Likeness and Likeliness
Exploring Multidimensional Classification for the Multiverse of Information

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ABSTRACT
In previous studies grouped under the common denominator "Idea Collider," the CERN Hadron-Collider was used as a metaphor to explore the meaning of breaking down existing structured and less-structured clusters of information into the finest particles to get a better understanding of the laws and nature of the universe of knowledge (Heuvel & Smiraglia, 2010). Moreover we compared past conceptualizations and visualizations of multidimensional classifications, in particular of faceted systems, and tried to assess their potential for future information retrieval (Heuvel 2011; Heuvel & Akdag Salah, 2011).

Where most classification theories focused on knowledge integration in a single universe of knowledge, we outlined the framework of an elementary theory of knowledge interaction in a multiverse of knowledge (Smiraglia, Heuvel & Dousa 2011) . We believe that similar to the real universe, not only matter, but also energy and gravitational forces are of importance for understanding the multiverse of information better. For that reason we want to elaborate on the question of how one perceives and interacts with knowledge production.

"Likeness" has been a recurrent theme in classification theory. Here the focus is on the concept "likeliness" which we, unlike Hjørland (2008)], do not describe in the terms of Richardson and Bliss as "putting together of like things, -likeness" or "alike", but rather refer to as the probability that a meaningful relationship or pattern will be recognized at a certain moment (event). We assume that the likeliness that knowledge "interacts" is conditioned by cognitive and cultural forces of perception. Vertical and horizontal lines might be considered universally as dividers and connectors, but the way we read ascending or descending steps is culturally defined by differences in reading and writing practices. (see Figure 1)

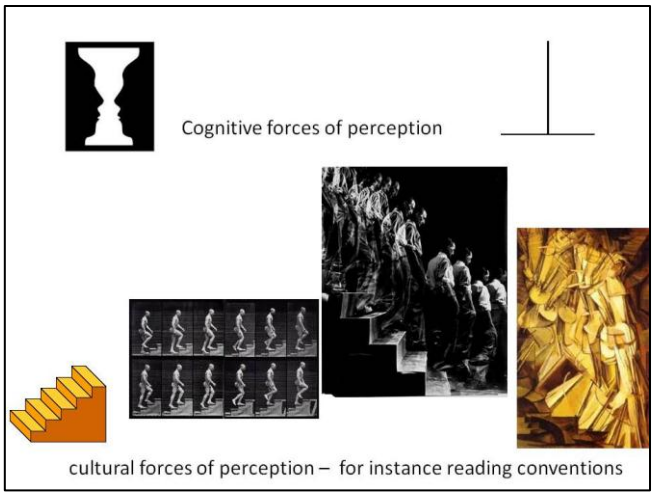

Figure 1 Cognitive and cultural forces of perception

In order to put our still very abstract elementary theory of knowledge interaction to the test we are in need of empirical research. In this lightning paper examples will be shown from art history, musical notation and literature that are more or less likely to interact. (see Figures 2 and 3)

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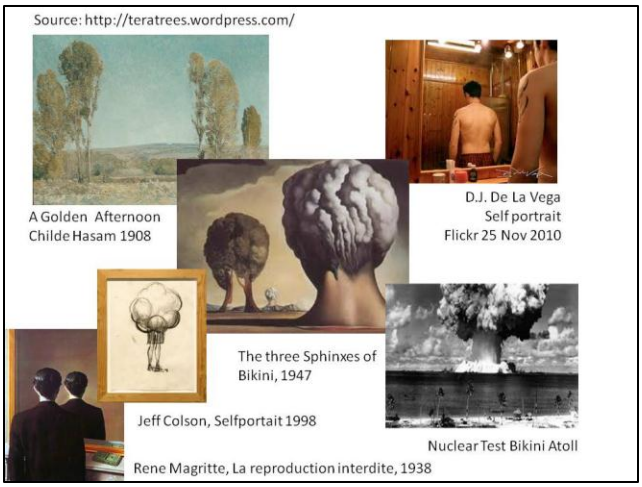

Figure 2 Lines of vision connecting works with similar features through Dali's The three Sphinxes of Bikini

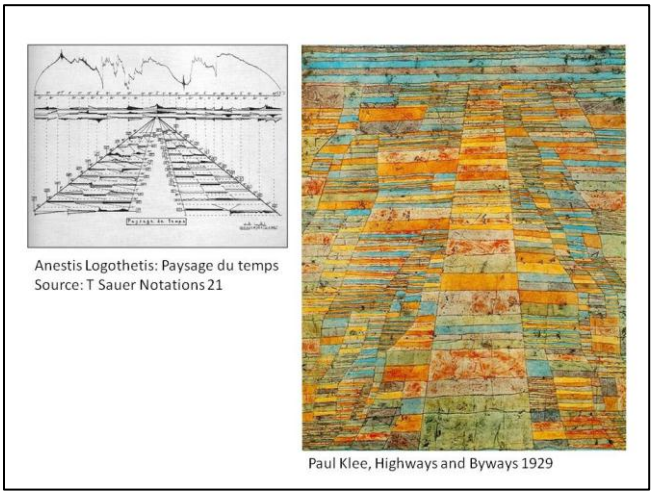

Figure 3 Visual similarities between musical notation of Paysage du temps of Anestis Logothetis and Paul Klee's painting Highways and Byways

In the future we will continue with our Idea Collider experiment and explore the implications of multidimensional classification for information retrieval further in two ways: empirically and theoretically.

The empirical research will build upon the (analysis of) two types of experiments with multi-modal non-semantic information retrieval. The first type consists of experiments with search engines that query for "alike" structural features of multimedia expressions such as color, composition (compare IBM-QBIC), but also rhythm, texture etc. In a recent experiment at Lawrence Technological University, 994 paintings of 34 artists of various art historical styles such as Renaissance, Mannerism, Baroque, Rococo, Romanticism, Impressionism, Expressionism, Surrealism, Fauvism and Abstract Expressionism were compared by automatic computer analysis for form, color and texture. The pattern recognition algorithms were able to measure and quantify visual similarities between paintings, painters, and schools of art and reproduced results in agreement with the analyses of styles by art historians. (see Figure 4) (Shamir & Tarakhovsky, 2012)

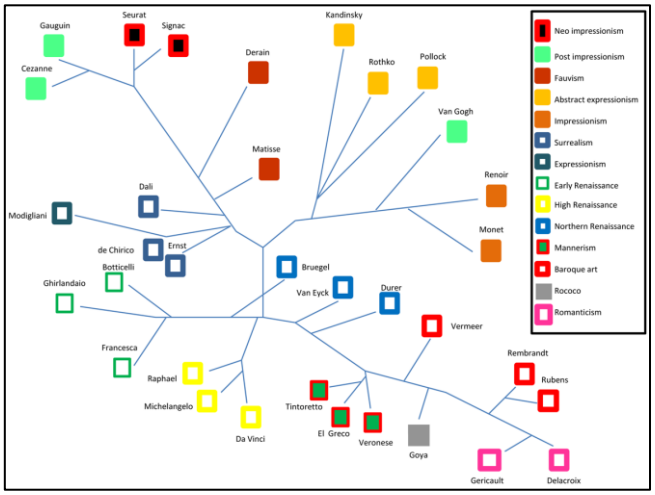

Figure 4 Shamir&Tarakovsky, Phylogeny of Automatic Computer Analysis of Artistic Styles of Painters

The research of such experiments focuses on the concept of "likeness." The second type of experiment is based on collaborative filtering technology that allow for the deconstruction of various expressions of multi-media. An example is the Art.Similarities experiment (G.J Nauta 2008) which uses a custom-made interface to record visual behavior: the non-verbally expressed visual similarity associations and judgments of distributed individuals which can be assessed both according to human analysis and statistical procedures. This research focuses on the concept of "likeliness."(see Figure 5)

Figure 5 G. Nauta, Interface to record visual assocations Art Similarities - Collaborative Visual Filtering

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