Organizing without understanding. Lists in ancient and in digital cultures

1. A web of lists

The web, labeled by Umberto Eco as “The Mother of all Lists” (Eco 2009, p. 360), apparently “thinks” in the form of lists (cf. Poole 2013). In the digital world lists are pervasive and seem to be the privileged form of organization of information, reproducing recursively at various levels of organization of the web (cf. Oring 2012). Lists multiply themselves. The algorithms directing the web are lists of instructions, databases are organized lists of data, search engines process them to provide lists of sites, services like Amazon and Tripadvisor deliver lists of products or restaurants while News Feed offers constantly updated lists of friend’s Facebook activity. Also the communication forms of “traditional” media are affected: the classical article is written more and more often in the mode of a “listicle”, i.e. as a list – and there are whole websites, such as Listverse, containing nothing but listicles (cf. Poole 2013).

The web works on the basis of lists to produce lists, and then second order lists help to direct our search for information in lists: for example BuzzFeed and other services that offer user-generated hot lists of newsworthy lists. Lists are managed through lists, producing as their last result the ubiquitous top-ten lists that seem to become one of the primary forms by which new generations are organizing information. The parodistic example is the character Rob Fleming who, in Nick Hornby’s novel High Fidelity (1995), reflects on himself and the world through the practice of organizing Top Five lists of all the elements of his private life and of his self-image.

Why are lists exponentially multiplying in our digital society? Why does the web seem to have an affinity with the form of the list, which has a long history in Western civilization but has been supplemented and then gradually replaced by other more efficient methods for data management?

In this short essay I first examine the practice of using lists in the digitized society, where we do not only deal with lists on the web, but since a few decades tend to observe objects and services in general in the form of evaluative lists like ratings and rankings: university rankings (cf. Espeland/Sauders 2007; Musselin 2017), financial ratings (cf. Langhor & Langhor 2008, Levich
2002), ratings of restaurants (cf. Scott/Orlikoswki 2012), hospitals and prisons (cf. Menniken 2013 and 2016), rankings of states (cf. Cooley/Snyder 2015), movies, books and virtually everything, affecting the observation and self-observation in all areas of society deeper and deeper (cf. Esposito/Stark 2017). Are these forms, which are spreading at the same time, all the same and do they have the same effects? What is the difference (and the relationship) between lists, ratings and rankings? What is the specificity of the list compared to other forms of organization in sequence?

In a second step, I specifically address the web and digital data processing, and ask why the form of the list is spreading right now, especially in the last three decades. What is the relationship of this form with the web and with algorithms, which are central tools of information processing on the web?

2. Writing, context and abstraction

Lists are everywhere, but in different forms: there are flat lists (friend lists on Facebook), there are ratings (list of evaluated items like restaurants or financial assets – with corresponding numbers of stars, alphabetic letters or hearts) and there are also rankings organized as lists of objects in hierarchical order (the 100 Best Colleges in the US). They are all lists, but not all lists are rankings, and not even ratings. And not all ratings are rankings. What is the difference?

Ratings have an evaluative component, in the sense that they attribute scores – on the solvency of companies, on the reliability of nations, on the quality of restaurants, wines or movies: AAA, Ba2, 3 stars, 2 glasses etc. In many cases, ratings are created without the intention of comparison – they only evaluate, assigning scores to individual objects in their specificity. The objects evaluated are confronted in their specificity because every scientific article, every firm, every wine, strictly speaking, every object is unique and different from every other one. What these raw scores offer is a multiplicity of singular judgments. In classic guides like Michelin, moreover, initially the various features of the restaurants were dealt with separately: quality of raw materials and preparation, for example, but also originality, atmosphere, view, and many other factors that cannot be sensibly aggregated into a single measure (cf. Karpik 2000; 2007, p. 113ff.).

Rankings, instead, compare the listed items. They establish a hierarchy, usually from 1 to 10 (like the items on the first page of the results of a Google search), but also from 1 to 50 or 1 to 200: The World's 10 Best Restaurants, The Top 50 Universities under 50 years old, the best 200 Sci Fi Movies of all Time. Each element has a lower place than the previous one and a higher place than the next one, and this is the information delivered by the ranking. Attention focuses on the comparison much more than on the characteristics of the items, that are lost from view. The users
of rankings look at who's up and who's down, not at what it is. The ranking describes the mutual relations between a number of entities, and not the performance of each of them (cf. Stuart 1995). Pure lists, on the other hand, do not have an evaluative component, and do not have an order – as clearly shown by the always cited list of animals in Borges’ Chinese encyclopedia (1993) (animals that belong to the Emperor, embalmed ones, suckling pigs, mermaids, fabulous ones, stray dogs and so on, including “those included in the present classification”, and “others”) – but also by most of our daily shopping lists. Usually there is no reason why milk is listed before apples or bread or eggs, and the list can be read from the bottom to the top without losing any information. Lists are extremely flexible and extremely fungible, but usually require contextual or interpretive additions in order to become useful (the organization of the store where we do our shopping, the groupings by the user).

When do these different forms appear in the organization of our society, what do they require, and what is the relationship between them? When and how do evaluative and hierarchical forms combine with the simple sequence of the list?

Lists are the oldest form, typical of civilizations in early times of writing, especially with non-alphabetic forms of writing - in ancient Mesopotamia, among the Sumerians, in the archaic civilizations of Egypt and China (cf. Hungert/Archi 2001; Goody 1977). Even if lists also exist in oral discourse, they are very infrequent in face-to-face communication. Participants in a conversation are always immersed in the context and in the ongoing situation. They share the same space and the same time (here and now), taking them for granted. In primary orality, indeed, no awareness of contextual factors and their contingency is required, because there is no need to observe them (cf. Luria 1976): one only communicates with people who share the same context, know it and know each other. The context is taken for granted. Communication under conditions of primary orality is characterized by a low level of abstraction and by a complex detailed adherence to the context (cf. Ong 1982).

These conditions do not favor the use of lists, because the form of the list requires a first step of abstraction and de-contextualization. It separates the listed objects from the present situation and places them in a different frame, together with other listed items. The list breaks the "natural unity of the perceptual world" (Goody 1977, p. 104), requires an act of distancing and introduces a discontinuity between the listed items and everything else, and of the listed objects with each other.

At the beginning of writing, written documents practically never had a narrative form and did not reproduce discourse – this happened much later. People did not write what they said and did not write in order to communicate with absent people, they wrote for administrative and economic
purposes. Lists were written to record sales and purchases, rentals, loans, marriage bonds, wills – not to communicate with someone, but to fix and to remember. Ancient lists collected the most heterogeneous materials. Mesopotamian cuneiform lists include plants, animals, artifacts, professions, titles of officials, toponyms, body parts and foodstuffs – in an order about as adventurous as Borges’ Chinese list of animals. As all pure lists, these ancient records could be read either downwards or upwards, since the order did not provide any additional information. Why were this kind of lists so popular in the early times of writing? Lists make a detached observation of the recorded items possible. The written record certainly introduced a huge intellectual break, requiring the writer and the reader to distance themselves from the concrete context of the ongoing situation – with all the advantages and the freedom connected with this detachment, but also with the related complexity. The pure form of the list allows to abandon the unquestioned adherence to the immediate context, but not necessarily requires the further abstract conceptual tools necessary to build an alternative context. According to Goody and other researchers, abstraction and recontextualization were the consequence, not the prerequisite of written lists. They came later.

This concerns primarily not completely phonetic forms of writing, like the ones used in the first millennia since the introduction of writing. Only with accomplished phoneticity, i.e. with the use of the alphabet, the detachment from the context was completed. An alphabetic text can be read with no need of contextual information, while pictographic writing is only accessible to a reader who already knows the meaning of the signs, and syllabic writing requires the addition of vowels by a reader able to make the appropriate integrations (cf. Havelock 1976). If you know the alphabet and the language, instead, you can read alphabetic texts you know nothing about, because the texts themselves provide all the information needed to understand them. In linguistic terms, the co-text takes the place of the context (cf. De Mauro 1998, p. 187). Only then the context of the writer can be fully uncoupled, i.e. separated, from the context of the reader. Time and space of the text do not coincide with the coordinates of the immediate location of the readers, and the writer must take this into account in order to produce an understandable text. Both the writer and the readers master a world of abstract references independent from their immediate situation, and everyone must be able to orient in both domains.

It took thousands of years to develop these performances, which according to Havelock (cf. Havelock 1963) were the background of the “Greek miracle” and of the beginnings of abstract thought in Western civilization. Although not all scholars agree with this interpretation, everybody confirms that the form of the list became progressively less common after the spread of alphabetic writing. Lists can still be found still in epics like the Iliad (as in the famous catalog
of ships: II, 494-759) or in many passages of the Old Testament – which in fact were composed before the introduction of the alphabet. With the spread of literacy, however, the form of the list was gradually replaced by more complex arrangements, tree structures or classifications, producing an order that goes beyond the simple juxtaposition of objects – beyond what Eco calls simple accumulation (cf. Eco 2009, p. 133). He claims that the rise of abstraction lead to a switch from definitions according to properties (Aristotle’s definition per accidents) to definitions according to essences, that require a detached abstract analysis of the objects at stake.

Returning to the distinction between different forms of listing, in this process lists also tend to develop towards organized series like ratings and rankings. While the ancient lists from the 4th and 3rd millennium B.C. did not have an order or a hierarchy, since the middle of the 2nd millennium B.C. more specific forms of organization developed, referring to the meaning of the words (organizing them from the head to the feet, following the parts of the human body, or according to spatial orientation) or to the form of the signs (for example according to the initial letter or to the acrographic principle – i.e. graphic similarity). Once data are objectified in writing, they can be observed from a distance and it becomes almost inevitable to identify other organizational criteria giving rise to ordered series or to hierarchies. The recording of data in lists is a prerequisite for their manipulation leading to the development of forms of calculation, like divinatory arithmetic in Chinese and Mesopotamian civilization (cf. Vandermeersch 1974, p. 39ff.; Bottéro 1974). This was the starting point of more and more complex classifications, eventually leading to algebra and to other abstract computations.

3. A digital “Listenwissenschaft”? Jumping a few millennia, this leads to the second step in the argument of this paper: why are lists multiplying in the digital world, and what is their relationship with the logic and the operational mode of algorithmic data processing?

Research on the ancient uses of writing shows that lists are an effective way to manage complexity with limited abstraction capability. Lists were very common in ancient cultures that had the possibility to record data but not the ability to distance from them and reflect on their organization. This is the big advantage of the organization of data in lists: lists do not need abstraction nor reflection on the sorted objects or on the organizing activity. Lists allow to generate an order without a genuine ordering criterion, without going into the details of the listed objects and without really knowing them. They generate an order almost automatically, even if you don’t know what you’re ordering and how – and even if you don’t care about it.

Our society of course has high abstraction capabilities, but the algorithms that process data on the
According to the classic definition of algorithms, they are “procedures that solve specific problems through a finite number of elementary steps”, requiring no "creative" thought in their execution (Davis 1958, p. xv). Algorithms do not require thinking nor abstraction, and this is their main asset. They merely calculate. This has always been the case, but paradoxically becomes more and more clear with the development of sophisticated procedures like deep learning working with Big Data, recently producing machines that seem to be able to act as competent communication partners. Self-learning algorithms can now accomplish many tasks traditionally reserved for human intelligence, such as translating and correcting texts, playing chess or Go, recognizing and classifying images never seen before, providing advice and recommendations, or even autonomously writing articles or entire books. In all these cases, however, the results have been achieved in recent years using programming techniques that explicitly renounce the idea or even the ambition of artificially reproducing the forms of human intelligence. Algorithms do not reason like us to do what we do with reasoning. Algorithms process and write texts in a useful and informative way without understanding anything of their meaning and without knowing the languages in which they translate and their rules (cf. Hammond 2015, p. 7; Boellstorff 2013). The AlphaGo algorithm succeeds in beating the world's best Go players without knowing the game itself, without developing a strategy and without anticipating the strategies of the opponents (cf. Silver/Hassabis 2016). Recommendation programs operate as reliable tastemakers knowing absolutely nothing about the movies, songs or books they suggest (cf. Grossman 2010; Kitchin 2014, p. 4).

The power and efficiency of algorithms depend on their ability to process data without being themselves intelligent, i.e. to work without abstraction, just calculating. This can explain, as in ancient divinatory cultures, the preference for the form of the list, that becomes informative for the users without requiring abstraction in its production. Lists are easy to write and easy to read. Poole attributes to this ease the rampant success of listicles (cf. Poole 2013). The author only needs to produce a sequence of topics, without worrying about the connections between them nor about the argumentative order. The user reads and uses the data as he wants, stopping when it suits him and freely building his own order – without thereby losing or distorting the sense of the list, because it has no sense. The sense can be produced as a consequence of the list.

Algorithms process lists and produce lists, working in a controlled and not arbitrary way but not understanding the information they process. As in Mesopotamia, then, lists can also produce more complex arrangements like rankings, giving rise to the recent explosive proliferation of hierarchical orderings. This development also requires no abstract reasoning by the algorithms.
Of course some reasoning must be included in the process, but algorithms do not need to produce it themselves. This is a basic feature of the interaction with “smart” algorithms: their results are informative for the users as if they were the product of an intelligence, because these algorithms – themselves not intelligent – are able to parasitically use the intelligence of the users participating in the web (cf. Esposito 2017). All successful web projects use, in one way or another, "googlization" practices (cf. Vaidhyanathan 2011; Rogers 2013): harvesting, copying, aggregating and processing data derived from users’ behavior – as PageRank does in order to produce an updated and efficient ranking of websites. Through lists, Google uses the behavior of users (their links and preferences) to learn how important a page is, but also to learn what it is about and to direct its own internal organization, which is continuously renewed depending on the connections and affinities “discovered” in the operations of users (cf. Langville/Meyer 2006). The organization of data in the form of lists allows to use orders that you did not produce yourself, and possibly do not even understand. Secondary orders can then be developed, allowing for increasingly complex management of data.

Google’s approach has become, more or less explicitly, the model of many other digital data management projects that rely on the diffuse processing on the web to organize their operations. Algorithms can then process the empty form of the list in more complex ways, as it happened in ancient cultures with non-alphabetic writing, and produce more and more elaborate classifications as in divinatory arrangements. On the basis of lists ratings and rankings can be produced from which users can derive more specific information.

This is happening today on the web and in our digitized society as a whole. List and their secondary forms proliferate on the web because they can become quite elaborate and still remain compatible with the fact that algorithms cannot and must not work with abstraction. They do not need to be intelligent according to the model of human intelligence. This poses a challenge for theoretical description. To investigate these developments we presumably need a revised version of the “Listenwissenschaft” wished by Goody (cf. Goody 1977) dealing with ancient lists and their evolution. A proper scientific observation of the organization of the web would require today a “science of the list” updated to the features of our digital environment.

On this background, the discussion on information processing on the web would have to abandon the analogy with the forms of human intelligence, producing further questions and different problems. Instead of asking how machines “think”, one could ask for example what happens when a digital society observes itself and its observation through forms of data processing that do not use intelligence. What does the form of the list allow to see and what does it hide, when the processing itself does not use abstraction and merely reflects and amplifies the abstract processes
and the selections of the users? How does an awareness of the features and consequences of lists contribute to properly describe digital information management?

References

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