Classification: Some Fundamentals, Some Myths, Some Realities

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ABSTRACT: The pervasiveness of classification in all human activities is described. Classification is characterized as being relative, utilitarian, and artificial. The importance of classification in library settings and academic disciplines is documented. Classification is described as an emerging, independent discipline.

Classification is a fundamental activity of every system, be it living, organizational or machine. It is cerebral, neural, cognitive, intellectual, psychological, social, academic and organizational in nature. Life in its every sense would be impossible without the constant act of classifying. Man needs classification right from the very primitive necessity of securing food and security to living in a very complex, sophisticated and intrigue-ridden society.

Classification is manifested in all of the following activities: naming, defining, analysis, generalization, discrimination, distinguishing, pattern-making, sorting, filtering, demarcating, separating, individualizing, identifying, categorizing, grouping, matching, selecting, sampling, arranging, ordering, grading, ranking, correlating, tabulating, mapping, designing, structuring, coordinating, organizing and controlling.

Pattern-Recognition is Classification

Every order basically comprises a pattern. Dean Jesse H. Shera (1957) defined pattern as "any sequence or arrangement of events in time or any set of phenomena in space so ordered as to be distinguishable from or comparable to any sequence, arrangement or set". Shera further writes that patterning plays some part in perception process – it integrates new perceptions with old experiences stored in the memory.

A new sensation is compared and related with a myriad of processed perceptions already in the mind. A face, a series of sounds, a taste sensation are familiar or unfamiliar to the degree to which they conform or fail to conform to the patterns created by past experience already stored in the memory. Each new sensation, each new experience is fragmented into a pattern of relationships. By relating it with past patterns new knowledge is formed into an organized whole. Thus experience may be considered as the classified patterns of past sensory perceptions. Those who are quick in learning are quick and accurate in organizing and assimilating new experience and in relating it with past experience. If something is difficult to comprehend, it means there are fewer such patterns in the memory with which the new idea or sensation can be related. Mind is a sort of loom weaving patterns of experience. A pattern in the mind is the framework for giving significance and meaning to experience (Shera, 1957), and classification is at the basis of pattern-making.

All Knowledge is Classification

The eminent educator John Dewey [1859-1952] was of the opinion that all knowledge is classification. Brian Buchman (1979) quotes W. S. Jevons [1835-1882] as saying that "all thought, all reasoning so far as it deals with general names or general notions may be said to consist in classification". Scientists seek patterns in nature. Knowledge advances when a scientist discovers patterns. Any new idea becomes knowledge only when it is related with some already existing area of knowledge. All researchers cite references to previous works for acceptance of their research. Information becomes knowledge only when given some structure. Thus concepts, information, knowledge and classification are intrinsically linked.

Classification is Relative

Classification is neither absolute nor isolated, nor is it a self-contained act. We always classify an entity with respect to something else. It is thus relative. We can divide a group of entities only if at least one of them has at least one differing characteristic. Conversely, we can group entities to form a set only if all of them possess at least one characteristic in common.

According to FID/CR, in a definition agreed upon by the Elsinore International Conference on Classification Studies and Research, "By *classification* is meant any method creating relations ... between individual semantic units". (Atherton, 1965) Classification is thus a mode of expression, correlation and display of relations. It is relatedness and connectivity.

Classifications are Invented

Carrying this argument further, we can easily say that no classification is absolute in the sense that no classification exists in Nature. Classifications are not discovered but invented. Derek Langridge (1992) quotes John Hospers:

> Nature only guides us, and never dictates us the formation of classes. In nature only characteristics are found. Man uses these characteristics to make suitable classes.

Classifications are invented to serve a purpose.

There are no Natural Classifications

It is erroneous to call a classification natural just because the characteristic chosen is natural or inherent. For example, toad, frog and tiger do not form a natural classification though all these possess four legs. Similarly, bats, butterflies and birds do not form a natural group though the characteristic of flying is itself natural. (Broadfield, 1946).

Similarly, classifications are neither good nor bad. The are only relevant or irrelevant to a given purpose. A classification is not an end in itself but a means to an end. For example, some living entities will be grouped differently by, say, a scientist and a farmer. The scientist would call a mouse a mammal; the farmer would call it a pest. Classifications differ according to different purposes. The aim of the scientist is to study nature, whereas the aim of the farmer is to produce food.

Ranganathan's Canon of Relevant Characteristics

Ranganathan (1967) stablished his Canon of Relevant Characteristic (in the Idea plane). This canon means that it is always difficult to select a relevant characteristic since this selection involves matching the characteristic with the purpose of classification. He wrote:

> The characteristics relevant to the purpose of classification are usually many. Practical considerations, however, will restrict us to the inclusion of only a few of them in the Associated Scheme of Characteristics. Further it may also happen that the scheme for classification becomes as efficient as it can be even without the need to use all the relevant characteristics allowed by practical considerations. If then there is need for a selection of only a few of the possible relevant characteristics, it follows that we can construct different schemes of characteristics and that they may produce different Associated Schemes for Classification for one and the same Universe. All these Schemes for Classification may not be equally helpful to the purpose in view.

He continues:

> This naturally raises the question. "How to make a selection of just those relevant characteristics for the construction of the Associated Scheme for Characteristics that is likely to give us the most helpful Scheme for Classification?"

His answer:

> There is yet no definite answer to this question. No *a priori* rules for hitting upon the most helpful set of characteristics have been found as yet. Generally it depends on genius; but other things being equal, persons with knowledge and experience are likely to develop the flair to reject the less helpful characteristics.

This means that prior experience and knowledge are important in designing useful classifications.

Classification is Always Practical

Be it classification of knowledge, books or other abstract or concrete entities, classification is always utilitarian in purpose. Elaine Svenonius (1992), explaining classification as a science, demonstrates that it has elements of Aristotle's three categories of sciences: (l) productive, (2) theoretical, and (3) practical. She explains that classification:

> ... is a productive science insofar as its aim is to produce classification systems. But as these systems are action oriented, the action being organizing the universe of subjects, the discipline can be classed among the practical sciences. And then, since the discipline seeks to demonstrate general truths about its objects of study, viz, the

Universe of subjects and classification systems, it partakes of the theoretical sciences.

In brief, classification is done to understand the situation, for simplification, for economy, and for aesthetics. Hence no classification is without utility.

Library Uses of Classification

Classification is a foundation study of library science, as Bernard Palmer (1971) used to say. For D. W. Langridge (1992), classification pervades all subject work. A librarian classifies books and other documents for a logical, filiatory or pedagogical sequence on the shelves to make meaningful groups for browsing and for efficiency in retrieval. Classification schedules are propaedias of knowledge and represent its structure. Other uses in the library include ist applications in classified catalogues, in arrangement of circulation records in the facet analysis of user's queries for reference service, arrangement of entries in bibliographies, and many more. Classification in online databases is beginning to find numerous uses. (Marcella & Newton, 1994)

Classification and Academic Disciplines

Classification is approaching the status of an independent discipline. If so, it is an interdisciplinary one. It can easily be related to the following subjects:

1. Logic: Classification uses methods of logic
2. Psychology: All learning and memory involve classification; the mind works by classification.
3. Philosophy: Classification is inherent in any definition. All theory is classification as it „identifies possible relationships among key variables and suggests how and why they are related." (Soper et al., 1990)
4. Epistemology: It is the theory of nature and organization of knowledge. The relation between classification and epistemology is intrinsic
5. Linguistics: Classification is naming. Classification is an indexing language. Concepts exist in language. Linguistics, terminology and semantics are fundamental to classification. Language is an instrument in the organization of knowledge.
6. Indexing: Classification schemes form the basics of any kind of structured and controlled vocabulary. Alphabetical subject indexes to classified catalogues are derived from classification schemes in use
7. Library and Information Science: Its relation with classification has already been spoken of.

Classification as an Independent Discipline

Classification studies and research fulfill all of the requisites of an independent academic discipline, namely:

1. It is practice is based on a sound theory.
2. It has different schools of thought.
3. It has a coherent body of literature in every form, being produced ceaselessly. There are textbooks, annuals, research reports and journal articles in abundance. There are exclusive journals devoted to classification.
4. Regional, national and international classification conferences are held regularly and occasionally to share new thoughts and research in classification.
5. There are national and international societies exclusively devoted to the promotion of classification studies and research.
6. Classification studies are being taught at the university level.

There will be independent departments of classification in universities, and universities will institute MA degrees in classification. From its academic status, it can easily be said that days are not far off when classification will become an independent discipline.

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Correction

In the article by Robert Fugmann *(Bridging the Gap between Database Indexing and Book Indexing)* that appeared in KO 24(4) the following corrections should be noted:

1. p.207, immediately under the heading "Notations", the text should read:
   "Lexicalization of concepts through 2, 5, 7
   and the index language ..."
2. p. 208, column 2, line 20, the letter "p" should read: "precombination brass".