Book review

Sorting Things Out - Classification and Its Consequences

Geoffrey C. Bowker e Susan Leigh Star
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SORTING THINGS OUT

CLASSIFICATION AND ITS CONSEQUENCES

GEOFFREY C. BOWKER AND SUSAN LEIGH STAR

There are several manners of treating anomalies. Negatively, we can ignore them, not notice them, or judge them once we notice them. Positively, we can, deliberately, confront the anomalies, and try to create a new pattern of reality, on which they will fit. It is not possible for individuals to reconsider their own personal classification schemes. However, individuals do not live in total isolation, and their scheme will be partially received by other individuals (DOUGLAS, 1976, p.54).

Categorizing is human. People subject objects, animals, places, illnesses, occupations, or ideas to several categorizing processes in a daily basis. From the simplest forms of personal organization, such as how someone's books are displayed on their home library, or how people give priorities to household chores, going on to how people choose their technological standards, and finally to what their race are, or ethnicity, or nationality "; we are immersed in complex systems of classifications. Almost implicitly, we create separations, ordinances, and systematization based on certain ways of categorizing the world in its material and social dimensions, that are culturally inherited and often technically operationalized in manuals, checklists, forms, statistics, or bureaucratic procedures.

In their book Sorting Things Out - Classification and Its Consequences, Geoffrey C. Bowker and Susan Leigh Star explore the nature, the origin, and the social consequences of classifications, especially when they are formalized, institutionalized, and adopted in large and widespread contexts, such as contemporary societies. In fact, according

to the authors, "classifications are powerful technologies" (p.319), that represent certain social and technical choices, and that have significant ethical and political implications, although usually hidden or fuzzy. In other words, behind some classification systems, however trivial or neutral they may seem, there is certain rationality, whose consequences may affect social relationships and, ultimately, the identity of individuals or the nature of the objects they classify.

This premise is clearly seen in the description of the classification systems presented by the authors, this structure evolves around their work: to examine the International Statistical Classification of Diseases and Related Health Problems (ICD) , the Nursing Interventions Classification (NIC) , the diagnosis of tuberculosis and the system of racial classification in South Africa during the apartheidregime; Bowker and Star make an effort to outline Foucault, not only to reconstruct the processes of construction and stabilization of certain classifications and standards, but mainly to assess the impact of these technologies on human interactions.

In addition to an introduction, a brief theoretical and methodological chapter and a final concluding section, the book - which according to the authors stands as "crossroads" of sociology of knowledge and technology, history and information science (p.6) - can be divided into three major parts. In the first part, entitled "Classification and Large Scale Infrastructures" (Chapters 2-4), the ICD case is reviewed extensively in order to investigate "how a global medical classification system was developed to serve the conflicting needs of multiple local, national and international information systems"(p.16). Formally, this is a publication of the World Health Organization (WHO) that numerically encodes diseases, symptoms, and mortality and morbidity causes, which is used worldwide, and is currently in its tenth revision (ICD-10). However, to the authors, ICD is further characterized as *information infrastructure*, based both on specific technologies and practices, which, through an effort to systematize the diseases and their symptoms, allows the realization and general understanding of activities such as medical diagnoses, bureaucratic procedures, or the building of statistical and epidemiological models.

However, this does not mean that the categories represented in ICD are static, definitive, or universal. Most importantly, it should be noted that the historical analysis on the constitution of ICD does not show a trend of gradual consensus, marked by principles of scientific neutrality, but rather a set of overlapping and conflicting schemes. The categories are built, and they come and go in new versions of ICD, and are interpreted by their users, according to their different socio-historical contexts, and such users often cover their classification with moral and ethical coat:

In the case of ICD, this means describing the disease so that the social and legal contingencies are covered up by the classification system, naturalizing them"(p.87).

For example, the various types of abortions (although medically equivalent and with possible similar complications) are classified in ICD especially in relation to moral distinctions on the subject - miscarriages are classified with code 634, while legally induced abortions, as well as illegally induced, not specified or unsuccessful, are classified under the same code 638. In other words, when there is distinction between natural miscarriages and those caused mainly by human intervention, it is possible to assume that their classification is based on a legal, moral, and ethical character of abortion, showing the contamination of these factors on ICD's "narrative"[3] .

The effects of the classifications in the lives of individuals are the focus of the second part of the book, entitled "Classification and Biography" (Chapters 5 and 6). At first, the authors strive to demonstrate the complexity of tuberculosis diagnosis and, thus, the effects of constant redefinitions for the "suffers of tuberculosis". Essentially, tuberculosis is described as a "moving experience"[4] that "is inserted in a changing terrain of possible classification systems and cultural symbols" (p.173). Most importantly, beyond the issue of building a diagnosis of tuberculosis, the authors seek to demonstrate the impacts of this disease (and the classifications resulting from this condition) in patients' lives, using concepts such as *trajectory* and *torque*.

The *body-biography trajectory*[5] concept refers to mutually influenced body history and personal biographies, over a long period of time, where certain diseases can cause changes in the history of the affected individuals, and vice versa. However, this process of "double determination" becomes more complex when confronted with a strict classification system, such as systematization and measurement of disease symptoms, or the framing of tuberculosis in ICD. In these cases, the authors point out that both trajectories (physical and social) suffer a torque effect, ie, some kind of "twist" that make them change: when categorized as carriers of certain diseases, for example, patients start to have very specific status, which determines their relationship with other social actors, as a result of this classification process. Thus, the authors show that strict classification systems and standards are capable of "distorting" personal trajectories, redefining physical and social trajectories. However, such systems and standards may also represent an important mechanism when

defining one's identity, even if through an active attitude of those that are under the effects of classification systems (as in the case of individuals who learn the internal logic of the classification system and seek to adjust their identity, either positively or negatively, to the established parameters).

This view is detailed in the following chapter, where the racial classifications (and reclassifications) institutionalized during the *apartheid* in South Africa are analyzed in order to highlight their impact on individual life histories. Formally, the South African racial classification started to shape up during the 1950s, after the rise of a nationalist government and the approval of two laws that made it mandatory to classify people into racial groups, which started to socially determine, among other aspects, where these people could live, work or study (p.196). This classification was based on the sorting of individuals into four major racial groups: European (or white), Asian, of mixed races (coloured) and native (or Bantus). Moreover, the categories "coloured" and "native" were sub-divided by various "anthropologically incorrect" criteria, intrinsically subordinate to the political project of establishing the national identity and legitimacy of the ruling classes.

In more detail, to move forward on the historical discussion about the origin of this regime or about the ethical implications of the relationship among classification systems, racism, and government bureaucracy, the authors present the cases of individuals who transcended racial classifications imposed by the government, either by switching through different categories and often conflicting (pg. 203, 206), or by assuming a "borderline" character - ie, individual cases that were not susceptible to an objective classification by the government socio-technical system, because their characteristics and histories did not correspond to the legal and technical-scientific infrastructure of its regime (p.217). Accordingly, it is precisely from the *exceptions* that the authors seek to highlight the constant tension between major classification systems and individual cases, clearly applying the methodological principle of *infrastructural inversion*, presented in the first chapter of the book: because of its tendency to naturalization and even trivializing, information and classification infrastructures often become invisible, making it necessary to use examples that are seemingly counter-intuitive, exceptional, and almost not serious to expose its inner workings[6] .

The third part of the book deals with the relationship between classification systems and work practices. For this, Bowker and Star examine the case of the Nursing Interventions Classification (NIC)[7] , seeking to clarify how and why this information system about the practices and nursing intervention was instituted. On the one hand, the authors indicate that the establishment of a classification system is essential for the formation of some professional groups, contributing to their distinction, acknowledgment, and institutionalization with the rest of society. By establishing a standardized language for the nursing activity (NIC), researchers in this field of knowledge enabled make people aware of this activity, usually considered to be secondary, accessory and even "invisible". More precisely, the authors argue that the establishment of classification systems associated with certain professional groups encourages internal communication among these professionals, but also their interrelationship with more extensive information systems, both in the bureaucratic and in the scientific scopes (p. 242) . Therefore, the main goal of NIC is ultimately "making invisible work visible" (p.254).

On the other hand, from an epistemological point of view, the scientific systematization of nursing practices ends up highlighting certain objects, records, and operations to the detriment of others. That is, the establishment of a formal system of classification reinforces certain categories, while allowing the concealment of others. However, contrary to what it may initially seem, this should be considered as a constituent part of the construction of knowledge: intentionally "forgetting" certain objects and categories will draw the boundaries and the scope of scientific disciplines and of practical activities of communities, while providing its internal organization (p.279, 280). In this sense, the choices made by those responsible for *designing* NIC seek simultaneously to represent the everyday practice of such profession, as conceived by practitioners themselves, and provide an increasing systematization (and thus, visibility and acknowledgment) of this field of knowledge.

Finally, the last two chapters present a brief review of the issues arising from the analysis of the cases discussed, as well as possible directions and related analytical and theoretical approaches to modern classification systems. In general, the classification activity can then be considered to be both organizational and informational, but most importantly, *infrastructural*. Classification schemes come in several shapes and sizes, starting with scientific activity, moving on to everyday work practices, finally affecting the individual personal trajectory, but always representing a naturalized and narrow part of modern rationality. The authors argue that it is essential to understand the constitution, operation, and especially the formalization of these systems in order to increase our understanding of everyday life.

It is important to note that although the issue of classification has been present in classic works of sociology and anthropology (eg, in works by authors such as Emile Durkheim,

Marcel Mauss, and Mary Douglas) or, albeit marginally, in works of Social Studies of Science and Technology , Bowker and Star seek to improve and expand the understanding of Human Sciences on this topic. In fact, the general concept of the classification systems presented in this book is based on anthropological and ethnomethodological principles, incorporating contributions from the multidisciplinary field of Social Studies of Science and Technology[8] to finally produce a general conceptualization of classification systems as a result of general epistemological, political, and moral processes, that, can ultimately be considered as practically ubiquitous technologies , which use and dissemination have real (sometimes dramatic) effects in everyday life.

First published in 1999 in the prestigious series *Inside Technology* of MIT Press, the book remains highly relevant to professionals from diverse fields, such as sociologists, health professionals, and information science professionals. Although the quite heterogeneous nature of cases and examples observed did not contribute to the flow of the reading, as a whole, the authors' smooth writing style (and often humorous), their great ability to analyze matter, and the descriptive richness of their work end up favoring comprehension. And finally, the book is also relevant because it represents a compilation of some of the authors' academic career main ideas up to when it was released, in particular, regarding topics such as classification, standardization, *boundary objects*, and even sociology of work, as an initial approach to the prolific and diverse work of Susan Leigh Star, who has precociously passed away in early March 2010.

Notes

1. In English, *International Statistical Classification of Diseases and Related Health Problems* (also known by the abbreviation ICD).

2. Nursing Interventions Classification (NIC).

3. Curiously (and despite having no more practical significance), some "residual" categories, which are completely anachronistic, are still presented in the ICD, as the *addition of absinthe*, present in ICD-9 under code 304.6. According to the authors, this is an indication that the classifications do not only reflect the current social and moral conditions, but they carry classifications "themselves" which are inherited from other socio-historical contexts.

4. Diagnosing tuberculosis is a very complex task: "Tuberculosis does not have a single cause" (...), "it does not appear in only one place, usually the lungs are infected, but it can result in injury to other organs and tissues" (p. 172). Moreover, historically it was not right and "it is still not clear" when someone should stop being classified as a sufferer of tuberculosis (p. 174).

5. To learn more on this matter, the authors recommend the following: Corbin, J.; Strauss, A. *Unending Work and Care: Managing Chronic Illness at Home* (1988) or Timmermans, S. *Saving Lives or Saving Identities? The Double Dynamic of Techno-scientific Scripts* (1996).

6. "This inversion is a struggle against the tendency of infrastructure to disappear (...). It means learning to look closely at technologies and arrangements which, by design and by habit, tend to fade into the woodwork (sometimes literally!)" (p. 34).

7. There are several classification systems for nursing activities. The authors refer specifically to *Nursing Interventions Classification* (NIC), "a project that began in 1987 with a group of researchers from *College of Nursing University of Iowa*" (Guimarães & Barros, 2001: 131).

8. Some examples of Social Studies of Science and Technology works on classification issues: analyzing the "socially situated knowledge", Barry Barnes (1983) compared the different taxonomic classifications of animals made by natives of New Guinea and scientists. John Dean (1979) studied historical controversies regarding classification in the field of botanics. As for Ian Hacking (1992), he discussed the relatively recent creation of the behavioral category of "child abuse", which systematization created new meanings for certain actions and attitudes that have been considered historically normal.

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