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## Managing Uncertainty Through Participation

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### 1. Introduction

Participation enjoys a very special status in health promotion discourse. Conceptualised both as a process and a valued outcome, it is often viewed as a defining feature and a key principle of health promotion (Robertson & Minkler, 1994; Rootman, Goodstadt, Potvin & Springett, 2001). Taking advantage of an undisputable position as a cardinal value, the role of participation has rarely been critically examined in relation to health promotion practice and its contribution to public health. The questions regarding the role of participation and how, in practice, practitioners can facilitate and support its emergence, have not been given satisfactory answers. Answers to these crucial questions can only result from a theoretical understanding of what participation entails in terms of action in the social situations of health promotion interventions. Theorizing on the role of participation in health promotion and on the social processes at play when it occurs is a prerequisite to reframing participation as a professional practice rather than as an ideology (see Pelikan, Chapter 6), and to develop appropriate procedures that can foster the conditions for effective participation.

Using social theory, this chapter seeks to shed a fresh light on the notion of participation. Firstly, identifying some of the reasons why the world in which we live is increasingly uncontrollable by scientific means (Giddens, 1990, 1994), this chapter will argue for the necessity of public health to develop a practice of participation as a strategy to manage the uncertainty associated with reflexivity, a characteristic of our contemporary society (see Balbo, Chapter 8). Secondly, expanding upon Callon's Actors Network Theory we will elaborate a theoretical conception of participation as a process by which groups of heterogeneous actors negotiate their role with regards to a social situation; in so doing these actors actively explore the possible worlds that can be collectively pursued.

### 2. Public Health and Reflexive Modernity

Public health is the combination of science, practical skills, and values directed to the maintenance and improvement of the health of all the people. It is a set of efforts organised by

society to protect, promote, and restore the people's health through collective and social action (Last, 1998, p. 6).

Like many authors who attempted to define public health, Last clearly associates public health with the modernist perspective of advancing the human condition through rationality and science to inform public choices and population management (MacKian, Elliott, Busby, et al., 2003). An exemplary endeavour of *The Enlightenment*, public health rests on the underlying assumption that the association of science and the State through expert knowledge and bureaucracy will yield to a world where disease and death, conceived as failures of nature, are no longer part of the human experience (Fassin, 1996). "Suffering, healing, and dying, which are essentially transitive activities that culture taught each man, are now claimed by technocracy as new areas of policy-making and are treated as malfunctions from which populations ought to be institutionally relieved" (Illich, 1975, p. 132). Although public health can certainly claim to have fulfilled a great deal of this command, its action also generated novel sanitary challenges. Using Giddens and Beck's critic of modernity, this section explores how these challenges come about.

Over the past 150 years through various interventions, programs and initiatives, public health as an institution has significantly contributed to improving the health of populations and in so doing, built a convincing case for the do-ability of health (see Kickbusch, Chapter 9). In fact, many of the public health achievements, such as the global eradication of smallpox or the reversal of the cardiovascular mortality trend in the 1970's, are truly spectacular. In health however, as in many other applied sciences, the modernist utopia of creating an orderly world through the application of scientific knowledge has been achieved often at the cost of creating new risks or adverse outcomes. The new realities engineered through scientific and technological progress are also associated with unexpected and undesirable outcomes (Beck, 1992, 2000; Giddens, 1994). Global pollution is the more obvious example of such unintended consequences.

In the health sector, the whole area of work on epidemiological transition shows how public health progress in longevity and disease prevention constantly lead the way to new sanitary challenges that were previously unforeseeable (Frenk, Bobadilla, Stern, et al., 1994). Like the previous transition periods that marked public health history (see Potvin & McQueen, Chapter 2), the third revolution of public health faces many new challenges that result from the successful efforts to control infectious diseases and to prevent chronic diseases; this in turn, limits the generalization of people's capacity to produce health equally throughout entire populations (see Abel, Chapter 5). The most frequently cited challenges are often associated with people's social conditions, such as: the increasing health disparities between those at the top of the social hierarchy and those at the bottom; the resurgence of infectious diseases, such as tuberculosis, in low income populations; the emergence of new epidemics due to changes in lifestyle (e.g. heart disease, obesity, diabetes) or outbreaks due to new viruses (e.g. HIV, SARS); the dramatic decrease in life expectancy in Sub-Saharan Africa and Eastern Europe; the population backlash against universal vaccination programs, and many others.

For many present-day sociologists and social critics, a major task of contemporary social theory is to explain this partial failure of science and rationality exemplified by instances where unintended consequences of scientific progress are identified after their negative impact is starting to be felt. For Beck, Giddens and Lash (1994), the reflexivity that inherently accompanies the development of knowledge is an essential ingredient for explaining why knowledge and scientific discoveries do not translate into more control over, and predictability of, nature and society.

According to many social theorists, reflexivity is a defining feature of modernity. For Giddens, reflexivity is one of the dynamic forces that lead to the transformation of institutions and that constantly impede our capacity to render our world more predictable. While self-reflection and a capacity to analyse one's own place in the world has been a feature of all societies (Beck, 1994; Giddens, 1994), reflexive modernity highlights a different dimension and a different role of knowledge in the transformation of societies.

The reflexivity that comes with modernity<sup>1</sup>, together with unavoidable unintended consequences associated with technological developments (Beck, 1992), are the main reasons "why has the generalizing of sweet reason not produced a world subject to our prediction and control" (Giddens, 1990, p. 151). For Giddens, reflexivity primarily relates to the social practices involved in attempts to exercise control over aspects of our world, and how such practices continuously transform, and are transformed, by the knowledge they generate. The fact that knowledge about the world is a part of the world blurs the relationship between knowing subjects and the objects of knowledge. Thus, knowledge gained about the world through science is constantly being reintroduced in society, participating to the latter's increasing complexity (see McQueen, Chapter 4). "The reflexivity of modern social life consists in the fact that social practices are constantly examined and re-formed in light of incoming information about those very practices, thus constitutively altering their character" (Giddens, 1990, p. 38).

Reflexivity implies that the relationships of social actors with institutions and other social structures are being transformed by scientific knowledge reintroduced into the social world via the media, the increased access to education and information, and through professional practice. In other words, the increasing level of knowledge about the functioning of society available to all social actors, contributes to altering their practice; the very object of that knowledge results in a pervasive gap in scientific knowledge and the objects of that knowledge. Through this double hermeneutic<sup>2</sup>, the objects of expert knowledge are thus continuously transformed by it, creating a world in continuous transformation that can never be completely predictable. Consequently, the accumulation of knowledge about

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<sup>1</sup> In the rest of this chapter we will adopt the term reflexive modernity (Lash, 1999) to label the contemporary version of modernity experienced in western societies (Beck, 1994).

<sup>2</sup> The first order of hermeneutic is that of the scientist interpreting the world. The second order is that of interpreting the effect of producing knowledge about the world has on the world and on the knowing process.

the social world and the gain in transparency associated with this accumulation, does not necessarily convert into a greater control over social development and evolution (Giddens, 1990, p. 16).

Another feature of reflexive modernity is the growing capacity of social actors to distance themselves from the influence of the social structure. In reflexive modernity, agency is progressively freed from structure (Lash, 1994) through increased individualization. This is the process by which individuals increasingly become the main decision makers on the matters of their life; the choices and chances that influence their lifestyles are less determined by the tradition or by social structures. "Individualization therefore means that the standard biography becomes a chosen biography, a do-it-yourself biography" (Beck, 1994, p. 15)<sup>3</sup>. An absolute prerequisite however for the fabrication of such a "reflexive biography" is access to information not only in terms of its availability but more importantly, in terms of the actor's capacity to interpret it and integrates its meaning (see Abel, Chapter 5).

As a consequence of the growing unpredictability of our social world and of the freeing of agency from the structure associated with reflexive modernity, the orientation of social changes in predictable directions through professional practice rooted in expert knowledge cannot be totally achieved. Instead of a clear and linear causal chain of events that link interventions to social changes, the implementation and unfolding of interventions in the real life is better represented as an open trajectory, at every point in time, a variety of scenarios could be, and effectively are, elaborated and selected. Furthermore, the range and content of those possible scenarios are incrementally unpredictable as time passes and contingent upon their context<sup>4</sup>. The future is always open and social actors can always radically modify a given course of action. Thus, when it comes to transforming social structures, the impact of interventions based on expert knowledge and technology can only be anticipated as plausible scenarios containing also a large dose of uncertainties<sup>5</sup>.

As an institution characterized by a set of goals, a knowledge base and practices (see Last's definition above) public health should be largely concerned with reflexive modernity. Public health is about using scientific knowledge for transforming the world to increase people's longevity and decrease the burden of disease. The very act of assigning a public health meaning to a human experience is changing the reality of this experience, thus rendering somewhat less accurate the very knowledge that contributed to assigning this experience a meaning relevant to

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<sup>3</sup> A significant dimension of this do-ability of one's own biography is the do-ability of one's own health (see Kickbush, Chapter 9).

<sup>4</sup> McQueen's chapter in this book discusses how contextualism, together with complexity and reflexivity, challenge the ability for health promotion to develop sound theoretical bases.

<sup>5</sup> One major difference between Giddens' and Beck's conceptions of late modernity lies in the generalisation of this conclusion to the natural world (Lash, 1994). Whereas Beck's *Risk Society* clearly extends the notion of reflexivity to humanity's attempts to rationally exploit and control nature, Giddens' reflexivity seems to be limited to social innovations. This discrepancy in their thinking is only tangentially related to the argument developed here since it is generally accepted that public health programs and interventions include important social components.

public health. An example of public health power to change the meaning of social realities is the labelling by public health of the current tendency for an increasing proportion of North American people to carry excess weight, as an obesity epidemic. This label actually conveys to these overweight people the message that they have a health problem instead of, or in addition to, one of body image. In so doing, it is changing the course of the phenomenon itself: people will not react the same way to health concerns as they do to aesthetic or moral concerns. As a result, public health is always confronting a reality that is being transformed by the knowledge it produces and by its practice to transform the reality. Thus, in public health as in many other techno-scientific endeavours, more knowledge does not necessarily translate into more predictability and control. It often means increasing complexity and uncertainty about the impact of action through unintended consequences and reflexivity.

To continue to be a relevant institution in reflexive modernity<sup>6</sup>, public health must develop strategies and practices to manage this uncertainty. One such strategy lay in the confrontation of a multiplicity of perspectives about the situation and in the active exploration of a maximum of the plausible scenarios that are made possible, and are developing, in the course of action. Adding information, even contradictory, is a way of exploring such plausible scenarios (Callon, Lascoumes & Barthe, 2001). We will later argue that the management of uncertainty resulting from the reflexivity of social practices necessitates that the perspectives being considered and confronted include those of the broadest range of relevant actors. However, in order to properly examine how participation conceived as the confrontation of heterogeneous perspectives contributes to the management of uncertainty, one should first develop a theoretical understanding of the social actions and interactions that take place in situations of participation. And while health promotion is leading the way in advocating that public health practice include active participation, such a theoretically informed understanding is still lacking.

### 3. Programs as Public Health Practice

Practices of public health are broad and diverse and as illustrated in Last's definitions, they are essentially action-oriented. Most activities performed in the name of public health are concerned with the justification, design, implementation, or evaluation of actions that involve deliberate interventions to alter one or several processes that are thought to be harmful to the health of individuals or populations or promote and sustain healthy actions (Green & Kreuter, 1999). Public health interventions may take a variety of forms, however, three types dominate public health practice: public policy that regulates social actors' practice through sanctions and norms (e.g.: tobacco regulations; car seat belt laws, safety norms); the

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<sup>6</sup> We mean by this public health capacity to influence the orientation of society in a way that is compatible with its goal of improving the health of the population.

development and maintenance of public infrastructures for people to use more or less freely (e.g. clean water, sanitation, bike paths); and programs in the sense of resources and knowledge to achieve specific goals (e.g. vaccination, diabetes prevention, community development). Although the question of participation is relevant to all of these forms, this discussion will mainly focus on programs.

Even if the term program is widely used in relation to public health interventions, attempts at defining its exact meaning and delineating its conceptual frontiers are scarce (Potvin, 2004). It is generally accepted that public health programs are composed of resources assembled to create and maintain activities and services designed and implemented to pursue specific objectives in response to a problematic situation that affects a target population in a specific context (Potvin, Haddad, & Frohlich, 2001). Using a spatial metaphor (MacKian, Elliot, Busby, et al., 2003), programs can also be characterized as social spaces: they involve network relationships between various social actors drawn together around a common interest; the aim being to create new meanings and/or relationships between actors relevant to the program's objectives. For example, a school-based smoking prevention program would endeavour to change the meaning of tobacco smoking for adolescents, assigning it a negative value, rather than an accepted and cool one. With respect to the space metaphor, those relationships and their content can be mapped to illustrate the general form of those networks, the relative distances between actors involved, as well as the content of these interactions. Also included in the task of modelling a program, is the establishment of a set of criteria that allows for the identification of those relationships that are considered within or outside of the program space.

### *3.1. Top-Down and Bottom-Up Public Health Programs*

From the point of view of participation, the expressions “top down” and “bottom up” have often been used to contrast two ideal-types of programs.<sup>7</sup> In their ideal-type form, top down programs are oriented by a rigid vision of the changes to operate and what constitutes valid intermediary steps and end-points. This vision is primarily informed by scientific knowledge and often programs are conceived as empirical and real world tests of scientific knowledge (Nutbeam, Smith, & Catford, 1990). Their rationality is founded on the mastery of relevant technical and instrumental procedures. The legitimization of power lies in the recognised expertise of those actors who are imposing a scientifically informed vision on the other program's actors; the latter are being objectified to the extent that their own objectives and projects are doomed irrelevant for the program. These programs are planned as a series of steps, and their implementation aims at producing a chain of pre-determined events, as prescribed by expert scientific knowledge (Scheirer, 1994). Even if difficulties in following the set course of actions are encountered, a

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<sup>7</sup> The Weberian concept of ideal-type refers to a bundle of properties that would define an ideal instantiation of an object but that may be not be found all at once empirically.

great deal of efforts is usually deployed to fit the implementation conditions with those experimented during the program development phase (Nutbeam, Smith, & Catford, 1990).

In terms of social space, program planners use their expert knowledge and power to identify the set of relevant actors and to assign each group of actors a specific role in the sequence of events and activities that form a program. Relationships between the actors follow a hierarchical structure. This means that experts, from the top of the hierarchy, control the principal nexus of decisions. At the bottom of the pyramid, program beneficiaries are objectified, in the sense that they constitute the object the program aims to change and the relationships that they entertain with each other are not usually considered to rest within the program space. Finally, the content of the transactions between program actors is constrained by the actors' role, the program's objectives and the logic model. The landscape of such program space is static and orderly. It can be easily bounded in time and space by a set of criteria that are manipulated by program designers, implemented by program staff, and experienced by the program's beneficiaries<sup>8</sup>.

In health promotion and disease prevention, many community trials were designed by academic researchers in order to test specific hypotheses. The Minnesota Heart Health (Salonen, Kottke, Jacobs, et al., 1986), the Pawtucket Heart Health (Lefebvre, Lasater, Carleton, et al., 1987), and the COMMIT trial (COMMIT Research Group, 1991), to name just a few, are examples of top down programs. Although these programs did provide room for implementation variations following differences in contexts, they constitute attempts to use scientific knowledge about health and its determinants to design and implement activities and services aimed at correcting problematic situations with little input from other sources. In these instances, the rationality rests essentially in the correspondence between the scientific knowledge about the problematic situation and its determinants, on the one hand, and the technical solutions that were fabricated and encapsulated within the programs, on the other hand.

At the other end of the spectrum, there exist programs that are much less rigidly organised, almost to the point that they might appear as being improvised. In their ideal forms, bottom up programs are dynamic social spaces in which various groups of actors negotiate and coordinate their actions to develop a common vision and implement the activities that may lead to the realisation of this common vision. Scientific knowledge is one among several types of knowledge mobilized to structure and inform such a social space. The vision and objectives of bottom-up programs result from the confrontation of expert objective epidemiological and other types of diagnosis with the subjective knowledge of the local conditions and with values as formulated by concerned actors. This means indeed that the development of vision and objectives in these programs follows a more organic process, iterative and context specific.

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<sup>8</sup> These three categories of actors are mostly useful in top down type of programs. The flatter the relationships between program actors, the more likely the distinctions between these categories will be blurred.

These programs often have as a starting point a loose menu of activities that are more or less framed and reframed by program staff and local actors in a permanent negotiation process. Indeed, identifying the relevant actors and trying to engage with them often constitute the core of the initial activities (Bisset, Cargo, Delormier, et al., 2004). One property of the negotiation process that enhances the dynamic evolution of a program is its capacity to be responsive to the ever-changing conditions of the broader environment (Potvin, Cargo, McComber, et al., 2003). The minimally formalised initial conditions that characterize bottom up programs, lead to a variety of developments, some mostly unpredictable at the start of the enterprise (Potvin & Chabot, 2002). Some programs fade away shortly after being launched and others burgeon into projects and programs that have a strong history of renewing themselves.

This form of program represents an innovative practice in public health, marking a rupture with more traditional top down programs, and this is for two reasons. Firstly, because such programs take advantage of horizontal relationships between all categories of actors, complex systems are produced whose initial conditions cannot be controlled by experts, whose evolution cannot be planned in advance, and whose outcomes are mostly unpredictable. Even if health professionals could manipulate the formative stages of a program, they cannot diminish the impact of the existing relationships between the local actors who engage with the program, thus helping to shape the functioning of the program (Potvin & Chabot, 2002). Secondly, because numerous actors in such programs are identified as spokespersons for various relevant organisations or social groups, and because actors' participation can rarely be imposed, the program structure is more akin to that of a network, reaching out beyond the immediate circle of participants and target groups. Indeed one of the strengths of this public health practice is to be responsive to changes in environmental conditions through its capacity to engage with newly identified relevant actors (Potvin, Cargo, McComber, et al., 2003).

There is little doubt that the bottom up form of public health programs is chiefly identified with health promotion on the one hand, (Potvin, Gendron, Bilodeau et al., 2005; Potvin & Chabot, 2002), and would be widely perceived as being more favourable to participation on the other hand (Green et al., 1995) however participation is defined. Even if participation has been introduced in health care systems since the 1960's (White, 2000), its enshrinement as a key value and principle of health promotion (Rootman et al., 2001; Robertson & Minkler, 1994) has sealed its generalized and sustainable association with public health and health promotion. Although numerous essays on public participation are being published in the health promotion literature, there is a lack of critical analysis about participation in general and on the favourable conditions for its emergence, how it can be nurtured and how it affects programs (Zakus & Lysack, 1998)<sup>9</sup>.

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<sup>9</sup> One notable exception is a recent paper by Contandriopoulos (2004) in which the author uses Bourdieu's concepts of symbolic struggle and objectivation to analyze public participation in health care decision making.



### 3.2. *The Uncritical Public Health Rhetoric of Participation*

One striking feature of the literature on participation in relation to public health and health promotion is the abundance of expressions that are used interchangeably. The term participation is most often linked to a broad, non-specific, category of people: consumers, citizens, community, the public or lay participants (White, 2000). These categories refer to people that are outside of the health system in contrast to those who are inside, i.e. the public health experts, administrators, practitioners, and researchers<sup>10</sup>.

In terms of top-down type programs, people from inside the health system, (i.e. the professional experts recognised as such through a series of institutional rules), are those in control of the program space and those from outside the system are the beneficiaries of program activities or services. It is the beneficiaries' objectified problems that the program is designed to solve. Feedback loops from those beneficiaries towards experts are scarce and rarely effective in modifying experts' practice. Conversely, in bottom up programs, the roles and relationships within the program space do not follow the inside/outside distinction. Diverse forms of knowledge are actively sought and valued to enrich and broaden program's perspective on issues of interest. Thus, for the remainder of the chapter participation will be used as a generic term to encompass: those practices that involve collaborative relationships in the form of exchanges of opinion, knowledge or other resources between various groups of actors concerned by, and willing to, devote time and resources to issues of relevance to health in order to participate in decision making regarding priorities, planning, implementation or evaluation of public health programs.

The health literature provides three broad frameworks for thinking about participation. The first one analyses participation in terms of a quantifiable characteristic, in the continuity of Arnstein's work (1969), whose eight-step ladder of citizen participation provides a rating of the degree of control exercised by citizens upon the program. One recent version of this work uses the concept of ownership to describe this sense of control over program features by various groups of actors involved in a program (Cargo et al., 2003; Green & Mercer, 2001). The second type focuses upon the program's features in which program beneficiaries are involved. Rifkin, Muller, & Bichmann (1988) designed a measurement instrument that identifies participation in five aspects of the program: leadership; needs identification; organisation; resource mobilization; and management. The work of Green et al. (1995) that resulted in an evaluation grid to assess the level of participation in health promotion is a synthesis of these two

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<sup>10</sup> In reflexive modernity where specialized knowledge is widely available and where individuals are lifelong learners, this distinction between experts from inside the health systems and lay people of all sorts (consumer, patients citizens and so on) is increasingly blurred (see Balbo, this book, and Callon, Lascoume & Barthe, 2001). This state of affair renders even more relevant a conceptualisation of participation that transcends this distinction between expert and lay people.

types of framework. Finally, a third type highlights the ideological dimension of participation. Fournier and Potvin (1995) argue that underlining the promotion of participation are three potentially conflicting values, utilitarianism, democracy, and empowerment. These, in turn result in three forms of participation. Program efficiency is enhanced through utilitarian participation. Representation of beneficiary's diversity is increased through a democratic form. Finally people's control over the conditions of their health is improved through empowering participation<sup>11</sup>.

Although such empirical descriptions of the quantity, program features, and values associated with participation are essential components for a comprehensive understanding of participation, they remain unsatisfactory. First, they all implicitly or explicitly reiterate the inside/outside of the health system distinction, making participation an asymmetrical process where health experts are allowing outsiders to have a voice in health matters. Lastly, none of these frameworks provide an analysis of the social processes at play when participation is implemented in health programs. In response to the lament that "as a specific technique, community participation is not well understood" (Zakus & Lysack, 1998, p. 3), the next section proposes a theoretical model of the social process at play in situations of participation. This model is based on the sociology of translation, a social theory that seeks to explain the dynamics of network expansion.

#### 4. Actor Network Theory and Participation

The work of Michel Callon in the field of science and technology studies provides the basis for our conceptualisation of participation in health programs. For the past 25 years, Callon has conducted systematic observational studies on the sociology of knowledge development. He followed groups of researchers in their daily work, including their interactions and collaborative transactions with lay people, as they pursued their research objectives. His sociology of translation renamed, Actor Network Theory, offers a theoretical model for the social process leading to technical innovations. The analogy of innovation is relevant for health promotion programs in the sense that such programs constitute either a local adaptation of programs tried elsewhere or locally designed actions to address local issues. In both cases, programs are innovative set of actions in their local context. Therefore, the analytical categories developed in the course of Callon's work are relevant for the analysis of the collaborative process that develops between groups of actors in health promotion programs.

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<sup>11</sup> This chapter does not address the issue of empowerment, even if for many commentators in health promotion the notions of empowerment and participation are often used together. We agree that a critical appraisal of the notion of empowerment is as important as that of participation, but we think that each notion should be examined for its own sake before they could be linked into a coherent theoretical framework.

In the next sections we will further develop the idea that programs are socio-technical networks that expand through translation processes and then examine how participation is a special case of such programs.

#### *4.1. Programs as Socio Technical Networks*

Callon's research program is an attempt to elaborate a theoretical framework for analysing the elaboration of scientific knowledge and applied technology. For Callon (1986, 1989a, 1989b), all scientific propositions are embedded within a network of actors, both human and non-human. Scientific facts are not revealed by nature to a passive scientific observer. Scientific propositions need to be elaborated through systems of action that include previous knowledge and work done by other scientists experimental, and/or measurement apparatus that form the know-how (or embodied knowledge) of a group of scientists, testing by other groups using a variety of other apparatus and techniques, and the utilisation into new technologies (Latour, 1991). For Callon, all of the knowledge, apparatus, technical skills, actions, and humans involved in this process form a socio-technical network (1989a). Furthermore, all of these specific entities (knowledge, apparatus, etc. . . ) mobilized in any given socio-technical network can be conceptualised as "mouthpieces" for the broader categories of actors they represent (Akrich, Callon, & Latour, 1988b). It is only through the analysis of its position in a socio technical network that the meaning of any scientific proposition can be fully assessed (Callon, 1999).

The concept of socio-technical network can also be applied to health programs when understood as systems of action. Indeed, health promotion programs are composed of objectives, resources, knowledge, experts, lay people, staff members, and contextual elements all forming a composite of human and non-human actors. In any instantiation of a program, each of these categories of elements is actually represented by a few specific entities. The particular health experts, words used for defining the objectives, persons who are targeted by the program and so on, are all potential mouthpieces for the broader categories to which they belong. These actors, their actions and the social space they create form a socio-technical network. So the concept of socio-technical network used to analyse knowledge in the making can also be expanded to analyse the life of programs.

Another area of relevance of Callon's work to health promotion programs is the relationship between knowledge and action. One important distinction resulting from the social studies of science is the distinction between "science as made" and "science in the making" (Callon & Latour, 1991; Latour, 1989). Science as made is composed of the numerous scientific facts that are produced in laboratories and disseminated in the public domain as powerful and almost irrefutable assertions about the state of the world, once they had been validated within the realm of the scientific activity (e.g.: smoking tobacco increases the risk of lung cancer; regular practice of physical activity increases longevity). When they reach the public domain, scientific facts are essentially purified of the controversies and debates

that surrounded them when they were being elaborated<sup>12</sup>. Science in the making is an account of the translation that transformed observations into scientific facts through a negotiation process between relevant human and non human actors. To become a scientific fact an observation needs to be integrated into a socio-technical network and this integration follows a translation process.

Knowledge results from a negotiation process between heterogeneous actors whose viewpoints and perspectives are not necessarily compatible a priori (Callon, 1999). For new knowledge to emerge there has to be a negotiation process made of transformations and trade offs. Propositions have to be modified: each contender taking into account his or her opponents' perspectives, and provide arguments that cannot be rejected. Knowledge is negotiated to the extent that it results from mutual concessions by emerging groups that attempt to agree while assessing the relative validity of their own arguments (Callon & Latour, 1991).

Not unlike science in the making, the practice of health promotion programs also involves translation, negotiation, transformations and compromises. Various bodies of knowledge have to negotiate their role in the construction of the problems that need to be addressed locally and in the elaboration of the solutions. Negotiations between knowledge produced in controlled conditions and the constraints imposed by local implementation conditions necessarily result into a form of program adaptation. Finally, a variety of social actors coming from a diversity of horizons, representing various interests, have to negotiate a common vision for the program as well as a course of action that takes into account the diversity of interests from relevant actors. All of this compose a process by which the different perspectives from the various actors are confronted in negotiations that redefine these perspectives and recompose existing networks. Public health and health promotion programs are not defined nor shaped solely by the logic models that translate expert knowledge into action but also through the actions of, and interactions between, the various actors located within the program's social space.

#### *4.2. The Four Operations of Translation*

Callon calls translation the ensemble of four operations that lead to the creation of new networks, or to the expansion of existing ones. This occurs through the integration of heterogeneous actors with different goals and interests, who are mobilized by common finalities and spokespersons with regards to a given situation (Callon, Lascoumes, & Barthe, 2001). These four operations that are called

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<sup>12</sup> A case in point is the association between cigarette smoking and lung cancer. Nowadays, nobody would contest the scientific fact that cigarette smoking is a major cause of lung cancer. The heated controversy that involved leading statistician, epidemiologist and psychologist such as R. A. Fisher (1958a, 1958b), J. Berkson (1955) and H. J. Eysenck (Eysenck, Tarrant, & Woolf, 1960) in the 1950's concerning the association between cigarette smoking and lung cancer is almost forgotten now. See Vandenbroucke (1989), Stolley (1991) and the associated commentaries published in March 1<sup>st</sup> 1991 issue of the American Journal of Epidemiology for an interesting and informative debate about this controversy.

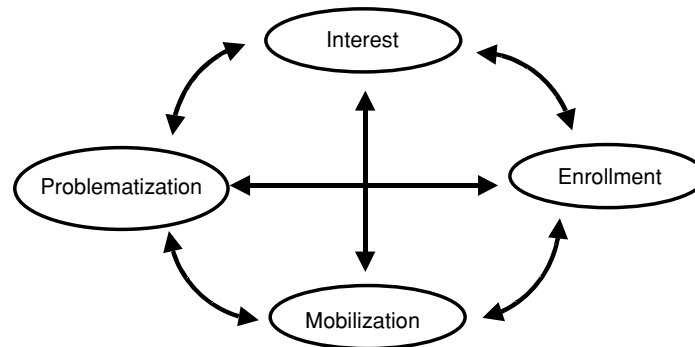


FIGURE 7.1. The four operations of translation.

problematization, interest, enrolment and mobilization<sup>13</sup>, are iterative and do not necessarily follow a pre determined sequence as illustrated in Figure 7.1. The initiators of the translation process may vary. In most instances of public health programs, experts are leading the process, but documented cases exist where lay people have also initiated translation process by asking experts to help them find a solution to a situation they perceived as problematic and that required professional and scientific expertise. Finally, these operations do not presuppose a positive attitude of the initiator toward participatory approaches. These operations are merely milestones in a process.

The operation of problematization consists of identifying groups of relevant actors for a given issue, and in so doing, expanding the meaning of the issue. This operation is an acknowledgement that program initiators can only develop a limited understanding of the issue at hand and that they cannot control all aspects of the actions to be undertaken (Callon, Lascoume & Barthe, 2001). Groups of actors are deemed relevant, to the extent that they are perceived by the initiators as controlling resources or knowledge that are necessary for the full exploration of the question, or if they can give access to other relevant actors. To problematize a question is to demonstrate to the groups of relevant actors that the fulfilment of their own objectives and interests is linked to a given issue. Furthermore, the problematization operation is an essential step in mapping the social space of programs through establishing the social distances among the various relevant groups and between each of them and the issue of interest. In so doing it redefines various actors' beliefs about the question in an attempt to maximize the relevance of addressing this issue in the pursuit of their own objectives.

As an example of problematization, imagine that a group of local citizens (that we call initiators) conceive essentially as a moral issue attempts by municipal

<sup>13</sup> Callon's work is mainly published in French. The labels given of the four operations are those found in English translations of Callon's work. The original French labels are: problématisation, intéressement, enrôlement et déplacement.

authority to legalize street prostitution in their neighbourhood. If this is the case they are likely to initiate discussions with experts in ethics or with religious leaders and elaborate moral arguments in their confrontation with the proponents of this liberalisation. In an attempt to mobilize powerful allies they may revise this initial problematization so as to include the local public health authority as a significant actor. To do so, it is likely that they would have to alter the original meaning they ascribed to the legalization of prostitution and add a health dimension to it. This may lead them to hypothesize that there is an interest for public health authorities to preventing the possible dispersion of used condoms in parks and public spaces that may be associated with the legalization of prostitution<sup>14</sup>. The group of initiators could also formulate corresponding hypotheses regarding the local school authorities, adding to it an educational dimension and so on. In so doing however, they lose some of their own control over the definition of the problem and the actions to be undertaken regarding its solution. In reverse, failure to problematize relevant actors early in the action, may lead to the creation of a strong opposition that will elaborate its own problematization of the issue which may be conflicting. To problematize is to create associations between social actors and an issue of interest that is relevant in the pursuit of their own interests, elaborating a network among which some of the actors become essentials for the pursuit of the objectives and interests of other actors.

The operation of problematization can involve actors that are more or less active and more or less aware of their involvement in such a process<sup>15</sup>. Independently of their level of awareness, these groups of actors may behave according to the initiator's problematization explicitly or tacitly accepting the identity and role assigned to them or they may refuse this identity. The initiators need to engage in a negotiation with the groups of relevant actors in order to solidify the hypothetical relationships and identities hypothesised by the problematization. It is through the operation of interest that this negotiation develops.

Interest is the operation by which the initiators try to impose and to stabilize the other actors' role and identity in relation to the issue of interest through a series of mediated actions. The media is an apparatus the function of which is to allow the positioning of each group of actors in relationship with the question of interest (Akrich, Callon, & Latour, 1988a) To interest a group of actors is to establish with them a link, that may exclude other potential links. While problematization operations position the relevant actors with reference to a given social space,

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<sup>14</sup> Note that the condom argument has acquired a strong health meaning mainly in association with the prevention of HIV-AIDS and Hepatitis C.

<sup>15</sup> In one of his early presentation of the theory of translation, Callon (1986) uses the example of a network composed of seashells, fishermen and scientists, in which each group needed the others in order for the particular seashell colony to continue to exist, for the fishermen to continue to earn their living by fishing from that colony, and the scientists to develop knowledge on that specific seashell specie. In this particular example, the scientists were the sole translators whereas the roles of the fishermen and of the seashells although as important, were more reactive than proactive.

interest sets up the content of their interaction with each other and more specifically with the issue of interest. Interest is based upon interpretations about what the other actors to be enrolled are and want. The interest apparatus is there to fix the identity of the actors in the network while interrupting competing relations, leading to the emergence of new social structures (Callon, 1986).

In the previous example, interest of the public health authority by the group of concerned citizens could develop through various apparatus and strategies. Citizens could alert the local newspapers and tell stories about children finding condoms in parks. They could invite physicians as speakers in citizens' assemblies. The reactions of the public health authorities to these various actions would in turn define the negotiation that would take place with the citizens. The public health authority could for example refuse to adopt the identity of a public regulatory authority embarking on a crusade against prostitution and adopt that of experts showing interest in structuring the experience of legalizing prostitution, and studying its consequence. The negotiation process that takes place with the interest operation may or may not transform the initial problematization.

The negotiations that take place during interest operation and that materialize the definitions and distributions of the various actors' roles are not always successful. Some actors may not behave as planned by the initiators, refusing their hypothetical identity. This identity can also be altered through the enrolment operation (Callon & Law, 1982). The operation of enrolment is the successful completion of an interest operation. "It designated the mechanism by which a role is defined and assigned to an actor who accepts it, thus integrating the network" (Callon, 1986). Enrolment strategies are numerous and various; they may follow a diversity of modalities and may occur simultaneously with a variety of actors. Once enrolled and their role redefined and accepted, groups of actors are part of a new network, their roles are coordinated in the pursuit of a common objective. As the system of action develops and new actors are identified as relevant, these roles are re-examined and redefined through iterative problematization and interest operations.

In our example, in their negotiation with the public health authorities, the group of citizens may have to accept that in order to count on this powerful ally, they would need to accept a modified version of the proposed legislation. For example, one in which the legalization is experimented in a well structured manner, which may suit better the long term objectives and mandate of a public health agency. This redefinition however implies also the redefinition of new roles for the sex workers and their relationships with the citizens, leading to a new problematization of the question in which new sex workers' identity would have to be entertained. The approval of these workers to enrol in such experimentation can only be obtained through another operation of interest, potentially led by the concerned citizens together with the public health authority.

The fourth operation is that of the mobilization of the actors. In all the operations of translation, the entirety of the individuals composing a group may not be involved throughout the translation process. In fact, most of the negotiations take place with mouthpieces whose legitimacy is denoted by their capacity to mobilize the group they represent. This mobilization of a group's interest by mouthpieces

goes on until a limited number of actors can represent the whole network. The operation of mobilization is that by which selected actors identified as mouthpieces for the system or parts of it are entitled to, and do effectively, displace other actors enrolled. The capacity to mobilize a variety of actors in a network is thus the ultimate test of the legitimacy of a system's mouthpieces. The more heterogeneous and the less stable a network, the more intense the negotiation between the groups of actors to establish the legitimacy of the mouthpieces and the more likely it is that more than one mouthpiece will be necessary, or that the network will not survive the rise of a controversy. Of course, in highly hierarchical organisations, the legitimacy is often associated with the position in the hierarchy; however, in emerging networks where controversies are frequent, legitimacy is gained through a negotiation process. The legitimacy of the mouthpieces for those they represent can also be appraised through the various procedures that is required for the former to mobilize the latter. In our previous example because of the hierarchical and program structure of public health organisations, the professional responsible for AIDS prevention might be a representative spokesperson for this group of actors, and she will mobilize resources in her organisation by using the power associated with her role in this organisation, whereas for the group of sex workers, spokespersons may have to be designated through a consultative process. Even so, these spokespersons may have to have frequent meetings and discussions with the group they represent.

A translation process develops whenever social actors attempt to elaborate a novel network of relationships between various groups of actors who do not share *a priori* the same perspective and interests on an issue. Translation is the process by which these groups are strategically displaced in relation to each other and to an issue of interest. Translation is also the process by which a limited number of mouthpieces can express, in a common language, the will and discourse of the groups of actors involved in the network. A network of relationships between social actors is not static. New events, new actors or new relationships can contradict or shed doubts on the legitimacy of the mouthpieces or of their representation of the network, triggering controversies. The notion of dissidence describes the process of contesting the legitimacy of the mouthpieces by refusing the displacement and mobilization they call for. Callon calls "controversies" all those signs that show that mouthpieces legitimacy and capacity to mobilize the network is contested.

The translation process, as described by Callon, involves the constant adjustment of a plurality of actors in a social space through the operations of problematization, interest, enrolment, and mobilization of relevant actors (see Figure 7.1). As a social process, however, translation does not require that all actors from all groups act as translators of other groups of actors. Translators are those actors who initiate the translation process by: 1) problematizing a situation in terms of the roles and identities of relevant actors; 2) developing the media and apparatus to interest relevant actors; 3) enrolling other actors in their problematization and 4) mobilizing them into actions.

Translators can also act as network's mouthpieces and their legitimacy as mouthpieces is constructed throughout the translation process itself. Mouthpieces are



successful translators of a given network, who can mobilize the network as well as represent it to outsiders.

### *4.3. Participation as a Multidirectional Translation Process*

Translation, as described by Callon, is a series of operations in which each actor's level of activity and power is variable. As mentioned earlier, in his 1986 paper Callon uses as a case example a research program that involves three researchers, a fishermen union and a local seashell population. In this example, the researchers act as the sole translators and spokespersons for the whole network. Neither the seashells nor the fishermen took an active role in any of the translation operations; they reacted to the problematization, interest, enrolment and mobilization operated by researchers. These reactions with regards to the specific roles and identities assigned to them by the researchers' problematization often triggered negotiations and changes in the problematization, but neither the seashells nor the fisherman attempted to translate the other groups of actors in the pursuit of their interest. In addition, the specific seashells and fishermen enrolled in the process could be conceptualised as mouthpieces for their own groups. Not being actively involved in the translation however, neither the seashells nor the fishermen could or would constitute legitimate mouthpieces for the new network of relationships that was created by the translation process. One proposition is that although "translation" provides a valid and useful explanation of the social processes occurring in the social space of programs, translation is not equivalent to participation. In Callon's example, the researchers' control over the whole process was rarely challenged, and more importantly, these researchers were never translated by the other groups of actors. Neither seashells nor fishermen actively problematized the situation from their own perspective. As a result, translation as described in most of Callon's work is unidirectional. From the perspective of the translator the range of actions of the other actors is limited by the problematization operated by this unique translator. The main proposition of this chapter is that participation in health promotion programs occurs when at least two actors from different groups representing different initial interests are actively involved as translators of the other groups and as mouthpieces for the entire network. Participation is thus a multidirectional translation process.

Callon mostly reported on translation processes initiated, operated, and controlled by a single group of actors. Mostly concerned with knowledge production and socio-technical innovation, his work rarely addresses situations where scientists could not legitimately act as the sole translators for a given socio-technical network. I propose that participation is what happens when several groups among those involved in a social space develop their own problematization and initiate actions in order to translate other relevant groups. These multiple translation processes involve heterogeneous mouthpieces, each representing the problematization and interests of a relevant group of actors. Each translator is thus involved in two articulated translation processes. In one process, as spokespersons of a specific group of actors, they participate in the group's translation that they, as mouthpieces,

can legitimately mobilize. In another process, in promoting the problematization and interests of their own group, they engage in active translations of other groups. Within this context, participation is the confrontation of various groups' problematization of a situation, where none of the groups can, or is willing to impose its own translation to the other groups.

These multiple translations need to be somewhat limited in number to occur in a specific space, otherwise the situation could be chaotic and the network may not mobilise a coherent set of actions. I thus propose that participation is characterised by a governing structure in which spokespersons from the various groups initiate translation operations and react to one another's translations in such a way that they can mobilize their own group when required and in a direction compatible with their network's interests and objectives. So, the multidirectional translation required in a participatory process entails a doubly articulated translation.

As illustrated in Figure 7.2, in the first level, a limited number of actors, who are mouthpieces for other actors, have to initiate a translation process among them. For that first-level translation to occur, the actors involved have to be engaged in a negotiation process in order to articulate the operations of the second-level translation in which their governance structure is engaged. This first level translation occurs within the governing structure and the second occurs between the governing structure and the other actors. The other level translation is occurring within and between each group's spokesperson and the groups they represent. They may or

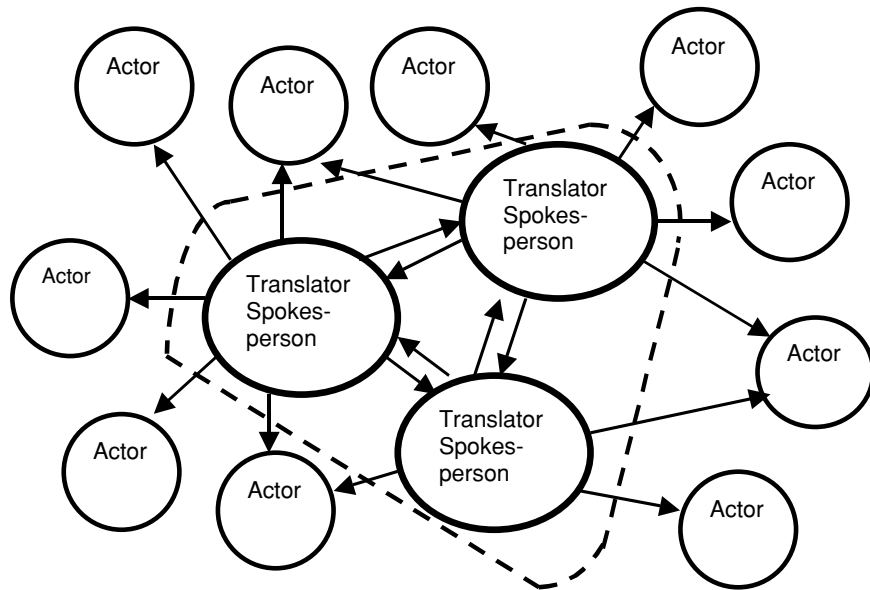


FIGURE 7.2. Network with multidirectional translations\*.

\* The single pointed arrows of this figure represent translators' capacity to mobilize other actors in the network.

may not be translators in their own group, but they need to be able to mobilise their groups in actions called for by the whole network's interests.

In such a doubly articulated network the mouthpieces assembled in the governing structure form a microcosm of the whole network whose capacity to create effective program space depends upon its capacity to anticipate the second level translation process as well as to imagine solutions to the problems that will be raised through iterative negotiations. Due to this, there is a constant reshaping of the program space to adapt to the ever changing results of the various negotiations is another characteristic of participatory programs. It is through this negotiation that participants to the governing structure map out a common problematization of all relevant groups of actors, including those that they are representing in the governing structure. One consequence of this process is the development of equivalences between their respective discourses and representations of the whole system. Each of the translator/spokesperson involved in the governing structure has the potential to become a legitimate spokesperson for the entire network while maintaining an obligation to remain a legitimate spokesperson of his or her own group of actors. The example presented in the Box below shows some of the explanatory power of framing participation in health promotion program as multidirectional translation.<sup>16</sup>

Many interesting features of the Kahnawake Schools Diabetes Prevention Project (KSDPP) acquire meaning when analysed through this multiple translation framework (see Macaulay et al., 1997; Potvin et al., 2003 for a detailed description of the project). This project identifies itself as a participatory project, founded upon the functional equal partnership between a group of academic researchers, a group of community researchers/professionals, and the community through the KSDPP Community Advisory Board (CAB), (Macaulay et al., 1998). An apparent paradox of this project is that despite the fact that most of the project's interventions are targeted at young people, the latter are not specifically mentioned in the "Code of Research Ethics" that form that partnership agreement, neither are they part of the governing structures of the project. The multidirectional articulation model of participation resolves this paradox. In their problematization of the situation of diabetes in their community, the group of elders and community leaders identified children and young people as a key group in the pursuit of their vision of a community free of diabetes. Community leaders could not however interest and enrol children with regards to diabetes prevention without the expert knowledge of community researchers and professionals. In addition, to have access to some of the required funds and

<sup>16</sup> In agreement with the Code of Research Ethics developed for this project (KSDPP, 2004), the chapter and the content of this box were discussed in a seminar with community researchers and representatives of the Community Advisory Board. The author of this chapter had been involved in this project as academic researcher for more than 10 years. Even if the information founding this example is all in the public domain, it was felt that such discussion was important to keep transparent all translation processes and all instances in which a program actor may be perceived as a potential spokesperson for the entire program.

resources, community leaders together with community researchers had to develop a research component; this was a necessary apparatus to interest funding agencies and mobilise their resources. This is why academic researchers were problematized, interested, and enrolled in the project. The community, through CAB as spokespersons, the community researchers/professionals and the academic researchers form the governing structure of translators for which the first level translation described earlier applies. Together, and in a concerted manner, they problematize, interest, enrol, and mobilize various other groups of actors, inside and outside of the community. The young people in the community form one such a group. They are mobilized through program activities and to the extent that CAB representatives and community staff in the governing structure are perceived as legitimate spokespersons of community young people's interest, there is no controversy and the governing structure can continue its work. Obviously, one could question whether program staff and community representatives are adequate spokespersons for community young people. The answer to that from a translation perspective is that a controversy will emerge when spokespersons will lose their legitimacy, signalling to the governing structure that the current problematization is not satisfactory for all actors involved and should be revised.

The double articulation that accompanies a multidirectional translation process also helps explain why some groups in the community may sense that their level of ownership over the project is low, despite its participatory nature (Cargo et al., 2003). Indeed, a longitudinal analysis of the sense of ownership over the project expressed by various groups in the community indicates that people in the Community Advisory Board together with the project staff, composed of community people, are the two groups with the greatest sense of ownership over all aspects of the project. Interestingly, the group of researchers from outside of the community express very little ownership about the intervention part of the project and a high satisfaction with that situation. In counterpart, some other community organisation members (referred to as community affiliates in Cargo et al. (2003)), who are associated with the development and implementation of some of the project's activities expressed low satisfaction with their actual level of control over the project. In terms of the two translation processes involved in this participatory program, these results indicate that the CAB members together with the program staff constitute the main actors in the translation process that occurs between the governing structure and community groups. The other community organisations that are translated by this governing structure have less control over the project. As for the academic researchers, their low level of perceived ownership over the project is an indication that the KSDPP has never been conceived as a hypothesis testing experiment and that they accept to be translated in the pursuit of community objectives. Their high level of satisfaction is a sign that through the project they can actively pursue academic objectives of conducting research, producing knowledge, and training graduate students (Potvin et al., 2003).

Finally, the doubly articulated translation creates a very dynamic space not only because each new compromise that results from the negotiation within the governing structure builds upon all previous negotiations, but also because these various iterations of the process transform the identity of all actors and therefore potentially affects the representativeness of the mouthpieces within the governing structure. This makes the whole situation much more complex and, more importantly, much more unstable than one characterized by a unique translator.

## 5. Health Promotion Programs, Uncertainty, and Participation

The complexity and dynamism resulting from participation in health promotion programs, conceived and experienced as a multidirectional translation process in a socio-technical network are key for the relevance of health promotion programs in reflexive modernity. Going back to uncertainty and individualization as two characteristics of reflexive modernity the remainder of this chapter will explore how participation allows health promotion programs to better cope with these features of our society.

Understanding health promotion programs as translation processes and participatory health promotion programs as multidirectional translation highlights two important features of participatory programs. The first is that programs are composed of social actors whose relationships are constantly negotiated within a dynamic problematization of the situation of interest. The second is that participation is a deliberate attempt to make problematization inclusive and relevant for a variety of groups of actors in the pursuit of their own objectives. These ideas are central to understanding how health promotion programs can orient social change in reflexive modernity.

A conception of health promotion programs that addresses the challenges of reflexive modernity should rest on the idea that in a reflexive world, a predictable chain of events leading to local transformations cannot be reliably triggered by implementing a program based upon universal knowledge. Meaning, programs cannot be reduced to technical solutions that can be imported in local contexts once they have proved effective. The working hypothesis that such a program could provide a valid answer to a local challenge needs to be problematized within an existing network of local actors. Such problematization, in turns, induces a translation process through which the meaning of the situation and the role of the various actors, including that of the program itself will be renegotiated. Adaptations to local contexts and realignments of the planned actions have to be negotiated continuously because any program aims at a moving target, and the target is moving precisely as a result of the events associated with the program. By proposing a novel problematization of a given situation, health promotion programs introduce new meanings and roles, the effect of which is to induce a new dynamism in the situation of interest. Independently of the carefulness of the planning process, health promotion programs not only are operating in uncertainty but they are themselves sources of uncertainty.

There are three possible reactions to this state of affair. The optimist modernist reaction is to deny that programs contribute in creating a more complex reality and that when appropriately manipulated, technical solutions derived from objective science leads to predictable outcomes. The pessimist modernist reaction is mainly associated with post modernism; and rests upon the thought that scientific knowledge cannot be translated into technical innovations with predictable effects; there is no possibility to deliberately orient social change in the pursuit of specific objectives. A third posture is to attempt to manage this uncertainty associated with the implementation of health promotion programs. One way of doing so is to foster participation by inviting a variety of groups of relevant actors to actively engage in their own problematization of the situation and to render the multidirectional translation that characterize the process as transparent as possible through a governance structure made of spokespersons of the various groups actively involved as translators.

Uncertainty does not mean that the future is opaque and that anything could happen. Quite on the contrary, it refers to situations in which the range of plausible future developments is identifiable but where each of these possible futures cannot be assigned an exact probability of occurrence. I contend that participation helps manage this uncertainty and this in two ways. Firstly, the exploration of a wider range of possible futures through the negotiation and confrontation of the problematization that various groups of actors entertain about the situation provides a richer and more comprehensive assessment of the mechanism that produced any given situation, therefore resulting in a better informed action. Secondly, because the simultaneous occurrence of those multiple problematizations necessitates the constitution of functioning governance structures that rest on the involvement of spokespersons, a greater variety of groups of relevant actors can be mobilized through the program, thus resulting in a greater capacity to make things happen.

## 6. Conclusion

This chapter used Callon's sociology of translation to theorize public participation in health promotion and public health programs. In so doing, it illustrated how social theory may be put at work to better understand a key health promotion practice. More than that, by linking a macro social theory such as that of reflexive modernity to a micro social theory of action like the sociology of translation it is expected that such a theoretical exercise would lead to a critical appraisal of public participation as a practice, justifying its promotion in specific situations and providing health promotion practitioners with practical ideas on how to facilitate participation.

The problem, this chapter argues in line with Giddens' conception of modernity, is that the increasingly reflexive nature of our world renders the applications in local context of solutions derived from universal knowledge more and more problematic. This is even more so when social processes are involved because this is where reflexivity is primarily at play, and as such, probably the reason why the need to advance public participation was more acute in health promotion than in health care for example, because the health promotion clearly positions health

in the social domain. In addition, dealing with local social contexts for program implementation necessarily entails some degree of uncertainty, even for programs that are widely recognized as effective. Nonetheless, one should never consider public participation lightly and simply. The uncritical definition of public participation as the involvement of all concerned actors in all aspects of the program is plainly untenable and leads potentially to complete chaos.

Understanding public participation as a multidirectional translation process puts the emphasis on the negotiation process that needs to take place between representative and legitimate spokespersons of the various groups of actors. While these actors may problematize the situation differently, their mobilization is crucial for exploring and pursuing the actualisation of locally relevant scenarios. So, there are various degrees of public participation both in terms in the variety and heterogeneity of groups of actors actively involved as translators. In addition, there are varying degrees in terms of the power and legitimacy of the groups' spokespersons in the program's governance structure.

In closing, health promotion must be conceived, at least in part, as a practice that advances public health's capacity to fulfil its public responsibility. Its ability to do so, however, is not linked to the power of its ideology but to its profound and critical understanding of how those practices that are its trademark, such as participation, operate and contribute to improving the public's health in our contemporary society.

## References

- Akrich, M., Callon, M., & Latour, B. (1988a, Juin). A quoi tient le succès des innovations. Premier épisode: l'art de l'intéressement. *Annales des mines. Gérer et comprendre*, 12, 4–17.
- Akrich, M., Callon, M., & Latour, B. (1988b, Septembre). A quoi tient le succès des innovations. Deuxième épisode: l'art de choisir les bons porte-parole. *Annales des mines. Gérer et comprendre*, 12, 18–29.
- Arnstein, S. R. (1969). A ladder of citizen participation. *Journal of the American Institute of Planners*, 35(4), 216–224.
- Beck, U. (1992). *Risk society: Towards a new modernity*. London: Sage.
- Beck, U. (1994). The reinvention of politics: Toward a theory of reflexive modernization. In U. Beck, A. Giddens, & S. Lash (Eds.), *Reflexive modernization. Politics, traditions and aesthetics in the modern social order* (pp. 1–55). Stanford, CA: Stanford University Press.
- Beck, U. (2000). Risk society revisited. In B. Adam, U. Beck, & J. Van Loon (Eds.), *The risk society and beyond. Critical issues for social theory* (pp. 221–229). London: Sage.
- Beck, U., Giddens, A., & Lash, S. (Eds.). (1994). *Reflexive modernization. Politics, traditions and aesthetics in the modern social order*. Stanford, CA: Stanford University Press.
- Berkson, J. (1955). The statistical study of association between smoking and lung cancer. *Mayo Clinic Proceedings*, 30, 319–347.
- Bisset, S. L., Cargo, M., Delormier, et al. (2004). Legitimising diabetes as a community health issue: A care analysis of the Kahnawake Schools Diabetes Prevention project. *Health Promotion International*, 19, 317–326.

- Callon, M. (1986). Elements pour une sociologie de la traduction. La domestication des coquilles Saint-Jacques et des marins-pêcheurs dans la baie de Saint-Brieuc. *L'année sociologique*, 36, 169–208.
- Callon, M. (1989a). Introduction. In M. Callon (Ed.), *La science et ses réseaux. Genèse et circulation des faits scientifiques* (pp. 7–33). Paris: La découverte.
- Callon, M. (1989b). L'agonie d'un laboratoire. In M. Callon (Ed.), *La science et ses réseaux. Genèse et circulation des faits scientifiques* (pp. 173–214). Paris: La découverte.
- Callon, M. (1999). Le réseau comme forme émergente et comme modalité de coordination: le cas des interactions stratégiques entre firmes industrielles et laboratoires académiques. In M. Callon, P. Cohendet, N. Curien, J.-M. Dalle, F. Eymard-Duvernay, D. Foray, & E. Schenk (Eds.), *Réseau et coordination* (pp. 13–64). Paris: Economica.
- Callon, M. (2001). Actor network theory. In N. Smelster & P. Balste (Eds.), *International encyclopedia of the social and behavioral sciences* (pp. 62–66). Oxford, UK: Pergamon.
- Callon, M., Lascoumes, P., & Barthe, Y. (2001). *Agir dans un monde incertain. Essai sur la démocratie technique*. Paris: Seuil.
- Callon, M., & Latour, B. (1991). Introduction. In M. Callon, & B. Latour (Eds.), *La science telle qu'elle se fait* (pp. 7–36). Paris: La découverte.
- Cargo, M., Levesque, L., Macaulay, A. C., et al., with the KSDPP Community Advisory Board. (2003). Community governance of the Kahnawake Schools Diabetes Prevention Project, Kahnawake Territory, Mohawk Nation, Canada. *Health Promotion International*, 18, 177–187.
- COMMIT Research Group. (1991). Community Intervention Trial for Smoking Cessation (COMMIT): Summary of design and intervention. *Journal of the National Cancer Institute*, 83, 1620–1628.
- Contandriopoulos, D. (2004). A sociological perspective on public participation in health care. *Social Science & Medicine*, 58, 321–330.
- Eysenk, H. J., Tarrant, M., & Woolf, M. (1960). Smoking and personality. *British Medical Journal*, 1, 1456–1460.
- Fassin, D. (1996). *L'espace politique de la santé*. Paris: Presses universitaires de France.
- Fisher, R. A. (1958a). Lung cancer and cigarettes? (Letter). *Nature*, 182, 108.
- Fisher, R. A. (1958b). Cancer and smoking (Letter). *Nature*, 182, 596.
- Fournier, P., & Potvin, L. (1995). Participation communautaire et programmes de santé: les fondements du dogme. *Sciences sociales et santé*, 13, 39–59.
- Frenk, J., Bobadilla, J.-L., Stern, C., et al. (1994). Elements of a theory of health transition. In L. C. Chen, A. Kleinman, & N. C. Ware (Eds.), *Health and social change in international perspective* (pp. 25–49). Boston: Harvard University Press.
- Giddens, A. (1990). *The consequences of modernity*. Stanford, CA: Stanford University Press.
- Giddens, A. (1994). Living in a post-traditional society. In U. Beck, A. Giddens, & S. Lash (Eds.), *Reflexive modernization. Politics, traditions and aesthetics in the modern social order* (pp. 56–109). Stanford, CA: Stanford University Press.
- Green, L. W., George, M. A., Daniel, M., et al. (1995). *Study of participatory research in health promotion: Review and recommendations for the development of participatory research in health promotion in Canada*. Ottawa: The Royal Society of Canada.
- Green, L. W., & Kreuter, M. (1999). *Health promotion planning: An educational and ecological approach*. Mountain View, CA: Mayfield.
- Green, L. W., & Mercer, S. (2001). Can public health researchers and agencies reconcile the push from funding bodies and pull from communities. *American Journal of Public Health*, 91, 1926–1929.



- Illich, I. (1975). *Limits to medicine. Medical nemesis: The expropriation of health*. London, UK: McClelland & Stewart.
- Lash, S. (1999). *Another modernity a different rationality*. Oxford: Blackwell.
- Latour, B. (1989). *La science en action*. Paris: La découverte.
- Latour, B. (1991). *Nous n'avons jamais été modernes: essai d'anthropologie symétrique*. Paris: La découverte.
- Latour, B. (1999). *Politiques de la nature. Comment faire entrer les sciences dans la démocratie*. Paris: La découverte.
- Lefebvre, R. C., Lasater, T. M., Carleton, R. A., et al. (1987). Theory and delivery of health programming in the community: The Pawtucket Heart Health Program. *Preventive Medicine, 16*, 80–95.
- Macaulay, A. C., Delormier, T., McComber, A. M., et al. (1998). Participatory research with Native community of Kahnawake creates innovative Code of Research Ethics. *Canadian Journal of Public Health, 89*, 105–108.
- Macaulay, A.C., Paradis, G., Potvin, L., et al. (1997). The Kahnawake Schools Diabetes Prevention Project: A diabetes primary prevention program in a native community in Canada. Intervention and baseline results. *Preventive Medicine, 26*, 779–790.
- MacKian, S., Elliott, H., Busby, H., et al. (2003). “Everywhere and nowhere”: Locating and understanding the “new” public health. *Health & Place, 9*, 219–229.
- Nutbeam, D., Smith, C., & Catford, J. (1990). Evaluation in health education: A review of progress, possibilities and problems. *Journal of Epidemiology and Community Health, 44*, 83–89.
- Potvin, L. (2004). On the nature of programs: Health promotion programmes as action. *Cienca, & Saude Coletiva, 9*, 731–738.
- Potvin, L., Cargo, M., McComber, et al. (2003). Implementing participatory intervention and research in communities: Lessons from the Kahnawake Schools Diabetes Prevention Project. *Social Science & Medicine, 56*, 1295–1305.
- Potvin, L., & Chabot, P. (2002). Splendour and misery of epidemiology for evaluation of health promotion. *Revista Brasileira de Epidemiologia, 5*(suppl. 1), 91–103.
- Potvin, L., Gendron, S., Bilodeau, A., & Chabot, P. (2005). Integrating social science theory into public health practice. *American Journal of Public Health, 95*, 591–595.
- Potvin, L., Haddad, S., & Frohlich, K. L. (2001). *Beyond process and outcome evaluation: A comprehensive approach for evaluating health promotion programmes*. In I. Rootman, M. Goodstadt, B. Hyndman, D.V. McQueen, L. Potvin, J. Springett, & E. Ziglio (Eds.), *Evaluation in health promotion. Principles and perspectives* (pp. 45–62). Copenhagen: WHO Regional Publications. European series No. 92.
- Rifkin, S. B., Muller, F., & Bichmann, W. (1988). Primary health care: On measuring participation. *Social Science & Medicine, 26*, 931–940.
- Robertson, A., & Minkler, M. (1994). New health promotion movement: A critical examination. *Health Education Quarterly, 21*, 295–312.
- Rootman, I., Goodstadt, M., Potvin, L., & Springett, J. (2001). A framework for health promotion evaluation. In I. Rootman, M. Goodstadt, B. Hyndman, D. V. McQueen, L. Potvin, J. Springett, & E. Ziglio (Eds.), *Evaluation in health promotion: Principles and perspectives* (pp. 7–38). Copenhagen: WHO Regional Publications. European series No. 92.
- Salonen, J. T., Kottke, T. E., Jacobs, D. R., & Hannan, P. J. (1986). Analysis of community-based cardiovascular disease prevention studies—evaluation issues in the North Karelia Project and the Minnesota Heart Health Program. *International Journal of Epidemiology, 15*, 176–182.

- Scheirer, M. A. (1994). Designing and using process evaluation. In J. S. Wholey, H. P. Hatry, & K. E. Newcomer (Eds.), *Handbook of practical program evaluation* (pp. 40–68). San Francisco: Jossey-Bass.
- Stolley, P. D. (1991). When genius errs: R. A. Fisher and the lung cancer controversy. *American Journal of Epidemiology*, *133*, 416–425.
- Vandenbroucke, J. P. (1989). Those who were wrong. *American Journal of Epidemiology*, *130*, 3–5.
- White, D. (2000). Consumer and community participation: A reassessment of process, impact, and value. In G. L. Albrecht, R. Fitzpatrick, & S. C. Scrimshaw (Eds.), *The handbook of social studies in health & medicine* (pp. 465–480). Thousand Oaks, CA: Sage.
- Zakus, J. D. L., & Lysack, C. L. (1998). Revisiting community participation. *Health Policy and Planning*, *13*, 1–12.