A new view on old search engines

Reiview of Gugerli, D. (2009). Suchmaschinen. Die Welt als Datenbank. Frankfurt: Suhrkamp.

By Dennis

In his book Search Engines, The World as a Database (Suchmaschinen, Die Welt als Datenbank) the Swiss historian of technology David Gugerli describes the forerunners of Internet search engines in the second half of the 20th century exemplified by four different case studies. He starts with the examination of two German television shows, which Gugerli considers as early forms of search engines that were providing certain functions demanded for by the society. Furthermore, the author analyses the methods invented by the German BKA (The German Federal Criminal Police Office) in the early 1970's. Gugerli then explains the development of search engines using the idea of the relational data bank invented by Edgar F. Codd in 1969.

In the introduction Gugerli depicts the ubiquity of the search engine Google and all its additional services. Then he reminds the reader that before Google there have been different sorts of search engines that worked outside of the Internet. The detection of earthquake-zones or low-pressure systems for example was executed by satellites, sensors and simulations. Superstars and scandals were detected by TV-stations. Managers searched for information in corporate data bases, which were not open to everyone. Gugerli mentions that every type of search engine is situated in an area of conflict, between overview and surveillance. The author explains that search engines are connected with hopes concerning democratization, informational emancipation and complete overview. Contradictory they are also linked with fears regarding the vision of an Orwellian state of permanent observation. Gugerli identifies four functions that all search engines have in common. First of all, search engines premise that the aims of their operation can be objectified. Secondly, search engines operate in a concrete room of addresses. Search engines can only work, if they can link the searched object with an address. Thirdly, search engines follow a certain pattern, from which they cannot divert, but they simultaneously show a fundamental openness for results. Fourthly, search engines feature a special proximity to games and simulations.

The first case-study taken into consideration by David Gugerli is the old German TV-show:

„Was bin ich?“ (What am I?), that had been aired between 1961- the year Gugerli was born - and 1989 and hosted by Robert Lembke. The game-idea of the show was to let the audience guess which profession attendant persons in the show had. These persons had to display four characteristics of themselves at the beginning of the show: a signature, stating whether they are employed or self-employed, gesturing a situation typical of their job and selecting the color of a piggybank. During this procession the profession of the person was revealed to the TV-audience. A team composed of four (more or less) famous persons, who used these four different inputs to find out the person‘s job. They asked questions that could only be answered with „Yes“ or „No“, and for every „No“ the candidate received five DM (Deutsche Mark), which were put into a piggybank, whose color has been selected before. „Was bin ich?“ had been a very successful TV-show for almost 30 years. David Gugerli identifies an interesting reason for this success. He argues that in Germany people demanded for reliability of expectations, the audience had a desire for the certainty that professions and people could be linked. The structure of the show offered a method which was able to conjoin professions with persons exemplarily. Gugerli labels this possibility of linking jobs and persons as normal and therefore concludes that „Was bin ich?“ was a search engine seeking the „normal“ in German society. In a next traceable step Gugerli classifies this desire for reliability into the historic context in Germany. After World War II people searched for a new identity because the old structures of identification had vanished. Gugerli concludes that „Was bin ich?“ supported this process of self-discovery. It showed that the profession was a stable attribute of a person that could be discovered by using the simple mechanism of the show. Later on the society changed but the show stayed the same for almost 30 years and absorbed the complexity which had emerged because of social alteration beginning in the 60‘s. The mechanism of the show reduced the question for individual identity to what someone was, not who and in this way objectified the question.

The second case-study the professor at the Technical University Zurich (ETH Zürich) uses for illustration is the German TV-show „Aktenzeichen XY ... ungelöst“. The show went on the air in October 1967 and was hosted by Eduard Zimmermann. In the show Zimmermann presented unsolved criminal cases which were re-enacted by performers. After a shown clip, the host talked to an expert of the police to give additional information to the audience. People sitting in front of the TVs were then requested to provide the police with relevant information.

In this manner the show tried to find a delinquent based on the criminal practice and the traces of the crime. The consequence of this procedure was the reliability of expectations concerning the deviant, the aim of the search was connecting criminal work and the associated delinquent and to link his position with an address. In contrast to „Was bin ich?“ this show did not provide the audience with an image of the normal but with an image of the deviant. „Was bin Ich?“ was a search engine looking for the normal in society, while „Aktenzeichen XY“ was searching for the opposite, the deviant. And this is where Gugerli detects the entertaining potential of the show, by searching the deviant the show stabilized the amusing distinction between normal and abnomral. In the show the searched criminal did not fall under the presumption of innocence anymore, the show put everyone under general suspicion. The audience built a giant living network that provided information like a data bank with the advantage that it did not need to be fed with information by the police and Zimmermann before. The show objectified by considering cases and files, then it subjectified the cases again by re-enacting them with actors. After this simulation of the audience being witness of the crime, it was objectified again by the police expert who provided additional and real details regarding the case.

As the third case-study exemplifying the function of a search engine David Gugerli selected the methods of the BKA (Federal Criminal Police office) that were invented when the new BKA-president Horst Herold started his work in 1971. Herold built up a giant computer data base system containing all information that had been collected by the german police. Using this background Herold created a search engine that should find statistically attestable patterns of the deviant. These results were supposed to serve as arguments for the prevention of crime and were the background for flexible manpower planning. Repression should be substituted by prevention, contention by dynamics, command by control, experience by logics and hypothesis by prognosis. Allocation of police resources followed the results of the analysis and the patterns that had been found out and were adapted flexibly. But in contrast to Zimmermann and Lembke, Herold himself had to create the bases for his search engine: He transformed information on papers into electronic data, facts were linked with addresses and were retrievable constantly. This data could be combined and compared and in this way opened new forms of criminological research, e.g. it was possible to search for „all 19 year old bakers with a Swabian dialect“. Furthermore Herold‘s search engine became omnipresent

and connected all police stations and reduced the distance between the central and the periphery, the system intelligence moved from the centre to the periphere elements. In the end the data base of the BKA was connected with international networks so that there was access to the German data from the whole world. To enable operating of the search engine the BKA implement different steps of objectifying the data. A fingerprint for example was at first captured as a photo, then it was enlarged and its characteristics were fixed as mathematical expressions and saved as a file in the data base. The idea of searching for patterns of social deviant behaviour, to take preventive actions which should substitute the search for the delinquent, was based on substantial objectifying of traces and characteristics of delinquents. Thus an attribute drifting from the norm could result in a decisive information for the police. This system depended on a giant amount on information and therefore started to stagnate because channels of information were overloaded. After describing explicitly how Herlod‘s „cybernetic police“ worked, Gugerli explains that the idea of a „cybernetic controlled, failure-free society“ failed because of the masses of information the system had to deal with. The terror of the RAF during the 1970‘s legitimized and stabilized the work of Herold‘s Engine until the resources of the system were exhausted.

The last example that is pointed out by David Gugerli concerns the relational data bank as it has been imagined by Edgar F. Codd in 1969 and has more to do with the type of search engine we are used to. His aim was to create a data base which allowed to combine all files with each other and to investigate all kinds of possible connections between them. Codd‘s main idea was that users of future data bases do not have to possess special knowledge to use the data base. In fact it was his view that people have to be protected from depending on knowledge in regards to the internal organisation and functionality of the data in which they are interested. Until Codd‘s time hierarchical data banks had predefined ways of gaining access to the information which they had stored. Hence new kinds of questions were only possible if the user was informed about the saving-structures of the data base he or she wanted to consult. By changing this, Codd expected the users to become more specialized in asking, while the people programming the data base were assuring a reliably operating system. This gave people the opportunity to use the data bank as a black box which they could ask whatever they wanted to. Consequently, the use of the search engine changed from seeking for certain items to an open query for results. Together with his employer IBM,

Codd developed the project „System R“ which was the attempt to form a data base usable even for people with less knowledge about computers. To facilitate this, they invented the „Structured English Query Language“ (SEQUEL) which enabled an easier way of querying. In mind they had the idea of a manager who needs information to take a decision independent of his knowledge about programming and data banks. This new type of search turned the computer to an important economic search engine that could be used as an instrument for rationalization. The relational data bases helped the companies to reduce transaction costs and to expand the possibilities of combining resources because it lowered the investment necessary for analysis. In Germany these ideas resulted in an alteration of the culture regarding the usage of data bases, now it was possible to query in real time and users and data were separated through a default software.

In the end of his book Gugerli points out that western societies of the 20th century are characterized by flexibilization of expectations and the situational recombination of resources. For him, these attributes have been supported by search engines. They made it possible to locate addressable objects and increased the possibilities to access these objects. In this part Gugerli comes to the main issues of this book and he states that search engines produce overviews, determine priorities and create differences between the things they include and things they exclude. Furthermore, Gugerli gives a logic reason why search engines have a political history. It is because they contain the user‘s attention by having a certain structure of data rooms, programs and presentation of results.

David Gugerli‘s book opens up a new view on the work of old search engines. We usually think of internet search Engines like Google but he reminds us that the process of searching has been an important task in the society before the emergence of the internet. By picking the examples he demonstrates the development of search engines and successfully creates a historical room for reflections what has been his intention. The detailed descriptions of the characteristics of each search engine provided by Gugerli facilitate the understanding of how the examples functioned as search engines in their temporal and social context. The examples and explanations given by Gugerli help to consider the nowadays omnipresent Internet search engine differentiated and help to understand how search engines have become an essential base of our modern society.