secondly, it is sometimes difficult to show the added value of the ACC from the first moment. One of the ACCs for example encounters specific problems in showing this added value:

In terms of coordination I find it difficult to [manifest our ACC] when there are no real results. When we started, we got extensive press and media coverage and there was much interest, and now the press keeps on asking "when will there be results"? They are already waiting three years for that. […]. So that

is something I find difficult, if you have an ACC that consists of a number of larger projects, that it is difficult to use the content [of the projects] to promote the ACC (Interview code 6.2).

Showing fast results thus is necessary, but is also difficult to attain given the new working relations that are developing. This ACC seems to be stuck in the first stages because of the long-term character of their projects. Thirdly, the local context (and starting conditions) may limit the ACC in developing further. With a lack of history in the relationships between PHSs and universities, collaboration needs to be built up from the start, while ACCs that operate in a local context with long established relationships may see more space for development (Codes 2.2 & 3.2).

In the transition from the expansion stage to the reflection stage, most ACCs encounter different dilemmas. Whereas one of the dilemmas in the start-up stage related to the small size of the ACCs, here, in contrast, the exceptional growth can become problematic. With new parties joining the ACC and numerous new projects being developed, it sometimes becomes unclear which projects fall under the heading of the ACC and which projects do not. The general structure of the ACC may become less clear because of this rapid growth (Code 1.2). This rapid growth may then lead to a divergence of activities, which makes mutual adjustments and coordination between groups more difficult. One of the ACCs also experiences an increasing formalization:

What we now are facing is that the organization of the ACC becomes more complex because we are broadening. We are of course an informal community that is very creative and picks up things very easy. But the larger it becomes, the slower it becomes and in the end you are constantly busy with all kinds of procedures. Slowly you start to turn into a small bureaucracy. That is a tension that we need to deal with (Interview code 3.2).

The rapid growth thus seems to come at a cost: a decrease in the informal, flexible and creative character of the ACC. Another dilemma in this phase of rapid growth relates to the increased time pressure on participants. Many respondents emphasized that the task of adequately coordinating an ACC takes up much more time than expected (Codes 2.2, 3.2 & 4.2).

The transition from the reflection stage to the stage of 'aimed focus' is again characterized by different dilemmas. One of the most recurring dilemmas relates to adjusting priorities for further development. After a period of extensive growth and expansion, the reflective stage is a stage in which ACCs start

to evaluate and discuss their achieved results and activities. Often this leads to debates about new priorities: which specific new instruments, ideas and coordination structures should be (further) developed? Another important dilemma in this phase relates to the difficulty some ACCs experience in adequately positioning themselves. It becomes more difficult to position the ACC *vis à vis* other ACCs in the area of public health, but also in other areas where similar formats are developed:

> What can become confusing is the uncontrolled growth [that is taking place]. We are also involved in the ACC for environmental health and there is also an ACC youth health care of [another university] in which we participate. We still have to think carefully about how that all fits together (Interview code 4.2).[52]

In the transition from the stage of 'aimed focus' to the consolidation stage, the main dilemmas relate to issues of organizational incorporation and finding structural financial resources. Many ACCs experience difficulties in properly embedding the activities of the ACC within the involved organizations. In many cases, the exact place of the ACC within the participating PHSs and university departments remains unclear (and often limited to a small group of persons who are actively involved). The second main dilemma in this transition relates to finding appropriate long-term financial resources. After the second round of financial support of the funding organization, the ACCs are expected to be self-supportive. In order to safeguard the continuity of the ACCs, it thus becomes of crucial importance to fall back on structural funding. Many ACCs however emphasize the difficulty of this task, especially with an eye on the current budget cuts in the public sector (Codes 5.2 & 7.2).

DISCUSSION: DEVELOPMENT STRATEGIES

We argued that one often overlooked element in research utilization literature focusing on collaborative research-policy partnerships is the ways in which such partnerships develop over time. Our empirical analysis showed that the different dilemmas such partnerships face in their development are not static, but change significantly over time. This discussion will explicate the different

52 As the ACC format had become very popular, other similar structures have been set up, for example targeted at youth care or home care. Many universities and PHSs participate in more than one ACC.

strategies that are used in the ACCs to deal with these dilemmas and outline the consequences of these strategies. We distinguish two different development strategies that are used, as well as two different strategies with regard to the consolidation of activities. Finally, we compare the development stages and their dilemmas with the phases described by Wenger et al. (2002), highlight the main similarities and differences, and discuss the implications of some of the main differences.

Development strategies

With regard to the development of the ACCs, two distinct strategies can be distinguished: a strategy of *external orientation* and *internal orientation*. Within the external orientation strategy the ACCs mainly focus on facilitating growth, developing new projects and starting up new themes. The ACC then also aims to incorporate new parties that can contribute to these new projects and themes. In some cases, the ACCs require additional expertise and thus try to expand their network of participants (Focus group coordinators, 24-01-11). In other examples, PHSs see an added value in collaboration and therefore contact an ACC in order to become part of its structure (Code 7.2). ACCs that mainly work on a strategy of internal orientation specifically aim to gather internal support within the organizations that are originally involved. Furthermore, within this strategy, one of the ACC's main aims is to firmly establish itself within these organizations (Code 1.2).

The distinction between both strategies does not imply that one strategy is necessarily better than the other one. However, we do see that both strategies have different advantages and disadvantages. For one, an external orientation enables the ACC to become more visible within the region it operates (Code 2.1). If the main aim of the ACC is to develop new projects and enable new organizations and departments to join, this heightens its regional visibility. This can be seen in many ACCs that have expanded within the last four years. An important downside of this strategy, however, is that it is likely to lead to diminished internal visibility. While the activities of the ACC become more visible regionally, the visibility within the organizations participating often remains limited to a small number of people. We therefore see that several ACCs begin working to increase this small number (Focus group coordinators, 24-01-11).

ACCs that predominantly maintain an internal focus in their development also face different advantages and disadvantages. An important advantage of this strategy is that the ACC is more capable of developing a strong internal position within the organizations that are involved. One of the ACCs focused less on expansion in the first period, but more on internal issues, now notices the effect

of this continuous investment in relationships. According to the coordinator of this ACC, the ACC now maintains a 'natural position' within the PHS (Code 1.2). However, this strategy also has its disadvantages. For example, the focus on internal issues can come at the expanse of its broader regional visibility. From the perspective of an outsider, the ACC may seem to stagnate (Code 6.2).

Consolidation strategies

Also with regard to the consolidation of the ACCs two distinctive strategies can be distinguished. The first strategy many ACCs followed could be labeled the *strategy of organizational consolidation*. This strategy entails that the ACC strives to consolidate its activities through formalizing them within the connected organizations, for example through positioning the agreements and working methods of the ACC within the existing procedures and task descriptions of the involved organizations (Code 8.2) or by connecting to already existing formats for facilitating interaction (Code 7.2). The second strategy can be labeled the *strategy of conceptual consolidation.* Here we see less emphasis on formal arrangements, but more attention toward establishing the *concept* of the ACC. One of the coordinators argues that the self-evident nature with which researchers, professionals and policy makers seek contact with each other is a crucial element in the consolidation of the ACC (Code 3.2). Here, consolidation mainly takes place on a conceptual level: the concept and the implications of it need to be widely spread and carried within the involved organizations.

Also here we see that both strategies (which do not necessarily contradict each other, as both can be applied in different amounts) come with advantages, but also with disadvantages. One of the main perceived advantages of organizational consolidation is the level of continuity it provides. As the procedures and task descriptions are clearly described, this makes them more easily transferable to other persons. In this sense, the continuity of the ACC is better safeguarded against shifts in the workforce (Code 8.2). However, a disadvantage of this strategy is the loss or decline of the informal character of the collaboration. The increased formalization of activities and tasks makes it more difficult to quickly and informally address problems that may occur (Code 3.2). The main advantage of the strategy of conceptual consolidation is related to the increased recognition of the ACC, as the activities of the ACCs become secured in the beliefs and convictions of its participants. The ACC becomes secured not because of its formal place, but because the participants believe in the idea and goals behind the collaboration. However, many coordinators also emphasize that conceptual consolidation (which, following Wenger et al.'s (2002) stage of transformation, could eventually even lead to a merging or fading away of the ACC as its main

goals are achieved) is currently only wishful thinking (Focus group coordinators, 24-01-11).

CONCLUSION

This article argued that research focusing on partnerships between researchers, policy makers and professionals should focus on how such partnership structures develop over time and what consequences that has in terms of collaboration. We provided an empirical account of such developing partnership structure through our analysis of how the Dutch Academic Collaborative Centres for Public Health (ACCs) developed over a period of four years, which changing dilemmas they faced, and which strategies are developed to deal with these dilemmas. Wenger et al.'s (2002) distinction between different development stages of communities of practice provided a helpful analytical heuristic for this.

When comparing the different stages the ACCs generally go through in their development with the different stages of CoPs as described by Wenger et al. (2002), many similarities can be noticed. These similarities do not only relate to the different stages, but also to the different kinds of dilemmas that become dominant in most of these stages. In this sense, the lessons drawn from Wenger et al. seem to be applicable to the ACCs as well. However, there is a crucial difference between the stages we distinguish and the stages Wenger et al. describe. We argue that this crucial difference explains why many ACCs still seem to lack the 'thick' relationships[53] that characterize communities of practice, even though one could expect these relationships to arise after a prolonged period of intense cooperation and interaction.

According to Wenger et al., communities of practice generally develop from the stage of potential to the stage of coalescing. In this stage, many regular activities and events are started and the community builds extensively on the creation of added value and the establishment of trustful, 'thick' relations. In other words, in this stage the community maintains a strong internal focus. It is only *after* this stage, in the more advanced communities (the mature stage and the stewardship stage) that the community starts to expand its boundaries and

53 'Thick' relationships refer to continuous, ongoing interactions within a group, leading to relationships based on mutual respect and trust, facilitating a shared sense of belonging and mutual commitment.

tries to find a balance between maintaining core activities while being open for new ideas, perceptions and input.

When compared to the development of the ACCs we see that here the building of 'thick' and trustful internal relationships is often (whether planned or not) postponed to later phases in the development. After the start-up phase many ACCs developed new projects and enabled new organizations to join instead. This relates to the external development strategies most of the ACCs seem to employ. As the discussion showed, such a strategy has several advantages, but one of the main downsides is that working on the 'thick' and trustworthy relations that are necessary for a community of practice to develop requires more time. In the Dutch context, where ACCs had to show results fast, this time seems to have been lacking.

Our research provides several recommendations for the development of research-policy-practice partnerships. First, newly developed structural partnerships should be aware of the fluid character of the dilemmas they encounter in different development stages and should base their coordination, expansion and consolidation strategies on these different stages. Second, since the different strategies we distinguished can have large consequences, newly developed partnerships should explicitly address their strategies and perceived consequences. When the partnership aims to become a visible and dominant regional player in the field, an external development focus may be the best strategy. However, if the partnership aims to develop thick mutual relationships and increased trust amongst its participants, an internal focus is crucial.

Through its focus on the development of structural partnerships, this article identified several stages of development and linked these to Wenger et al.'s (2002) understanding of development stages within communities of practice. We showed how the dilemmas such partnerships face in their development are not static, but may change significantly over time, consequentially also requiring different strategies. The literature on research-policy partnerships can gain much from a more longitudinal perspective on the development of partnerships. With this article we hope to have provided a first step in this direction.

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Chapter 8

Conclusion

INTRODUCTION

The main topic of this thesis is the relationships and interactions between researchers, policy makers and practitioners in the Dutch public health sector. Several national advisory reports considered these relationships to be problematic due to the lack of integration between the research, policy and practice of public health (WRR, 2004; Algemene Rekenkamer, 2003). Within these reports, echoing scholarly work on issues of 'knowledge translation' and 'research utilization' in public health, these problematic relationships are frequently discussed in terms of the 'two communities' metaphor. Researchers and policy makers (or researchers and practitioners) are perceived as institutionally and culturally different in fundamental ways: they are 'living in parallel universes' (Brownson et al., 2006). From an understanding of researchers and policy makers as distinctive (cultural) groups, one of the main issues becomes to better connect these groups. There are 'gaps' between them that consequentially need to be 'bridged'. This two communities framework, including the metaphor of 'bridging' the different worlds, is widely spread within public health.

The two communities framework also becomes visible in policy initiatives aiming to facilitate collaborative structures that bring together researchers and policy makers or practitioners. In The Netherlands, similar considerations for example gave rise to a widely spread initiative to develop a collaborative format within public health, aimed to better connect researchers, policy makers and public health professionals. The development of these Academic Collaborative Centres, which are expected to function as 'coordination structures' between the worlds of research, policy and practice, thus seems to be driven from the 'two communities-logic'. Because the world of research is seen as distinctive from the world of policy and the world of practice, there is a lack of fit between activities: scientific knowledge is perceived to be irrelevant or inaccessible by policy makers and professionals, and policy-questions are not amenable to scientific investigation. The ACCs are expected to fulfil a 'bridge-function': they can be seen as incentives to 'bridge the gap' (cf. ZonMw 2005; Garretsen et al., 2007).

This newly developed collaborative format of the ACCs formed the empirical focus of this thesis. The ACCs are set up to become structural collaborations between researchers, policy makers, professionals and other stakeholders within the field of public health. These collaborations, usually between a Public Health Service (PHS)[54] and a university department (but also frequently involving

54 Public health in the Netherlands is largely organized on a local level, where municipalities are obliged to set 4 yearly policy plans which are then executed by Public Health

other stakeholders, such as research institutes, youth health care organizations, or municipal departments), have been funded by the Netherlands Organization for Health Research and Development (ZonMw) from 2005 until 2013. Nine ACCs have been subsidized.

From a theoretical perspective, this thesis questions whether this 'two communities' rhetoric[55] dominant in public health, including the context of the ACCs, is the most useful conceptualization of science/policy and science/practice relations. The introduction discussed how within knowledge translation literature, conceptualizations of research/policy (and research/practice) relations have become more sophisticated over time (from earlier rationalistic linear models to relationship models and, more recently, a focus on systems or network models). The complexities in the processes of policy making and professional practice are increasingly recognized in these later models. However, the two communities paradigm and the underlying epistemological assumptions behind it are hardly questioned. For instance, in all of these approaches, the realm of scientific knowledge production (and its processes) is treated as a black box.

One of the main questions this thesis addresses is whether there are other conceptualizations of the relationships between research and policy (and research and practice)[56] with more analytical power? And could such an alternative conceptualization lead to a more productive approach towards the problems the ´two communities´ rhetoric poses? Some authors within the public health field have already developed alternative conceptualizations that recognize some of the problematic aspects of the two communities framework. Lin & Gibson (2003) criticized the 'two communities construction of the research-policy problem' and proposed three alternative constructions based on different theoretical concepts. Horstman & Houtepen (2005) use Actor Network Theory (ANT) to make sense of how prevention programs (including a research component) can be seen as a form of network building. They focus on

Services. Most PHSs serve several municipalities.

55 The same rhetoric can be seen with the domains of research and practice in literature discussing the 'implementation gap' (Bero et al., 1998; Berwick, 2003; Glasgow, Lichtenstein & Marcus, 2003; Grol & Grimshaw, 2003).

56 The relationships between research and policy and the relationships between research and practice are discussed in different strands of literature, but concern similar issues. Both stands also show a similar development in terms of how the relationships are conceptualized (cf. Nutley, Walter & Davies, 2003). In the analysis of the ACCs, this thesis focuses on the relationships between research and policy and between research and practice. The relation between policy and practice is not of explicit concern here.

the *networks* of researchers, policy makers, professionals and other actors that need to be built for interventions to succeed rather than starting from the perspective of different *communities*. Horstman and Houtepen plea for the use of a pragmatic rather than rationalistic paradigm for prevention, in which research, policy and practice are not seen as separate, but as *human processes*: all of them are open, experimental learning processes which through trial-and-error need to be evaluated on practical usability (2005: 205). De Leeuw et al. (2008) explored various theoretical conceptualizations for research/policy/practice relations, including a 'blurring the boundaries' framework that recognizes the often fluid and negotiable character of the boundaries between these domains.

This thesis builds upon these and other works (Bijker, Bal & Hendriks; Bekker, 2007) in terms of its critical investigation into the assumptions within the two communities framework. The main goal of this thesis was to investigate whether a conceptualization of research/policy/practice relations in terms of a *co-production framework* serves as a better tool to understand these relations and interactions within the empirical context of the ACCs than the two communities perspective is able to provide. Does a co-production conceptualization lead to better answers and solutions? And if it does, then what are the theoretical and practical implications of such a perspective?

THE CO-PRODUCTION OF RESEARCH AND POLICY

The co-production framework places these processes of scientific knowledge production center stage. This radically different view on science/policy relations focuses on how natural and social orders, or more specifically science and policy, are being produced simultaneously and interactively. From a co-production perspective, the starting point of analysis is that in many situations it is impossible to make a priori distinctions between the processes of research and policy. Consequentially, an analysis from such a perspective does not start with an a priori separation of research, policy and practice into separate domains, as the traditional distinction between science and policy (with 'facts' and 'values' traditionally being associated with respectively the first and last of these domains) is debunked in this perspective. From a co-production perspective, science "is understood as neither a simple reflection of the truth about nature nor an epiphenomenon of social and political interests" (Jasanoff, 2004: 3). Rather, the notion of co-production - similar to many other STS-work – points towards the tightly interwoven character of science and policy in many domains.

An analysis from a co-production framework sheds a different light on the interactions between researchers, policy makers and professionals as the main question to investigate becomes how the domains of research, policy and practice become distinctive in some contexts (through 'boundary work', (Gieryn, 1995) whilst they seem to be intertwined in other contexts. Much empirical research of scientific advisory work in the STS-field has shown how these boundaries are often rather fluid and largely rhetorical, especially in settings that involve close collaboration. From such an understanding, the two communities metaphor dominating much of the public health literature is a strategically deployed image that needs to be explained rather than a definitive situation taken for granted. It is the *outcome* of a process in which this metaphor has been constructed through boundary work. Consequentially, this process needs to become the starting point of the analysis.

In the empirical context of the ACCs, this has several consequences for the analysis. From a co-production framework it becomes important to 'break through' static understandings of the relations between research, policy and practice domains. Instead, it becomes more important to address the *processes* through which these relations are established, strengthened or loosened. Such a process-focus also implies explicit attention towards the processes of coordination and legitimation work within the ACCs, as the actors involved in the collaborative projects need to establish consensus through mutual adjustment, but also need to be able to legitimize the decisions and choices to their respective organizations. For professionals, this relates to ensuring the practical applicability of research products and results. For policy makers, this relates to issues of relevance and acceptability. For researchers, this relates to the question of how the legitimacy of scientific knowledge can be preserved in a changing context of close collaboration with non-scientific actors (cf. Bekker, 2007).

RESULTS

Based on this co-production perspective, this thesis has therefore also addressed a number of distinctive research questions to investigate the novel format of the ACCs. The ACCs serve as empirical cases to make sense of the relations between researchers, policy makers and professionals, as well as their interactions. The following five research questions were leading the analysis:

1. a. How do the actors within the ACCs balance the perspectives (on research, policy and professional practice) and the accountability demands (of participating organizations and external parties such as the funding organization) in the collaborative research projects?
   b. What 'hybrid management strategies' do they use for this?
   c. What are the consequences of these strategies?
2. a. How do the ACCs, as examples of collaborative infrastructures, develop over time?
   b. What kind of dilemmas and problems do they face and how do they try to solve those?
3. Are the ACCs, as institutional incentives for collaboration, able to meet the goal of facilitating a better integration between researchers, professionals and policy makers (in terms of social learning through 'mutual engagement', the development of a 'joint enterprise' and 'shared repertoire'), and how?
4. How do the changing accountabilities in research (in terms of increased emphasis on societal relevance), policy (the dominance of the evidence based policy discourse) and practice (an increasingly rationalized focus on health care) affect collaboration within the ACCs?
5. a. How can the relationships between science, policy and practice be conceptualized?
   b. How can the ACCs be conceptualized?

As these questions already highlight, there are two levels of analysis in the investigation of the relations between researchers, policy makers and professionals. The first level is that of the research projects, in which different actors need to collaborate. Four extensive case studies of collaborative projects, which focus on the processes through which the actors tried to find a balance between coordinating different perspectives and addressing the different accountability demands, provided insights into this first level. The second level is that of the overarching structure of the ACCs, and how this structure developed within the nine ACCs. The research questions reflect these different levels, as they focus on the processes through which 'socially robust knowledge´ (Rip, 2000) is created, the structures in which the collaborations between researchers, policy makers and professionals take place (and development over time), and the ways to theoretically make sense of these processes.

In order to answer the research questions, this thesis built on a range of qualitative methods, including semi-structured interviews, document analysis, observations and a focus group. I used a multiple and comparative case study approach that consisted of an in-depth investigation of four collaborative

research projects conducted within the format of the ACCs. The thesis further builds on the data gathered through two general interview rounds with the coordinators of the nine ACCs.

This conclusion systematically answers the five research questions. Important theoretical concepts (which are explored in the introduction of this thesis) I draw upon for this purpose are the notions of 'boundary organizations' (Guston, 1999; 2001), 'hybrid management' (Miller, 2001), 'front and back stage regions' (Goffman, 1990) and 'communities of practice' (Wenger & Lave, 1991). These theoretical concepts give further substance to the overarching organizing conceptual framework of 'co-production'. They originate from the same 'interpretive gestalt' (cf. Yanow & Schwartz-Shea, 2006) and enable me to explore empirically the processes of meaning making within the context of the ACCs, the ways in which these meanings are negotiated and constructed, and how they might vary. The conclusion discusses how the theoretical concepts helped me to analyze the ACCs, how these concepts relate and how this thesis can contribute to the further development of these concepts. After reflecting on the research design, methodology and limitations of this study, I will end with outlining the (theoretical and empirical) implications of the findings.

How do the actors within the collaborative research projects of the ACCs balance the perspectives (on research, policy and professional practice) on the one hand and the accountability demands (of participating organizations and external parties such as the funding organization) on the other hand?

Coordination and legitimation work

This question has been addressed through four case studies of collaborative projects, in which I was able to trace the processes through which the actors tried to find a balance between coordinating different perspectives (for example different views on evidence and practical relevance different actors hold) and addressing the different accountability demands the respective organizations impose (for example about what constitutes 'acceptable' or legitimate evidence or what counts as practical applicability). Briefly summarized, one of the findings from the case studies is that balancing these perspectives and the associated accountability demands is a process that requires extensive and continuous work. More specifically, the four case studies highlighted the continuous *coordination* and *legitimation work* that had to be conducted simultaneously. The internal coordination work consisted of balancing perspectives, finding workable solutions for dilemmas, trying to reach mutual agreement on issues

and activities, and reaching compromises. The legitimation work towards participating organizations and external parties such as the funding organization consisted of the process of accounting for the decisions that are made, the compromises that have been reached, and the directions that have been taken to render the collaboration successful to all groups or organizations involved. This confirms the descriptions and analyses of much earlier research (Bijker, Bal & Hendriks, 2009; Hilgartner, 2000; Van Egmond, 2010).

Balancing coordination and legitimation through hybrid management strategies

The crucial question than becomes: how do the actors involved try to do this? In the case studies the stakeholders employed a number of sophisticated strategies. The hybrid management concept (Miller, 2001) served as a useful analytical tool to explore these different strategies used. According to Miller, 'hybrids' can be defined as "social constructs that contain both scientific and political aspects, often sufficiently intertwined to render separation a practical impossibility" (2001: 480). With his focus on hybrid management, he emphasizes the processes by which such hybrids are constructed, taken apart, and ordered in relation to each other. Chapter five analyzed these processes in terms of the four strategies distinguished by Miller:

1) hybridization: the integration or 'putting together' of scientific and political elements in standards and measures (such as environmental standards or economic forecasts);
2) deconstruction: the separation or 'opening up' of these hybrids to reveal the value-laden assumptions that are embedded in them (for example critically examining the assumptions in climate models);
3) boundary work: the establishment and maintenance of dynamic boundaries between science and policy (for example through dividing up responsibilities or explicitly designating certain activities or choices as political or scientific);
4) cross-domain orchestration: the coordination of activities taking place in these multiple domains, even if they appear to be separate (an example of this would be the establishment of an informal working group of research and policy actors discussing implications of research findings).

The case studies demonstrated that productively balancing coordination and legitimation work consists of shifting strategies for hybrid management, depending on the phase of the project. The 'Healthy in the City' case study for example showed how the strategy of boundary demarcation (between

the university department and the PHS) was actively employed in the beginning of the project as a form of legitimation work, as a formal separation of responsibilities was established (the university department was made formally responsible for the research findings whereas the PHS would be responsible for the policy translation). Later, the emphasis shifted towards coordination work through a combination of cross-domain orchestration and hybridization. With regard to cross-domain orchestration, the coordinators engaged in 'expectancy management' to reach a convergence of perspectives. In terms of hybridization, the researchers worked together with the coordinators on the development of policy relevant scenarios that better included the criterion of 'relevance'. The scenarios consisted of both scientific elements (they are based on the model of the Erasmus MC) and political elements (they are linked to the policy program of the PHS), which were fully intertwined. This development greatly enhanced the reception of the preliminary results and can thus be seen as an example of how hybridization can be successful. During the presentation of the results to a broader (policy) audience, the balance shifted again from coordination work to legitimation work. Consequentially, the boundary demarcation strategy became more dominant again and much effort was put in separating the responsibilities of the PHS and the university department.

Various configurations of hybrid management are thus required in order to conduct successful coordination and legitimation work – in other terms: to work simultaneously on accountability issues and mutual consensus building. The empirical material highlighted that hybrid management strategies may be used by different groups at different moments, may reinforce or contradict each other, and may be more or less effective at different points in time. But which kind of configuration seems to be most successful and under which circumstances?

More and less successful instances of hybrid management

The empirical material presented in chapter five allows me to provide some tentative answers to this question. First of all, it is important to acknowledge the purposes of the different hybrid management strategies, as some of these strategies aim to reach mutual consensus or agreement (usually in a 'back stage setting') whilst other strategies serve to establish legitimacy (usually in 'front stage settings') (cf. Goffman, 1990). This distinction is important as front stage processes more often emphasize boundaries between science and policy, while in the backstage these boundaries are deliberately downplayed.

With this distinction in mind it seems to be that hybridization and cross-domain orchestration are particularly suitable as 'back stage strategies'. The

strategy of boundary work or boundary demarcation seems to be more ambiguous. In some cases and at some moments, this strategy was successful, for example in terms of how policy makers perceived the research findings. The empirical material showed, however, that a negative side effect of this strategy was the exclusion of crucially important groups. The strategy of deconstruction became quite problematic in some of the projects, especially when this strategy was used by groups outside of the collaboration (as this could easily undermine confidence in the research conducted). Such strategies then require continuous and active monitoring to be countered. When such strategies are utilized within the collaboration, a combination of cross-domain orchestration and boundary demarcation seems to be suitable to provide some counterbalance.

To which extent are the ACCs, as institutional incentives, able to meet the goal of facilitating a better synergy between the perspectives of researchers, professionals and policy makers?

ACCs as facilitating structures for the development of 'communities of practice'

For the clarity of the argument, the sequence of the research questions has been turned, so that the third research question will be addressed before the second one. This is due to the fact that I use the concept of 'communities of practice' for the answering of both questions. However, for the purpose of the third question it is important to explore the central elements of this concept, whereas for the second question some brief remarks about the concept suffice. To answer this research question, I further draw upon the empirical material of the four case studies. Theoretically, the CoP concept is particularly relevant to explore this question as it is seen within much knowledge management literature as a key aspect to organizational learning, informal problem-solving, building mutual commitment and integrating research and practice (Wenger, McDermott, & Snyder, 2002; Hildreth & Kimble, 2004; Lesser & Storck, 2001). Wenger et al. (2002), define CoPs as "groups of people who share a concern, a set of problems, or a passion about a topic, and who deepen their knowledge and expertise in this area by interacting on an ongoing basis" (Wenger et al., 2002:4). In this general definition there are clear parallels with the collaborative projects in the ACCs, which also entail groups of people who share the general concern of a poor 'fit' between research evidence, policy development and professional practice (based on the perceived substandard quality of policy and practice) and who deepen their understanding of this problem by interacting regularly.[57]

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57 An interesting point to be made here is that in the discourse on the ACCs the means

However, the parallels go beyond this general definition. One of the main ideas behind the development of the ACCs is that increased interaction and collaboration between researchers, policy makers and professionals will result in an increased understanding of each other's perspectives, goals and aims. The assumption therefore seems to be that the different perspectives of these groups can be brought together through sustained interaction. The ACCs thus function as overarching structures that facilitate different collaborative projects that have the potential of developing into CoPs. Therefore, this research question mainly addresses the extent to which the ACCs were able to facilitate this development of CoPs.

Characteristics and currently neglected elements of CoPs

In order to do so, this thesis moves beyond the general definition as provided by Wenger et al., which is too general for analytical purposes. In chapter six I further unraveled this notion in order to focus on its central indicators as well as neglected elements. A literature study showed that the main indicators that were most commonly used to describe the extent to which CoPs developed were 'mutual engagement' (the level of communication and interaction and the development of 'thick' relationships), 'joint enterprise' (a shared sense of coherence and purpose and a common set of tasks) and 'shared repertoire' (shared experiences and a mutually understood set of common vocabulary) (Wenger, 1998; Buysse et al., 2003; Iverson & Mcphee, 2002; Vaast, 2004). In order to answer this research question, I therefore first analyzed the extent to which these indicators could be seen in the four collaborative projects that served as case studies. However, the literature study also revealed quite some critical comments with regard to the CoP-notion, mainly focused on important issues that are overlooked by the concept. The three most common 'neglected issues' – the roles of power, trust, and predispositions in the development of a CoP – have therefore also been analyzed.

Synergy between perspectives?

The case studies showed that the extent to which the structures of the ACCs are able to facilitate a better synergy between perspectives is mixed. The ACCs are partially able to facilitate a better synergy between perspectives. The case studies showed how some of the project groups started to resemble CoPs in

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and ends to which the ACCs were originally developed seem to become confused: the ACCs and the establishment of collaboratives seems to be more often presented as an end rather than as a *means* to improve public health. This point will be elaborated in the discussion.

certain aspects. For example, in several case studies the development of combined instruments such as mutually developed scenarios or questionnaires can be seen as instances of a 'shared repertoire' that is being developed. Another example is the increased 'mutual engagement' that becomes visible in several case studies, for example through sophisticated communication structures that greatly facilitated mutual learning and the development of shared experiences.

The case studies however also highlighted where this resemblance to CoP groups did not work out yet. In all case studies, the neglected power-, trust- and predisposition-elements were closely related to the development of CoP characteristics. Moreover, these 'neglected issues' always have different, specific meanings in the contexts to which they relate, influencing the collaboration in specific ways. Especially when power-issues become negatively dominant, it becomes difficult to achieve a better integration of different perspectives as the room for negotiation becomes smaller. In the case studies, this could be seen in several ways. First, the external demands placed on a project by the US program developer requiring a specific research design that was considered problematic. A second example relates to the strategic demands of the involved medical centre, influencing the collaboration by limiting the space for negotiations of different perspectives.

Ambiguous relations between CoP development and the organizational structures of the ACCs

The ACCs, as institutional incentives, turn out to maintain an ambiguous relation with the collaborative projects with respect to their potential to facilitate the development of CoPs. The ambiguity can be explained by using Thompson's (2005) distinction between 'seeding structures' and 'controlling structures'. Thompson focuses on how organizational structures influence the cultivation of CoPs. He argues that an organizational structure supporting interactive communication and strong personal identification is likely to be more successful in cultivating CoPs than one emphasizing centralized, top-down control. *Seeding structures* refer to such structures. They are non-prescriptive and indirectly 'seed' future collaboration through providing people with the instruments and points of focus that are required as a basis for communicative interaction. *Controlling structures*, on the other hand, attempt to directly control collaboration by introducing control mechanisms such as best practices and targets.

An analysis of the ACCs in terms of Thompson's typology reveals the ambiguities rather clearly. On the one hand, many formats that have been developed in the ACCs can be interpreted in the framework of seeding structures (such as intervision meetings, theme groups, brainstorm groups, etc.). The ACCs can be argued to 'seed' collaboration by organizing the formats through which the

different groups can meet and exchange ideas. However, other developments contradict this aim. Through developing formal rules and criteria to which projects should conform, many ACCs also bear close similarities to Thompson's controlling structures. Furthermore, there is much emphasis on formal evaluations of the ACCs and some ACCs also show increasing formalization in terms of guidelines and criteria. Although in theory the ACCs provide the seeding structures for CoPs to develop, in practice these turn out to be more ambiguous.

This ambiguity has been enhanced by the role of the funding organization in the development of the ACCs. One the one hand, the official program text depicts the ACCs as innovative new collaborative formats that need time to develop, while on the other hand a wide range of evaluative techniques and practices has been established in an early stage (yearly progress reports, an interviewer conducting site visits, more site visits by the program committee, the way in which our own research project was perceived). In a way, the tension between seeding and controlling structures is also reflected in the difficulties the funding organization seemed to have had in finding a balance between strict evaluation and providing the space for ACCs to develop.

How do the ACCs, as examples of collaborative infrastructures, develop over time? What kind of dilemmas and problems do they face and how do they try to solve those?

In public health literature there is increased emphasis on the need to develop structural partnerships or collaborations (Lomas, 2000; Innvaer et al., 2002; Nutley, Walter & Davies, 2003; Jansen et al., 2008; Mitchell et al., 2009; Nutley, 2003; Young et al., 2002; Lencucha et al., 2010). However, far less attention has been paid towards how such partnerships actually work out in practice and develop over time. In line with the process-focus of this thesis, an explicit emphasis on how the partnership structure of the ACC changes and develops over time – and what consequences that has in terms of collaboration – may provide relevant insights into the changing character of dilemmas such collaboratives face. For this purpose, this thesis mainly builds upon the two series of interviews with the coordinators of the ACCs. These interviews, complemented with an analysis of the documentation of the ACCs, such as progress reports, and with an additional focus group meeting, provided a comprehensive image of how the ACCs have developed and which dilemmas needed to be addressed in the course of this development.

Development phases in the ACCs

In order to answer this research question, this thesis theoretically built upon Wenger et al.'s (2002) development scheme of 'communities of practice' (CoPs). Wenger's notion of CoPs is useful for this purpose as it originates from a social learning perspective. In order to establish fruitful synergy between the different domains within the ACCs, social learning is thus important. The CoP concept describes the progress in social learning within informal networks. The ACCs are supposed to enhance such networks and learning. Wenger et al. (2002) identified several development phases of CoPs, with each phase characterized by different dilemmas and possible solutions. The CoP development phases thus emphasize the changing character of the dilemmas such (collaborative) communities face.[58] As such, the concept provides input for the analysis of the ways in which the ACCs have developed in recent years.

In broad lines, the ACCs seemed to follow a general development pattern, in which five different development phases could be distinguished.[59] Although the phases are not as clear-cut in practice as they are presented here, the distinction nevertheless is of analytical use as it enables me to unravel the changing character of the dilemmas the ACCs face in their development. The first general stage in the development is the *start-up stage*. In this stage, the ACC is formed, collaborative agreements between parties are written and signed, and a first infrastructure is developed. The second stage is the *stage of expansion*. In this stage the ACC starts to grow exponentially: its network expands, new groups and organizations join the collaboration and new projects are being developed. The third stage is the *stage of reflection*. After a period of growth, this is the stage in which a temporary pause is made and the ACC starts to reorient itself towards its initial goals. The fourth stage is the *stage of aimed focus*, where there is room for further expansion, albeit now focused on specific elements. The fifth stage is the *stage of consolidation*, where the consolidation of results and processes becomes a central element in the collaborative.

Changing dilemmas

The ACCs need to deal with different kinds of dilemmas over the course of their development. Each stage is characterized by other dilemmas. These dilemmas are thus not stable, but change significantly over time. As the dilemmas the ACCs

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58 Regardless of the conceptual difficulties associated with the CoP concept as described in chapter six, the development scheme is a useful tool for the purpose of answering this particular research question.

59 These are slightly diverging from the CoP phases, see chapter seven.

face differ, much effort needs to be put into making sure they are properly addressed in each 'development phase'.

The main dilemmas in the transition from the start-up stage to the expansion stage are related to the small size of the ACCs. This limits the number of projects that can be started and makes it difficult to show the added value of the ACC from the first moment. In the transition from the expansion stage to the reflection stage, in contrast, the exceptional growth can become problematic. With new parties joining the ACC and numerous new projects being developed, the general structure of the ACC often becomes less clear. Furthermore, the increased divergence of activities makes coordination between groups more difficult and sometimes less informal. The transition from the reflection stage to the stage of 'aimed focus' is characterized by dilemmas related to adjusting priorities and adequately positioning the ACCs in their regions. In the transition from the stage of 'aimed focus' to the consolidation stage, the main dilemmas relate to issues of organizational incorporation and finding structural financial resources.

Development strategies

Chapter seven also distinguished between two development strategies that were frequently employed and that can be seen as different strategies for dealing with the dilemma's. These strategies can be labeled an 'external development strategy' and an 'internal development strategy'. Both highlight different paths, bring about different consequences, and have different advantages and disadvantages.

Within the *external development strategy* the ACCs mainly focus on facilitating growth, developing new projects and starting up new themes. The ACC then also aims to incorporate new parties that can contribute to these new projects and themes. In some cases, the ACCs require additional expertise and thus try to expand their network of participants. The main advantage of this strategy is that it enables the ACC to become more visible within the region it operates. If the main aim of the ACC is to develop new projects and enable new organizations and departments to join, this heightens its regional visibility. An important downside of this strategy, however, is that the visibility *within* the participating organizations often remains limited to a small number of people.

In contrast, ACCs predominantly working from an *internal development strategy* aimed to gather internal support within the organizations that were originally involved in the collaboration. Within this strategy, the ACCs aim to firmly establish themselves within these core organizations. Rather than focusing on regional spread, ACCs operating from this strategy aim to involve a wider

range of participants from the originally involved organizations. The main advantage of this strategy is that the ACCs are more capable of developing a strong internal position within the organizations that are involved. Such a continuous investment in relationships can lead to a more 'natural position' for the ACC within these organizations. However, this strategy also generally comes at the expense of the broader regional visibility of the ACC. From the perspective of an outsider, the ACC may seem to stagnate.

Within developing collaborations, a conscious choice thus needs to be made about which priorities are considered more important, whilst recognizing the advantages and disadvantages of both strategies.

Consolidation strategies

An important issue that was ubiquitously present within all ACCs, was how to make sure that the activities, instruments and products that have been developed will be consolidated when the external funding ends. Also with regard to this consolidation issue, two distinctive strategies of how ACCs tried to deal with this could be identified. These consolidation strategies can be labeled a 'strategy of organizational consolidation' and a 'strategy of conceptual consolidation'.

The *strategy of organization consolidation* entails that the ACCs strive to consolidate their activities through formalizing them within the connected organizations. They try to achieve this through positioning the agreements and working methods of the ACC within the existing procedures and task descriptions of the involved organizations or by connecting to already existing formats for facilitating interaction. On the other hand, ACCs working from a strategy of conceptual consolidation place less emphasis on formal arrangements. Rather, their primary focus is placed towards establishing the *concept* of the ACC and towards making sure that this concept and the implications of it for ways of collaborating are widely spread and carried within the involved organizations.

Also here we see that both strategies (which do not necessarily contradict each other, as both can be applied in different amounts) come with advantages, but also with disadvantages. For the strategy of organizational consolidation, an advantage is the level of continuity it provides: procedures and task descriptions are clearly described, making these more easily transferable to other persons. The continuity of the ACC is therefore better safeguarded against shifts in the workforce. However, a disadvantage of this strategy is the loss or decline of the informal character of the collaboration, as increased formalization of activities and tasks makes it more difficult to quickly and informally address problems that may occur. The main advantage of the strategy of conceptual consolidation is related to the increased recognition of the ACC, as the activities of the ACCs

become secured in the beliefs and convictions of its participants. The ACC becomes secured not because of its formal place, but because the participants believe in the idea and goals behind the collaboration. However, this seems to be much more difficult to achieve.

Since both strategies have important advantages and disadvantages, the main actors within the ACCs continuously need to establish their priorities (which can differ in the different development stages) and find the strategy that best fits these priorities. In other words: next to the previously identified coordination and legitimation work, the ACCs are also involved in what can be labeled as continuous *development work*. This development work consists of acquiring insights into what the main priorities of the ACC should be at different moments, and a conscious reflection on the consequences the different strategies entail. For example, if the main goal is to become a visible and dominant regional player in the field, an external development focus may be the best strategy, whereas an internal focus may be more suited if the primary objective of the collaboration is to develop 'thick' mutual relationships and increased trust amongst its participants.

How do the changing accountabilities in research (in terms of increased emphasis on societal relevance), policy (the dominance of the evidence based policy discourse) and practice (an increasingly rationalized focus on health care) affect collaboration within the ACCs?

Changing accountabilities in public health research, policy and practice

The last research question focuses on the broader contexts in which the ACCs operate. These contexts reflect different developments in terms of research, policy and practice. Many scholars have pointed toward the apparent erosion of scientific status in many contexts (cf. Bijker, Bal & Hendriks, 2009; Braun & Kropp, 2010). Research is increasingly assessed in terms of societal relevance: scientists are expected to deliver 'socially robust knowledge' that is not only scientifically reliable but also takes into account demands from societal actors outside academia (Gibbons et al., 1994; Nowotny, Scott, and Gibbons, 2001). At the same time, the Dutch public health sector can be characterized by a 'scientization' of policy and practice rather than the 'socialization' of research. Evidence-based work processes are growing in importance and public health policies and practices are expected by both the Dutch Ministry and the Health Care Inspectorate to use the best available evidence (i.e. systematic reviews) in order to optimize their activities (cf. Slob & Staman, 2012). Within this context, strong scientific criteria become more emphasized whilst criteria of practical

usability become relatively less important (a point that has been explored empirically in chapter five).The ACCs thus operate in a context of changing accountabilities in research as well as policy and practice settings.This question addresses how these changing accountabilities work out within the practice of the ACCs.

Converging accountability criteria?

One of the central assumptions in some of the literature on changing accountabilities in the research system is that there is a convergence of research objectives and societal problems (Gibbons et al., 1994; Nowotny, Scott & Gibbons, 2001).These authors assume a relatively straightforward integration of research and other societal actors in terms of transdisciplinary research groups, and an increasing array of involved stakeholders both from within and outside the scientific community.[60]

However, while in theory the different accountability criteria may seem to be converging, an important conclusion of this thesis is that these criteria are much less easily intertwined, or even considered equally important, within the ACCs than is assumed in much of the above mentioned literature. Contrary, the analysis in this thesis reveals the *paradoxical and disproportionate ways* in which these changing accountabilities affect the collaboration within the ACCs. Rather than an easy convergence of accountabilities, this thesis underlined the continuous struggle with the different accountability structures the actors in the ACCs face. What is considered as 'appropriate' evidence and 'socially relevant' knowledge may differ greatly, not only between research and policy or practice actors, but also between different scientific traditions. For example, in the 'Primus' case study one group of researchers maintained a very strict view on appropriate evidence, which was defined as a systematic review.[61] In this case study it also became clear that these particular research actors interpreted the criterion of 'practical relevance' differently than some of the professionals working within the PHS. Whereas the former interpreted this criterion as research being "based on a practical question" (that consequentially can be solved in a traditional scientific approach), the latter group considered practical relevance to be related

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60 An interesting parallel can be drawn between this kind of work and much of the managerial literature on 'communities of practice'. Both strands of literature assume a relatively easy convergence of different perspectives and accountabilities, whereas this thesis places strong question marks with such an assumption.

61 This strict definition of evidence is especially persistent in public health settings and stems from a medical orientation towards 'appropriate' evidence (cf. Timmermans & Berg, 2003)

to practical products to which the project should lead. Here, practical relevance was defined in the usefulness of these concrete products.

Chapter five of this thesis analyzed what this paradoxical and disproportionate character of the different accountabilities entails. The paradoxical character is related to the peculiar 'balancing act' actors within the collaboration face. The coordination and legitimation work acquired for this balancing act may paradoxically become more difficult to achieve when the collaboration is put under a magnifier. It even may have counterproductive effects, because when the balance shifts too heavily towards issues of legitimacy, the room for internal discussions and mutual adjustments becomes threatened. In other words: when each decision needs to be legitimized (towards the participating organizations, but also towards the funding organization), it is hard to reach consensus about anything. I will elaborate on the (practical) consequences of this finding in the discussion.

The theoretical notions of 'front stage' and 'back stage' settings (Goffman, 1990; Hilgartner, 2000) help to explain this. According to Goffman, on the front stage, individuals deliver performances to an (external) audience. These performances make apparent that the activities employed maintain and embody certain standards. The back stage, by contrast, is a room for insiders, where the impression fostered by the performance is knowingly contradicted as a matter of course. Here the performer can step out of character. What can be learned from this is that hybrid management strategies are likely to differ in front stage settings when compared to the strategies used in back stage settings. An overemphasis on the front stage, however, makes some strategies (for example 'deconstruction') more difficult to use. The high visibility of the ACCs, as well as the persistent promotion of the funding organization, therefore paradoxically led to a decrease in the room for consensus-seeking within the ACCs.

Chapter five also showed the disproportionate ways in which the different accountabilities were often weighed in the ACCs. While the criterion of societal relevance was (expected to be) a primary part of the ACCs, the analysis showed that scientific quality criteria are still decisive in many instances. For example, adjustments to scientific criteria were often seen as improvements of the collaborative study design, whereas adjustments to policy and/or practice quality criteria were regularly seen as (potential) deteriorations of the design and usually required a substantial crisis before they were included. Partly this is related to the way in which the ACCs are conceptualized: the term 'academic' in its title (criticized by many practitioners) also raises such disproportional weighing of criteria. I will come back to this point at the end of this conclusion.

DISCUSSION

Before concluding with the theoretical and practical implications of this thesis, this discussion will pick upon a number of unexplored issues. First, I will summarize the added value of the co-production framework in understanding the relations and interactions between researchers, policy makers and professionals within the ACCs. Second, I will reflect on the relations between the various theoretical concepts I have used throughout my analysis. Third, I will reflect on the interpretive research design and methodology I have applied. Fourth, I will discuss the limitations of this study. Fifth and finally, I will reflect on my role as a researcher (which includes a discussion of the relationship between my thesis, the broader research project of which I was a participant, and the role of the funding organization in this broader project).

The added value of the co-production framework

The preceding pages provided answers to the main research questions that formed the core of this thesis. It is now time to pick up on the main goal of this thesis, which was an investigation of whether a conceptualization of research/policy/practice relations in terms of a co-production framework enables a better understanding of these relations and interactions than the 'two communities' perspective is able to provide. Does this framework lead to more suitable and productive ways to understand these relationships? Does it provide more descriptive power? And if it does, then what are the theoretical and practical implications of such a perspective? What can we learn from a co-production framework? These questions are all closely related to the fifth – conceptual – research question of this thesis.

Throughout the chapters, this thesis has shown that an analysis of research/policy/practice collaborations from a co-production framework provides a more detailed understanding of how such collaborations work. This perspective adds complexity, analytical depth and level of detail to the more static depictions of research/policy/practice relations in the two communities tradition (with some exceptions, for instance see Lin & Gibson, 2003; Horstman & Houtepen, 2005; De Leeuw et al., 2008). In this thesis I showed that the commonly depicted image of research and policy (or practice) as 'two communities', and the consequent focus on addressing 'gaps' that need to be 'bridged', is only part of the whole story and cannot explain fully the processes of interaction that occur within structural collaborations such as the ACCs. Rather than starting from the perspective of research, policy and practice as necessarily distinctive worlds, a co-production perspective investigates empirically how they *become*

distinctive through boundary work in some contexts and are brought together in different contexts. Usually, the process of distinction relates to the front stage depiction that is used to legitimate back stage processes of negotiation and consensus seeking (cf. Stone et al., 1998).

An overview of the most important differences between 'two communities' and 'co-production'

In general terms, table one provides an overview of the main differences between the two communities framework and the coproduction framework. What will immediately become clear is that the distinctions are large, relating not only to perceived solutions for the coordination of activities amongst multiple domains, but also to different problem perceptions and the use of a different discourse or general terminology. After presenting this table, I will summarize some of the empirical examples provided in the preceding chapters in order to illuminate the added value the co-production framework can provide in understanding collaborative formats such as the ACCs.

Table 1: overview of differences between 'two communities' framework and 'co-production' framework

.	'Two communities' tradition	Problematic aspect	'Coproduction framework'	Added value
Research / policy coordination	From research to policy (linear process)	Tends to focus on the non-use of research. Neglects the process of scientific knowledge production.	Coordination of research and policy (simultaneous and co-constructive process)	Extends analysis to include process of knowledge production
Problem:	Poor uptake of research findings Lack of 'linkage and exchange'	Inhabits linear view in which research is conducted separately and prior to its use Assume a basic and absolute distinction between objective knowledge and subjective values.	Successfully balancing adjustment/ consensus and accountability	Recognizes that conducting research and establishing societal relevance are not separate phases, but need to be conducted simultaneously
Perceived solutions:	Identifying facilitators and barriers to research uptake, identifying conditions 'Building bridges' between domains, knowledge brokering	Facilitators and barriers change over time and context. Facilitators and barriers do not say anything about the difficulties of balancing adjustment and accountability issues.	Identifying suitable 'hybrid management strategies' Understanding the workings of – and relations between - front stage and back stage processes	Hybrid management explores both how research and policy become closely intertwined and how they become separated. Front stage / back stage draws attention to difference between 'internal' consensus seeking and 'external' accountability issues.
Research / practice coordination	From research to practice (linear process)	Interventions are expected to be easily disseminated to other settings and contexts	Coordination of research and practice (simultaneous process)	Preventing the problems associated with linear implementation-perspective

Table 1: overview of differences between 'two communities' framework and 'co-production' framework (continued)

.	'Two communities' tradition	Problematic aspect	'Coproduction framework'	Added value
Problem:	Lack of implementation / dissemination of successful ('evidence-based') interventions	Aggregated scientific knowledge is prioritized over practice, or even tacit knowledge (on organizational complexity).	Effects of rationalized health programs on local practices, 'travel expenditures'	Takes the costs of standardized/ rationalized programs (in terms of how the program affects practices, unintended consequences) into account.
Perceived solutions:	Better adherence / compliance, identifying factors influencing compliance, highlighting best practices, spread, dissemination	From this perspective, it is health care professionals' and participants' non-adherence that causes these interventions to fail.	'Articulation work', 'reinvention' of health programs in new contexts together with user groups	Acknowledges many ongoing (and usually invisible) efforts of negotiation and stabilization required to make interventions 'work' in different contexts.

Empirical examples of the additional analytical power of the co-production framework

Throughout the chapters, this thesis provided numerous empirical examples of how this perspective enables a more thorough analysis than the two communities framework is able to provide. Chapter three showed how an analysis of the Healthy in the City project from this perspective provided insights into otherwise unanswered questions. For example: how could the strictly maintained role division between the university department and the PHS be understood while simultaneously we saw continuous involvement and discussions during the project? And how did the formal responsibility of the PHS relate to the active role of the researchers in presenting the findings? The co-production framework is better able to explain such apparent inconsistencies or contradictions. Here, the added value of an analysis based on the co-production framework was to show that the distinction between what counts as 'science' and what counts as 'policy' was only one side of the story. On this 'front stage', the two communities metaphor was actively played out for legitimation purposes, while 'back stage', a transgression of boundaries could be seen. In terms of table 1, the analysis based on the co-production framework showed how the boundaries between research and policy were presented more strictly for legitimation purposes. It highlights how the front stage presentation of two communities was the *outcome* of an intense process of negotiation and mutual adjustment

that took place back stage. An analysis departing from the two communities tradition would arguably be more likely to miss out on these nuances.

Similarly, chapter four provided empirical examples that go against an understanding of science and practice as separate communities. Rationalized health programs such as the PreCare case study cannot be explained fully by discussing them in terms of implementation *from* research *to* practice. Rather, the chapter showed the amount of work required to make this 'implementation' successful (cf. Kok et al., 2012). The analysis showed how the trial design disciplined the nurses, how it redrew boundaries between groups, and to which extent the nurses were able to reshape some of the aspects of the program. In general, the analysis highlighted how research and practice are co-produced, despite the rationalized aura many of these programs adopt. In line with other authors investigating standardization practices in medical settings, such a perspective highlights how research and intervention protocols always involve active tinkering and re-articulation to make them workable in practice (Timmermans & Berg, 1997; Zuiderent-Jerak, 2007). Whereas from a two communities framework, the analytical focus would be on how guidelines or intervention protocols are implemented into medical practice, the co-production framework addresses attention towards how the development of guidelines is closely intertwined with organizational changes (cf. Timmermans & Mauck, 2005).

The cross-case analysis presented in chapter five also provides numerous empirical examples that show how the co-production framework is able to account more fully for the meticulous balancing work between consensus seeking and accountability that is being conducted (in terms of hybrid management strategies) in the projects. For example, when investigating the different hybrid management strategies used in the 'PreCare' case study, this co-production framework enabled me to place attention towards the tension the researchers felt between clear boundary demarcations on the one hand (ensuring the scientific character of the intervention) and cross-domain orchestration on the other hand (reducing the risk of alienating the practitioners conducting the intervention that was under investigation). Again in terms of table 1, it would be much more difficult to adequately explain this tension in terms of a two communities framework in which the main issue is a lack of implementation and the solution is better adherence.

An understanding of how natural and social orders in science and policy are being co-produced thus sheds a different light on the interactions between researchers and policy makers. Throughout this thesis I argued – and showed with a range of empirical examples – that it can lead to an additional step in theorizing science-policy-practice interactions. With this additional step, the

focus then is not so much on how research results may be better implemented in policies or practices, but on how an acceptable balance between coordination and accountability is achieved. This thesis offered the conceptual tools to work on such analyses of collaborations.

Co-production: remaining questions?

The discussion also provides an opportunity to come back to some of the questions about co-production that have been articulated within the field of public service management. Nutley (2010) discussed three questions: 1) where does research co-production begin and end?; 2) are there dangers in analyzing the barriers and experiences of co-production through the lens of the 'two communities' view?; 3) is research co-production facilitated by clear boundary maintenance between the relevant communities or do boundaries inevitably become blurred*?*

This thesis provided insights into the second and third of these questions. Indeed, the main thrust of this thesis has been to argue that there are indeed dangers in analyzing the barriers and experiences of co-production through a 'two communities'-lens. Rather, these two lenses are inherently incompatible because they originate from fundamentally different epistemological vantage points. The third question has been dealt with most explicitly in chapter five. This chapter showed that it is not the maintenance or blurring of boundaries *per se* that needs to be advanced as *the* strategy to 'facilitate' co-production. Rather, it is the *process* of how boundaries are constructed, maintained or re-drawn, the ways in which the science-policy and science-practice interface is shaped and re-shaped that needs to be the analytical focus. The chapter showed that in some situations and for some purposes, the blurring of boundaries was productive, while in other situations and for different purposes, the maintenance (or rather, construction) of clear boundaries proved more useful. What the notion of co-production highlights, is that *both* aspects need to be explained.

The first question Nutley poses has not been explicitly discussed in this thesis. The question of where co-production begins and ends is saturated with philosophical and epistemological debates that underlie the different positions that can be taken. Whilst it is far beyond the focus and possibilities of this conclusion to analyze these debates, in general terms I think it is possible to distinguish between at least two forms of co-production, which could be labeled *radical co-production* and *moderate co-production*. This distinction can provide at least some insight into the question of 'where co-production begins and ends'. From the view of moderate co-production, it is recognized that within *structural* collaborations between researchers, policy makers and professionals (whether

this refers to settings such as the ACCs, advisory organizations, think tanks or other formats) it is difficult to distinguish clearly between what counts as 'science' and what counts as 'policy'. Within such settings, there is much overlap between these domains and the boundaries between them are often blurred and ambiguous. The more radical form of co-production extends this argument further and claims that there are no *principal* distinctions between science and policy (science is a social practice which is inherently political and normative), knowledge and power, or even nature and culture. From the view of 'moderate co-production', co-production begins in settings where there are structural relations between researchers and policy makers or professionals. From the view of 'radical co-production', there is no beginning and end as science and policy are not distinguishable in principle (which obviously does not mean that there are no differences whatsoever). Therefore, the answer to the question of where 'co-production begins and ends' is greatly dependent on the position one maintains on this spectrum from moderate to radical co-production.

Relations between the various theoretical concepts

In my thesis I drew on a range of different theoretical concepts, such as 'boundary organizations' (Guston, 1999; 2001), 'hybrid management' (Miller, 2001), 'front and back stage regions' (Goffman, 1990) and 'communities of practice' (Wenger & Lave, 1991).

The boundary organization concept has been developed in STS literature. It originates from a mixture of sociological investigations into boundary work and political-economic approaches of principal-agent theory (Guston, 1999). It has a more organizational focus than the notion of boundary work, analytically emphasizing the structures in which such boundary work is conducted. For this thesis, it provided me with a useful tool to emphasize both the processes of coordination and legitimation work – or the processes of reaching mutual adjustment while simultaneously addressing the broader accountability structures that influence the collaboration. The concept enables me to focus on the 'internal negotiation space' the ACCs are able to provide and to investigate how potential conflicts between research, policy and practice domains are internalized while at the same time the actors struggle to maintain accountable to their different principals.

The hybrid management concept also originated within STS literature. It can be seen as an adaption of the boundary organization concept in order to focus more on the practices and processes within science/policy hybrids rather than their organizational structures. This particular concept enabled me to explore the *specific strategies* (and their combinations) that were used by actors within

collaborative project to deal with the balancing of mutual adjustment with accountability demands. Both concepts focus on demarcating *and* bridging different domains. However, the hybrid management offers a nice addition to the notion of boundary organizations as it more specifically addresses what kind of strategies are developed within the 'internal negotiation space' of the ACCs.

Goffman's notion of front stage and back stage regions has its origins in sociology and takes a symbolic interactionist view on how people 'manage impressions'. The concept is helpful as it directs analytical attention towards the distinction between the discussions and debates *within* the collaboration and the ways in which the actors involved in this collaboration strategically position themselves to the different principals involved *outside* of this collaboration. It thus further explains how hybrid management strategies may differ between external and internal purposes. The hybrid management strategies, on the other hand, show how the transition between front stage and back stage is managed in collaborative research settings such as the ACCs.

The community of practice concept was empirically developed from a social learning perspective. It has been a dominant concept in the field of knowledge management. While this concept may seem to deviate from the origins of the other concepts, the origins of the CoP concept are within grounded, detailed empirical work close to a constructivist approach emphasizing learning *in practice* (Wenger & Lave, 1991; Orr, 1996; Brown & Duguid, 1991). In this sense, in terms of philosophy of science, it originally falls into the same tradition as the previously mentioned concepts (notwithstanding the fundamental breach that can be seen in how this concept is used in much managerial literature nowadays). The CoP concept has been helpful in exploring the extent to which the ACCs are able to facilitate mutual learning and an integration of perspectives. In this respect, the concept helps not only in interpreting the processes within the ACCs, but also in investigating some of the outcomes (in terms of CoP-indicators).

In sum, the combination of concepts enabled me to analyze several aspects of the ACCs: the processes of coordination and legitimation work conducted within collaborative research settings (and the strategies developed for successfully balancing both processes), the (changing) structures in which these processes are embedded, and the extent to which the ACCs are able to facilitate an integration of perspectives.

Reflections on research design and methodology

When I started working as a PhD student at this project, I defined the focus of my research broadly as 'gaining an understanding of what is going on in the

ACCs as collaborative format', both on the level of the ACCs in general, but also more specifically focused on projects conducted within this infrastructure. Over time, while analyzing the first series of exploratory interviews with the nine coordinators of the ACCs, selecting the case studies of collaborative projects, and examining the different strands of literature on this topic, this general question became more focused and resulted in the preceding four research questions.

The research questions thus have been developed through an iterative process of data collection, analysis, theoretical examination, interpretation and reinterpretation, a process quite common for interpretive qualitative research. Yanow & Schwartz-Shea (2006) argue that while interpretive qualitative research may not be 'rigorous' in the sense of a strictly defined, stepwise approach of hypothesis formulation, research design, data collection, analysis and drawing conclusions, this does not mean interpretive research is not carefully designed and crafted and systematically carried out: interpretive does not mean impressionistic. Interpretive qualitative research focuses on sense-making: how can we as researchers make sense of the phenomenon we are investigating? This sense-making is necessarily bound to the researcher, who does not hold the traditional, distanced, 'impartial' position which is usually attributed to this role, but rather is considered to be always *involved* or immersed in the setting he is studying. Interpretive research rejects the possibility of such an impartial position:

> Interpretive philosophies reject the human possibility of such social scientific mirroring [of science and its theories as holding a mirror up to nature]. In their view, social realities and human knowledge of them are created by human actors through our actions and interactions. We are not and cannot be outside of them […]. Theories, in this view, do not mirror the social world; they constitute interpretations of it. […] Interpretive research challenges the idea that understanding is even possible from a position of cognitive externality (Yanow & Schwartz-Shea, 2006: 75).

The question is how these interpretations can become credible or trustworthy – in other words, how to judge the quality of such interpretations.

Several quality criteria have been built in to ensure the credibility and trustworthiness of the claims and interpretations this thesis has presented. These relate to the most common criteria for interpretive qualitative research (and indeed, many are characteristics of qualitative research in general). First of all, I synthesized all data from the case studies in *thick descriptions* (Geertz, 1973).

Thick description refers to the presence of sufficient detail in the analysis of an event, setting, or person to be able to capture the context-specific nuances of meaning. In other words: the analysis has to be sufficiently detailed to validate the interpretations by the researcher. I wrote a detailed report on all case studies, explaining not only the actions, interactions and decisions in terms of collaboration in detail, but also included a description of the context and meanings of these.

Secondly, I made extensive use of *member checks*. In interpretive research, member checks mean more than simply sending back an interview transcript: it means 'going back' to the people studied for an assessment of the interpretations made. This enables the researcher to address the potential gap between his own interpretations and the interpretations of research participants (and thus adds an additional analytical and reflective layer to the research, without necessarily meaning that these interpretations should always overlap). In my research, both the interview transcripts and the case reports have been sent back to (key) respondents for the purpose of member checking. Furthermore, in the case of observations, the field notes based on these observations were also sent back to the contact persons to allow for member checking. Most comments were related to small factual errors, which have been corrected in later versions. The focus group that has been organized to discuss several statements related to the development of the ACCs can also be seen as a form of member checking.

The most widely known criterion is that of triangulation. It refers to the use of at least three different analytic tools (these can be different methods, or different theoretical concepts, etc) in the analysis of a phenomenon. In my research, both triangulation of sources (interviews, formal and informal document analysis, observations), and researcher triangulation (discussing analytical codes within the research team) took place.

In terms of the trustworthiness of the analytical interpretations, then, my thesis made use of several of the available quality criteria for interpretive research. Nevertheless, the specific way in which the ACCs are conceptualized here are obviously closely related to the kinds of theoretical concepts used. In this sense, an analysis of the ACCs from a different theoretical perspective would undoubtedly highlight different elements and place different accents. Likewise, while the use of the theoretical concepts described above enabled me to focus on the processes of coordination and legitimation work within the ACCs, it also led to a specific focus on dilemmas, tensions and debates within the collaborations (as well as how these were dealt with). In this sense, the analysis may slightly overemphasize the problematic aspects encountered in the collaborations, although

this may be counterbalanced by the simultaneous attention for solutions and ways of dealing with the encountered dilemmas.

In terms of generalizability, the case studies are too context-specific for the results to be extrapolated to other settings. However, this does not mean that no generalization is possible. The theoretical understanding of the processes involved in the collaboration (in terms of co-production, hybrid management strategies and front stage/back stage work) is more likely to be generalizable to similar collaborative formats. The findings of this study are also in line with the findings of previous research using similar concepts and identifying similar processes, such as back stage coordination work and the front stage staging of scientific authority (Hillgartner; 2000**;** Bijker, Bal & Hendriks, 2009).

Limitations of the study

Part of the reflective attitude discussed above also relates to an acknowledgement of the limitations of the research conducted. Here, I want to discuss two weak points of the analysis and reflect on them.

The first omission in this research is that the policy perspective remains rather unexplored. This is partly due to the fact that specific policymaker participation in the ACCs was very limited. Whereas I was able to conduct numerous interviews with researchers and practitioners, whether involved in the ACCs in general or in the collaborative projects that formed the focus of the case studies, interview possibilities with policy makers (and especially politicians) remained rather scarce. Especially in the two general interview rounds, policy makers did not seem to have a large role in the ACCs. In the case studies, I was better able to conduct interviews with policy officials from the PHS or the municipal health department, and in the 'Healthy in the City' case study, I was able to interview a councilor. However, I was not permitted access to one of the relevant aldermen in this case. By observing some of the town hall meetings in which the project was discussed, I did gain more insight into the political reception of the study under investigation, albeit minimal.

The second limitation of my thesis relates to its specific focus on processes rather than on the outcomes of these processes. While I did gain a highly detailed and useful understanding of the processes of balancing mutual adjustment and accountability demands within research-policy-practice collaboration, my thesis does not provide answers to the 'deliverables' of this collaboration in terms of final health outcomes. However, this was also not the goal of this research. Rather than assessing these 'deliverables', the goal was to provide an evaluation of the processes of collaboration and an investigation into ways to conceptualize these processes. This thesis does provide information about 'intermediate products',

such as policy advices, databases, reports, masterclasses, and other developed instruments and formats, but also on the extent to which social learning takes place within the collaborative projects. The deliberate focus on process-issues was motivated by the lack of empirical attention for such processes within much public health literature on collaboration. The choice was also inevitable in the sense that the time period in which I conducted my research made it too early to say anything about outcome measures, which should be the focus of a much more longitudinal study (and even then, showing the effects of a collaborative format such as the ACCs on general health outcomes will probably be close to impossible as the health outcomes are likely to be minimal).

Reflection on my role as a researcher

This research was part of a ZonMw funded project at the Institute of Health Policy and Management. This project focused mainly on how the ACCs functioned as coordinating structures for public health research, policy and practice and to what degree this collaborative exchange would contribute to the facilitation of evidence-based public health. Next to the general interview rounds and the series of case studies of particular collaborative projects, this broader project also encompassed a quantitative element (a survey in which we compared collaborative projects between university departments and PHSs *within* the structure of the ACCs with collaborative projects *without* an ACC), and the development of a simulation game Delta in which we explored the dilemmas and competences required to collaborate in settings such as the ACC.

Since the role of the researcher is never neutral according to interpretive researchers, another important aspect in judging the quality of work in this tradition is based on reflexivity, which refers to an overall scholarly attitude: "a keen awareness of, and theorizing about, the role of the [researcher] in all phases of the research process" (Yanow & Schwartz-Shea, 2006: 102). Here, it is important to discuss the role of my research in this broader ZonMw funded research project I was involved in. This broader project at times had a sensitive relationship with the ACCs, which seemed to be very much related to the ambivalent way some coordinators perceived our project. Some ACCs were under the impression that our research would directly lead to a set of criteria which would be used to judge their functioning, and consequentially, directly influence their possibility to get funding for an additional period. This feeling proved to be difficult to adjust. It seemed to be strengthened at some moments through the difficult 'in-between' position the funding organization found itself confronted with (which was in fact not in between at all as they decided on funding). This difficult position can explain why the funding organization also

faced difficulties in addressing these concerns. Related concerns of some of the ACCs were the 'vague' sociological underpinnings of our research, which prompted the question on which indicators our judgment of the ACC's functioning would be based.

What is interesting in this regard, is that our own research project thus faced similar issues as the ACCs: we too had to balance scientific quality criteria with increasing demands to show the practical relevance of our work. Did we also engage in 'hybrid management' to deal with these issues and if so in what forms? When reflecting on the way our own project developed in terms of the hybrid management strategies, it seemed we employed a combination of boundary work at some moments and hybridization at others. In terms of boundary work, we continuously emphasized that the aim of our project was *not* to conduct an evaluation, but rather an analysis and learning perspective of how different actors tried to coordinate their perspectives within the structure of the ACCs. We thus conducted boundary work *vis-à-vis* the funding organization and the other ACCs, in order to explicitly position ourselves outside this domain. We were however only partly successful in this boundary work as the ACC coordinators kept seeing us as evaluators of the program.

In terms of hybridization, we contributed a chapter to a practical handbook discussing the successes and pitfalls of the ACCs. Here, we deliberately tried to enhance the practical relevance of our research results. In this sense, the chapter aims to be a 'hybrid' between research findings and professional concerns. It is difficult to say to which extent this approach was successful, although the chapter was well-received. Also the development of the simulation game can be seen as an example of hybridization (in terms of an intertwining of scientific elements and practical concerns rather than political aspects), as this game intended to balance research results from the case studies with practical experiences of working within a research/policy/practice collaborative (and dealing with the coordination and legitimation work involved in this). The game was thus developed to enhance the practicable application of our research results within newly established ACCs or other collaborative practices.

There were also other ways in which we tried to enhance the practical relevance of our work, but which do not seem to fit easily within any of the hybrid management strategies. For example, we gave several presentations for the coordinators and the program committee of the funding organization. Furthermore, we participated in several meetings with colleagues working within ACCs and PHSs, in which we discussed, amongst others, ways to conceptualize the relationships between research, policy and practice. Next to that, we worked together with TNO (a Dutch research organization focusing on practical

applications of knowledge) on a monitor investigating the extent to which the ACCs were consolidating their activities.

All in all, however, this process did not went as smoothly as one would hope for, which reflects the difficult moments as described in the project case studies in this thesis. Our experiences seem to be similar to the ones described by Zuiderent (2007), who describes how their 'interventionist evaluation' of a large-scale improvement program in Dutch health care led to a rather narrow perception of the role of these social science researchers by the actors involved in this program. Whilst the researchers considered their possibilities to explore refigurations and alternative conceptualizations of the problem space the improvement program was addressing to be the main added value of their involvement, the actors involved in the program understood the role of the researchers in a more narrow sense: identifying factors that facilitate or hinder improvement. Similarly, this research tried to explore alternative configurations of the two communities paradigm in public health, and apply different theoretical concepts to make sense of the ACCs. However, the broader project was assessed by several actors in the ACCs in terms of the more narrowly defined 'effective/not-effective paradigm' Zuiderent discussed.

THEORETICAL CONTRIBUTIONS

This thesis ends by outlining some of the theoretical contributions and practical implications it makes. This session discusses the main theoretical contributions. While the main contribution lies in the explication of how a co-production framework enables a better and more thorough understanding of the processes involved in intense science/policy/practice collaborations than the two communities thesis is able to provide, this session explores the contributions of this thesis to some of the other theoretical concepts used. More specifically, the chapters in this thesis sought to significantly enhance and further elaborate the concepts of 'hybrid management' and 'communities of practice'.

The empirical material of the four case studies for example provided several additions to the hybrid management concept as developed by Miller. The analysis showed how the different aspects of hybrid management feature *in various configurations* in the four projects under investigation. This is an important addition to the concept, as Miller hardly explores how the different strategies actually relate to each other in different contexts. Chapter five showed several ways in which these strategies related to each other: they may be used by differ-

ent groups or at different moments, may reinforce or contradict each other, and may be more or less effective at different points in time.

This chapter discusses three additions to the hybrid management concept. First, the empirical material showed how similar hybrid management strategies can lead to different results in different moments. For example, the Healthy in the City study showed how the strategy of boundary demarcation and maintenance was more effective at the end stages of the project than at the starting phases (where it led to the exclusion of a crucially important group). Secondly, the empirical material highlighted how hybrid management strategies can simultaneously be useful and problematic for different aspects. For example, the Healthy in the City case study showed how the boundary demarcation strategy had clear disadvantages (a divergence of accountability criteria), but it also had the advantage that the PHS was able to relieve some of the pressure behind the proposal. Thirdly, the chapter showed how hybrid management strategies can be divergent or even opposite to each other when they are used by different groups. For example, in the PreCare case study we saw how the nurses continuously tried to deconstruct or open up the RCT design, while the researchers mainly focused on boundary demarcation in order to prevent this deconstruction from taking place.

The thesis also provided a critical lens to the 'community of practice' concept. Chapter six provided a critical theoretical and empirical analysis of the core notions of this concept, and how these interacted with several crucially neglected issues (Roberts, 2006). While the core notions of the concept ('mutual engagement, 'joint enterprise' and 'shared repertoire') are recognized by several authors as key to empirically analyzing the extent to which CoPs are developing (see Wenger, 1998; Iverson & McPhee, 2008), this chapter also discussed how other important elements influence this potential development. Currently neglected issues are: 1) how power structures and broader organizational demands play a role in the development of CoPs (cf. Fuller et al., 2005); 2) what the specific role of trust is in this development (even though it is considered to be of crucial importance in CoPs, it may be much harder to achieve than is presumed), and ;3) the role of predispositions in how meaning is negotiated within CoPs.

The chapter empirically showed how the main indicators of CoPs worked out in the practice of collaborative research projects within the ACCs. The ACCs provide a formalized infrastructure that offers the opportunities for CoPs to develop. In this sense, they can be seen as a managerially produced settings that may foster the development of CoPs. The analysis further developed the CoP notion by including the neglected issues, but also by extending the focus of

the concept to include the relations between (potential) CoPs and the broader organizational environment in which they need to operate, and to which tensions this can lead. What the analysis highlighted, is that the neglected power-, trust-, and predisposition-elements do not only relate to the level of (potential) CoPs, but that within managerial settings these elements are also *implicated in the design principles*. Within such settings, these neglected issues then do not only need to be part of the analysis of CoP development in the collaborative projects, but also need to be analyzed on the 'meta-level' of design principles. In the case of the ACCs, such a focus highlights similar ambiguities with regard to how elements of power, trust and predispositions play a role in the design principles. An example of such ambiguities can be seen in the formats that have been developed. On the one hand, many formats have been developed that are informal in character and focus on creativity through brainstorming and changing ideas. On the other hand, many ACCs also developed formal rules and criteria to which projects should conform.

PRACTICAL IMPLICATIONS

The theoretical implications of this thesis thus relate to a much more specific focus on the processes and balancing acts that are usually required in science-policy-practice collaborations. But what are the practical implications? Can this thesis provide practical advice for the future development of such collaborative formats? I believe it is possible to distill several concrete recommendations that would benefit the future development of such formats.

One of the most visible results of this thesis is the recognition that the potential of the ACC is not fully achieved. The thesis highlighted the importance of relatively sealed places that are explicitly recognized as experimental settings as they provide the necessary back stage settings that can help in reaching compromises and making adjustments that would not be possible if debated in a front stage setting. There are two related reasons why the ACCs did not fully live up to this potential. First, the structure of the ACC has not sufficiently been positioned as an experimental space that would consequentially assess projects on different criteria than regular research projects. While the ACCs have high potential to operate as such experimental spaces, the case studies showed that they had not been sufficiently positioned as such. Moreover, the funding agency started visitations and evaluations in an early stage of development, possibly interfering with the developmental process. The second reason, which is closely related to this, is that within the ACCs, the different accountability criteria were

not always rendered equally important. This however also applies to the way in which the funding organization balanced the different criteria, especially in the early stages of the ACCs. The case studies showed how the collaborative projects mainly emphasized scientific quality criteria, which provided policy and practice actors in the case studies with fewer opportunities to take other criteria fully into account. Whilst there are obviously inherent limitations to what can be achieved within the ACCs (the different accountability criteria are not so flexible that any compromise is possible), a more equal assessment based on the diverse criteria would have helped the relevance of the partnership to some groups. Similarly, a more explicit acknowledgement of the experimental character of the ACCs by the funding organization could help a better balancing of criteria as well, as it would render it more difficult for research actors to use the ACCs as regular call for research proposals (where some respondents in the interviews hinted at).

Recommendations for strengthening the ACC design

In terms of practical recommendations, this thesis offers several concrete points of attention that could lead to a strengthening of the design of partnerships such as the ACCs. First, such designs should build in extra-scientific criteria such as policy relevance and practical usefulness more strongly. This goes hand in hand with: a) a more explicit focus on the type of 'socially robust knowledge' such collaborations are expected to deliver; b) the recognition that for this type of knowledge production, different criteria than 'traditional' scientific criteria are important.

'Socially robust knowledge' refers to scientific knowledge with three specific elements: it is tested for validity *outside* of the laboratory, which involved social, economic, cultural and political factors that shape its products and processes; it is achieved through involving an extended group of experts and (potential) users; it has been repeatedly tested, expanded and modified (Nowotny, 2003). Importantly, it differs significantly from a 'translation' of research findings *into* policy or professional advises: it involves *continuous* collaboration between researchers and potential users. The case studies showed that when these users where only involved in identifying a problem, the results of the research projects often did not meet expectations. This leads to the following practical recommendation:

Recommendation 1: *If the projects conducted within the ACCs are to be seen as* truly *collaborative research projects, they should involve potential users not*

only at the first stage of the research (formulating a question), but actively involve them throughout all *phases.*

The most important moment to involve potential users is not only at the early stages, when signaled public health problems become rephrased to researchable questions, but also during the interpretation of the results (professionals often being well-able to place research results in their own organizational contexts). Also during the research, users should remain involved, at least at moments when important decisions regarding research design are made, and, potentially, as co-researchers.

It is also important to reflect on how the different quality criteria are interpreted by the different actors, as this may often be quite divergent. As discussed earlier, some of the case studies showed how the criterion of 'practical relevance' was interpreted differently by different groups. For some, this meant that the research should be based on a practical question, where for others it related to practical *products* to which the project should lead. This consideration leads to the following recommendation for establishing or successfully building further upon the collaborative format of the ACCs:

Recommendation 2: *Explicitly reflect upon the ways in which the quality criteria of scientific quality and practical relevance are interpreted by the different actors in the collaboration. If necessary, organize a debate on how these can be operationalized in a way that satisfies all groups involved.*

This debate may need to be organized on multiple occasions, as the differences in interpretations may not be limited to one moment, but may reoccur in different forms in different moments. Furthermore, different research methods (for example action research or other forms of collaborative research) than traditionally associated with public health research may be more suitable to operationalize the different criteria.

In order to achieve this, partnerships such as the ACCs should be more explicitly positioned as *experimental settings* in order to provide the necessary space to become looser from the traditional accountability structures that problematize collaboration. The analysis showed that these traditional accountability structures are in some cases too strong to ignore, which leads to limited room within the ACC to balance the diverse criteria of the different actors. This does not only apply for the involvement of university departments focusing on scientific output, but also for PHS-departments that leave little space (and have

little financial possibilities) for their employees to be involved in the activities of the ACC. A third recommendation therefore focuses on the administrative level:

Recommendation 3: *In order to exploit the potential of the ACC as experimental space, actors on the administrative level need to either establish arrangements for a period of more flexibility in accountability criteria, or set up different accountability criteria.*

How should such an experimental space be organized? And which issues are important? Next to the above mentioned flexibility with regard to accountability criteria, other important issues that need to be taken into account, are how such a setting is financed. Different accountability criteria may require searching for different ways of funding collaborative research projects. For PHSs, it may be crucial to reserve budget for research and development purposes.

When the potential of the ACC as experimental setting is utilized, the actors involved within this collaboration could also benefit from a more explicit recognition of the various forms of hybrid management. This could help them in their balancing of consensus seeking versus accountability. The case studies highlighted several examples of successful instances of hybrid management. The most successful approaches seemed to be related to the strategies of hybridization and cross-domain orchestration. Cross-domain orchestration relates to the organization of various (formal but also informal) meetings and exchange possibilities (such as advisory group including end users to provide regular feedback). Successful hybridization refers to instruments, formats and tools in which scientific and professional/political elements have become intertwined in a way that enables all groups to benefit. Examples here could be the development of policy relevant scenarios, questionnaires taking into account scientific as well as practically relevant questions, or joint databases including data relevant for researchers as well as professionals. Another practical recommendation therefore is:

Recommendation 4: *Organize frequent (informal) exchange possibilities and develop instruments and tools that have the potential to connect to the needs of different domains.*

These instruments and tools should be able to bundle diverging interests. A nice example from one of the case studies was the development of a joint questionnaire, in which researchers and members from an intermediary group combined

their questions in one questionnaire, which not only enhanced the acceptability of the questionnaire for the target group, but also its scientific quality.[62]

A final, perhaps slightly provocative, recommendation relates to the role of researchers in such collaboratives. Whereas much literature addressed the importance of developing 'reflective practitioners' (Schön, 1991) this thesis signaled an equal need for 'reflective scientists'. In other words: scientists who are not rigidly adhering to the front stage image of 'pure' science, but are willing to reflect on their underlying assumptions, values and normative choices as well. Consequentially, this may mean that researchers might need to use different (participatory) methods. This leads to the following recommendation:

Recommendation 5: *Next to enhancing reflective skills in professionals and policy actors, ACCs should also facilitate the enhancement of reflective skills in researchers conducting collaborative research within the context of the ACCs.*

The experimental space of the ACCs in theory would be able to offer a relatively 'safe' setting to enhance such reflexivity, because it could provide more flexibility in otherwise more rigid quality criteria for researchers. It is furthermore closely related to the 'conceptual consolidation' that has been discussed earlier, in which it is the *idea* or *concept* of the ACCs that is consolidated rather than formal organizational procedures. However, it is important to notice that there are also limitations in the flexibility of research criteria: whilst the experimental space of the ACCs may be able to increase the room for compromises, not all compromises are possible and not all accountability criteria can be neglected.

FINAL COMMENTS

In the years I have been following and studying the phenomenon of the ACCs, I have seen how the format became further developed, embraced by many different groups, and further spread out towards other settings, such as home care, mental health care, youth care and healthcare supervision. Whilst the rationale behind this further development is a noble one, I would like to conclude this thesis by advancing a word of caution about this development.

To some extent, the concept of the ACC seems to be embraced by many, not in the least by the funding organization, as a kind of panacea facilitating better

62 See chapter five for an elaboration of this point.

collaboration and integration of research activities with professional demands and policy expectations. However, a lack of critical reflection on how the ACCs operate as collaborative settings of knowledge co-production, and a lack of recognition towards which kind of settings are needed to work towards this precarious balance of adjustment and accountability, could derive the format of its true potential. Furthermore, within the current and future financial context (funding by the national agency will end in 2013, and in the light of severe financial cuts in university as well as municipal budgets, ACCs are under increasing financial pressure), it still remains to be seen how much of the (expensive) infrastructure of the ACCs will remain durable, and which other ways of organizing collaboration are possible.

The ACCs are promising concepts, but no panaceas, and there are limitations to what they can achieve. However, when properly deployed and conceptualized, they have great potential, as they can offer valuable experimental settings in which participants are able to renegotiate dominant accountability criteria in a relatively safe setting. I hope this thesis has provided at least some of the concepts and ideas that may trigger new thoughts and insights on how to conceptualize and develop the format of the ACCs further.

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Summary /Samenvatting

SUMMARY

A dominant way of describing the relations between research, policy and practice domains within public health has been the 'two communities'-tradition. Central elements in such descriptions are a depiction of researchers and policy makers (or researchers and practitioners) as stemming from strictly separated worlds, with distinctive logics, rationales and incentives. The result of these differences, so it is argued within this tradition, is a 'lack of fit' between the research and policy domain. From this conceptualization, one of the main issues becomes to improve the relation between research, policy and practice through better connecting these groups. Much literature in this tradition therefore aims to find ways to 'bridge' the alleged 'gaps' between research and policy. This metaphor of 'bridging' the different worlds is a particularly persistent one and is also visible in policy initiatives aiming to facilitate collaborative structures that bring together researchers and policy makers or practitioners.

In the Netherlands, similar considerations gave rise to a widely spread collaborative format within public health, aimed to better connect researchers, policy makers and public health professionals. This format (the so-called Academic Collaborative Centers for Public Health [ACCs]), has been developed by the Netherlands Organization for Health Research and Development (ZonMw) in response to several national advisory reports criticizing the lack of integration between the research, policy and practice of public health. The ACCs are structural collaborations between researchers, policy makers, professionals and other stakeholders within the field of public health. The underlying logic of the establishment of the ACCs is perfectly compatible with the conceptualization of research and policy as distinctive worlds. Because they are distinctive, there is a lack of fit between activities: scientific knowledge is perceived as irrelevant or inaccessible by policy makers and professionals, while policy questions do not lend themselves to scientific inquiry. The ACCs are expected to fulfil a bridge-function. The concept of the ACC has become very popular and in the meantime ACCs have been established in the areas of Youth Care and Control on the Quality of Care, amongst others.

This thesis empirically focuses on the phenomenon of the ACCs. It does so in several ways: by investigating the general development of the ACCs over the first five years of their establishment, but also through four case studies in which an in-depth analysis is made of four collaborative research projects that have been conducted in the context of these ACCs. I have used qualitative research methods to conduct this research. In total I have conducted 71 semi-structured interviews with a large amount of directly and indirectly involved

actors within the ACCs. The interviews have been supplemented by document analyses, in which amongst others project proposals, concept reports, news letters and examples of internal communication have been analyzed. Next, I have conducted observations at relevant meetings in three of the four case studies. Finally, a focus group with the coordinators of the ACCs has been held.

However, this thesis does not take the notion of 'two communities' for granted, but rather seeks to take into account other conceptualizations of the relation between scientific knowledge production, policy development and professional practice. A radically different view on these relations, is the notion of 'co-production'. This notion focuses on how natural and social orders, or science and policy, are being *produced together*. This thesis asks the question of whether such an analytical framework provides more 'explanatory power' than the two communities framework is able to provide, for despite the growing sophistication in knowledge utilization models, the question remains whether these models are able to explain all facets of how science and policy interact. This becomes especially important as one realizes that the basic assumption of research and policy as distinctive worlds still underlies even the more nuanced 'systems models'.

In their critical reflection on the notion of evidence-based health policy, Vivian Lin and Brendan Gibson discuss some of the crucial problems in the 'two communities'-approach: it provides us with poor analytical power, it primarily focuses on the *non-use* of scientific knowledge, and in many instances it is empirically incorrect. This approach may provide a reasonable *description* of the experiences of researchers and policy makers, but offers a poor *explanation* for why there are problems in the research-policy relationship.

However, much empirical work in other fields, such as Science and Technology studies (STS) shows how the boundaries between research and policy are often rather fluid and largely rhetorical, especially in settings that involve close collaboration. What counts as a 'scientific' issue and what counts as a 'policy-affair' is not given in advance, but actively negotiated. Much work within this tradition has argued that in fact, such boundaries are never as clear-cut as they may appear. They are not fixed in advance, but negotiated in practice. An analysis of science-policy relations taking the notion of co-production as a starting point thus leads to a fundamentally different analysis than an analysis taking the sharp contradictions and boundaries of the 'two communities'-tradition as a starting point. From the idea of co-production, it is not useful to make an *a priori* distinction between science and policy as separate domains.

The ACCs can be seen as sites where an analysis in terms of a co-production framework seems to make most sense: they are experimental settings that

require collaborative and new forms of scientific knowledge production. This thesis focuses on three important elements that are crucial for such an analysis: the *processes* of balancing coordination and legitimation work, the *structures* in which collaboration takes place, and the *temporal development* of the collaboration (with attention for changing strategies, structures and dilemmas). This thesis is centered around the questions of how the actors within the ACCs balance the different perspectives (as researchers, policy makers or practitioners) and the accountability demands (to participating organizations and external parties such as the funding organization) in the collaborative research projects, how the ACCs develop over time, and to which extent they are able to meet the goal of facilitating a better integration between researchers, professionals and policy makers.

Throughout the chapters, this thesis empirically showed how the notion of co-production can be utilized as a fruitful overarching frame of analysis to enhance our understanding of the relationships between research, policy and practice. It sheds a different light on the interactions between researchers and policy makers as the main question to investigate becomes how the domains of research, policy and practice *become* distinctive in some contexts, whilst they seem to be intertwined in other situations. The four case studies of collaborative research projects highlighted how the actors within the joint research projects balanced between their different perspectives (as researchers, policy makers and professionals) and the respective accountability demands imposed on them from their organizations.

The case studies emphasized the continuous *coordination* and *accountability work* that needed to be conducted simultaneously. The internal coordination work consisted of balancing different perspectives, finding workable solutions for dilemmas, and trying to reach mutual agreement over problems and activities, as well as reaching compromises. A concrete example of this is the consensus that needs to be sought when it turns out that the involved actors have different predispositions about what the collaboration can yield for policy makers. The accountability work to the participating organizations and external parties consisted of the process of legitimizing the decisions that are taken, the compromises that have been reached and the directions that have been taken to render the collaboration successful to all groups or organizations involved. An example of this is connecting to the evidence standards that are used within the most dominant organization or emphasizing the scientific rigor of the results. Maintaining a proper balance between both processes is of crucial importance. Keeping room for experimental spaces can contribute to this (see below).

The two general interview rounds provided a good image of how the ACCs have developed over the years and which dilemmas they faced in this process. This thesis distinguishes several 'development stages' and their associated dilemmas. The ACCs need to deal with different kinds of dilemmas over the course of their development. These dilemmas furthermore can change significantly over time. For instance, a common dilemma in the early stages of development is related to the small scale of the ACC, which limits the number of projects that can be conducted and makes it more difficult to immediately show the added value of the collaborative. In a later stage of development, however, it is precisely the rapid growth that causes dilemmas. As many new groups are participating in the collaborative, the overall structure becomes less clear. Moreover, the divergent activities make it more difficult to reach mutual alignment and secure the informal character of the collaboration. Next to dilemmas this thesis identified two development strategies that were frequently employed to deal with these dilemmas. Within the *external development strategy* the ACCs mainly focus on facilitating growth, developing new projects and starting up new themes. In contrast, ACCs predominantly working from an *internal development strategy* aimed to gather internal support within the organizations that were originally involved in the collaboration.

The question of how the changing accountabilities in research, policy and practice affect collaboration within the ACCs, is a question that focuses on the broader contexts in which the ACCs operate. These contexts reflect different developments: researchers are increasingly assessed in terms of the societal relevance of their work, within the public health sector, evidence-based work processes are growing in importance and public health policies and practices are expected by both the Dutch Ministry and the Health Care Inspectorate to use the best available evidence (i.e. systematic reviews) in order to optimize their activities.

While in theory the different accountability criteria seem to be converging, an important conclusion of this thesis is that these criteria are much less easily intertwined, or even considered equally important, than is assumed in much of the above mentioned literature. For example, the peculiar 'balancing act' between internal consensus and external accountability can become more difficult to achieve when the collaboration is put under a magnifier. When the balance shifts too heavily towards issues of legitimacy, the room for negotiations and mutual adjustments becomes threatened. Moreover, in many ACCs scientific quality criteria are still decisive, whereas adjustments to policy and practice-based criteria were much less often made.

Throughout the chapters, this thesis has shown that an analysis of research/policy/practice collaborations from a co-production framework provides a more detailed understanding of how such collaborations work. This framework adds complexity, analytical depth and a level of detail to the more static descriptions of research/policy/practice relations that still dominate much public health literature falling into the two communities tradition. Throughout the chapters, this thesis provided numerous empirical examples of how the co-production framework enables a more thorough analysis than the two communities framework is able to provide. The analysis showed how the boundaries between research and policy were often presented more strictly for legitimation purposes. In one of the case studies we saw, for instance, that the role of the PHS – in contrast to the previously agreed role division – became minimized during the presentation of the research findings for local politicians. The analysis highlights how the 'front stage' presentation of two communities was the *outcome* of an intense process of negotiation and mutual adjustment that took place back stage.

This thesis concludes with the observation that the potential of the ACCs is not fully achieved yet. It highlighted the importance of relatively sealed places that are explicitly recognized as experimental settings as they provide the necessary 'back stage' settings that can help in reaching compromises and making adjustments that would not be possible if debated in a front stage setting. Partnerships such as the ACCs should be positioned much more explicitly as *experimental settings* in order to provide the necessary space to become looser from the traditional accountability structures that could problematize collaboration. This thesis showed that the ACCs are promising concepts, but no panaceas, and there are limitations to what they can achieve. However, when properly deployed and conceptualized, they have the great potential, as they can offer valuable experimental settings in which participants are able to renegotiate dominant accountability criteria in a relatively safe environment. However, this also demands investments on an administrative level. In order to do justice to the ACC as such an experimental space, it is important that different, more flexible accountability criteria are composed for such spaces. Room to experiment combines arduously with rigid guidelines.

SAMENVATTING

In de publieke gezondheidszorg is de 'two communities'-traditie de laatste jaren een dominante manier geweest om de relaties tussen onderzoeks-, beleid- en praktijkdomeinen te beschrijven. In deze traditie worden onderzoekers en beleidsmakers (of onderzoekers en professionals) gezien als tegenpolen, die afkomstig zijn uit strikt gescheiden werelden, met volstrekt uiteenlopende logica's, motivaties en prikkels. Het resultaat van deze verschillen, zo wordt binnen deze 'two communities'-traditie beargumenteerd, is een 'gebrekkige aansluiting' tussen het onderzoeks- en beleidsdomein. Vanuit deze conceptualisatie wordt één van de belangrijkste kwesties in het verbeteren van de relatie tussen onderzoek, beleid en praktijk het beter verbinden van deze groepen. Veel literatuur in deze traditie richt zich dan ook op het zoeken naar manieren om de vermeende 'kloven' tussen onderzoek en beleid te 'overbruggen'. Deze metafoor van het overbruggen van verschillende werelden is volhardend en is ook zichtbaar in beleidsinitiatieven gericht op het opzetten van samenwerkingsstructuren waarin onderzoekers, beleidsmakers en professionals worden samengebracht.

In Nederland hebben soortgelijke overwegingen geleid tot een inmiddels wijdverspreid initiatief om een samenwerkingsstructuur te ontwikkelen binnen de publieke gezondheidszorg, die erop gericht is om onderzoekers, beleidsmakers en professionals beter met elkaar te verbinden. Deze structuur (de zogenoemde Academische Werkplaatsen) is ontwikkeld door ZonMw in reactie op verschillende nationale adviesrapporten waarin het gebrek aan integratie van onderzoek, beleid en praktijk binnen de publieke gezondheidszorg bekritiseerd werd. De Academische Werkplaatsen Publieke Gezondheid zijn structurele samenwerkingsverbanden tussen onderzoekers, beleidsmakers, professionals en andere stakeholders binnen de publieke gezondheidszorg. De onderliggende logica valt te plaatsen binnen de 'two communities'-traditie en de conceptualisering van onderzoek en beleid als verschillende werelden. Omdat ze verschillend zijn, is er een gebrekkige aansluiting tussen de activiteiten: wetenschappelijke kennis wordt als irrelevant of ontoegankelijk ervaren door beleidsmakers en professionals, terwijl beleidsvragen zich niet lenen voor wetenschappelijk onderzoek. Van de Academische Werkplaatsen wordt verwacht dat zij een 'brugfunctie' vervullen. De figuur van de Academische Werkplaats is zeer populair en inmiddels bestaan er ook werkplaatsen op het gebied van bijvoorbeeld de Jeugdzorg en het Toezicht op de kwaliteit van zorg.

Dit proefschrift richt zich empirisch gezien op het fenomeen van de Academische Werkplaatsen. Dat gebeurt op verschillende wijzen: door het onderzoeken van de algemene ontwikkeling van de Academische Werkplaatsen

Publieke Gezondheid gedurende de eerste vijf jaren na hun oprichting, maar ook door een viertal case studies waarin een diepgaande analyse is gemaakt van gezamenlijke onderzoeksprojecten die binnen de context van deze Academische Werkplaatsen zijn uitgevoerd. Ik heb gebruik gemaakt van kwalitatieve onderzoeksmethoden om dit onderzoek te verrichten. In totaal heb ik 71 semigestructureerde interviews gehouden met een grote hoeveelheid direct en indirect betrokken actoren van de werkplaatsen. De interviews zijn aangevuld met documentanalyses, waarbij onder andere projectvoorstellen, conceptrapportages, nieuwsbrieven en voorbeelden van interne communicatie geanalyseerd zijn. Daarnaast heb ik in drie van de vier case studies observaties verricht bij bijeenkomsten.Tenslotte is een focusgroep gehouden met de coördinatoren van de werkplaatsen.

Dit proefschrift neemt het uitgangspunt van 'two communities' echter niet voor lief, maar probeert andere conceptualiseringen te zoeken van de relatie tussen wetenschappelijke kennisproductie, beleidsontwikkeling en professionele praktijk. Een radicaal andere visie op deze relaties, is de notie van co-productie. Deze notie richt zich op hoe natuurlijke en sociale ordes, of onderzoek en beleid, *gezamenlijk geproduceerd* worden. Dit proefschrift stelt de vraag of een dergelijk analytisch raamwerk meer 'verklarend vermogen' biedt dan de 'two communities'-traditie. Ondanks de toenemende nuancering en verfijning in modellen van kennisutilisatie, blijft de vraag namelijk staan of deze modellen in staat zijn om alle facetten van de interacties tussen onderzoek, beleid en praktijk te verklaren. Dit wordt eens te meer van belang wanneer men zich realiseert dat de basale onderliggende notie van onderzoek en beleid als verschillende werelden óók nog steeds ten grondslag ligt aan de meer genuanceerde 'systeemmodellen'.

In hun kritische reflectie op de notie van 'evidence-based' gezondheidsbeleid identificeren Vivian Lin en Brendan Gibson enkele cruciale problemen in de 'two communities'-benadering: het biedt slechts gering analytisch verklaringsvermogen, het richt zich vooral op het *niet-gebruik* van wetenschappelijke kennis en het is in veel situaties een empirisch onjuiste weergave. De benadering geeft wellicht een aardige *beschrijving* van de ervaringen van onderzoekers en beleidsmakers, maar biedt een magere *verklaring* voor waarom er problemen zijn in de relatie tussen onderzoek en beleid.

Veel empirisch werk in andere onderzoeksvelden, zoals het Wetenschap en Techniekonderzoek (STS) laat echter zien hoe de grenzen tussen onderzoek en beleid vaak juist behoorlijk kneedbaar en grotendeels retorisch van aard zijn, zeker in settings waarin nauw wordt samengewerkt. Wat telt als een 'wetenschappelijk' issue en wat telt als een 'beleidskwestie' is niet een vooraf

vaststaand gegeven, maar iets waarover actief wordt onderhandeld. In veel onderzoek binnen deze traditie wordt beargumenteerd dat dergelijke grenzen in feite nooit zo rechtlijnig en eenduidig zijn als ze op het eerste gezicht lijken te zijn. Een analyse van onderzoek/beleids-relaties die de notie van co-productie als uitgangspunt neemt, leidt dus tot een fundamenteel andere analyse dan wanneer het beginpunt ligt bij de scherpe tegenstellingen en grenzen van de 'two communities'-traditie. Vanuit het idee van co-productie is het niet verstandig om vanuit een *a priori* onderscheid tussen onderzoek en beleid als separate domeinen te beginnen.

De Academische Werkplaatsen kunnen worden gezien als settings waar een analyse in termen van een co-productie raamwerk het meest zinvol lijkt: het zijn namelijk experimentele settings die vragen om gezamenlijke, nieuwe vormen van kennisproductie. Dit proefschrift richt zich op drie belangrijke elementen die cruciaal zijn voor een dergelijke analyse: de *processen* van het balanceren tussen coördinatie- en verantwoordingswerk, de *structuren* waarbinnen samenwerking plaats vindt, en de *temporele ontwikkeling* van de samenwerking (met aandacht voor veranderende strategieën, structuren en dilemma's). Dit proefschrift is gecentreerd rondom vragen over hoe de actoren binnen de werkplaatsen proberen te balanceren tussen de verschillende perspectieven (als onderzoekers, beleidsmakers en professionals) en de verantwoordingseisen (naar de betrokken organisaties en externe partijen zoals de financieringsorganisatie) binnen de gezamenlijke onderzoeksprojecten, hoe de werkplaatsen zich gedurende de jaren ontwikkelen, en in welke mate zij in staat zijn om het doel van een betere integratie tussen onderzoekers, professionals en beleidsmakers te bereiken.

Door de hoofdstukken heen laat dit proefschrift empirisch zien hoe de notie van co-productie als een bruikbaar overkoepelend raamwerk gebruikt kan worden om ons begrip van de relaties tussen onderzoek, praktijk en beleid te vergroten. Het werpt een ander licht op de interacties tussen onderzoekers en beleidsmakers, omdat de hoofdvraag wordt hoe de domeinen van onderzoek, beleid en praktijk onderscheidend *worden* in sommige situaties, terwijl ze juist met elkaar verweven lijken in andere situaties. De vier case studies van gezamenlijke onderzoeksprojecten laten zien hoe de actoren binnen deze projecten balanceren tussen de verschillende perspectieven (als onderzoekers, beleidsmakers en professionals) en de respectievelijke verantwoordingseisen die vanuit de organisaties worden opgelegd.

De case studies benadrukten het voortdurende *coördinatie-* en *verantwoordingswerk* dat tegelijkertijd verzet dient te worden. Het interne coördinatiewerk bestond uit het balanceren van verschillende perspectieven, het vinden van

werkbare oplossingen voor dilemma's, het proberen om wederzijdse overeenstemming te bereiken bij problemen en activiteiten, en het bereiken van compromissen. Een concreet voorbeeld is de consensus die gezocht moet worden als blijkt dat de betrokken actoren andere vooronderstellingen hebben over wat de samenwerking zal opleveren voor beleidsmakers. Het verantwoordingswerk naar de deelnemende organisaties en externe partijen bestond uit het proces van verantwoording afleggen over de genomen beslissingen, de compromissen die bereikt zijn, en de richtingen die zijn ingeslagen om de samenwerking succesvol te maken voor alle betrokken groepen. Een voorbeeld hiervan is het aansluiten bij de bewijsstandaarden die binnen de meest dominante organisatie gehanteerd worden of het benadrukken van de wetenschappelijke rigoureusheid van de resultaten. Het bereiken van een goede balans tussen beide processen is van cruciaal belang. Het open houden van experimenteerruimtes kan daarin bijdragen (zie onderstaand).

De twee algemene interviewrondes gaven een goed beeld van hoe de werkplaatsen zich in de loop der jaren ontwikkeld hebben en welke dilemma's ze daarbij tegen kwamen. Dit proefschrift onderscheidt verschillende 'ontwikkelfases' met daarbij behorende dilemma's. De werkplaatsen dienen met verschillende soorten dilemma's om te gaan in het verloop van hun ontwikkeling. Deze dilemma's kunnen bovendien aanzienlijk veranderen. Zo is een veel voorkomend dilemma in de beginfase van de ontwikkeling gerelateerd aan de kleinschaligheid van de werkplaats, waardoor het aantal projecten dat uitgevoerd kan worden gelimiteerd blijft en het moeilijk is om direct de meerwaarde van het samenwerkingsverband te laten zien. In een later ontwikkelstadium is het echter juist de snelle groei die voor dilemma's zorgt. Doordat vele nieuwe partijen deelnemen aan de samenwerking, wordt de algemene structuur minder duidelijk. Bovendien maken de uiteenlopende activiteiten het lastiger om afstemming te bereiken en het informele karakter van de samenwerking te waarborgen. Naast dilemma's identificeert dit proefschrift twee algemene ontwikkelstrategieën die regelmatig gebruikt zijn om met deze dilemma's om te gaan. Binnen de *externe ontwikkelstrategie* richten de werkplaatsen zich vooral op het faciliteren van groei, het ontwikkelen van nieuwe projecten en het opstarten van nieuwe thema's. Daarentegen richten werkplaatsen die vanuit een *interne ontwikkelstrategie* opereren zich op het vergaren van interne support binnen de oorspronkelijk betrokken organisaties.

De vraag hoe de veranderende verantwoordingsstructuren binnen onderzoek, beleid en praktijk inwerken op de samenwerking binnen de werkplaatsen, is een vraag die zich richt op de bredere contexten waarbinnen de werkplaatsen opereren. Deze contexten laten verschillende ontwikkelingen zien: onderzoekers

worden in toenemende mate beoordeeld op de sociale relevantie van hun werk, binnen de publieke gezondheid winnen 'evidence-based' werkprocessen aan belang en van zowel beleidsmakers en professionals wordt verwacht door het Ministerie van Volksgezondheid en de Inspectie voor de Gezondheidszorg dat zij gebruik maken van het beste beschikbare bewijs om hun activiteiten te optimaliseren.

Terwijl de verschillende verantwoordingscriteria in theorie lijken te convergeren, is een belangrijke conclusie van dit proefschrift dat deze criteria binnen de werkplaatsen veel minder makkelijk met elkaar verenigbaar zijn, en vaak ook onevenredig belangrijk gevonden worden, dan in veel literatuur wordt aangenomen. Zo kan het balanceren tussen consensus en verantwoording moeilijker worden als de samenwerking onder een vergrootglas komt te liggen. Als de balans te sterk richting verantwoordingseisen verschuift, wordt de ruimte om te onderhandelen en consensus te zoeken bedreigd. Bovendien blijkt dat in veel werkplaatsen wetenschappelijke criteria nog steeds doorslaggevend zijn, terwijl aanpassingen aan beleids- en praktijkcriteria veel minder snel worden doorgevoerd.

Door de hoofdstukken heen heeft dit proefschrift aangetoond dat een analyse van samenwerkingsverbanden tussen de onderzoekers, professionals en beleidsmakers vanuit een co-productie raamwerk een meer gedetailleerd inzicht geeft in hoe dergelijke samenwerkingsverbanden werken. Dit raamwerk voegt complexiteit, analytische diepgang en detail toe aan de meer statische beschrijvingen van onderzoek/praktijk/beleid relaties die nog steeds in veel public health literatuur binnen de 'two communities' benadering te zien zijn. Dit proefschrift heeft in de verschillende hoofdstukken talrijke empirische voorbeelden aangedragen die laten zien hoe zo'n co-productie raamwerk tot een meer gedegen analyse leidt dan waar het 'two communities'-raamwerk in kan voorzien. Zo liet de analyse zien hoe de grenzen tussen onderzoek en beleid voor legitimiteitsdoeleinden vaak veel strikter gepresenteerd werden dan zij waren. Zo zagen we in een van de case studies dat de rol van de GGD – in tegenstelling tot de op voorhand afgesproken rolverdeling – geminimaliseerd werd bij de presentatie van de onderzoeksbevindingen voor lokale politici. De analyse benadrukte hoe de 'front stage' presentatie van twee gemeenschappen de *uitkomst* was van een intens proces van onderhandelingen en wederzijdse aanpassingen dat 'back stage' plaatsvond.

Het proefschrift sluit af met de constatering dat het potentieel van de Academische Werkplaatsen nog niet volledig is vervuld. Het benadrukt het belang van relatief afgesloten plaatsen die expliciet erkend worden als experimenteerruimtes, omdat deze ruimtes de noodzakelijke 'back stage' omgevingen bieden

die kunnen helpen in het bereiken van compromissen en het doorvoeren van aanpassingen die niet mogelijk zouden zijn als er in een 'front stage' omgeving over onderhandeld zou worden. Samenwerkingsverbanden als de Academische Werkplaatsen dienen dan ook veel explicieter gepositioneerd te worden als *experimenteerruimtes* om zo de noodzakelijke ruimte te bieden om losser te komen van traditionele, strikte, verantwoordingsstructuren die de samenwerking kunnen problematiseren. Dit proefschrift heeft laten zien dat de Academische Werkplaatsen veelbelovende concepten zijn, maar geen panaceeën, en dat er grenzen zijn aan wat zij kunnen bereiken. Wanneer zij echter goed ingezet en geconceptualiseerd worden, hebben zij groot potentieel en kunnen zij waardevolle experimenteerruimtes bieden waarin deelnemers in staat worden gesteld om te onderhandelen over dominante verantwoordingsstructuren en deze in een relatief veilige omgeving te hervormen. Dit vereist echter ook investeringen op bestuurlijk niveau. Om de werkplaats als experimenteerruimte volledig tot zijn recht te laten komen, is het van belang dat er ook andere, meer flexibele verantwoordingscriteria worden opgesteld voor dergelijke ruimtes. Ruimte om te experimenteren gaat immers moeilijk samen met rigide richtlijnen.

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Toch zijn er ook overeenkomsten. Zowel de totstandkoming van het station als de totstandkoming van dit proefschrift zijn langdurige projecten, waarbij van tevoren vast staat dat ze jarenlang gaan duren. Ze vergen enerzijds een zeer gestructureerde aanpak, maar het staat ook eigenlijk van tevoren al vast dat er onvermijdelijk uitdagingen en onverwachte problemen opduiken. Flexibiliteit is dan ook zeker gevraagd. Bij beide projecten hangt af en toe de vraag in de lucht of 'het allemaal *ooit* wel af komt'. Toch valt ook bij beide projecten voortgang te zien. Een nieuw perron klaar; een nieuw artikel ingediend. De feestelijke opening van het nieuwe metrostation; de opwinding wanneer het eerste artikel geaccepteerd is voor publicatie. En hoewel er geen honderden mensen hebben meegewerkt aan het proefschrift, is het eindresultaat zeker niet mogelijk geweest zonder de hulp – zowel direct als indirect - van een aantal personen.

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Rik Wehrens was born on June 10th 1984 in Heerlen in The Netherlands. He studied Arts and Culture at the University of Maastricht between 2002 and 2005. After finishing his bachelor, he followed the newly developed research master CAST (Cultures of Arts, Science and Technology), also at Maastricht University (2005-2007). The research master trains young academics to do research into three important domains of modern culture and their interrelations: the arts, science and technology. It is based on the master-apprentice model, in which students work closely together with senior researchers. In 2007 he followed an internship of four months at the Rathenau Institute, where he investigated user experiences with early Ambient Intelligence-applications in a variety of domains.The internship resulted in a report that was published by the Rathenau. In 2008, he started a PhD project at the Institute of Health Policy and Management, in which he analyzed new collaboration structures between researchers, professionals and policy makers in Dutch public health. The PhD project led to several publications in international peer reviewed journals. In addition, he has taught several courses at the Institute of Health Policy and Management, such as Qualitative Research Methods and Change Management in Health Care. Currently he is involved in a post-doc project in which a novel research method (the Imitation Game) is being further developed in the context of chronic illness experiences.

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PHD PORTFOLIO

PhD student:	Rik Wehrens
Department:	Institute of Health Policy and Management
PhD period:	2008 – 2012
Promotor:	Prof. dr. Roland Bal
Supervisor:	Dr. Marleen Bekker

PHD TRAINING

Courses

NSPOH Course 'Visions on Public Health' (4 days)	2008
NIG Course 'Qualitative interviewing' (2 days)	2008
NIG Skills Course / Formulating the Research Problem (2 days)	2009
NIG Skills Course / Serious Games	2009
NIG Skills Course / Operationalization	2009
NIG Course General Methodology (5 days)	2009
Summer School "Beyond Knowledge Society", Dubrovnik, Croatia (5 days)	2010
WTMC International Workshop 'Research For Development' (3 days)	2010
WTMC workshop 'STS goes mental' (3 days)	2011
WTMC Workshop 'Models and Simulations' (3 days)	2011
Studies of Expertise and Experience Workshop (3 days)	2011

Presentations

NCVGZ (Dutch Conference on Public Health)	2009
4th International Conference in Interpretive Policy Analysis (Kassel, Germany)	2009
Society for the Social Studies of Science (4S) Annual Meeting (Washington DC, U.S.)	2009
NCVGZ (Dutch Conference on Public Health)	2010
International Union for Health Promotion and Education (IUPHE) Conference (Geneva, Switzerland)	2010
NCVGZ Dutch Conference on Public Health)	2011
17th Annual Qualitative Health Research Conference (Vancouver, Canada)	2011

Society for the Social Studies of Science (4S) Annual Meeting (Cleveland, U.S.)	2011
Society for the Social Studies of Science (4S) Annual Meeting (Copenhagen, Denmark)	2012

Other

Rik Wehrens, Marleen Bekker, Stans van Egmond, Kim Putters, Roland Bal (2008). De Academische Werkplaats als grensorganisatie. De coördinatie van onderzoek, praktijk en beleid in de Academische Werkplaatsen Publieke Gezondheid. TSG 86(6), pp. 308-315.

Book review: Bruyneel, Elisabeth, De Hoge Gezondheidsraad (1849-2009). Schakel tussen wetenschap en volksgezondheid, Leuven 2009. In: Studium Jaargang 3 (2010) no. 1

Wehrens R, Bekker M, Bal R. (2011) Academische Werkplaatsen in ontwikkeling: ontwikkelstadia, knelpunten en opbrengsten van vijf jaar samenwerking. In: Jansen M & Burhenne K. (Eds) Hoge hakken, lange tenen. Successen en valkuilen voor de Academische Werkplaatsen Publieke Gezondheid in Nederland. GGD Zuid Limburg.

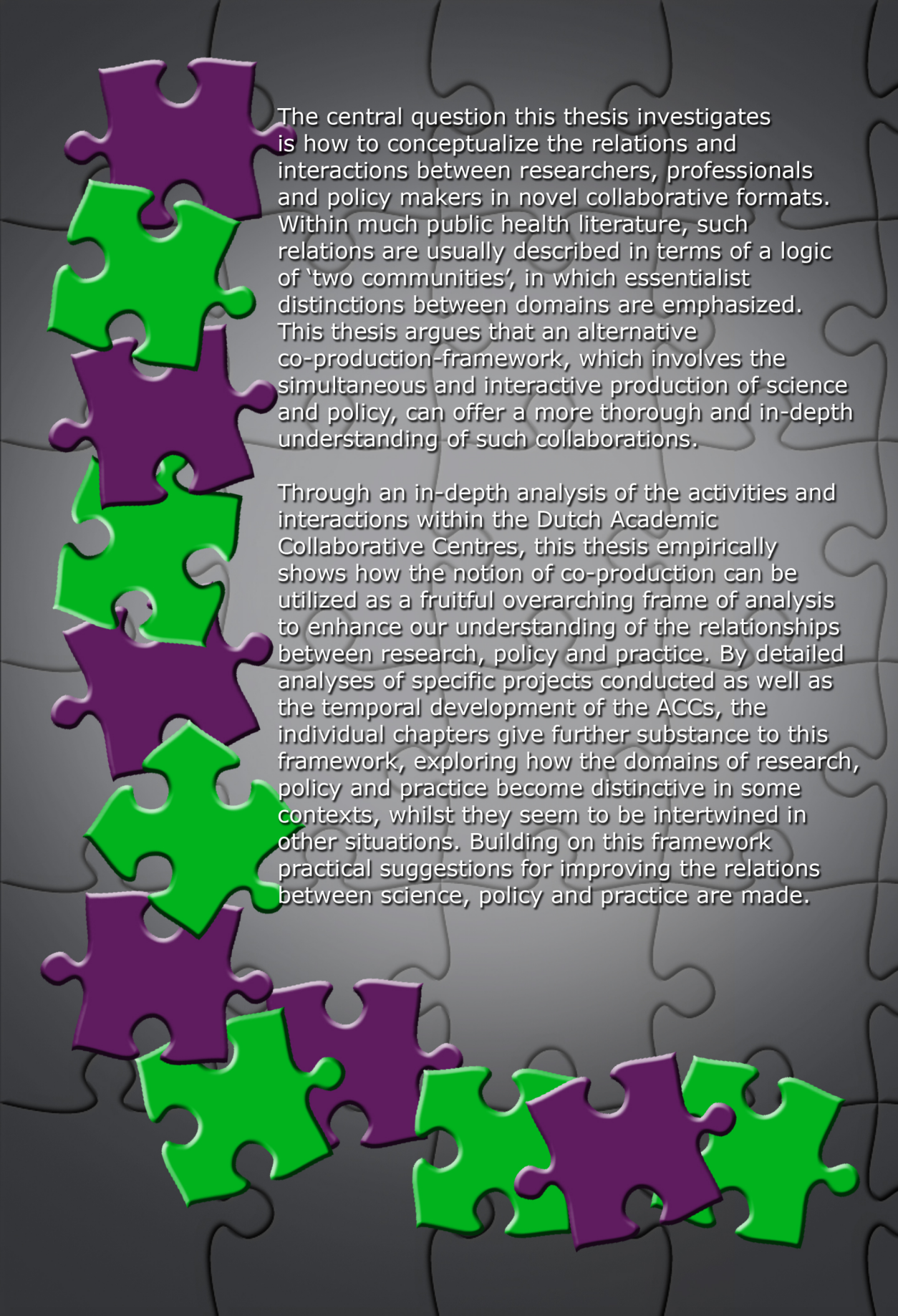
TEACHING QUALIFICATIONS AND EXPERIENCE

Courses followed

Training on problem-directed education (PGO) (3 days)	2008
Basic course didactic skills (4 days)	2010

Teaching experience

Skills	2008-2010
Knowledge management	2008 – now
Policy studies	2010
Qualitative research methods	2011 – now
Change management in health care	2012 – now
Supervision of bachelor theses	2011 – now
Supervision of master theses	2012 – now



The central question this thesis investigates is how to conceptualize the relations and interactions between researchers, professionals and policy makers in novel collaborative formats. Within much public health literature, such relations are usually described in terms of a logic of 'two communities', in which essentialist distinctions between domains are emphasized. This thesis argues that an alternative co-production-framework, which involves the simultaneous and interactive production of science and policy, can offer a more thorough and in-depth understanding of such collaborations.

Through an in-depth analysis of the activities and interactions within the Dutch Academic Collaborative Centres, this thesis empirically shows how the notion of co-production can be utilized as a fruitful overarching frame of analysis to enhance our understanding of the relationships between research, policy and practice. By detailed analyses of specific projects conducted as well as the temporal development of the ACCs, the individual chapters give further substance to this framework, exploring how the domains of research, policy and practice become distinctive in some contexts, whilst they seem to be intertwined in other situations. Building on this framework practical suggestions for improving the relations between science, policy and practice are made.