Dimorphism as a Metaphor for Information-Seeking Behavior

By David E. Schmersal, Bridwell Library, Perkins School of Theology, Southern Methodist University

ABSTRACT Our increasingly hybridized information environment, in which both print and electronic resources are available and offer certain advantages, may be described as "dimorphic," alluding to the dual modes of sustenance evident among certain semi-nomadic peoples in the Ancient Near East. In this session, Reference and Digital Services Librarian David Schmersal will draw upon amateur interest in the Ancient Near East to explain how dimorphic social structure may provide a useful heuristic device or metaphor for understanding the information-seeking behavior of students, faculty, and other researchers. Such insight into user behavior may be applied to collection development, instruction sessions, reference interviews, and other crossroads between libraries and our patrons' information needs.

INTRODUCTION

Pastoral nomads might seem a most unlikely source of comparison with the information-seeking behavior of students in theological libraries.[1] Nomadic pastoralists typically inhabit an environment characterized by scarcity; indeed, this lack of resources is one of the driving forces behind their nomadic existence. They must move from place to place in order to exploit the limited resources of their environment. In contrast, the information environment in which our students are pursuing theological education is characterized by super-abundance. Any student with internet access can obtain within seconds a quantity (if not quality) of information that vastly exceeds the collections of even the most robustly-funded theological library. Further consideration, however, suggests that the comparison is not

entirely without merit. In both cases, the "inhabitants" of the environment must adapt to the environment, and the strategies necessary to adapt to and thrive in an environment of scarcity are remarkably similar to those necessary to adapt to an environment of overabundance: maintaining a healthy diet in the midst of a cruise ship's 24/7 all-you-can-eat buffet can be just as challenging as ensuring adequate sustenance on a wilderness backpacking trip. Both require careful planning, flexibility, and discipline. Adopting multiple modes of existence has enabled nomadic peoples to most fully and efficiently exploit the limited resources of their environment. Similarly, theological students may choose to use both print and electronic resources available in their information environment for various tasks, adapting their mode of research accordingly. This allows them to most fully and efficiently exploit an overabundance of resources within the confines of limited time and attention. Thus, comparing agro-pastoral dimorphic nomadism with the information-seeking behaviors observed among researchers in theological libraries will enable theological librarians to better understand how students, faculty, and other researchers adapt to our dimorphic information environment and suggest ways we might assist them in doing so.

I. Brief overview of agro-pastoral dimorphic nomadism as a strategic response to the physical environment of the Near East/Western Asia

The way of life of any group of people is largely determined by their environment.[2] This was especially true for the people of the Ancient Near East.[3] The Near East, or Western Asia, may be regarded as an environment of extremes, comprising deserts, mountains, and the irrigated valleys of the Tigris and Euphrates Rivers. These latter represent "thin strips of green in an otherwise brown landscape," though as one scholar notes, "the more arid lands around them are no less significant in subsistence, demographic, or cultural terms."[4] Interspersed between and among the deserts and the irrigated fields was a liminal space which, like an estuary, facilitated a rich intermingling of two ways of life, inhabited by peoples who adopted multiple modes of existence in order to take full advantage of the limited resources available to them.[5] Their environment was characterized by "sharp variation in the amount of yearly precipitation" so that "an

economy which relied on agriculture alone would entail unacceptable risk," forcing "close symbiosis between pastoralism and agriculture."[6] Some scholars have used the term "dimorphic" or dimorphic structure to describe this symbiosis between sedentary agriculture and nomadic or semi-nomadic pastoralism whereby "the two ways of life were combined in a system of political economy."[7] Two intertwined factors combined to create this dimorphic mode of existence: topology, "the effect of the physical environment" on the history of the region, and the effects of the seasonal migration necessitated by sustaining herds in marginal environments.[8] These two factors brought nomadic pastoralists and sedentary populations into close proximity, creating "dimorphic zones"[9] and leading to a kind of "enclosed" or "enclosing" nomadism characterized by a "high degree of symbiotic, economic, and political relationship between the nomadic pastoralists and the sedentary population."[10]

Such proximity created possibilities not only for exchange (both cultural and economic) but also for conflict.[11] This likely is familiar to theological librarians, from the biblical story of Cain and Abel. This story reflects the tensions between sedentary farmers like Cain and nomadic pastoralists like Abel, which could sometimes lead to violence.[12] At the same time, many biblical stories depict pastoral and sedentary peoples not only in close proximity but as members of the same group or family: Cain and Abel are brothers. Lot lives in a city while his cousin Abraham is dwelling in a tent. Indeed, despite presuppositions to the contrary, when Ancient Near Eastern sources are allowed to speak for themselves, "it soon emerges that pastoralism is in no way separate from the urbanized, sedentary world", but rather the two exist side by side.[13] This has led one scholar to assert that rather than thinking of pastoralists and agriculturalists as two distinct groups that came together on occasion due to economic necessity, "we should envisage one entity splitting apart from time to time; or better as a series of single entities diverging and merging in a myriad of combinations over time."[14] Indeed, "the nomad-sedentary continuum is much more complex," than the typical division into nomad and sedentary, "composed of diverse (and changeable) socioeconomic situations, such as sedentary elements, agro-pastoralists, pastoralists who engage

in occasional dry farming, 'pure' pastoral nomads, etc."[15]

Even those groups that might be placed toward the "pure nomadism" end of the spectrum would have required some contact with sedentary populations as outlets for the products of their flocks and herds, and this interdependence would have been more, not less, acute in times of economic crisis.[16] Thus, maximizing the economic potential of the region required adopting both modes of existence, which may explain the stability and persistence of symbiotic nomadism in the region—the social structure of the region was (and in some quarters remains) dimorphic because the environment itself is dimorphic.[17] In some cases, this meant that the entirety of a given social group ("tribe") would spend part of the year engaged in sedentary agriculture and part of the year engaged in mobile pastoralism. In other cases, part of a group would engage in sedentary agriculture or even small-scale industry while part of the same group engaged in mobile pastoralism.[18] Yet, beyond the economic value, there was also "the social value of herds, which corresponds to the potential for converting animals and pastoral resources into other cultural forms, including symbols, materials, information, relationships, and capacities—each having importance to herders and often for their neighbors as well."[19] Within such contexts, the expertise of those who knew how to maintain livestock in the midst of drought, "managing animal communities, environment, and spatial and temporal change," was highly valued, even though the tribal group would also engage in agriculture as conditions allowed, for such "knowledge, skills, and cultural traditions compensate for, or even profit from, productive variability."[20]

Agro-pastoral dimorphism may thus be seen as an economic strategy in which a community or society adapted itself to its environment, diversifying its population to take full advantage of every means of communal survival offered by a context with limited resources.[21] However, rather than a passive strategy determined by the need to find sufficient fodder for herds of animals, mobile pastoralism may be considered an active strategy. The desire to maintain mobility and autonomy led to the decision to maintain herds as part of an overall strategic response to an environment characterized by uncertainty, both in natural resources

and politically.[22] Retaining "alternative modes of organization" that could be "enacted" under appropriate circumstances offered groups the degree of flexibility necessary to respond to dynamic circumstances, whether climatic or political.[23]

II. Brief overview of information-seeking behavior in the dimorphic environment of theological libraries

To a large extent, the research practices of students, faculty, staff, and other scholars who use theological libraries are a product of their information environment or "epistemological ecology." In the context of libraries, this information environment may be thought of as "an integrative interface comprising all [points of] contact between users and available library resources" whether "human, physical or digital."[24] The library's information environment is also part of the wider cultural milieu created by society's adoption of various technologies to create, preserve, use, and gain access to information. On the one hand, religion and theology, like other humanities-related disciplines, continue to place greater emphasis on print. Not only theology faculty, but also students who are "digital natives", have indicated a preference for reading some kinds of resources, particularly books and textbooks, in print, even if a digital version is available.[25] On the other hand, our information environment in theological libraries reflects the wider cultural shift in emphasis toward digital information accessible through information technology and communications networks. Most scholars, including those looking for physical books in our physical libraries, begin their searches for information on the internet, using search engines, databases, the library's online catalog, or a combination thereof.[26] And while many theological students and faculty may express a preference for print books, the same students and faculty prefer to gain access to journal articles electronically.[27] The fault line between preference for digital over print lies less along differences in age or generation (though these have been and will continue to be a factor) than along different types of sources employed for different purposes within the overall research process. This suggests that theological libraries will likely continue to comprise both print and electronic resources for some time.[28] In other words, our

information environment, like that inhabited by agro-pastoral nomads, is dimorphic, which means that the scholars, faculty, staff, students who inhabit and adapt to our information environment are also dimorphic, employing different formats for different purposes or to meet different needs. Thus, the central question is not whether students, faculty, staff, and scholars, etc. prefer digital or print, but rather how they use the various types of tools and formats available within their research environment. To discern this, it will be helpful to consider the information-seeking behavior of students, faculty, and other scholars in theological libraries.[29]

As in other humanities disciplines, the information-seeking behavior of researchers in religion and theology may be described as "an idiosyncratic process of constant reading, 'digging,' searching, and following leads," with "citation chasing" a commonly used strategy.[30] Many have noted that convenience plays a significant role in the information-seeking behavior of students.[31] While this is a cause of concern to some faculty members, theological faculty members have also cited the convenience of electronic sources as a significant factor in choosing digital over print sources.[32] As one faculty member notes, "Journal articles are great to access in pdf-files. I love to simply download them into my research folder without running around in the stacks trying to identity the right volume and then scan or copy them."[33] This suggests that rather than symptoms of laziness or lack of commitment, behaviors based on convenience or "satisficing" may be means of adapting to an information environment characterized by overabundance and information overload.[34] For example, making online availability a criterion when selecting sources may be a strategic way of helping students choose a topic when so many options are available. Information is not scarce; what is scare is time and attention.[35] When using the physical or digital library to find sources, patrons are not only "seeking information on X," but also are evaluating the relative advantages of using a given electronic book or journal article or reference work, versus the print version of the same, versus the fifteen million hits on Google. This may explain, in part, why library patrons sometimes seem to be flittering about. As Björneborn observes in his

article on serendipity and user information-seeking behavior, "When users move through an information space they may thus change direction and behaviour several times as their information needs and interests may develop or get triggered depending on options and affordances encountered on their way through an information space."[36] Within the dimorphic information environment of theological libraries, print and digital spaces and sources offer different "affordances," or properties, aspects, and "potential utility."[37] Discerning the affordances of print and digital contexts and sources will thus contribute to better understanding the information-seeking behavior we perceive among students, faculty, and scholars.

One notable affordance of the physical library space, and of physical objects housed, used, and made accessible in this space, is their tangibility or tactility. The physical library space also facilitates direct, unmediated, face-to-face interactions between scholars and librarians.[38] Moreover, the design of the physical library itself, the "aura" of a formal, quiet space with minimal distractions, is itself an important part of the service we provide.[39] There is much to be said for "the beauty, as well as solemnity and sacredness" of the physical books our physical library spaces hold.[40] Tactility and presence resonate with deeply-ingrained human needs and have profound theological associations. This is not to suggest that theological libraries cannot meet the information needs of scholars through digital mediation (as enabled through networked information and communications technologies), but it is important to recognize that there are aspects of the physical library, many with deep spiritual and psychological connections, that cannot be fully replicated in a digital space.[41] Browsing, or "semi-directed or semi-structured searching in an area of potential interest," and serendipity are also widely regarded as advantages that print sources have over digital.[42] Or, perhaps a more precise way to say this is that the design features of the physical library that facilitate browsing and serendipitous discovery are more intuitive, or the habit of using them has thus far been more successfully and deliberately inculcated, than the design features that facilitate browsing and serendipitous discovery in the digital library.[43] User education, and improvements in user interfaces such as

a virtual browse feature, may mitigate this discrepancy, but we must nonetheless "be aware that there is a part of the reading world, which relies upon (not just prefers) the ability to orient themselves in the spatial dimensions of books, and specifically libraries."[44]

At the same time, digital information spaces and electronic resources clearly provide their own affordances or advantages. One commonly cited advantage of digital resources such as e-books is their portability and accessibility. Even those who prefer print appreciate the ubiquitous availability of e-books when a print copy is unavailable, or when they are traveling.[45] Thus, one of the strengths of print resources, their tactility and physicality, also highlights some of the advantages of digital and electronic sources, their ubiquity and portability. Digital/electronic resources also have, or at least are perceived to have, the advantages of convenience, ease, and efficiency.[46] As one student noted, "Through the digital form, it is easier to search through the several articles to pull out a main thought from a single article you want to use for your own writing. Searching through the print version of several articles would be more difficult than the ATLA system breaking down the articles by subject."[47] Unlike print texts, digital sources also offer the significant affordance of enabling scholars to copy and paste text from a source into their own documents, facilitating notetaking and accurate quotations, which is especially useful when working with primary sources.[48]

On the other hand, one common concern/complaint about e-resources is that those lacking page numbers can be challenging to cite.[49] Others note the inability to easily highlight and annotate digital texts as a disadvantage. However, both have more to do with flaws in a particular interface than with the medium itself. Many digital texts do include page numbers, and OCR-enabled PDFs allow users to search them, take notes, and highlight them "as if they were printed."[50] Indeed, some scholars prefer electronic formats and will scan print books to have in PDF format to facilitate searching and reading on a tablet.[51] Moreover, as Lincoln observes, limited highlighting and annotating functions should not really be regarded as a liability in library e-books, since these are not encouraged behaviors when working with library print books.[52]

The foregoing suggests that "different kinds of tasks will drive different types of behaviors."[53] In other words, the use of a print or digital resource is determined less by an overall preference for one format over the other than by the utility of one or the other for specific tasks. Electronic sources seem to be more conducive to searching, quick reference, and utilizing greater quantities of shorter sources such as essays, journal articles, articles in subject dictionaries and encyclopedias, and relevant portions of commentaries on books of the Bible and other texts.[54] Print tools, and the physical library infrastructure built around them, seem preferable for in-depth study, reading longer portions of text, and browsing. Some researchers have noted a correlation between the type of reading and the type of sources. They link "deep reading," or "reading with the goal of long-term retention of the material" and "perspective-transforming" comprehension, with print media, which "supports navigation, creates a sense of control, and provides tactile experiences." Conversely, some have suggested that digital texts, which allow for scanning and searching for keywords, are more conducive to "surface reading," which "seeks task-completion over retention of comprehension."[55] In light of this, one might even suggest that researchers may choose to limit themselves to a print text in order to facilitate deeper, more concentrated reading. Thus, using a print text, rather than gaining access to a digital text on the same device that dings whenever a friend has posted yet another cat video, may itself be thought of as strategy.[56] This may be reflected in the fact that researchers seem to prefer print when they seek to ingest the contents of a book (or journal article) for greater understanding. When asked whether he/she is more likely to use the print or digital version of a given source, one student observed:

> It depends on if I want to make notes in the book or not. If I am likely to read the book in depth for a paper and reference it, I would most likely want the book to add my tabs and take notes from the book. If I am just reading the book for an overview of an argument, I am more likely to use an e-book. I think for books, as opposed to articles from journals, the print copy is more valuable than just

an e-book. I have found myself printing out e-books, so I can take my own notes. If I had the print book, I could skip printing out the work and just add my tabs for important points in the book.[57]

Information-seeking behavior also seems to be influenced by the stage, quality, and duration of a research project. Students seem to prefer digital resources in the initial stages of a project and when under time constraints, whereas students engaged in long-term or more in-depth projects seem to prefer print.[58] As one graduate student related: "I find it most advantageous to use a print version instead of a digital version when I need to utilize the whole scope of the print version in my research. I find it much easier to flip between sections, compare different portions of a text, and take themes or patterns in the text when using the print version."[59]

With changes and improvements in the interfaces, including the ability to highlight and annotate digital texts, researchers are becoming more comfortable in using digital sources for deep reading.[60] Nonetheless, it is unlikely that digital sources will replace print sources anytime soon. In their 2016 study of students' information-seeking behavior, Lopatovska and Regalado observed that students use electronic devices not for reading but "for writing, searching, watching videos, making calls, and making photographs of print texts."[61] Thus it would seem that students have adapted to using both print and digital sources for various tasks and information-seeking strategies. As one Perkins graduate student noted, "At times, I have been known to utilize the ebook alongside the print book in order to find information quickly through the search function available on an ebook. This happens most when the print version does not have a very thorough index."[62] Ultimately, we see that physical and digital library spaces, and the physical and digital materials to which they provide access, complement each other.[63] We also see that the researchers who use them employ "a variety of deep and surface reading strategies" while "using both print and electronic resources."[64] Thus, "the question is not whether we read better from the print page or screen, but which form of reading is most suitable for the task and text at hand."[65]

III. Dimorphism as a heuristic image

It should now be apparent that, despite obvious differences, agro-pastoral dimorphic nomadism offers a compelling metaphor or heuristic image for shedding light on information-seeking behaviors evident among researchers in theological libraries. As we have seen, dimorphic nomadism is a means of adapting to a physical environment of scarcity, conducive to both limited agriculture and pastoralism, in order to exploit the limited resources thereof. Nomadism is also a strategy to retain a degree of autonomy and flexibility in the midst of dynamic social and political circumstances. Likewise, the information-seeking behavior of researchers in theological libraries is a way of adapting to a "dimorphic" information environment of overabundance in which print and digital spaces and resources offer certain affordances, as well as a strategy for dealing with information overload.[66]

Agro-pastoral dimorphic nomads of the Ancient Near East adopted strategies based on "geographic expanse, a preference for maintaining options (i.e., flexibility), and the articulation of movement, scheduling, information gathering, and communication" to adapt to their environment. So our students employ similar strategies—flexibility, "satisficing," restricting themselves to print or digital for certain tasks or certain points in their research—to adapt to their environment.[67] And just as Ancient Near Eastern nomads chose to engage in animal husbandry because it facilitated a more flexible strategic response to their environment, so our students' information-seeking behavior may be driven less by a preference for print or digital resources than by an overall strategic response to an environment of information overabundance given their scarcity of time and attention.

IV. Experts in adapting to changing environment and behavior: the role of theological librarians

What role might theological librarians play in our dimorphic information environment? Again, our metaphor may prove useful. In his article on alternative complexities among nomads, Honeychurch describes experts among African nomadic tribes

who retain and possess necessary "skills in a range of productive pursuits and the expertise to contextually adjust the degree of investment according to conditions," making pastoral nomadism "an ideal tether for grounding diverse capabilities, skills, and knowledge that make possible multiple options."[68] In our dimorphic information environment, theological librarians similarly offer "skills" and "expertise" in using a variety of print and electronic tools to help researchers "contextually adjust" their research strategies "according to conditions."[69] Our vocation offers a unique perspective to discern how certain types of information sources are more conducive to certain information-seeking behaviors. Thus, the role of theological librarians is less a matter of determining whether students prefer print or digital and acquiring and providing access to such sources than it is discerning which types of resources may be more advantageous for which types of tasks and helping students strategically adopt sources accordingly.[70] Electronic texts offer the advantages of searching and extracting sentences and phrases for the sake of quoting sources, but print books are more conducive for browsing and referring back and forth between sections. Electronic commentaries and journal articles are more convenient, since one can select only the content that is immediately relevant, but this comes at the cost of serendipity and context. Print sources are more conducive to tasks that require deep reading and concentration, while electronic sources may be more convenient for rapid searching, skimming, and portability. Recognizing the relative strengths and advantages of print and digital sources, and helping the students and scholars who use our libraries recognize how these advantages can facilitate accomplishing certain tasks, is an essential skill and vital service theological librarians offer as we seek to help our patrons adapt to our dimorphic information environment.

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NOTES

1   Wilson defines "information seeking behavior" as "Those activities a person may engage in when identifying their own need for information, searching for information and using or transferring that information." T.D. Wilson, "Models in Information Behaviour Research," *Journal of Documentation* 55, no. 3 (June 1999): 249.

2   Israel Finkelstein and Avi Perevolotsky, "Process of Sedentarization and Nomadization in the History of Sinai and the Negev," *Bulletin of the American Schools of Oriental Research* 279 (August 1990): 68, 73.

3   Focusing attention on the Ancient Near East provides limit-
     ing parameters for the topic at hand, though because similar
     dynamics have prevailed in more recent times, this overview
     will also incorporate analyses of "modern" nomads. As Rowton
     rightly observes, given a "physical environment [that] is condu-
     cive to nomadism" and continuity in social structure, "one might
     expect rather similar conditions in diachronic perspective, even
     at considerable intervals of time." Michael B. Rowton, "Dimor-
     phic Structure and the Tribal Elite," *Al-bahit* (1976): 230.

4   Anne Porter, *Mobile Pastoralism and the Formation of Near Eastern Civi-
     lizations: Weaving Society Together* (New York: Cambridge, 2012), 87.

5   Cribb observes that one of the "implications" of the environment
     of the region is that the main access routes through the moun-
     tains of the region are also (necessarily) the migration routes of
     nomads, "bringing them into continual contact with sedentary
     society." He notes that while pastoral and agricultural produc-
     tion may be integrated at various levels, from family, to commu-
     nity, to society, this need not suggest the two modes of existence
     are meant to "ensure a balanced diet" or "even out ecological
     imbalances." Nonetheless, the need for adequate sustenance
     amidst ecological variations has been a significant factor in the
     modes of existence evident among people in the region. Roger
     Cribb, *Nomads in Archaeology* (New York: Cambridge University
     Press, 1991), 8, 24-25. See also Michael B. Rowton, "Dimorphic
     Structure and Topology," *Oriens Antiquus* 15 (1976): 23.

6   Michael B. Rowton, "Dimorphic Structure and the Parasocial
     Element," *Journal of Near Eastern Studies* 36, no. 3 (Jul., 1977): 196.
     "This form of integration is conditioned by the physical envi-
     ronment." Rowton, "Dimorphic Structure and the Tribal Elite,"
     220. Barth notes that this symbiosis is evident in the similar diet
     common among nomads and villagers. He also lists factors that
     contribute to the balance between the pasture and the sown in
     a given region. Frederik Barth, "A General Perspective on the
     Nomad-Sedentary Relations in the Middle East," in *The Desert and
     the Sown: Nomads in the Wider Society*, ed. Cynthia Nelson (Berke-
     ley, CA: Institute of International Studies, 1973), 18-19.

7   Abbas Alizadeb, "The Rise of the Highland Elamite State in
     Southwestern Iran: 'Enclosed' or Enclosing Nomadism?" *Current*

Anthropology 51, no. 3 (June 2010): 354; Porter, *Mobile Pastoralism*, 24; Mario Liverani, *The Ancient Near East: History, Society and Economy*, trans. Soraia Tabatabai (London: Routledge, 2014), 222; John Nichols, "Amorite Agro -Pastoralism and the Early- to Middle Bronze Age Transition in Syria," (Ph.D. Dissertation, The Johns Hopkins University, 2004, ProQuest Order No. 3130750), 12-14, 45-47; Rowton, "Dimorphic Structure and the Parasocial Element," 181.

8   On topology see, Michael B. Rowton, "Autonomy and Nomadism in Western Asia," *Orientalia*, Nova Series 42 (1973): 248; Rowton "Dimorphic Structure and Topology," 17, 20-21; on migration, see, Finkelstein and Perevolotsky, "Process of Sedentarization," 68; Rowton "Autonomy and Nomadism," 250; Rowton, "Dimorphic Structure and Topology," 18.

9   Rowton, "Autonomy and Nomadism," 247-248; see also the map in Rowton, "Dimorphic Structure and Topology," 31. Liverani notes that although the phrase "dimorphic zone" is commonly used "to define an area characterized by a mixed economy," as originally introduced by Marcel Mauss, the term referred to seasonal dimorphism, wherein "the same area of population takes on different behavioral patterns at different times of the year." He thus observes that, in this sense, the Ancient Near East was "not 'dimorphic' because pastoral groups coexisted with cites and agricultural villages" but because "the agro-pastoral population concentrated in the irrigated lands during the dry summers, and was much more dispersed in the pastures and steppes during the wetter winters and springs. It therefore followed those transhumant patterns that seasonally separated and reunited families and larger kin groups alike." Liverani, *The Ancient Near East*, 176. I am using the term to refer both to the dimorphic patterns of behavior and to the environments that made such patterns possible and necessary. See also Nichols, "Amorite Agro -Pastoralism," 13-14, 20-21, 42; Mario Liverani, "'Half-Nomads' on the Middle Euphrates and the Concept of Dimorphic Society," *Altorientalische Forschungen* 24 (1997): 44, 45.

10   Alizadeb, "Rise of Highland Elamite State," 353, note 1; Finkelstein and Perevolotsky, "Process of Sedentarization," 80; Rowton "Autonomy and Nomadism," 249; Rowton, "Dimorphic Structure

and the Parasocial Element," 196; Rowton, "Dimorphic Structure and Topology," 18, 19, 21.

11 Rowton, Michael B. "Dimorphic Structure and the Problem of the *ʿapirû-ʿibrîm*." *Journal of Near Eastern Studies* 35, no. 1 (Jan., 1976): 14.

12 Modern Western readers, who can trace to the urban centers of the Ancient Near East the origins of many innovations that characterize our own civilization—cities, government, writing, law, and art—may thus find it surprising that in the case of the Hebrew Bible authorial sympathies seem to lie not with the sedentary populations, but with the pastoralists. It is Cain, the farmer, who is responsible for the violence and murder. It is the Philistines and Canaanites, the enemies of God's people, who occupy the cities and confront the Israelites with the innovations of civilization such as bronze and iron weapons and chariots. It is the Egyptians who oppress the children of Israel. Abraham may have come out of Ur, but he lived as a pastoral nomad in the land of Canaan, a *apiru* whose descendants declared without shame, "a wondering Aramean was my father." See, Porter, *Mobile Pastoralism*, 1; Giorgio Buccellati, "Apirū and Munnabtūtu-The Stateless of the First Cosmopolitan Age," *Journal of Near Eastern Studies* 36, no. 2 (April 1977): 145-147; Rowton, "Dimorphic Structure and the Parasocial Element," 195.

13 Porter, *Mobile Pastoralism*, 11. Nichols cites the Mari letters as evidence of the "social dimorphism of Amorite groups." Nichols, "Amorite Agro –Pastoralism," 307.

14 Porter, *Mobile Pastoralism*, 13, 36-37.

15 Finkelstein and Perevolotsky, "Process of Sedentarization," 68; Honeychurch similarly observes that "the role of farming and domestic grain in pastoral nomadic economies is quite diverse." William Honeychurch, "Alternative Complexities: The Archaeology of Pastoral Nomadic States," *Journal of Archaeological Research* 22, no. 4 (December 2014): 286-287, 288. Swidler similarly notes the "ease with which a nomadic group can move along the nomadic-sedentary continuum." W.W. Swidler, "Adaptive Processes Regulating Nomad-Sedentary Interaction in the Middle East," in *The Desert and the Sown*, 31.

16 Porter, *Mobile Pastoralism*, 22.

17 Finkelstein and Perevolotsky, "Process of Sedentarization," 70-71; Ernest Gellner, "Introduction: Approaches to Nomadism," in *The Desert and the Sown*, 2. Note that this understanding differs considerably from that with which Liverani takes issue, which sees dimorphic nomadism as a kind of evolutionary stage between "pure" nomadism and sedentary existence, noting that the persistence of "the dimorphic model" in the same area since at least the Bronze Age suggests that it is a means of adapting to the environment rather than a stage in social evolution. Liverani, "'Half-Nomads,'" 47-48.

18 Finkelstein and Perevolotsky, "Process of Sedentarization," 75; Cribb, *Nomads in Archaeology*, 23-27; Rowton "Autonomy and Nomadism," 254-256.

19 Honeychurch, "Alternative Complexities," 287. Honeychurch observes that nomads became adept at "sustaining a system of conversions that makes animals, goods, services, skills, and information interchangeable, so that underlying value might be preserved or even enhanced in multiple forms despite variation over space and time" (296).

20 Honeychurch, 288-289.

21 Honeychurch notes that "Herodotus' theory of nomadism was one of positive emphasis on strategy: a mobile strategy that both grew out of and imposed a different way of life (Herodotus 2003, p. 282)." Honeychurch, 278, 309. This is not to suggest that such conflicts between distinct groups of "socially dimorphic" agro-pastoralists and sedentary populations did not occur. See Nichols, "Amorite Agro –Pastoralism," 314-315; Rowton, "Dimorphic Structure and the Parasocial Element," 196.

22 Honeychurch, "Alternative Complexities," 279, 288, 290, 294, 298. He notes that "when it comes to politics within a mobile society, mobility related techniques for negotiating political relationships were likely as much about contesting, asserting, or consenting to authority as about evading it" (291). See also Alizadeb, "Rise of Highland Elamite State," 355.

23 Honeychurch, "Alternative Complexities," 295. In this light, the story of Cain and Abel may take on deeper significance. If nomadism was a strategy, not merely a means of adapting to needs of herding animals, then it is possible that this story bears

political undertones. Thus, it is not merely an expression of preference for animal vs. grain offerings, or of a nomadic vs. sedentary lifestyle, but a subtle critique of the established hegemonic states in the form of divine sanction for nomadic strategies used to adapt to and subvert the established states represented by Cain's offering.

24 Lennart Björneborn, "Serendipity Dimensions and Users' Information Behaviour in the Physical Library Interface," *Information Research* 13, no. 4 (December 2008), http://InformationR.net/ir/13-4/paper370.html.

25 On theology faculty, see Timothy D. Lincoln, "Reading and E-reading for Academic Work: Patterns and Preferences in Theological Studies and Religion," *Theological Librarianship* 6, no. 2 (July 2013): 42; Christine Wolff-Eisenberg, Alisa B. Rod, and Roger C. Schonfeld, *Ithaka S+R Faculty Survey 2015* (Ithaka S+R, April 4, 2016), 6, 20, DOI: https://doi.org/10.18665/sr.277685. Lincoln discusses the distinction between "digital natives" and "digital immigrants," though he notes that some have challenged the correlation between facility with technology and the year in which one was born (45, note 23). On preferences for print, see Lincoln, "Reading and E-Reading," 42; Jonah Arellano, "Print vs. Digital Textbooks," *Rural Telecommunications* (Jan/Feb 2011): 8; Irene Lopatovska and Mariana Regalado, "How Students use Their Libraries: A Case Study of Four Academic Libraries," *College and Undergraduate Libraries* 23, no. 4 (2016): 382-383; Kelsey Spinnato, personal correspondence, March 14, 2018.

26 Catalano, "Patterns of Graduate Students' Information Seeking Behavior: A Meta-Synthesis of the Literature," *Journal of Documentation* 69, no. 2 (2013): 260; Wolff-Eisenberg, Rod, and Schonfeld, *Ithaka S+R Faculty Survey 2015*, 11; Liyana and Noorhidawati. "How Graduate Students Seek for Information: Convenience or Guaranteed Result?" *Malaysian Journal of Library and Information Science* 19, no. 2 (2014): 10, 12.

27 Indeed, the 2015 *Ithaka S+R Faculty Survey* found that "Nearly three-quarters of faculty members overall strongly agreed that if their library cancelled the current issues of a print version of a journal but continued to make them available electronically, it would be fine with them." Wolff-Eisenberg, Rod, and Schonfeld,

Ithaka S+R Faculty Survey, 17. However, in his paper presented to the 2017 ATLA annual conference, Stefanut suggests this preference is not universal. Romulus D. Stefanunt, "Survey on Information Needs/Information Seeking Behavior of Seminary Students," (paper presented to the 2017 American Theological Library Association annual conference, Atlanta, Georgia, June 17, 2017).

28 Anthony Elia, "Beyond Barthes and Chartier: The Theology of Books in the Digital Age," *ATLA 2008 Proceedings*: 104.

29 S. Liyana, and A. Noorhidawati. "How Graduate Students Seek for Information," 2. For a compilation of definitions of "information-seeking behavior," see Irene Lopatovska and Deanna Sessions, "Understanding Academic Reading in the Context of Information-seeking." *Library Review 65*, no. 8/9 (2016): 503.

30 Andy Barrett, "The Information-Seeking Habits of Graduate Student Researchers in the Humanities," *Journal of Academic Librarianship* 31, no. 4 (2005): 327.

31 "Convenience is a situational criterion in people's choices and actions during the information-seeking process. The concept can include their choice of an information source, their satisfaction with the source and its ease of use, and their time horizon in information seeking." Lynn Sillipigni Connaway, Timothy J. Dickey, and Marie L. Radford, "'If It Is Too Inconvenient I'm Not Going after It': Convenience as a Critical Factor in Information-Seeking Behaviors," *Library & Information Science Research* 33 (2011): 180. See also Catalano, "Patterns of Graduate Students' Information Seeking Behavior," 265; Liyana and Noorhidawati, "How Graduate Students Seek for Information," 3.

32 Martin and Quan-Haase note that the history faculty members they interviewed "were concerned about students only going so far to seek for specific source material" and "were worried that students would potentially switch their topic of interest if it was too difficult to find the relevant text." Kim Martin and Anabel Quan-Haase, "Are E-Books Replacing Print Books? Tradition, Serendipity, and Opportunity in the Adoption and Use of E-Books for Historical Research and Teaching," *Journal of the American Society for Information Science and Technology* 64, no. 5 (2013):1023.

33 Suzanne Scholz, personal communication, March 14, 2018; Connaway et al. note similar observations regarding students' preference for electronic journal articles. Connaway, Dickey, Radford, "If it is too inconvenient," 180.

34 "Satisficing is a combination of the words satisfy and suffice, and reflects upon the user's behaviour to choose what is satisfactory (or good enough) rather than what is best (Byron 2004)." Liyana and Noorhidawati, "How Graduate Students Seek for Information," 3. This of course does not rule out laziness as a contributing factor. See Marc Vinyard, Colleen Mullally, and Jaimie Beh Colvin, "Why Do Students Seek Help in an Age of DIY?: Using a Qualitative Approach to Look Beyond Statistics," *Reference & User Services Quarterly* 56, no. 4 (2017): 259.

35 Connaway, Dickey, and Radford, "If It Is Too Inconvenient," 179.

36 Björneborn, "Serendipity Dimensions and Users' Information Behavior," http://InformationR.net/ir/13-4/paper370.html; Lopatovska and Regalado likewise found students simultaneously using and switching between multiple print and electronic media, "How Students use Their Libraries," 388.

37 *Oxford English Dictionary*, s.v., "Affordance."

38 Björneborn, "Serendipity Dimensions and Users' Information Behavior," http://InformationR.net/ir/13-4/paper370.html; Amy Catalano, "Patterns of Graduate Students' Information Seeking Behavior,"260.

39 See Lopatovska and Regalado, "How Students Use Their Libraries," 382.

40 Elia, "Beyond Barthes and Chartier," 105.

41 Elia, "Beyond Barthes and Chartier," 105-106, 107, 108.

42 On browsing, see Xuemei Ge, "Information-Seeking Behavior in the Digital Age: A Multidisciplinary Study of Academic Researchers," *College & Research Libraries* 34, no. 2 (September 2010): 437. On serendipity, see Tami Echavarria Robinson, "Unanticipated Fortuitous Information Discoveries: Serendipity in Research," *Alki* (March 2014): 13-15. On the advantages of print, see Martin and Quan-Haase, "Are E-Books Replacing Print Books?" 1024, 1027.

43 Björneborn, "Serendipity Dimensions and Users' Information Behavior," http://InformationR.net/ir/13-4/paper370.html;

Catalano, "Patterns of Graduate Students' Information Seeking Behavior," 266. Thomas Mann rightly observes that the serendipitous discoveries that occur in the library are not the result of luck, but of systems carefully designed to facilitate such discoveries. Thomas Mann, *The Oxford Guide to Library Research* (New York: Oxford, 2005), 61.

44 Elia, "Beyond Barthes and Chartier," 109.

45 Kelsey Spinnato, personal correspondence, March 14, 2018; Suzanne Scholz, personal correspondence, March 14, 2018.

46 The history faculty interviewed by Martin and Quan-Haase indicated they "were likely to use the e-book when it was convenient to them," thus suggesting that faculty members' preference for print is a qualified preference. Martin and Quan-Haase, "Are E-Books Replacing Print Books?" 1025.

47 Andrew Nelson, personal correspondence, March 14, 2018.

48 Lincoln, "Reading and E-Reading," 45; Mitchell Kennard, personal correspondence, March 15, 2018.

49 Scholz, personal correspondence, March 14, 2018; Kennard, personal correspondence, March 14, 2018.

50 Spinnato, personal correspondence, March 14, 2018.

51 Kennard, personal correspondence, March 15, 2018.

52 Lincoln, "Reading and E-Reading," 44.

53 Catalano, "Patterns of Graduate Students' Information Seeking Behavior," 267.

54 Roy Heller, personal correspondence, March 14, 2018.

55 Lopatovska and Sessions, "Understanding Academic Reading," 505-507; Suzana Sukovic, "Transliterate Reading," *Scholarly and Research Communication* 6, no. 4 (2015): 2, 4.

56 The same internet that allows students to instantly find information on almost anything, and download twenty journal articles from a library database in ten minutes or less, also allows the constant bombardment of updates from social media that our cultural context expects us to respond to instantly. Lines between work and leisure are increasingly blurred when the same devices that distract me with cat videos when I am trying to write an exegesis paper also reminds me that said paper is due when I am trying to have some downtime.

57 Andrew Nelson, personal communication, March 15, 2018. Lopatovska and Regalado similarly observed "several students printing electronic texts for easier reading," "How Students Use Their Libraries," 389-390.

58 Lopatovska and Regalado, "How Students Use Their Libraries," 391.

59 Lisa Hancock, personal correspondence, March 14, 2018.

60 Lopatovska and Sessions, "Understanding Academic Reading," 512.

61 Lopatovska and Regalado, "How Students Use Their Libraries," 393.

62 Hancock, personal correspondence, March 14, 2018.

63 Björneborn, "Serendipity Dimensions and Users' Information Behavior," http://InformationR.net/ir/13-4/paper370.html; Sukovic, "Transliterate Reading," 4, 5.

64 Lopatovska and Sessions, "Understanding Academic Reading," 511.

65 Sukovic, "Transliterate Reading," 10.

66 Honeychurch's observation regarding the functioning of a state across distance through symbolic representation, ideology, and partial and episodic participation may perhaps suggest a further analogy with distance students. Honeychurch, "Alternative Complexities," 284-285. Nomadism also raises questions of ownership vs. access. See Swidler, "Adaptive Processes," 25.

67 Honeychurch, "Alternative Complexities," 294.

68 Honeychurch, 293-294; Vinyard, Mullally, and Colvin, "Why Do Students Seek Help," 263-264.

69 Honeychurch, "Alternative Complexities," 293-294.

70 Catalano (citing Barry 1997) notes that many doctoral supervisors themselves employ a limited range of search strategies and tend to continue to use those they themselves learned in graduate school. This suggests that as "experts" librarians can play a vital role in fostering more sophisticated search strategies among graduate students and in introducing students and faculty to resources that may enable them to perform certain research-related tasks more efficiently. Catalano, "Patterns of Graduate Students' Information Seeking Behavior," 264.