

4 WHAT UNFAMILIAR LISTS AFFORD

Assessing lists and contexts, like seeing infrastructures, is difficult because contexts and lists in their ordinary utility are difficult to see. It is difficult to see the similarity between the assertions of McKenzie and Butler from within the organizing contexts provided by information science or textual criticism as they have been organized by those working in those fields and as they are enumerated by classificatory systems such as those provided by the Online Computer Library Center (OCLC). In this chapter, I present less familiar ways of thinking about lists to defamiliarize enumeration. The aim is to step outside our ordinary ways of working and thinking so we might find standing to reconsider enumerative bibliographical practices in information science. These unfamiliar modes of list making are meant to provide a sense for lists and enumerative practices as they can be perceived, not necessarily as we have come to know them. My presentation is not an endorsement of the scientific or philosophical arguments that formulate them. The measures of value that they may provide are not afforded by the validity of the science and philosophy that formulate them, but rather by how they enable us to relate our ordinary learned repertoires of enumerative practices with their culturally and socially sanctioned concepts and with what they enable and constrain.¹ Just as Borges's imaginative encyclopedic list afforded Foucault an opportunity to reconsider relations between words and things (*les mots et les choses*)—"the order of things"—the idea is to entertain alien lists and list-making processes to reconsider how lists and enumerative practices order relations. The odd perspectives enabled by the

speculative lists presented in the chapter suggest that our own enumerative practices are likely to create usefully limiting contexts that afford utility and enable action by constraining what can be taken as given. They create contexts that afford the ability to find and organize information about books concerning “library science; libraries; information science” and “criticism, textual—social aspects; Communication—social aspects; knowledge, sociology of,” for example. But the affordances of these contexts are simultaneously disabling and thwart efforts to find and organize points of intersection and shared boundaries, such as between library science and textual criticism. Apropos of its title, this chapter suggests that unfamiliar lists afford a means of accounting (albeit incompletely) for the enabling and disabling contexts that enumerative practices produce.

Two perspectives are particularly useful for investigating what is afforded by lists, how they create contexts that can be both enabling and constraining, and the ways that they can formulate what is taken as given. The first comes from the Baltic-German biologist Jakob von Uexküll (1864–1944), who asks that we seriously consider the subjectivities of nonhuman creatures. The second is from the speculative realist and media theorist Ian Bogost and his philosopher colleague Graham Harman, who ask that we speculate seriously about objectivity by earnestly considering what it might be like to be a thing. The works of Uexküll, Bogost, and Harman are useful for exposing bibliographical practices as infrastructure in information science because they disrupt commonsensical enumerative practices in ways that reposition us in relation to things and ideas ordinarily taken as given, such as how to enumerate objects and distinguish between objects and their contexts, by having us consider how this might be done by nonhuman subjectivities and alien objectivities.

UEXKÜLLIAN UMWELTEN (ENVIRONMENTS) AND ENUMERATION

How does a tick experience its world? What is an oak tree to a fox or a wasp? How many objects constitute an oak tree? Uexküll, who sees himself

as a biologist first and foremost, asks questions like these to understand the biological world. At first estimation, these may not seem to be bibliographical questions. But they are profoundly bibliographical in the sense that they provide a way to consider the affordances of enumerative processes, the contexts that they can generate and reveal, and what can be taken as given.

Uexküll theorizes that every living creature lives in the bubble of its own perceptions. He calls these bubbles “environments” (*Umwelten*), by which he means “all the features accessible” to an organism through its perceptive capabilities. Creaturely environments are delineated by creatures’ sensory organs. Each creature has its own *Umwelt*, Uexküll argues, and each is a closed world: “Everything a subject perceives belongs to its perception world [*Merkwelt*], and everything it produces, to its effect world [*Wirkwelt*]. These two worlds, of perception and production of effects, form one closed unit, the environment.”² This kind of closed-world thinking has profound implications for the objects that can be enumerated by creatures and what they can perceive as context in their environments.

As if he were a systematic bibliographer and not a biologist, Uexküll suggests that organisms create meaning by making lists. Enumeration provides a foundational utility to biological organisms as Uexküll conceives them by providing what information scientists might call “descriptive control.” This control is a function of the ability to reduce the complexity of the universe so that courses of actions that promote their survival can be undertaken. As Uexküll understands them, organisms’ perceptual systems “embody and measure a set of relations between heterogeneous elements”³ in the world so that organisms can take these measurements as established facts. In this sense, the sensory organs of biological entities function as biological equivalents of what Madeleine Akrich calls “technical objects” (see chapter 1). As with objects like electrical systems and the sensors that monitor them, the sensory organs of organisms create boundaries that delimit the plentitude of the universe and what counts as contexts. As Uexküll explains, the environmental bubbles within which organisms operate are formulated by perceptual apparatuses that facilitate a conversion of the facts created by their sensory systems “into facts” of their worlds, “pure and simple.”⁴ To

emphasize the bibliographical and information-scientific nature of his thinking, we can notice that perceptions and their effects in Uexküll's conception of the biological world are equated with marks that function as documentation for nonhuman animals. These marks are not unlike the documentary inscriptions made by electrons hitting photosensitive plates which physicists have used as evidence of subatomic particles. Describing the *Umwelt* of a tick, he writes: "The whole rich world surrounding the tick is constricted and transformed into an impoverished structure that, most importantly of all, consists only of three features [*Merkmalan*] and three effect marks [*Wirkmalen*]*—the tick's environment. However, the poverty of this environment is needful for the certainty of action, and certainty is more important than riches.*"⁵

Enumerating the tick's environment as he does, Uexküll provides a means for us to think about the affordances of bibliographical lists and enumerative processes and to consider how they might usefully impoverish the complexity of the world to facilitate the certainty of action toward specific ends. For a tick and its sensory system as described by Uexküll, the end is survival. Enumeration as a form of descriptive control, as we can hypothesize from the odd angle that Uexküll's tick provides, impoverishes the bibliographical universe to facilitate its use for some end or ends. The contexts enumerated by the tick's perceptual systems are limited to what is relevant to its survival. A person seeking a means to some bibliographical end, as Wilson describes, will wish to have an enumerative description just rich enough to exploit the bibliographical universe for some purpose. They will wish to have a context that is only as complex as what facilitates an end. At the same time, Wilson acknowledges that ends and purposes are variable. What is one person's heap of bibliographical flotsam and jetsam is another's treasure trove. Enumeration, because it is always selective, impoverishes complexity. It thus serves certain ends while disabling others by creating variously useful or disabling contexts. Enumerative practices selectively provide means to certain ends while affording none to others. Uexküll's tick provides a usefully unusual perspective on the old problem that Wilson describes while clarifying the infrastructural role of enumeration in information science by suggesting enumeration's inherent trade-offs.

UEXKÜLLIAN OBJECTS

The selective enumeration that is performed by biological subjects means that objects are never fully knowable to subjects in Uexküllian environments. Moreover, alternative methods of enumeration ensure that things are to be taken as givens in different ways. The usefully impoverished contexts of our tick's environment will be impoverished differently from a horsefly's, and differently again from the horse that the horsefly bites. This means that objects are variously formulated by biological subjects. As mentioned in chapter 1, Uexküll gives an example of an oak tree, which is a different object to different creatures. For the fox, the oak's roots become a solid roof that protects it and its family. For the squirrel, the oak's branches are "handy springboards," and for the bird, they are places to land. In the ant's environment, only the furrows of the oak's bark exist, and this bark is "soft" for the ichneumon wasp that is burrowing to feast upon the larvae of bark beetles despite being "hard" in the environments of many other creatures. The enumerative sensory apparatus of each species provides different means for their survival and for impoverishing the complexity of the world for their species-specific ends. Along with objects, what counts as context is articulated differently for each creature, according to Uexküll:

In the hundred different environments of its inhabitants, the oak plays an ever-changing role as object, sometimes with some parts, sometimes with others. The same parts are alternately large and small. Its wood is both hard and soft; it serves for attack and for defense.

If one wanted to summarize all the different characteristics shown by the oak as an object, this would only give rise to chaos. Yet these are only parts of a subject that is solidly put together in itself, which carries and shelters all environments—one which is never known by all the subjects of these environments and never knowable for them.⁶

The multiplicity of Uexküllian objects provides a vantage point for us to consider how enumerative processes enable objects to matter so differently and provide such distinct affordances. It also help us to consider how, even when objects matter differently, they can coordinate action. Like what Star calls "boundary objects," Uexküllian objects organize diverse actions

in and across communities with no need of consensus concerning what objects are. The oak tree usefully facilitates diverse action while also disabling similarly diverse action. From this admittedly unorthodox vantage point, it is easier to see how the same objects can matter so differently depending upon how they are enumerated by the perceptive apparatuses of different individuals and communities, and hence to see more clearly the important roles played by bibliographers (whether they go by that name or not) in formulating contexts through enumerative practices that serve (or thwart) the ends of individuals and communities.

UEXKÜLLIAN MEANING

Uexküll's take on meaning is also productive for thinking about the power and force of enumerative systems as they operate in information science. Meaning, in Uexküll's way of thinking, has force. For him, "meaning bridges the gap between physical and nonphysical processes"⁷ so that everything that "falls under the spell of an environment" is "reformed" until it becomes a "useful carrier of meaning" or is "neglected."⁸ Uexküllian *Umwelten* are creatively destructive; their "components" are "crudely torn apart without the slightest consideration"⁹ for what might have been afforded in an alternative environment or nature's plan. Although Claude Shannon attempted to bracket the meaning of messages, we can express Uexküllian meaning in Shannonian terms. It describes how information sources as discrete sets are formulated in relation to the channels of communication with the world available to a creature. In Wilsonian terms, Uexküllian meaning describes the marginal utility of an extra unit of descriptive control relative to exploitative control that it provides a creature as it acts for its survival. Uexküll explains with a complex conceit that has a "simple" curved glass bowl serving a variety of functions, including as a window. He writes, "I can . . . put the glass bowl on the table and fill it with water in order to use it as a flower vase"¹⁰ or insert it into an outer wall to be "transformed" into a "window." He adds: "The properties of the object are not changed thereby. But as soon as it has transformed itself into a carrier of meaning such as 'window' or 'vase,' a

distinction of properties according to their *rank* becomes apparent. For the window, transparency is the ‘leading’ property, whereas curvature represents a supporting property. For the vase, on the contrary, curvature is the leading property and transparency the supporting property.”¹¹

Parallels between Uexküllian meaning and library catalogs can be easily drawn. The meaning of Uexküll’s own book can be ranked according to its properties as librarians enumerate them from within their environments. The book’s title, or Uexküll’s name as the book’s author, might be “leading” properties. Other properties enumerated as part of what we would call “descriptive metadata” could also be leading properties. Uexküll’s take on meaning also provides a means of considering how we in information science often attempt to generate it.

While we as information scientists sometimes attempt to bracket certain kinds of meaning and knowing from definitions of information science and foundational technical definitions of communication (see chapter 1), these definitions and intellectual foci are themselves meaningful in an Uexküllian sense. The inclination to bracket what a message might mean to a person receiving it in order to focus on communication as an engineering problem, and the professional disposition that has us overlook the nuanced meaning of a novel or Shannon’s paper in order to catalog it correctly for readers, are themselves meaningful knowledge practices, of course. As Marcia Bates has suggested, our frequent focus on technical problems as they relate to the ways that people interact with the systems that we build helps to constitute what she calls the “invisible substrate of information science.”¹² Crudely put in Uexküllian terms, we are diverse species that tend, as we go about work in our field, to enumerate the world in ways that rank the properties of things and ideas differently from others. The useful paradox that Uexküll helps us to see more clearly is that we often understand the ends that we pursue in terms of our work’s meaningful utility to others.

Contemplating our work through an Uexküllian lens, we might say that through our own creative-destructive fashioning of the world, we fashion “information science” environments in which we “tear” what we formulate as “leading” properties of books—their titles, authors, subjects, and other

features—to facilitate “bridges” that span the “gap between physical and nonphysical processes.”¹³ We do this, an Uexküllian perspective would suggest, from within our environments such that what falls under the spell of our environment is “reformed” until it becomes a “useful carrier of meaning” or is “neglected.”¹⁴

Again, Uexküllian meaning helps to illuminate this old problem in information science from a new angle while reinforcing the notion that enumeration and description are foundational. What is meaningful to us as information scientists and how we formulate meaning are functions of how we mark, count, and list; the variously useful contexts that we produce with our enumerative practices; and the ways that our enumerative practices cause us to take things as given. These will be distinct from how others mark, count, and make meaning with the systems that information scientists fashion. These potential incompatibilities of meaning are not a problem, so long as what is fashioned by information scientists serves others in their alternative environments. In Uexküll’s model, the oak tree grows for the oak tree’s sake, but doing so creates forms of utility for other creatures.

The very hard problem is finding standing in relation to these other environments and ecosystems so what we enumerate as the properties of objects helps to sustain and propel others inhabiting alternative *Umwelten*. To borrow from Uexküll’s productive metaphor of the oak tree one last time, we have the difficult problem of wishing to sustain the ecosystem enabled by the oak tree without being able, from our own environmental perspective, to know the oak tree as an oak tree, let alone as what the oak tree is to the squirrel or fox. We also have the difficult problem of recognizing other trees in the forest and the ecologies that they inhabit and support. More troubling, we can just as easily degrade the ecosystems suggested by the forest as help them and the forest’s cohabitants thrive.

OBJECT-ORIENTED ONTOLOGIES AND ONTOGRAPHY

Purposeful speculation is one way to address this hard problem of finding standing in relation to those that we aim to support and sustain with our work. In addition to our more ordinary empirical approaches, and as a check

on the ways that we fashion our world with our disciplinary inclinations, we can consider alien enumerative practices as means of accounting for what has fallen under the spell of the environment that we have created for ourselves, what we have “reformed” through our own practices to be “useful carrier[s] of meaning,” and what we have neglected. Bogost and Harman provide a particularly useful method of accounting for what we take as given.

What is it like to be *E.T.* (the computer game from 1982, not Steven Spielberg’s movie or the alien that appeared in it)? Speculative realists like Bogost and Harman ask this question as they attempt to understand objects in relation to each other rather than as relations between living subjects and objects. They ask us to empathize with things rather than living beings by asking absurd questions. What is it like to be a bookbinding, acidic paper, or a Unicode value? The aim, they suggest, is to prompt a cascade of additional unfamiliar questions that allow us to write what Bogost calls “speculative fictions.” These fictions are meant to provide opportunities to reconsider and contextualize the nonfictions of what we take to be a real book, its binding, its acidic paper, and the Unicode values used to transcribe what appears on its sheets into digital systems. The idea is that such fictions enable us to consider the physical and mental environments that we inhabit by going “where everyone has gone before, but where few have bothered to linger.”¹⁵ Bogost and Harman suggest that we can be led closer to knowing what we assume about books and data by attempting to consider what they might be in “their worlds.” For our purposes, this kind of speculation affords opportunities to assess enumerative practices for how they draw the boundaries of things, ideas, and our relations with them.

LISTS AND ONTOGRAPHY

As you might expect, list making plays a central role in speculating about what might be taken as real by speculative realists. Harman and Bogost call their brand of list making “ontography,” and they associate it with methods of drawing our “attention to the countless things that litter our world unseen.”¹⁶ Lists “map” what they call the “basic landmarks and fault lines in the universe of objects” rather than a geography of “stock

natural characters.”¹⁷ A book is a “landmark” and “fault line” that can be used to distinguish objects, but it also highlights the inadequacy of *book* as a “stock character” and descriptive term for a literary bibliographer or librarian, which is comparable to the inadequacy of the term *forest* for an ecologist. For Bogost and Harman, ontography celebrates worldly detail by honing the virtue of attentive practices that attempt to suspend “anthropocentric narrative coherence”¹⁸ in favor of an object’s material or imagined presence. Like many defamiliarizing projects, the aim is to see things for what they are before they are made into a story of what is or should be. There is an imperative to explore what is afforded by quirky lists and the unfamiliar contexts that they produce. Ontography, according to Harman and Bogost, offers fitful contemplative pauses and “an antidote to the obsession with Deleuzian becoming” or any privileging of “continuity and smoothness” over “sequentiality and fitfulness.”¹⁹

Whatever we might feel about Deleuzian becoming or the need for a philosophical antidote to it, for our purposes, Harman and Bogost’s ontography suggests opportunities to pause and reconsider what coheres the narrative assumptions that guide our enumerative practices. We do not need to have a philosophical stake in what might constitute anthropocentric narrative coherence or their beliefs about speculative realism. But the oddity provided by ontography provides what reflection from an alternative perspective provides: the possibility of gaining something unexpected—for example, information about our assumptions, how we have positioned ourselves and our work, and what we may have left out.

As a concrete example of how ontography can afford opportunities to reconsider our enumerative practices and, by extension, the ways that bibliography serves as integral infrastructure in information science, we can consider lists that we have seen before: library science, libraries, information science; criticism, textual—social aspects, communication—social aspects, knowledge, sociology of. These are the lists provided by OCLC for the descriptions of McKenzie’s *Bibliography and the Sociology of Texts* and Butler’s *An Introduction to Library Science*. Pausing over them, we can wonder again what narrative coherence they might suggest. In chapter 3, I suggested that they could be associated with the similarity of Butler’s and

McKenzie's assertions about books and societies, even if OCLC cataloged them separately—something that I have attempted to record by placing a semicolon between the two lists.

Suggestive of how ontography can sensitize us to the ways that we enumerate facts that have already been established, we can fret over *things*, small and large. Ontography provides license to fret, as I did, over the semicolon used to conjoin the lists describing McKenzie's and Butler's books. We can wonder what semicolons are and how they might cohere or sunder narrative assumptions. How *truly* different would things be if a carriage return marked the boundary between the two lists?

Library science, libraries, information science

Criticism, textual—social aspects, communication—social aspects, knowledge, sociology of

This admittedly superficial and self-referential question, reflective of my own quandaries over how to punctuate this list, has the benefit of showing the ways that ordinary “stock characters” like semicolons and carriage returns can become “fault lines” capable of repositioning us in relation to the most mundane enumerative procedures. The carriage return creates a vertical hierarchy between the lists. Do I mean to suggest that “Library science” is above “Criticism, textual”? Did I mean to intend anything by having “Library science” precede “Criticism, textual” when ordered by the semicolon?

What defines a carriage return? Is it the idea of the carriage, so integral to the typewriters that helped to formulate the phrase? The Unicode value that can be expressed in decimal form as “10” if I think a carriage return as a “new line” and not a “carriage return,” which is encoded with the decimal value “13” by the Unicode consortium? What about the word *semicolon*? The *Oxford English Dictionary (OED)* defines it as follows: “In present use [the semicolon] is the chief stop intermediate in value between the comma and the full stop; usually separating sentences the latter of which limits the former, or marking off a series of sentences or clauses of co-ordinate value.”²⁰ Do I mean to suggest a “stop intermediate in value” between “library science” and “bibliography as a sociology of texts,” where “bibliography as a sociology of texts” limits “library science”? How might such an expression

sustain or undercut my arguments from the last chapter? Perhaps I mean simply to “mark off a series of sentences or clauses of co-ordinate value.” Indeed, this might be a nice summary of my arguments; but the semicolon suggests both ideas.

The larger point is that ontography can help to reveal our ordinary bibliographical practices of enumeration and our own fitful moments considering how to count, recount, and reshuffle what has been counted as information and knowledge so as to usefully formulate them and their relations. It helps us to see how enumerative practices reify and build the contextualizing systems within which they work and also how they provide opportunities to recontextualize those systems by insistently accounting for the objects formulated by systems. An apparently simple enumerative problem unfurls into questions about distinctions that can be drawn between a “carriage return” and a “new line” in the Unicode standard. One commenter on Stack Overflow endorsed by a “green check” indicating the usefulness of her/his suggestion writes: “\n is the newline character, while \r is the carriage return. They differ in what uses them. Windows uses \r\n to signify the enter key was pressed, while Linux and Unix use \n to signify that the enter key was pressed.”²¹

Those who have wrestled with data where fields are sometimes delimited by semicolons, and sometimes by something else, know with intimacy the fitful moments of those who have previously attempted to count and recount what has previously counted as information and knowledge. For our particular purposes, the distinction between a “carriage return” and a “new line” may not be of particular import. But attending to it as part of our ontographic example reveals contexts in which the distinction could be important. Along with the capacity to better attend to how lists have been formulated, the ability to reveal contexts is among ontography’s powers.

CARPENTRY-ACCOUNTING

To summarize our discussion of what is afforded by the unusual enumerative practices that we have been considering, bring this chapter to a close, and suggest again how bibliography and enumeration are marginal but

constructive and constitutive actors in diverse networks of practice in information science, we can dwell momentarily over an additional tool provided by Bogost.

To level an important critique of philosophy (and academic endeavor more generally), Bogost constructs a philosophical tool that he calls “carpentry.” “Carpentry,” he suggests, “extends the ordinary sense of woodcraft to any material whatsoever,”²² including philosophy. “To do carpentry is to make anything, but to make it in earnest, with one’s own hands, like a cabinetmaker.”²³ Bogost’s notion of carpentry can be extended to enumeration as a craft of “representation and organization” that we fashion with our own hands by engaging, as Bates has suggested, “fundamentally different talents and skills from those required in other professions and intellectual disciplines.”²⁴ Bogost’s basic argument is that making and building are the best kinds of philosophizing. He contrasts this with the philosophy that can be read from books, including, paradoxically, his own: “Like scientific experiments and engineering prototypes, the stuffs produced by carpentry are not mere accidents, waypoints on the way to something else. Instead, they are themselves earnest entries into philosophical discourse.”²⁵ “Carpentry,” Bogost’s critique suggests, can “offer a more rigorous kind of philosophical creativity” by addressing more than a “human reader’s ability to pass eyeballs over words and intellect over notions they contain.”²⁶ He adds:

Sure, written matter is subject to the material constraints of the page, the printing press, the publishing company, and related matters, but those factors exert minimal force on the content of a written philosophy. While a few exceptions exist (Jacques Derrida’s *Glas*, perhaps, or the Nietzschean aphorism, or the propositional structure of Baruch Spinoza’s *Ethics* or Ludwig Wittgenstein’s *Tractatus*), philosophical works generally do not perpetrate their philosophical positions through their form as books. The carpenter, by contrast, must contend with the material resistance of his or her chosen form, making the object itself become the philosophy.²⁷

This claim assumes a great deal about books and about philosophy. Bogost dismisses books themselves as contingencies, along with all the contingent processes that would bring any particular one before the eyeballs of

a human reader. These are contingences that Bogost otherwise celebrates, and bibliographers and information scientists, each in their own way as they pursue their own ends, know in their bones the way that a cabinet maker knows the feel of oak and can distinguish it from pine. Even as we might applaud Bogost's attempt to reposition contemporary philosophy to align it with building and the "knowing-how"²⁸ of old concepts like *techné*, he looks past the "carpentry" of the many people that created and then accounted for what has been made and organized as "books of philosophy." Their carpentry slips from view: not just the carpentry of the publisher raising capital to pay for the carpentry of the press people who ensure that the registers are aligned to constrain pages as proscribed by the carpentry of typesetters picking type or fiddling with a variety of settings in any variety of software packages; but also the bibliographical carpentry of those doing the work of "related matters" like enumerating, describing, analyzing, and critiquing as they facilitate cataloging and describing again, modeling and remodeling as data and metadata "books of philosophy."

If we take Bogost's notion of carpentry and append the idea of insistent recursive, enumerative accounting for what has been carpentered, it becomes a potent means of considering the foundational infrastructural roles played by bibliography and enumeration in information science, not as a kind of philosophy, but as a kind of material-conceptual work. Indeed, it becomes another usefully odd list that affords the idea that bibliography builds enumerative accounts that construct usefully constrained contexts while also providing means of accounting for what has been built. Carpentry-accounting creates one additional unfamiliar list that suggests through its strangeness how integral our ordinary enumerative practices are to work done in information science and how useful they can be as means of reflecting on it.

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Cats, Carpenters, and Accountants

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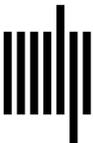
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