Chapter 3 – Health Systems – Methodological issues

Luhmann's Social Systems Theory departs from the traditional empirically orientated epistemology. Social systems are self-referred systems capable of self-observation. In cybernetic language (Foerster 2014), a self-referred system is "non-trivial" because, by observing itself and interpreting its own observations, the system can change links between inputs and outputs, therefore remaining to a large extent unpredictable. Besides that, by consisting of communications, social systems acquire functionalities related to the peculiarities of the social phenomenon of communication. Because of these conceptual decisions, a number of careful considerations are necessary in any attempt to acquire empirical evidence of a system's attributes and operations.

This chapter addresses key methodological concerns in studying social systems. First, we discuss the methodological implications of adopting the concepts presented in Chapters 1 and 2. Second, the following sub-section makes suggestions on how the researcher's gaze can navigate the operations of a system. The final sub-section concludes with a list of methodological points for analysing health systems and their components. A conclusion of the content of the three sub-sections is presented at the end.

1. Here we discuss the implications of recognizing health systems, their sub-systems and organizations as autopoietic. There are difficulties in approaching autopoiesis, however it is at work all the time, as otherwise any biological, psychic or social system would cease to exist.

Luhmann (2013) pointed out that the concept of autopoiesis has "weak explanatory power", indicating that although it is always at work in any living system, it fundamentally comprises all operations any system carries out. All operations contribute, or ultimately are, autopoiesis in the making. In its operations the systems are continuously reproducing themselves with the means they themselves produce.

He also made other relevant remarks. In his words: "Strictly speaking, nothing can be explained by means of autopoiesies" (Luhmann 2013, p. 80). He clarifies, for instance, that the hypotheses of systems development from lower to higher levels of complexity cannot be explained by autopoiesis, because it is at work, whatever the conditions in which a system operates. But he still advocates the use of the term he classifies as "meta-theory", similar to concepts that are never problematized in other science, for example what is the soul in psychology, or the social in sociology, or life in biology, and so on. "This concept gives little information concerning concrete work", Luhmann (2013, p. 31) says.

The theory therefore needs to bring in additional concepts. The notion that the system is in charge of its own reproduction is important and must be understood and kept in mind. It is also necessary to keep in mind that Luhmann speaks about communication as the only building block of social systems; and when he refers to a system's reproduction, he is talking about reproduction by the system of the communications that are distinctly constitutive of the system. In other words, systems reproduction is reproduction of the specific communications that belong to the system.

In accepting the system's autopoiesis, one has also to agree with its corollary implication that only the system can take care of and perform its own reproduction, and for that the system should be capable of self-observation and self-organization. This has epistemological as well as practical implications for how to study health systems. Among such implications, it situates external researchers (observers) on a place of very limited or no capacity for determining or influencing the reproduction of the system.

Opening a brief parenthesis here, we may acknowledge that common sense would tell us that reproduction of the health system is made possible by the health budgets the government approves or by other sources of finance. However, we need to remember that reproduction of the health system is the reproduction of its communications, which are meaningful and can only be properly engaged with and understood internally, inside the system. As an illustration, we can consider that, although a hospital is to some extent an organization operating in the economic system and therefore performing buying and selling operations, such operations do not interfere with or become themes in the communications concerned with health and sickness and the diagnostics and treatments being performed. The two semantic universes do not, so to speak, overlap. The price of the examinations and medications does not change the considerations about how correct or wrong a diagnosis was. This example il-

lustrates why the reproduction of what is at the core of the health system does not depend on the size of the budget. Social Systems Theory reminds us that the closure and internal generation of information is meaningful for the system.

Coming back to autopoiesis, having in mind that the observation of social systems is also second-order observation (i.e. observation of observers who are themselves able to observe and self-observe), the researchers need to be clear about who observes whom, and to be explicit about the distinction used for making observations. Observations are carried out with distinctions and therefore the observer needs to be critical about them and respective blind spots. All distinctions, and consequently all observations, have unavoidable blind spots.

Furthermore, orientating observation towards communications and what is possible to be communicatively achieved by those who communicate inside the system, the observer needs to understand how communication works. This point is further expanded in the subsequent paragraphs.

2. If a health system is observed as a function system made up of communications, the system is nowhere specifically and at the same time it is everywhere that recognized legitimate health communications take place. Therefore, researchers need to understand they are looking for an object that has a special ontological nature. The research does not need to look for buildings, equipment, physical assets or institutions. It must look for the communications deploying the healthy/sick codes inherent in all health communications, in correspondence with observations made from one or the other side of that distinction.

In line with that, it might sound counter-intuitive that ministries of health, as pointed out in the previous chapter, may only partially belong to the health system; or rather, to a large extent, a ministry is part of the political system. It all depends on the nature and codes of communication circulating inside a ministry of health. Nevertheless, the researcher may also find many organizations operating with the codes of the health system, coupled with other organizations and systems identified as relevant for their autopoiesis.

In short, communication is the key element for understanding systems. A good grasp of the recursive nature of communication (it is always possible to communicate about communication), and three components of communication – content, utterance and understanding – is therefore necessary. Furthermore, as all communications are based on language, the possibility of "yes" or "no" is always present, meaning that any communication, either accepting or

rejecting what has been communicated, can interlace subsequent communications. And finally, we need to recognize the importance of double contingencies, i.e. the selections made by each side while communicating. Communications include oral and written forms.

An important challenge is related to the fact that communications also imply the possibility of communication about communication. This extraordinary evolutionary achievement of communication creates a vast potential for recursive self-reference. The incorporation of self-reference in empirical studies represents a considerable difficulty which the traditional approaches to empirical observations do not deal with. Self-reference refers both to the system's capacities and to the observers' positions.

3. Wrapping up what was discussed in the previous sections, we summarize the methodological orientation derived from Luhmann's theory. The points below give a draft conception of the methodological approaches that can guide the researcher.

3.1 It is important to take the perspective that health systems are autopoietic.

3.2 It is necessary to start with a clear identification of what are the actual autopoietic units the researchers are approaching in their studies, and whether they are only small components of a larger autopoietic unit, whether they have any degree of autonomy for controlling communication and therefore continuing their autopoiesis. Autopoiesis necessarily implies production of one system's means of reproducing its communications. Here an understanding of the two types of social system is required; the researchers should know whether they want to address the health system as a differentiated overarching *function system* of the society (based on its specific binary code), or rather as specific *organizations* operating in a circumscribed manner, with clear membership criteria and decision-making structures.

3.3 The approach highlights the need to acknowledge *operational closure,* which implies that the system observes its environment and transforms observations into information inside the system. Only information generated by the system can then be meaningfully communicated inside it. In its closure, the system uses its specific binary code to determine whether the internally generated information is or is not relevant for the system.

3.4 In particular, for the organizations that are recognized as part of the health system, membership and decision-making are defining bases for organizations' closure. Organizations pursue their autopoiesis with those identi-

fied as members and the decisions they take (decisions are recognized as such once they are communicated).

3.5 The approach also emphasizes the need to locate the observer; researchers must be aware of where they stand, whether inside or outside the system they are studying, and whether they are carrying out first- or second-order observation, meaning observing observers or even observing observers observing themselves. Awareness of the unavoidability of blind spots is also needed.

3.6 With clarity about both the observation position and the autopoietic self-referential and operationally closed nature of the systems being observed, the researchers should be able to make critical judgement of the purpose of the investigation and the possibilities of having the results (conclusions and recommendations) considered by the organizations being studied.

3.7 Therefore, when choosing themes for carrying out empirical observation, the researchers should be aware that the findings exist within an autopoietic, operationally closed communication-based system that makes selections. The researchers also need to consider that the communications that will be produced by the research may find easy acceptance in the social system of science, where the researchers may come from, but may not be entirely recognized as relevant for the health system in focus. The two systems, health and science, operate with distinctively different sets of codes and communications programmes.

3.8 A system, defined in opposition to its environment and essentially composed by communications, should be approached having in mind that it is constantly selecting and reproducing communications in line with previous communications and decisions, and with the potential to encompass the subsequent ones.

3.9 Clarity on the nature of internal communications constitutive of the system is essential; this means observation of those communicating and the channels of communications, with clear understanding of directionality, expectations, recursive possibilities and the contingent nature (meaning the possibility to be different). Communications can be "mapped", "inventoried" or somehow reflected in the descriptions of the systems, but cannot be exhausted. As part of the autopoiesis of the system, communications are always being generated and kept open for new topics and formulations.

3.10 Finally, researchers need to pay attention to the possibilities that observed organizations may enter into structural coupling with other organizations, allowing for mutual influences, while maintaining their individual clo-

sure. Luhmann (2013, p. 88) talks about a system "irritating" or being "irritated" by other systems, meaning a system (organizations included) can observe another system and in consequence of those observations produce internal information that once processed can also be observed by the other system. In this process, the two systems, preserving their operational closure, can still observe each other and that can result in coordination. Of particular relevance, if the research includes policy and political themes, the researchers should be aware of the ways the political system operates in contrast with the health system and its organizations, and understand how the coupling between these two function systems is possible, as mutual observation.

Summary of the chapter

To conclude, Luhmann has been criticized (see Chapter 8) for having not conducted empirical data collection to confirm the validity of his concepts. Luhmann's work is entirely developed in the space of theoretical reflection, although informed by concrete observation of the social reality. Therefore, for many, there is no clear prescription on empirical methods to be deployed in fieldworks. However, these judgements do not decrease the value of what the theory offers for reflection and understanding of the operations of social systems, and the actions and interventions that can be derived from them. Empirical works and methodological approaches are therefore territories open for innovation and creativity. Of relevance, perhaps, is to consider that research is mostly conducted in the social systems of science or education (two different social systems), and health systems operate within different semantic orders. The reader will find more discussions on this topic throughout the chapters, with some more specific reflections in the final remarks chapter.