The Charm of a List

The Charm of a List: From the Sumerians to Computerised Data Processing

Edited by

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All the contributors are thanked for their patience and cooperation during the preparation of this volume. We hope very much that the present book succeeds in offering a new and inspiring set of approaches to a topic which has, as we believe and tried to show, a great deal to offer.

INTRODUCTION

The Potential and Limitations of Studying Lists

Lucie Doležalová

To dedicate a book to the topic of the list may seem a bit obscure. A list may seem to be something monotonous and boring. It is most frequently a tool – a table of contents, dictionary, phone book, etc. One does not *read* but only *uses* a list: one looks up the relevant information in it, but usually does not need to deal with it as a whole – and is happy about this fact. In a literary context, lists seem to embody a lack of story; one often skips lists in novels because they do not seem to move the events forward. In historical context, lists have been recognized as important and complex; many specific lists have been studied, but not much attention has been paid so far to what it *means* that they are lists. The case is similar in the cognitive and computer sciences.

This book presents a different point of view on the subject. It tries to show the charm of a list in different sciences and to suggest the possible ways in which lists can be researched. There have been very few attempts in a similar direction so far. Especially noteworthy is Robert E. Belknap's study *The List: Uses and Pleasures of Cataloguing*[1] which, although it concentrates on literary lists of the American Renaissance (Emerson, Whitman, Melville, and Thoreau), opens with a theoretical chapter including a number of inspiring thoughts and insights. An important publication offering a comparative perspective on the topic of indices is the proceedings of a conference which took place in 1994 in Florence entitled *Fabula in Tabula*.[2] Despite these studies, the scholarship on lists remains fragmented.

This volume does not bring unity either; it rather attempts to show a variety of approaches to this neglected topic with great transdisciplinary

[1] New Haven: Yale University Press, 2004.

[2] *Fabula in Tabula. Una storia degli indici dal manoscritto al testo elettronico. Atti del convegno di studio (Firenze 21-22 ottobre 1994)*, ed. Claudio Leonardi, Marcello Morelli, and Francesco Santi (Spoleto, CISAM, 1995)

potential. Neither does this book pretend to be exhaustive. Although transdisciplinary, not all relevant disciplines by far are represented in it. From all the topics which are not covered here, it is especially a detailed discussion of the Homeric catalogues and their influence on European literature which is clearly missing here.

We chose to provide a series of case studies rather than to create a new possibly generally applicable theory of lists. This is caused by the present situation: scholars actually do work with lists, but they often do not consider the implications. Thus, the task of the contributors here was to present their particular work while concentrating on what it can offer as far as the topic of lists is concerned. The result is a book including very particular cases of a variety of specific lists, in which questions, problems, suggestions, and theories are formulated, often in a rather intuitive way. The articles presented here not only each come from a different context, but even their presuppositions on lists in general sometimes contrast. The authors differ substantially on the features of a list that they consider crucial. This is a consequence of the state of research: a shared theoretical background on the topic of lists is still largely missing. Only when the subject is firmly established in a scholarly context will it become apparent which of the suggested characteristics of lists and research questions are truly relevant. At the same time, the way this book is composed is in line with its primary aim: to raise interest in the topic and to initiate a scholarly discourse on it.

* * *

The idea of the workshop and the book originated in my research project concentrated on a specific medieval Latin text, the so-called *Summarium Biblicum* (Biblical Summary) generally attributed to Alexander de Villa Dei (early 13th century) but more probably written substantially later by someone else. Although the text was extremely popular in the Middle Ages, it is been mostly neglected by scholars. It is a very curious retelling of the Bible, in which every biblical chapter is "summarised" in a single word. These words are then arranged in hexameters, and the whole Bible is thus presented in some 200 verses, which look like non-sense poetry unless accompanied by explanatory glosses.

The whole is thus a peculiar list. On the one hand, it is the "table of contents" type of a list, since its structure and order are determined by the structure and order of the Bible. It has indeed served as a kind of table of contents of the Bible in the Middle Ages – it is very frequently copied at

the beginnings or ends of biblical codices. On the other hand, its contents (unlike the contents of a normal table of contents) sometimes surprise. In "summarising" the individual chapters of the Bible, the author applied different strategies: sometimes he chose a word which appears frequently in the chapter, other times the first word (even an insignificant conjunction) of a frequently quoted passage, and yet other times a word which does not even appear in the chapter at all but can possibly evoke its story. Studying the nature of the "key word" selection, that is, formation of the list's items, is complicated by the fact that the text has not been edited yet, and thus it is not clear which of the manuscript versions is the original one. If one finds a meaningless key word in a manuscript of the *Summarium*, one can never be sure whether it is a very intricate allusion, or just a scribe's mistaken corruption of the original. The text, surviving in over 400 manuscripts, was constantly re-written and adapted. The marginal notes appearing in many of the manuscripts give a glimpse at the various ways in which it was understood and interpreted.

An analysis of the *Summarium Biblicum* as a list with all its related contexts and implications is, however, a task exceeding the scope of a study within this book.[3] Thus, the only reminiscence of the fact that it was this particular list that inspired this project can be found on this book's dustjacket, for which two fifteenth-century manuscripts of *Summarium Biblicum* now kept in Kremsmünster abbey (ms. 167, f. 1r and ms. 153, f. 280r) were used. But the book itself is concerned with other texts and issues.

* * *

Ivan M. Havel's opening contribution is an attempt at providing a basic definition and a listing of general features of a list from the point of view of cognitive science. Some of these seem to be rather controversial and are referred to or argued against by the other contributors. This study immediately makes very clear the differences among the approaches of different sciences.

How is it possible that already offering a "minimal" definition, that is, a definition that should be applicable to any list, turns out to be problematic? In this particular case, the main source of the feeling of unease over Havel's definition is, in my opinion, his suggestion of the "truth" of a list as its primary aspect. Although Havel states that this property may be

[3] I have published and article on the subject ("*Biblia quasi in saculo*: *Summarium Biblie* and other medieval Bible mnemonics," *Medium Aevum Quotidianum* 56 (2007): 1-35) and am preparing a monograph.

problematic ("unknown, time-sensitive, observer-relative, etc."), the mere introduction of the criterion of truth without being surrounded by quotation marks is disturbing, for example, to historians, who gave up enquiries of the type *wie es eigentlich gewesen* a long time ago. In historical sciences, the "truth" of a list is associated with the general impression lists give of being objective and neutral, which is actually rarely the case. Most lists have some purpose and an agenda and thus those which form our present-day historical sources have to be approached carefully and should not be taken at face value, as the contributions of **János M. Bak**, **Gerhard Jaritz**, or **Marianne Sághy** clearly show.

In the context of literature, on the other hand, the aspect of the "truth" of a list is often simply irrelevant, since literary specialists deal with fiction, that is, poetics, aesthetics, author's aims and strategies, etc., which are all "true" in a way. What is the "truth" of the lists of virtues (discussed by **Monique Goullet**), vices (**Farkas Gábor Kiss**), passions (**Gyula Laczházi**), alphabetical mnemonic aids (**Rafał Wójcik**), or evil women (**Lucie Doležalová**)?

The criterion of "completeness" is similar: in history we often have only one list as a source; checking its completeness is impossible due to the lack of other sources and thus also becomes irrelevant. Other times, it is, of course, possible to state whether a list is complete or not, but it is not an aspect of a list which would normally inspire further enquiry. In literature, the criterion of completeness is, again, irrelevant: if designed so by the author, the list is "complete" as it is. The author may choose to reproduce an existing list in an incomplete way, of course, but that is not a pattern which would deserve special theoretical attention.

Even Havel's general definition ("a list is a finite sequence of zero or more items (records), each with a specified content") may be problematic in one sense: its lack of context. On the one hand, when generalizing, one is trying to create a definition which would not be context-bound. On the other hand, history and literary science are very context-sensitive, and thus they both object to the "zero item list" standing by itself. A list of zero items, an empty list, is surely possible, but it has to be introduced, *contextualised* as a *list*, otherwise it is impossible for anyone to notice it and thus it does not really exist. For example, I can make a series of lists of what I ate each day and then leave the space reserved for one day (when I fasted) empty. Or, I have to signal clearly that I am opening a list, as, for example, by saying "And now I will list all his virtues:" and then leave the rest of the page empty. If I simply write a paragraph speaking ill of a person, one could certainly say that it contains an *empty list* of his virtues, but that is quite far fetched. A list of one item is similar – the sentence "Buy

milk!" can be considered as a single-item shopping list, but it is, again, rather problematic. Thus, a "normal" list should have at least two items.

This already suggests that to come up with a definition of a list is not a simple task. As Havel points out, a list is indeed something made, that is, artificial, or having an author. It is an enumeration. But perhaps it is not even very useful (if possible at all) to define on a general level what a list is exactly as far as its formal features are concerned.

The "typical characteristics" of list that Havel offers, *artificiality*, *significance*, *carrier*, *ordering*, *dynamics* (change over time by insertion, deletion, modification, sorting, combining, splitting), and *accessibility* (by identifier and by content, possibly limited) are certainly all relevant. Still, a historian would, I dare say, organize them differently. The main distinction, in my opinion, as with any historical and literary source, lies in the division of the aspects linked to the *creation* and those connected to the *reception* of a list.

Indeed, most lists seem to have an *author*, and that author (Havel's criterion of artificiality) has a particular intention or *idea* (Havel's significance) behind compiling the list. The author then proceeds to compile it by *selection* (or possibly *gathering*), *formation of items* (that is, formulating them in a particular way; the items on the list may have unified structure or they may differ, they may each consist of a single word but they may also be long and complex and have particular formal features), *ordering*, and *contextualizing* (providing a title to the list, placing it in a particular place within a larger text, for example) using a specific *medium* (Havel's *carrier*). It is only during the reception process that Havel's criteria of *dynamics* and *accessibility* become relevant. These could be rephrased as *interpretation*, *transformation*, *re-contextualisation*, etc.

Yet, it seems as if there is something missing in this sum of the list's aspects. Presented as it is now, it could be more or less applied to any creative process the result of which can be divided into items (which do not necessarily have the same structure). A feature that I think makes a list really special is formal: the juxtaposition of the individual items which both links and separates them. The juxtaposition makes the syntactical relationships among its units so basic that one could perhaps even speak of a *lack of syntax*. A list is a sequence (as Havel states in his basic definition), a catalogue of items which are not connected to each other except by the means of the order and possibly by the unifying idea behind its creation. The lack of syntax is, in a way, a lack of direction for the recipient. Thus, much more than in a usual narrative, the reader is left on his or her own. It is possible to find a story in a list but it requires special attention and effort by the reader. At the same time, in this way, a list is

more open to interpretation and the reader's intervention than other types of narrative.

Tamás Visi is the only contributor addressing the already existing theoretical basis for studying lists – the problematic *Listenwissenschaft* by Wolfram von Soden. Visi shows its limits and possibilities and applies a revised version to a case of medieval Jewish philosophy, namely the influential lists compiled by Moses Maimonides, as well as those put together by early modern rabbis in Bohemia and Moravia.

The contribution by **János M. Bak** concentrates on the function of lists in the process of gaining and maintaining *authority* in the Middle Ages. This article shows the concerns of a historian; when Hungarian kings added to their intitulations a list of territories they supposedly held, Bak notes, on the one hand, that this list may not be "true" – the territories were not in reality held by these monarchs, some of them were never even visited. On the other hand, a question which is much more interesting for Bak is the agenda behind this action: What was the *purpos*e of compiling such a list? What does it say about the self-perception of the kings and their strategies of self-representation? Furthermore, Bak stresses one more important aspect of lists: precisely by enumerating rather than arguing, they often give the desired impression of being *neutral* and *objective* while actually being mostly biased and subjective.

Marianne Sághy makes a similar point, analysing the *agenda hidden behind* compiling two bishops' lists in the fourth century C.E. Only one of her examples is an actual list; the other "list" was extracted by Pope Damasus from epigrams physically dispersed in catacombs around Rome. There has been a scholarly tradition of establishing these lists of subjects covered by the epigrams, however, as Sághy shows, Pope Damasus himself was using the aesthetics of enumeration in the individual epigrams, and thus these extracted lists may be considered part of his project. Examining the Liberian catalog and the Damasian *carmina* in the context of papal strategies of remembrance, Sághy also shows that the lists of bishops and martyrs legitimized episcopal power in a period of religious crisis and political turmoil. These lists created a venerable past for the Church of Rome, presenting it on a par with other respectable Roman institutions, such as the consulate or the imperial office.

The article by **Monique Goullet** is closer to literary concerns. In her analysis of lists of virtues in high medieval hagiography, she shows the relevance of considering the *formal features* of lists and of the items on lists. A discussion of this type enables Goullet to look for possible ancient models and parallels and to define the literary topos. Furthermore, she points out a curiosity of the function of a list in literary works: the list can

either be part of the aesthetics of brevity, that is, a means of condensation, or exactly its opposite: amplification, the rhetorics of extension.

On the basis of a case study of lists written in manuscript margins by Bernard Itier, a 12th-century librarian of St. Martial de Limoges, **Lucie Doležalová** attempts to approach the topic of *ad hoc* lists, that is, lists whose *unifying idea* may only be emerging from the list rather than standing in the background. In this respect she also addresses the problem of interpreting a list: not seeing the idea behind it or the coherence of a list might be merely a problem of our lack of knowledge. On the other hand, our coherent interpretations may be (and often surely are) simply our own constructions.

Farkas Gábor Kiss points out the aspect of linearity of a list: a list is a sequence, and that makes the *order* of its items interpretable. Through a detailed case study of the transformation of the order of individual items on the lists of vices in late medieval and early modern Hungary, he shows the ways in which the change of order reflects changes in interpretation, importance, and social context.

Gyula Laczházi studies early modern lists of passions as storehouses for commonplaces. In his example, a list pre-forms the way a certain subject or a notion is grasped. He includes a comparison with today's emoticons, pointing out that systematizing knowledge through lists may have substantial and surprising implications.

The contribution of **Rafał Wójcik** is concerned with a way of organizing information that appeared in the later Middle Ages: alphabetical order. For him, a list is a *tool for condensing and storing knowledge*, which should be designed in such a way as to retrieve the full information quickly and practically. It is a kind of reliable map which should enable one to revisit a land of knowledge at any time, from any spot, in any direction. In his case study of Latin abecedaries and similar lists from late medieval Poland, Wójcik shows how this way of ordering information was linked to memorization strategies and how it diffused into even quite unexpected contexts.

Rafael Chelaru provides a detailed study of how lists of parishes within a region of Moldavia reflect the notion of space and the geographic logic of the missionaries who compiled them (and who probably never saw a map of Moldavia). He shows how missionary geography differs from physical geography – that is, interpreting the presence of individual items and their order within the various lists, he shows the differences in attitude towards space.

The contribution of **Gerhard Jaritz** concentrates on a frequently explored source of the history of everyday life: early modern inventories,

that is, lists of property. He discusses their complexity and potential for research but provides an important *caveat*, stressing that they only *seem* to be *neutral* and *exhaustive*.

The focus of **Piotr Michura** and his colleagues is the use of computers in visualizing *repetition* through a list. Their computer-created lists, presented in a variety of interfaces, are designed to facilitate the work of literary scholars by helping them see patterns of repetition faster and more clearly. Thus, they approach whole *literary works as lists of words* where repetition occurs.

The concern of **Stan Ruecker** and his colleagues is, like that of Rafał Wójcik, an efficient way of organizing information, but it takes the point of view of a contemporary computer programmer. Their list takes the form of dynamic tables of contents – that is, a list for them is a tool enabling a computer user to navigate through a large amount of data. The lists they present are personal, adjustable, and transformable according to one's momentary needs. Thus, they are *condensations* and *selections*, helping their users find their way around data available in a specific database, which would be otherwise difficult to manage.

* * *

This volume thus addresses aspects of the list which have turned out to be relevant in the researches of particular researchers. It is a task exceeding this book (and the current state of the research on lists for that matter) to formulate conclusions or offer more than implicit comparisons. Yet, I hope the benevolent reader will find this book useful and thought-provoking.

Bergen, August 2008

TIME IN LISTS AND LISTS IN TIME

Ivan M. Havel

> As some day it may happen that a victim must be found,
> I've got a little list—I've got a little list…
> —Sir William Schwenck Gilbert, *The Mikado*

In this short note I make a few conceptual distinctions regarding the very notion of a list. Then I discuss two ways in which lists are connected with time. Let us start with an example. Consider the following list of virtues of a person:

> This holy man had indeed an outstanding dignity, an elegant stature, a distinguished appearance, a graceful face, a joyful heart, a wise spirit, a charming way of speaking, a perfect way of life, and was vigorous in all he did for God.[1]

This is a list of nine items, all related to one common specified theme (the virtues of the holy man in question). Each of the items can be straightforwardly converted into a proposition that can be either true or false (e.g., "this holy man had a wise spirit"). In general, we can speak about two *semantic* properties of such lists:

(1) *The truth of a list*: **only** true items are listed,

(2) *The completeness of a list*: **all** true items are listed.

Of course, for concrete lists both properties may be highly problematic (unknown, time-sensitive, observer-relative, etc.). But in spite of that, certain *significance* (an intended theme, meaning, or purpose) may often be specified for a concrete list. Only then is the property of completeness meaningful. Note that, in a strict sense, the property of completeness does not exclude presence of false items, and thus complete lists could have a certain intellectual value only if they are true at the same time.

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[1] Alcuin, *Vita Willibrordi* I, 24 (*Monumenta Germaniae Historica, Scriptores Rerum Merovingicarum*, [hereafter: *MGH*, *SRM*], VII) – cf. the article by Monique Goullet in this volume.

In the following I will be concerned with somewhat more formal (or syntactical) properties of lists. In the most general sense, a list is a finite sequence of zero or more items (records), each with a specified content. Certain further properties are characteristic of lists (even if some of these properties may not apply in all cases). Typical characteristics are:

(1) *Artificiality*: a list is a human creation or conception (there is an *author* or *authors* – an individual, a collective, or an unspecified virtual producer of the list);

(2) *Significance*: as noted above, a list as such is usually endowed with an intended meaning or purpose (in addition to, and transcending, the meaning of individual items); the significance is usually expressed in the telling title of the list;

(3) The existence of a *carrier*: often a material substrate (paper, computer memory) exists that secures the persistence of the list over time (however, an abstract or figurative usage of the word "list" does not presuppose the existence of such a carrier);

(4) *Ordering*: the sequential order of items is often connected with, and contributes to, the significance of a list (as in the case of chronological lists);

(5) *Dynamics*: a list may change over time while preserving its identity due to the concrete significance and/or (less importantly) due to the persistence of the carrier. There are several types of change, for instance:

(a) *Insertion* of a new item,
(b) *Deletion* of an item,
(c) *Modification* – changing the *content* of some item(s),
(d) *Sorting* – changing the *order* of items,
(e) *Combining* two or more lists into a single list,
(f) *Splitting* a list into two or more *partial* lists.

(6) *Accessibility* of items (typical for large lists): the *user* can access (in order to read or modify) a particular item on the list, by either its

(a) *identifier* (ordinal number or name of the item), or
(b) *content*, or else
(c) the accessibility may be *limited* to an item with a specific position in the list (e.g., its *first* or *last* item).[2]

The above list of characteristics (indeed, it is also a list!) is not meant as an explicit definition of the term "list," but may help to give implicitly the idea about the meaning of the terms written above in italics (a fully consistent definition would be rather complex and would not yield any

[2] In distinction to the *first* or *last* item, which may refer to the temporal order of insertion.

additional benefit). As our aim is to concentrate on the temporal aspects of lists, the most relevant characteristics are the last three – ordering, dynamics, and accessibility.

We can distinguish *two kinds of a temporal nature* of lists. First, the items in a list may have an intrinsic reference to time, for instance, they may refer to historical events with appropriate temporal indicators (dates). The most usual case is when the ordering of the list complies with these indicators; then we can talk of *chronological lists*. Consider, for instance, a list of Nobel Prize winners in a given field, ordered by the year of award, or a list of rulers, ordered by the historical period of their administration.

The second kind of temporality is connected with the dynamics of lists as evolving objects. A list can grow or shrink in various ways and according to various strategies. Particularly important (especially in computer science) are two types of list with limited accessibility (cf. point 6(c) above); they are called queues and stacks.[3] A *queue* is a list for which all insertions are made at one end of the list (e.g., the end) and all deletion (and usually all access) is made at the other end (e.g., the beginning). This corresponds to the so-called first-in-first-out (FIFO), or first-come-first-served strategy. On the other hand, a *stack* is a list for which all insertions and deletions (and usually all acts of access) are made at one and the same end of the list; this corresponds to the last-in-first-out (LIFO) strategy.

For the case of dynamic lists there is an interesting philosophical issue of their *identity* over time. As already mentioned, the identity of a list can be supported by its specific persistent significance. For instance, my own shopping list for today belongs to a concrete person (myself) on a concrete day (today) and for a concrete shopping activity (on my way home). Moreover, it may be written on a concrete sheet of paper (of course, I may copy it). Notice that the identity of a list as a dynamic sequence of items is not based on the identity of the very set of its items; I can freely add new items, cross out others, modify or reshuffle them and still treat it as the *same*, i.e., identical, list. This kind of identity is sometimes called a *genidentity*.[4] Of course, lists may also exist without a nontrivial temporal character, for instance the list of students of a university, a price list, or even a shopping list provided its items are inserted randomly and without any intention of following the order of actual shopping.

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[3] Donald E. Knuth, *The Art of Computer Programming* (Boston: Addison-Wesley, 1969), Vol. 1, Chap. 2.2.

[4] Raymond Ruyer, *Paradoxes de la conscience et les limites de l'automatisme* (Paris: Albin Michel, 1966).

A SCIENCE OF LISTS? MEDIEVAL JEWISH PHILOSOPHERS AS LIST-MAKERS*

Tamás Visi

Can we speak about a medieval science of lists? Ever since Wolfram von Soden, in an article published in 1936, introduced the term *Listenwissenschaft* to characterize certain ancient Sumerian lexical lists, it has been customary to refer to the "science of lists" as a way of organizing knowledge, doing science, or even as an approach to reality itself.[1] A recent critique of von Soden summarizes the core idea in the following way:

> To him [i.e., von Soden] this *Listenwissenschaft* exemplified a typically Sumerian psychological trait: *Ordnungswille*. In origin, according to von Soden, the lists had to mirror the order of the world as it was established by the gods. The lists, therefore, had a cosmological background. The Sumerians, thus von Soden, were not able to codify their views in a coherent argument. Scholarship therefore never went beyond the level of the lists.[2]

Von Soden's original proposal was not without contempt for the supposedly primitive forms of Asian thought and did not lack the feeling of European (or, to be more precise, Aryan) superiority – he was actually a member of the SA at the time his seminal paper was published and later he

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[1] Wolfram von Soden, "Leistung und Grenze sumerischer und babylonischer Wissenschaft," *Die Welt als Geschichte* 2 (1936): 411-464 and 509-557.

[2] Niek Veldhuis, *Elementary Education at Nipur: The Lists of Trees and Wooden Objects* (Groningen: Rijksuniversiteit Groningen, 1997), 137.

was actively engaged in Nazi propaganda. Nonetheless, the idea of *Listenwissenschaft* has become popular not only among Assyriologists but also in Egyptology, Jewish studies, and to a lesser degree in other branches of Oriental studies.[3] Biblical scholars and researchers of rabbinic literature refer to it when analysing biblical lists or the literary structures and conceptual schemes of rabbinic texts, especially the Mishnah.[4] Jack Goody devoted an important chapter of his *The Domestication of the Savage Mind* to the role of list-making in Mesopotamian, Egyptian and other archaic

[3] Note, however, that the concept made little impact on classical philology, even though one would expect its appearance in studies discussing Homeric catalogues and Hesiod's mythological genealogies especially since Hesiod's reliance on Ancient Near Eastern traditions was established long ago. For example in Peter Walcot's classic, *Hesiod and the Near East* (Cardiff: University of Wales Press, 1966), there is no reference to *Listenwissenschaft*. Even in a more recent and quite exhaustive treatment of the topic by Martin L. West, the archaic Greek ways of making lists and catalogues are *not* compared to the impressive list-culture of the Near East; cf. Martin L. West, *The East Face of Helicon: West Asiatic Elements in Greek Poetry and Myth* (Oxford: Clarendon Press, 1997). Since archaic Greek culture receives much more attention from Western theoreticians of culture than the Ancient Near East, one is not terribly surprised to encounter the wrong statement that *alphabetic* script is a necessary precondition for making lists. For example, Barry Sandywell in a highly theoretical analysis of early Greek literature claims that Hesiod's catalogues of gods and mythological heroines "is a literary possibility created by the spread of the alphabet during the late seventh and sixth centuries" since "inventories, catalogues, genealogical diagrams, maps, and so on are inextricably linked to alphabetic competencies." (Cf. Barry Sandywell, *Logological Investigations, Volume 2, The Beginnings of European Theorizing: Reflexivity in the Archaic Age* (London: Routledge, 1996), 355.)

[4] As for biblical scholarship, cf. Albrecht Alt's seminal paper, "Die Weisheit Salomos," *Theologische Literaturzeitung* 76 (1951): 139-144. Concerning rabbinic literature, it is mainly Jacob Neusner and his students who assign a central role to the concept of *Listenwissenschaft* in analysing the Mishnah; other scholars tend to use the term in a much vaguer and *ad hoc* manner. Cf. Jacob Neusner, "The Mishnah's Generative Mode of Thought: *Listenwissenschaft* and Analogical-Contrastive Reasoning," *Journal of the American Oriental Society* 110 (1990): 317-321, and *passim* in almost any work by Neusner on the Mishnah. Note also Wayne Sibley Towner, *The Rabbinic Enumeration of Scriptural Examples: A Study of a Rabbinic Pattern of Discourse with Special Reference to Mekhilta D' R. Ishmael* (Leiden: E. J. Brill, 1973). A recent dissertation on rabbinic lists following Neusnerian approach is: Roy Shasha, "The Forms and Functions of Lists in the Mishnah," Ph.D. dissertation (University of Manchester, 2006). As for *Listenwissenschaft* in ancient Egypt, cf. Alan H. Gardiner's *Ancient Egyptian Onomastica* (Oxford: Oxford University Press, 1947).

cultures arguing that written lists may serve as external support for a number of cognitive operations that could not be performed without them.[5]

Meanwhile, the concept of *Listenwissenschaft* has been challenged in Assyriology: Niek Veldhuis argues persuasively that Sumerian lexical lists, e.g., the names of trees or animals had little to do with biology or other sciences in whatever primitive form. The function of these lists was to facilitate learning the cuneiform script rather than classifying objects of scientific knowledge. Veldhuis proposes an alternative concept, the "Science of Writing," as a general framework for explaining the features of ancient Mesopotamian lexical texts. Recently published monographs on several aspects of ancient Mesopotamian sciences tend to abandon the term and concept of *Listenwissenschaft* altogether.[6]

Even though Wolfram von Soden's original thesis about the Sumerians' inability to "go beyond lists" is untenable, a predilection for lists and an obsession with list-making were quite striking characteristics of many ancient (and medieval) scholarly discourses. Therefore, many researchers continue to speak about *Listenwissenschaft* to denote this aspect of premodern cultures, but without subscribing to the racist implications of von Soden's original proposal.

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Another option for contextualizing *Listenwissenschaft* is to take Michel Foucault's "archaeology of knowledge" as a starting point. A discourse can be examined in terms of its "system of conceptual formation," which means the strategies for forming concepts (rather than documenting the histories of technical terms). According to Foucault's intuition, any discourse will organize its statements according to certain patterns and these "forms of succession" play a decisive role in forming concepts. For example, Foucault claims that a concept like "mammal" could not be formed in modern biology without first adopting certain patterns of arranging statements describing animals.[7]

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[5] Jack Goody, *The Domestication of the Savage Mind* (Cambridge: Cambridge University Press, 1977), 74-111.

[6] For example, Francesca Rochberg, *Heavenly Writing: Divination, Horoscopy, and Astronomy in Mesopotamian Culture* (Cambridge: Cambridge University Press, 2004), 5.

[7] Cf. Michel Foucault, *The Archaeology of Knowledge*, tr. A. M. Sheridan Smith (London: Routledge, 2002 [1972]), 62-63 (hereafter: Foucault, *The Archaeology of Knowledge*).

Foucault employs the term "epistemologization" to describe the process in which a discourse affirms itself as a form of knowledge (usually at the expense of other discursive formations). In a second step of epistemologization the discursive formation may be restructured as a "science," with a set of formal requirements concerning whatever purports to be knowledge.[8] Lists can be examined as factors in epistemologization: for example, a discursive formation may cross the threshold of scientism by listing the formal criteria of what may become an object of knowledge within the discourse ("the knowable" in Foucault's parlance) or by prescribing the usage of certain lists in scientific activities.

Some examples from archaic cultures suggest that the Foucauldian approach may turn out to be productive. An explicit link between knowledge and list-making is stated in Homer's famous invocation of the Muses at the beginning of his Catalogue of the Ships. Homer's emphatic statement that his list is derived not from human "rumours" but from the divine "knowledge" of the Muses, can be identified as an archaic example of epistemologization: the poet claims that he has access to the knowledge of the Muses that is denied to ordinary mortals:

> Tell me now, you Muses who have your homes on Olympos.
> For you, who are goddesses, are there, and you know all things,
> and we have heard only the rumour of it and know nothing.
> Who then of those were the chief men and the lords of the Danaans?
> I could not tell over the multitude of them nor name them,
> not if I had ten tongues and ten mouths, not if I had
> a voice never to be broken and a heart of bronze within me,
> not unless the Muses of Olympia, daughters
> of Zeus of the aegis, remembered all those who came beneath Ilion.[9]

According to Elizabeth Minchin's analysis an oral performance of a poetic list is likely to provoke enthusiastic replies from the audience. If the poet manages to recite a long list by heart without mistakes and signs of uncertainty the audience will happily recognize his superior abilities. Minchin claims that the Catalogue of Ships and other Homeric lists should be interpreted as orally performed texts.[10] The successful recital of the list was a proof that could persuade the audience that the poet was indeed

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[8] Cf. Foucault, *The Archaeology of Knowledge*, 186-191.

[9] Iliad 2:484-492; tr. Richmond Lattimore, quoted from *The Iliad of Homer* (Chicago and London: Chicago University Press, 1951), 89.

[10] Elizabeth Minchin, *Homer and the Resources of Memory: Some Applications of Cognitive Theory to the Iliad and the Odyssey* (Oxford: Oxford University Press, 2001), 73-99.

inspired by the Muses. The poetic catalogue as a specific "form of succession" contributed to the archaic concept of poetry as a repository of knowledge. It is through the Catalogue of Ships and other similar "feats of memory" that we can understand what the notion 'inspiration by the Muses' could mean in Homeric times.[11]

Another example is the ancient Mesopotamian "science" of divination.[12] Omens, which were believed to announce future events were collected in the form of long lists. In other words, Mesopotamian scholars applied their *Listenwissenschaft*, that is to say, their "know-how" of list-making to the domain of divination as well. This can be interpreted as an important step in the process of epistemologization: the interpretation of the omens had to be based on the "evidence" provided by the canonized collections of omen-lists and was entrusted to trained experts who were well-versed in this type of literature.[13] Moreover, the creation of the omen-

[11] Hesiod's genealogical catalogues of divine, semi-divine, and human mythological heroes is often represented in secondary literature as the beginning of a new "spirit of classification" and rationalization which made it possible to differentiate the gods from the stories related about them and thus resulted in the "birth of gods" as separate concepts of thought. One of the most profound analyses of this topic is Marc Richir's study, in which he identifies a "mythological reduction" in Hesiod's list-making activities and contrasts it with Husserl's concept of "eidetic reduction." Cf. Marc Richir, *La Naissance des dieux* (Paris: Hachette Littératures, 1998), 83-108; esp. 85-86 and 107-108. Comparable conclusions are drawn in Mark S. Smith's study about Ancient Near Eastern polyglot lists of divine names. Once lists of deities had been compiled in different languages of the Near East it was possible to compose polyglot lists of divine names in which, for example, Akkadian deities were equated with Ugaritic gods. Such lists contributed to the emergent cross-cultural idea of the divine ("the gods are the same everywhere") and to a spirit of "ecumenism." Cf. Mark S. Smith, *God in Translation: Deities in Cross-Cultural Discourse in the Biblical World*, Forschungen zum Alten Testament 57 (Tübingen: Mohr Siebeck, 2008), 37-51; esp. 44-48. Cf. also Jan Assmann, *Moses the Egyptian: The Memory of Egypt in Western Monotheism* (Cambridge, MA and London: Harvard University Press, 1997), 44-54.

[12] There are numerous studies on the history and on the various aspects of this "science." For an introduction to the topic consult Jean Bottéro, *Mespotamia: Writing, Reasoning, and the Gods* (Chicago: University of Chicago Press, 1995), 87-103 and 125-137 and Rochberg, *The Heavenly Writing*, esp. 1-13 and 44-65.

[13] The surviving correspondence between Neo-Assyrian kings and their scholars specialized in divination provides a vivid picture of the social contexts of this "science of divination" as well as numerous examples of quoting and interpreting canonical omen lists. See Simo Parporla, *Letters from Assyrian Scholars to the*

lists led to the formalization of the descriptive and interpretative language employed in them. A "scientific terminology" emerged. According to Francesca Rochberg's analysis many of the phrases used in the omen-literature originated in mythological or religious texts. However, when they were adapted in the omen lists they were dissolved from the context of "mythopoeic thought" and became scientific technical terms.[14]

From this perspective the lists composed by medieval Jewish philosophers are important source material for understanding the conceptual system of the discourse. Lists are successions of statements; as we shall see, these successions can be modelled in many different ways. A change in the savoir of making lists can affect a discourse quite fundamentally and can have a significant bearing on its system of concepts.

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Medieval adherents of rabbinic Judaism inherited their obsession with lists from their Late Antique predecessors. The Mishnah, the first comprehensive compendium of rabbinic lore, composed at the beginning of the third century C.E., often amplifies the legal content of biblical laws with exhaustive lists. To quote just one famous example, the rather vague biblical prohibition of work on the day of Shabbat is specified in the Mishnah by a list enumerating thirty-nine major categories of work, from which further sub-categories are derived in other texts of rabbinic literature.[15] Lists were important devices by which the editors of the Mishnah could redefine the very essence of Jewish law; as Jacob Neusner writes, the "Mishnah constitutes a statement *on* the meaning of Scripture, not merely a statement *of* the meaning of Scripture."[16]

The legacy of rabbinic lists from Late Antiquity was threefold. First, the rabbis of talmudic times compiled a great number of various lists containing specifications of laws. These lists were approached as sacred texts by medieval commentators. Second, the rabbis established the "know-how" for making lists, which was learned, appropriated, and modified by subsequent generations. Third, certain passages in the corpus of Late Antique rabbinic literature mentioned "blank lists," that is to say, they stated that a certain number of items should be included in a list without identi-

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Kings Esarhaddon and Assurbanipal (Kevelaer: Butzon and Bercker, 1970-1983; reprint: Winsona Lake, Indiana: Eisenbrauns 2007).

[14] Cf. Rochber, *The Heavenly Writing*, 165-180; esp. 173-176.

[15] Mishnah, Shabbat, 7:2.

[16] Jacob Neusner, *Method and Meaning in Ancient Judaism*, vol. 2 (Chico, CA: Scholars Press, 1981), 168.

fying the actual items. For example, it was an ancient tradition that Exodus 20 and Deuteronomy 5 contained the so-called Decalogue or the Ten Commandments. Nonetheless, neither the biblical text nor the talmudic tradition indicated explicitly how to "count the commandments" mentioned in these passages and any exegete attempting to compile the list of the Ten Commandments had to face unexpected difficulties. Another famous example is the idea that the Torah contains 613 commandments all in all: 248 positive commandments according to the number of the members of the human body and 365 negative commandments according to the number of days in the solar year.[17] However, no text of the rabbinic corpus enumerated the 613 commandments. The idea of the 613 commandments played a very marginal role in talmudic literature, but its importance became paramount for medieval scholars. Yet another rabbinic tradition claimed that the biblical verses Exodus 34:6-7 enumerated the thirteen attributes of God.[18] But no list of the thirteen attributes is provided anywhere in rabbinic literature and medieval biblical exegetes trying to fill this "blank list" with items encountered considerable difficulties.

The know-how of making lists in rabbinic literature survived to the Middle Ages; medieval Jewish students devoted many hours to memorizing the various lists of the Mishnah and Talmud. It can be assumed that for many medieval Jews the rabbinic lists continued to function in basically the same way as they had in late antique times.[19]

The history of Jewish list-making, however, clearly evidences a break separating talmudic savoir from the practices adopted by undoubtedly the greatest medieval Jewish list-maker, Moses Maimonides (1137/1138, Cordoba, Spain – 1204, Fustat, Egypt).[20] Maimonides's oeuvre abounds in lists. One of his most influential and controversial creations is nothing but a list: he summarized the cardinal doctrines of Judaism in thirteen articles. A "credo" of this kind was a rather dramatic innovation in the context of medieval Jewish culture; many of Maimonides' critics wondered how anyone could claim the authority to undertake such an endeavour. Another

[17] Babylonian Talmud, Makkot 23b-24a and Horayot 8a. See Arthur Hyman, "Rabbi Simlai's Saying and Beliefs Concerning God," in *Perspectives on Jewish Thought and Mysticism*, ed. Alexander Altmann, Alfred L. Ivry, Elliot R. Wolfson, and Allan Arkush (Amsterdam: Harwood Academic Publishers, 1998), 49-62.

[18] Babylonian Talmud, Rosh ha-shana 17b.

[19] On the methods of learning in traditional religious schools based on Cairo Genizah materials see Shlomo D. Goitein, *A Mediterranean Society*, vol. 2 (Berkeley: University of California Press, 1967), 205-211; esp. 209-210.

[20] The best available introduction to Maimonides is Herbert A. Davidson, *Moses Maimonides: The Man and His Works* (Oxford: Oxford University Press, 2005).

important work, *The Book of Commandments*, lists the 613 commandments of the Torah. It begins with an introduction in which Maimonides lists fourteen "principles" according to which he extracted the 613 commandments from earlier Jewish legal literature. The list of the commandments and the principles governing Maimonides' selection were debated intensely in the Middle Ages.

Maimonides also applied his magisterial art of list-making in his philosophical works. One cannot fail to mention the famous twenty-five "premises" listed at the beginning of the second part of the *Guide of the Perplexed* (hereafter GP), which Maimonides thought necessary for constructing a philosophical proof for the existence of God. These "premises," in fact, epitomized Aristotelian natural philosophy in its entirety. This part of GP started to live an independent life; it was translated into Latin before the rest of the work and circulated independently; it was commented on not only by Jews but by a Muslim scholar as well.[21] Besides the Aristotelian premises, GP also contains a summary of the Kalam (a branch of Islamic theology) in twelve premises and fifteen "methods" of proving three key propositions (the creation of the world [seven methods], the unity of God [five methods] and the non-corporeality of God [three methods]). A list enumerating the seven possible causes of self-contradictions in literary compositions puzzled some medieval readers and fascinates many modern readers, especially since Leo Strauss' famous essay on the topic.[22]

Maimonides' listing of the "thirteen articles of faith" was by no means innocent in terms of ideology.[23] Defining the "principles" of faith implied that other points of belief not appearing on Maimonides' list were not principles and, perhaps, not obligatory beliefs at all. As late as 1837, an important leader of Orthodox Judaism, the Hatam Sofer (Moses Schreiber, rabbi of Bratislava) still objected to the very idea of listing the "articles" of Jewish faith because such a list would introduce an undesired hierarchy

[21] Cf. Görge K. Hasselhoff, *Dicit Rabbi Moyses: Studien zum Bild von Moses Maimonides im lateinischen Westen vom 13. bis zum 15. Jahrhundert* (Würzburg: Königshausen & Neumann, 2004), 45-46.

[22] Leo Strauss, "The Literary Character of the *Guide for the Perplexed*," in idem, *Persecution and the Art of Writing* (Chicago: The University of Chicago Press, 1980), 38-94.

[23] On Maimonides' role in the evolution of Jewish dogmatics see Menachem Kellner's seminal study: *Dogma in Medieval Jewish Tought: From Maimonides to Abravanel*, The Littman Library of Jewish Civilization (Oxford: Oxford University Press, 1987) (hereafter: Kellner, *Dogma in Medieval Jewish Thought*).

into the body of Jewish beliefs.[24] On the other hand, some nineteenth-century opponents of Orthodoxy interpreted Maimonides as a medieval freethinker who took the liberty of defining a credo for himself. Thus, Maimonides' listing of the "thirteen articles of faith" formed a proof that belief was a matter of individual choice in Judaism.[25]

These facts are cited here to demonstrate the significance of the Maimonidean craft of list-making. For Maimonides a list was by no means a trivial way of arranging information or an instrument that has only an auxiliary role in scientific research. It was rather a powerful way of transforming knowledge; by his lists Maimonides redefined (sometimes invented) many possible fields of knowledge, introduced new hierarchies among objects and principles, appropriated older learning and accommodated it to new thought-patterns, and explicitly or implicitly demanded new competences at the expense of others from the participants in discourse. Making a list was a rather aggressive restructuring of a possible field of knowledge in Maimonides' discursive practice.

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Returning for a moment to rabbinic lists, we can identify some characteristics that were not continued in the Maimonidean practice. These characteristics were connected to the memorization of lists and concern the structure and literary form of lists as well as the principles of organization.

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[24] *ShUT Hatam Sofer*, Yore Dea, no. 356. Similar views were held by Don Isaac Abravanel at the end of fifteenth century; cf. Kellner, *Dogma in Medieval Jewish Thought*, 210; quoting Abravanel's *Rosh Amanah*: "There is no need to lay down principles for the Torah of God which ought to be believed by every Israelite in order to merit life in the world to come as Maimonides and those who follow after him wrote, for the entire Torah, and every single verse, word, and letter in it is a principle and root which ought to be believed" (tr. Menachem Kellner).

[25] Cf. the *Besamim Rosh*, no. 251, a famous late eighteenth-century forgery purporting to be a medieval rabbinic legal response but propagating distinctively modern ideas. The author was Saul Berlin (1740-1794). Cf. Talya Fishman, "Forging Jewish Memory: *Besamim Rosh* and the Invention of Pre-Emancipation Jewish Culture," in *Jewish History and Jewish Memory: Essays in Honor of Yosef Hayim Yerushalmi*, ed. Elisheva Carlebach, John M. Efron, and David N. Myers (Hanover, NH: University Press of New England, 1998), 70-88, and Emile G. L. Schrijver, "Saul of Berlin's *Besamim Rosh*: The Maskilic Appreciation of Medieval Knowledge," in *Sepharad in Ashkenaz: Medieval Knowledge and Eighteenth-Century Enlightened Jewish Discourse*, ed. Resianne Fontaine, Andrea Schatz, and Irene Zwiep (Amsterdam: Royal Netherlands Academy of Arts and Sciences, 2007), 249-259.