

# Chapter IV

## The Cultural History of Medical Classifications

**György Surján**

*National Institute for Strategic Health Research, Hungary*

### ABSTRACT

*This chapter outlines the history of medical classifications in a general cultural context. Classification is a general phenomenon in science and has an outstanding role in the biomedical sciences. Its general principles started to be developed in ancient times, while domain classifications, particularly medical classifications have been constructed from about the 16th-17th century. We demonstrate with several examples that all classifications reflect an underlying theory. The development of the notion of disease during the 17th-19th century essentially influenced disease classifications. Development of classifications currently used in computerised information systems started before the computer era, but computational aspects reshape essentially the whole picture. A new generation of classifications is expected in biomedicine that depends less on human classification effort but uses the power of automated classifiers and reasoners.*

### INTRODUCTION

This chapter outlines the history of medical classifications in a general cultural context. While classification and medical terminology is a hot topic of current biomedical informatics, our aim is to show, that nearly all problems we face currently

originates from the past. The modern computer era however offers more efficient techniques although the principles of these techniques have been developed through many centuries.

Classification is an essential issue in all scientific activity. Its importance is emphasised by R.A Crowson in his book titled *Classification and*

*biology* (Crowson R. A., 1970). He argues, that it is often thought that the essence of science is to count or measure things. But before we could do so we have to select *what* we want to count or measure (and what not). And this distinction presupposes a *classification*. Indeed, all scientific activity requires a clear scope definition: a distinction between relevant and irrelevant phenomena. This distinction – either made consciously or unconsciously – is at least a dichotomous classification. But this is usually not the last step – even if the aim is not to classify the phenomena of the given domain. This is particularly true in life sciences. If someone – let say – wants to study the alimentary habits of frogs (either in a qualitative or quantitative way), it is necessary to classify the things in the world as frogs and non frogs. But the habit of one particular frog at a particular time is probably not a real scientific issue: science is more about the general rules than about particular phenomena. So we study the habits of a number of frogs. Then we realise that there are many different kinds of frogs, each kind probably having different habits: many different species, but also young and old, male and female ones etc. And now we are in the middle of the sea of the problem of classification:

*Which distinctions are relevant and which are not for an actual problem?*

*Which distinctions are relevant in general?*

*Which categories are real, which are arbitrary?*

*Are we able to classify all phenomena correctly – are the categories well defined?*

This is no more the problem of a scope definition: we have to define classes *within* the scope of our research in order to properly interpret our observations. This is very characteristic to all life sciences, mostly due to the amazing variability of life. Medicine is no exception. Medical classification is not a solved problem, and perhaps never will be totally solved. Beyond the fact, that the rapid development of medicine reshapes clas-

sifications from time to time, it points to several philosophical, linguistic and logical problems. Philosophically it is related to the questions about the basic nature and structure of existence, the ontological nature of medical entities etc. The linguistic aspect deals with the naming conventions and the language used to describe medical phenomena, while the logical aspect is related to the problem of reasoning over medical facts.

The goal of this chapter is to show that all problems around medical classification and terminology have historical roots. This history can be seen in a wider and a narrower context. A narrower context would focus on biomedical and health problems, while a wider context includes the development of the theory of classification in general.

While we prefer the wider context, we do not want to provide an exhaustive description of the whole history of classifications and all cultural problems around it. Through selected examples we just want to show, that nearly all the problems we are facing now, already emerged in the past, and that the lessons learnt from this history can help to avoid traps in present and future development. This approach determines the structure of this chapter: first we want to describe the development of a general theory of classifications, pointing to the mentioned philosophical, linguistic and logical aspects. Then we will show how specific domain classifications emerged, particularly in life sciences. The third part of the chapter will go through the history of classifications in the medical domain while the fourth deals with current trends and achievements.

## **DEVELOPMENT OF A GENERAL THEORY OF CLASSIFICATIONS**

### **The Beginnings**

We believe that classification (i.e. identification of discrete entities of the world and grouping

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