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Abstract

As the field of digital humanities grows, scholars are translating and adapting their investigative processes to suit the digital environs. Questions about how digital technologies will enhance and transform historical scholarly reading practices have arisen, but they have not been extensively considered from the perspective of visual culture historians and less so from those working on select non-Western cultures. This paper approaches these questions from an Islamic and South Asian art historical perspective, mapping out the particularities of reading historical texts when conducting visual cultural research and considering the implications for the development of future digital research tools.

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The INKE Research Group comprises over 35 researchers (and their research assistants and postdoctoral fellows) at more than 20 universities in Canada, England, the United States, and Ireland, and across 20 partners in the public and private sectors. INKE is a large-scale, long-term, interdisciplinary project to study the future of books and reading, supported by the Social Sciences and Humanities Research Council of Canada as well as contributions from participating universities and partners, and bringing together activities associated with book history and textual scholarship; user experience studies; interface design; and prototyping of digital reading environments.

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Impressive progress has been made in terms of understanding how texts can be read spatially and, to a lesser extent, visually in the digital environs. Projects like Barbara Hui's *Litmap* (2009), a tool for literary cartography, the Stanford Literary Lab's project "A Geography of Nineteenth-Century English and American Fiction" (2011), and Stanford's "Mapping the Republic of Letters," which spatializes intellectual exchange in the Renaissance and the Enlightenment, all point to how digital tools can be developed to visualize the spatial data found in texts (Findlen and Edelstein, 2011). Recently, Google awarded a grant to the *HyperCities* project for its *Geoscribe* proposal, which aims to link maps to books and vice versa. The goal is to create a tool that

will allow users to create maps of places related to books, and each point on each map will be linked back to specific pages in the books. Users will be able to browse all books that mention a certain time and place, and to browse all the maps created by users that are linked to a specific book (Shepard, 2011).

Visual cultural historians who examine space, form, and image in their historical and cultural contexts have their own particular ways of reading relevant primary source texts to help them construct the narratives they wish to write. For example, they may simultaneously seek to extract information about visual cultural vocabularies, and creative intents, processes, specific works, viewer perceptions, spatial contexts, creators and their networks, patrons and their networks, travellers' routes, and influential events. Furthermore, specialized fields like Islamic art and architectural history have their own particularities as well. Another distinctive aspect of visual cultural research is the necessity of moving between textual, visual, and spatial data in various sequences, and of establishing correlations between them. Can these complex reading processes be unpacked, articulated, and coherently organized to the point that digital tools can be designed and developed to facilitate these kinds of reading? This article will report on some of the conclusions of the Medieval Delhi Humanities Computing Research Collective on how primary historical texts are typically read for visual cultural research and how these insights can inform the development of digital tools.

Approach

The Medieval Delhi Humanities Computing Research Collective gathered in Victoria, Canada, in 2008 and included specialists in Medieval Delhi visual culture whose perspectives included urban history, architectural history, and material culture. They were brought together to articulate and analyse their processes of scholarly inquiry and consider them in relation to digital tool design. Articulating scholarly processes was seen as the necessary first step for designing technologies around scholarly processes, as opposed to having scholarly processes conform to pre-existing tools.

Despite the impressive advances in semantic search and artificial intelligence, current initiatives and technologies still wrestle with understanding the complexities of advanced reading processes. In order to develop technologies that enlarge scholarly inquiry and analysis, it is important to first understand in detail scholarly practices of reading and how they can vary depending on disciplinary perspective and topic of inquiry. The problem of designing assistive technologies then is inherently a self-reflexive exercise; for historians and art historians, the task of envisioning, designing,

and employing technological tools can be seen as a kind of historiographical inquiry, since historiography is the inquiry into how history is and has been written and why. Conceptualizing technology requires a similar though not identical kind of inquiry.

The first portion of the article will identify different aspects of visual culture researchers' reading practices, using the example of Delhi Sultanate scholarship and a specific text, namely, Henry Elliot and John Dowson's 1869 abridged English translation of Hasan Nizami's 1205 Persian text the *Taj ul-Maasir* (The Crown of Exploits). The key question being explored is what common things Sultanate visual scholars read historical texts for and why? The second concluding portion will attempt to consider the implication for the design of technologies that aspire to enhance reading in the age of the digital word. Considering the case of a lesser known field of study with complex linguistic dimensions, like the Delhi Sultanates, is especially useful because if digital tools are designed to work for complex cases then they will likely be able to address a wide variety of more general and less complex cases, as well as have broader applications.

Text and context

Often, a Sultanates visual culture scholar working with a text begins with the most readily available text, which can be an English translation in book or pdf format. More often than not the pdfs are not searchable and optical character recognition versions are rife with errors due to the use of older typefaces, diacritics, foreign names. From the translation, scholars can move toward a published critical edition of the original text in Persian, if it is available, or to a plurality of manuscript copies on microfilm or DVDs. In other words, Delhi Sultanate researchers employing digital technologies more often than not currently work with images of texts scattered across various media rather than machine readable text organized in central databases and accessible via the Internet.

For example, consider the case of the 1869 Elliot and Dowson English "translation" of Hasan Nizami's Persian historical chronicle *Taj ul-Maasir*. The translators did not view the text kindly, judging it to be "exceedingly poor in historical details" (Nizami, 1869, p. 205). The original author, Nizami, was a refugee from Khurasan, Iran, who witnessed the conquest of Delhi by Qutbuddin Aybek and commenced writing his text in 1205 for the Lahore-based Ghurid imperial ruler Muhammad bin Sam bin Husain, also known as Sultan Muizzuddin Sam Ghori. Nizami's text is particularly valuable because it recounts the rise of the Delhi Sultanates in eleventh century North India when Turkic and Afghan Muslim armies, traders, and mystics conquered and settled amidst North Indians led by Rajput princes and subscribing primarily to Vedic-Brahmanist and Jain traditions. On behalf of the Central Asian Ghurid Empire, headed by Muhammad bin Sam, the general Qutubuddin Aybek defeated North Indian Rajput ruler Rai Pithora and his allies, first near Ajmer and then Delhi where Rai Pithora had established a fortress near Hindu and Jain temples. Aybek proceeded to build mosques in Ajmer and Delhi, ruins of which still stand today, marking what would be the beginning of large-scale, permanent Central Asian and Persian migration into to the Indian subcontinent and the inculcation of Islam into the Indian religious plurality.

This period of history is highly contentious in contemporary Hindu Muslim relations in India, as well as in the political relations between India and Pakistan, one of the world's most volatile geopolitical situations. The rhetoric of conquest found in

historical texts like Nizami's is highly controversial in contemporary Indian political life, in which Hindu nationalist parties like the BJP recount offensive narratives of past Muslim conquest in part to rationalize current violence and unequal treatment of contemporary India's large Muslim minority. Modern historians have inquired into whether conquest narratives can be taken at face value, or whether they are repetitions of an idealized vision of conquest quite different from the reality (Eaton, 2000).

Elliot and Dowson's text is interesting for a number of reasons. It is easily and freely available over the Internet due to Google's massive book digitization project, which includes Stanford Library, where a hard copy of the version used in this article is stored. It is the most readily available version of the text, and, having been published in 1869, is exempt from copyright restrictions (Nizami, 1869). However, the text is not a complete translation but an abstracted one, in which summaries of the text are accompanied by translations of select portions in order to convey an overall sense of the text. A more recent comprehensive translation has been made by Bhagwat Saroop and published in Delhi in 1998 (Nizami, 1998), and a critical edition of the Persian text has been published only recently in 2008 (Nizami, 2008). Digitized copies of different manuscripts can be purchased from the British Library and no doubt from other European and American repositories too; microfilm versions can be obtained through the international university interlibrary loan system. Visual cultural historians choosing to make use of the Elliot and Dowson text must come to terms with its complex nature and its multiple genealogies. From a scholarly point of view, it may be wiser to discard the text but for the fact that it is so easily available. Needless to say, if one wishes to move between the same portions of text in the various translations, critical texts, and original manuscripts, then much time will be required, since there is no common indexing system allowing the correlation of the same sections of text. Ironically, the older the printed text, the easier it is to access via the latest technologies; the digital environs in this case privileges the older text.

The text's title illustrates another common problem that both Sultanate and Islamic world researchers in general face when moving between original texts and translations, which is one of transliteration. Nizami's text is written primarily in Persian but employs premodern-Hindi/Urdu as well as Turkish and Arabic words and names, and there are multiple ways of transliterating each language from Devanagari and Arabic script into Roman script. For example, the Elliot and Dowson title *Tāju-l Ma-ásir* appears as *Tāj al-ma'āsir* in the Library of Congress catalogue, showing just one variance in Arabic transliteration. Even within a text there can be variations; for example, the title also appears in Elliot and Dowson's version as *TA'JU-L MA-A'SIR*. Such variations when unaccounted for pose a difficult barrier for automated computer software tasked with pulling up all the related records.

Furthermore, additional techniques can be used in print to signal the use of multiple languages within a translated text. To distinguish translated Arabic and Persian portions from abridged portions, Elliot and Dowson have employed italics. These small nuances and variations are important to note because these can get lost, and words and names can get corrupted as roman script optical character technology is applied. While roman script renditions of Persian, Arabic, and Turkish texts can vary widely, Arabic script renditions tend to be more stable, which is why the Library of Congress also

lists the Tāj al-ma āsir in Arabic script as well. All these variations in transliterations can obfuscate names and places for which stable identifications are necessary in order to pursue historical research. In addition to transliteration, translation itself introduces many variations that can create confusion for both scholars and computers. For instance, the title Tāju-l Ma-āsir is translated as “Crown of Exploits” by Elliot and Dowson, and as “Crown of Glorious Deeds” by Saroop. Can flexible, all-purpose digital tools be designed to handle these kinds of variances?

Naming place, placing names and tracking time

One recurring task that Sultanate visual culture researchers perform while reading historical texts is the reconciliation of place names used in texts with contemporary names, a process complicated by multiple transliteration systems. For example, Elliot and Dowson render Lahore as Lohúr. Place identifications can be highly imprecise, and remain in flux and subject to revision. The scholar then has to be aware of what previous scholars’ place identifications were and must keep abreast of updates and refinements, as well as the degree of certainty with which the identification is made.

For example, Nizami’s translator, Elliot and Dowson write, “[Qutbuddin Aybek and] the army remained encamped within the boundary of Dehli, at ... Indrapat (Indraprastha)” (Nizami, 1869, p. 216). In the context of the text, Delhi can refer to the pre-existing fort or the fort and surrounding area following the Turkic-Muslim victory. This Delhi, of course, is far different than the contemporary metropolis, with its Sultanate, Mughal, British Colonial, and modern iterations. The name Indraprastha refers to a pre-Islamic city mentioned in the Mahabharata that is thought to be a precursor city to Delhi but is known to Nizami as Indraprat. In Nizami’s text, Delhi then becomes a highly complex term referring to Rai Pithora’s fort and to nearby temple complexes, the Turkic-Muslim settlement and its mosque, and Indraprat, which is interpreted to mean Indraprastha of the Vedic text the Mahabharata, all of which have different spatial identities and geographic extents. Identifying the geographic correspondences of place names is, for Sultanate scholars, part of the larger quest to identify historical centres of habitation and population. This provides a crucial sense of where the initial Turkic army dwelled in relation to Delhi’s first mosque and would have been the seed for the first Turkic-Muslim urban development. But, visual cultural information is often derived through inference rather than through explicit textual reference, and is thus often imprecise. Hence, the three place-names correspond uncertainly to each other and multiple geographic regions.

As with place names, identifying people also poses its own unique challenges. In Nizami’s text, individuals are often referred to by multiple names and titles, requiring researchers to build a lexicon of names and titles attached to an individual. Sometimes different individuals bear the same names and similar titles. Further complicating matters, translators attempt to standardize the way people are named to make things clearer for the reader. Qutbuddin Aybek, for example, is frequently referred to in the Persian text as Khusrau Payruz Jang, but Elliot and Dowson choose to use either the truncated Khusrú or Qutbuddin Aybek, thus introducing a variation between translation and original (Nizami, 1869).

Even working with dates can have its challenges. The Islamic world frequently employs its own lunar based calendar, the Hijri calendar, in its texts. Elliot and Dowson indicate a date from the Hijri calendar using “H.” in most cases, but not all, and in contrast with the contemporary usage of “A.H.” or “AH.” They also provide Gregorian equivalents, although there are different formulas and complexities when converting dates since a Hijri year without a specified month can fall between two Gregorian years. Different scholars use slightly different date conversion methods, leading to minor variations in dates. Other later histories introduce additional Persian and Indian dating systems as well. Determining what dating system is in effect and how to consistently convert to the contemporary Gregorian system is another frequent challenge of the Sultanate visual cultural historian.

Furthermore, it’s important to recognize that chronological information does not always present numerically. For instance, Qutbuddin Aybek was invited to Ghazna by his overlord the Ghurid ruler Sultan Muizzuddin Sam Ghori to celebrate his Indian conquests “when the sun was in Cancer, and the heat was so great as to prevent travelling” (Nizami, 1869, p. 220). He did not go immediately but set out once the rainy season began. The passage provides vital chronological information about Aybek’s movements but is presented in less specific astrological and seasonal terms, rather than in precise dates. As one sifts through the complexities of identifying places, people, and dates, it becomes clear that they pose interesting challenges for the design of databases that aim for transparency in the construction of knowledge and suggest that even basic anchoring elements such as names, dates, and places are not as stable as they seem.

Identifying visual cultural vocabulary and significant visual cultural events

Historical texts can be very useful for shedding light on historical visual cultural vocabulary, and figuring out historical terms for carpets, temples, mosques, fortresses, gardens, vessels, tents, and other objects is part of establishing the vocabulary for visual culture. Translators, though, can translate the same words differently for the sake of style, obscuring the vocabulary employed and making it important to consult texts in their original languages. Scholars starting with a translation need to easily move back and forth between an original text and its translation to be able to gauge the consistency of the translation practices. The case of Delhi’s Friday mosque illustrates the importance of accurately identifying these historical names. In the present day, the mosque built by Aybek and his successors in Delhi is known as the Quwwat al-Islam, meaning “Might of Islam” and implying that imperialistic and messianic intents underlay its foundations; however, Nizami’s text shows that it was merely referred to with the generic name *jami masjid*, meaning “Friday congregational mosque.”

The researcher’s task also involves identifying key visual cultural events mentioned in an historical text and then interpreting their significance. For example, Nizami explains that when Malik Nasiruddin Kubacha, holder of the fortress of Bhakkar, died, the legendary treasury and wealth stored in the fortress was deposited in Delhi Sultan Shamsuddin’s treasury, which was presumably kept at Delhi. Nizami writes, “[m]ore than five hundred lacs of Dehliwals, various kinds of inlaid articles and jewels, and pearls exceeding white, and costly garments were deposited in the royal treasury of Shamsu-d din” (Nizami, 1869, p. 242). The event marks a significant moment of visual cultural exchange, with the Indic material culture of Bhakkar flowing into the Sultanate capital of Delhi. Descriptions of the objects themselves are of interest, but

the occasion of their transfer from Bhakkar to Delhi is of special note. Shortly after the Bhakkar-Delhi exchange, Nizami also writes that the Abbasid caliph in Baghdad, who still commanded immense respect throughout the Islamic world, sent a robe of honour to endorse Sultan Shamsuddin's lordship over the recently conquered Indian territories. Again, the event of exchanging the robe is of interest since it shows how the transaction of material culture is used to affirm and confer authority.

Perhaps the most contentious visual cultural events discussed in Nizami's text are the destruction of Vedic-Brahmanist and Jain temples and the erection of mosques in their place. According to Nizami, after the conquest of Ajmer, Sultan Muhammad Ghori "destroyed the pillars and foundations of the idol temples, and built in their stead mosques and colleges, and the precepts of Islam, and their customs of the law divulged and established" (Nizami, 1869, p. 215). Today an early Sultanate mosque does indeed survive in Ajmer, but it appears to reuse elements of the destroyed temples, and new components may have been built for the structure. This story of reuse and new construction is one that emerges from analyzing the Ajmer mosque's ruins and lends considerable nuance to Nizami's narrative of wholesale destruction. The case highlights how researchers identify visual cultural events in historical texts so that they can be correlated with surviving visual culture; that is, they seek to cross-examine narrative with reality and vice versa.

Topos

As with other scholars of narrative visual culture, researchers also search for recurring narratives and patterns in historical texts, or topos. Identifying these narrative patterns is important because they often indicate an author's conformity to literary style and convention over an independent reporting of events as they knew them to take place. For example, it has already been mentioned how after the conquest of Ajmer, Sultan Muhammad Ghori "destroyed the pillars and foundations of the idol temples, and built in their stead mosques and colleges, and the precepts of Islam, and their customs of the law divulged and established" (Nizami, 1849, p. 215). Similarly, Qutubuddin Aybek is described as building the Delhi Friday mosque using stones and gold from "temples which had been demolished by elephants" (Nizami, 1869, p. 222). Visual cultural researchers must judge whether the text recounts actual events, or whether the author merely repeats a conventional story of temple destruction that may or may not reflect what happened in Ajmer and Delhi. Recognizing narrative patterns and thus gauging the text's reliability is one of the tasks of the visual cultural researcher.

Between the literal and the metaphorical

Distinguishing between metaphorical and literal references is also part of Sultanate scholars' reading practices. For example, Nizami describes the city of Delhi on the return of its conqueror as decorated "like the garden of Iram" (1869, p. 222). Iram is a city mentioned in the Quran that is associated with extraordinary splendour, excess, and heedlessness that leads to its eventual ruin. The simile reveals a lot about how Nizami seeks to build a verbal image of Delhi using Iram, and the metaphorical language tells the visual cultural historian how Turkic-Muslims employed Quranic references to conceptualize their transformations of Delhi. Metaphorical language about visual culture reveals information about perceptions and receptions that is vital for visual cultural research. Consequently, distinguishing between literal and metaphorical usages is part of the practice of visual cultural reading.

Another interesting phrase describing the subjection of Rajput rulers can be seen in the following quote: “[t]he carpet of his audience-chamber was kissed’ by defeated Hindu rulers” (Nizami, 1869, p. 236). The phrase is potentially literal but is also likely metaphorical; the kissing of a ruler’s carpet in their audience hall becomes synonymous with submission. Taken literally, the phrase indicates how carpets were part of Sultanate visual culture, how they were part of holding court, and how people interacted with them, all very useful pieces of information. However, if the phrase proves to be more metaphorical than literal then the information on Sultanate carpets is perhaps less helpful.

Visual cultural researchers are as interested in the histories of perceptions of visual culture as they are in its genesis, and they read historical texts to help discern how people express their perceptions of the visual worlds around them, often through the use of metaphor. For instance, Nizami offers the perception of the fortress of Rai Pithora at Delhi as “a fortress which in height and strength had not its equal nor second throughout the length and breadth of the seven climes” (1869, p. 216). The conquered fort at Mirat is described as “one of the celebrated forts of the country of Hind, for the strength of its foundations and superstructure, and its ditch, which was as broad as the ocean and fathomless” (Nizami, 1869, p. 219). Under Turkic-Muslim rule, Delhi is described as the the “source of wealth and the foundation of blessedness” (Nizami, 1869, p. 219). All of these phrases speak to the ways these sites were perceived by Nizami and perhaps the perceptions of the historical actors about whom he writes.

Pre-modern multimedia texts

The preceding discussion has focused on visual cultural approaches to reading historical texts, but visual culture researchers’ historical texts are not limited to the format of manuscripts and books. Multimedia text is often thought of in terms of contemporary technologies – hypertext, online videos, digital photographs, etc. – but Sultanate visual scholars also deal with multimedia texts of a pre-modern variety. In Sultanate visual culture, texts are used not only in manuscripts to convey ideas but also as epigraphs on buildings, coins, textiles, and other media. Because epigraphs and inscriptions appear on diverse Sultanate media and intersect with manuscripts, Sultanate scholars think of text as something that straddles multiple media and not as something limited by one. Text, here, references an expression of thought that crosses word, image, and object.

Texts on other media, like buildings and coins, have additional visual and spatial dimensions that interest researchers, for instance, in their style, composition, and placement. The format of the text and its particular spatial placement all convey information about emphasis and importance. Researchers need to be able to move between the different media and compare the different usages of text and their appearance. For example, at the Delhi Friday mosque mentioned in Nizami, there is a minaret commonly called the Qutb minar with numerous bands of epigraphs with Quranic phrases and references to the elaborate titles of rulers and leaders. They are arranged so that the names of higher ranking individuals are placed above lower ranking ones. Some of these phrases and titles appear in Nizami’s text, making their comparison an important task. For instance, Nizami describes Muhammad Ghorī as lord of the world, sultan of sultans, lord of the fortunate conjunction of the planets, the pole of the world and religion, and the pillar of Islam and Muslims. Similar titles are found on the epigraphs of the Qutb minar, which suggests the structure of authority

given in the manuscript was spatialized in the form of the minaret. Not only can the content of the text be compared, but so too can the script style in order to understand the history of calligraphy as well as to provide a visual dating tool. The form of the text can be as important as the text itself, and being able to cross-reference the calligraphic style of the text employed across different media is important because it offers a dating technique based on style that can be applied to manuscripts and objects with text. In the context of Sultanate research, text is something that crosses the Qutb minar, the mosque's interior facade, coins, and historical manuscripts with their critical editions and multiple translations in different languages.

Implications for computationally enhanced reading

To summarize, Sultanate visual culture researchers reading practices include a number of processes. They sort through the complex relationships between manuscripts, critical editions and translations, along with the multitude of transliteration and dating systems and conversions employed. They seek to establish greater geographical and chronological certainty relating to visual culture, though this can yield results ranging from the precise to the vague. And, they establish historical lexicons of names, places, and visual cultural vocabulary. Furthermore, researchers seek to identify key visual cultural events, such as the destruction of sites and exchanges of visual culture, as well as to identify narrative patterns in order to distinguish literary habit from truthful reporting. They also seek to discern between literal and metaphorical references to visual culture and aim to discern perceptions of visual culture as refracted through historical texts. Such reading generally aims to find correlations between other texts, both primary and secondary, and extant material culture.

Only after having become better acquainted with the reading practices of Sultanate visual culture researchers, can the question of how computational tools can be designed to enhance these reading processes be broached. The preceding discussion shows the nuances and complexities of visual culture researchers' approaches to reading and why creating enhanced reading tools can be so complex.

A recurring theme is the prevalence of uncertainty, whether in the names of places and individuals, in chronology, or in other things. Gauging and navigating uncertainty is part of scholarly reading practices, especially those of visual culture researchers. When designing computational tools, this means uncertainty indices need to be integrated into tool designs and a means of gathering the collective scholarly consensus on degrees of uncertainty is needed.

Clearly tools that clarify the relationship between text and place are of great use, such as the proposed Geoscribe; however, the considerable uncertainty that can surround place names and their geographic equivalent needs to be considered more fully. When one encounters the term Delhi in Nizami, it seems to refer to both the pre-existing fort of Rajput ruler Rai Pithora as well as the Quwwat al-Islam mosque area. The two places are elided in the name Delhi, a crucial distinction for the visual culture researcher. Furthermore, scholarly consensus on text-place correlations can vary and shift over time, and thus need to be tracked by visual culture researchers. There is tremendous variance in what a place name refers to and in the precision with which its actual geographical correspondent can be determined. Geographers and GIS researchers have long been

aware of the problem of uncertainty in geography and have applied fuzzy set theory in mathematics as one way of tackling the issue (Petry, Robinson, & Cobb, 2005). Current digital humanities initiatives are only beginning to wrestle with the complex uncertainties inherent when moving between places in text and places in space.

The same is true for temporal identifications. Attributing dates to visual cultural events can also range from the precise to the vague and the paths to those identifications are many. Foregrounding the levels of certainty associated with temporal identifications then should be an important part of the digital humanistic method, beginning with establishing the temporal distance between the event and the representation of that event.

In addition to uncertainties, visual cultural researchers are interested in how the paths to geographic, temporal, and individual identifications can and should be made transparent. In other words, they want to see how previous scholars have come to their decisions and judgments. This suggests that computationally enhanced reading for Sultanate visual cultural researchers, and perhaps for visual cultural researchers in general, really means not only helping scholars to read the text by identifying interesting subsets of the text and highlighting relationships between text and the material cultural world in all its uncertainties, but also helping scholars navigate preceding readings and interpretations of the texts. Navigating the way texts have been marked up, tagged, and interpreted – that is, their commentaries – is where real value lies for the scholar. Connecting scholars to past scholars' thinking on a more intimate level within the microstructure of the text then becomes one way that enhanced reading can be defined.

The best role that digital technologies can play in the visual cultural research of historical texts is not simply to enhance reading, however that may be defined; indeed, its role need not be defined by the sentience they appear to emulate. Instead of emulating the ways human beings read, the computer's role can be to manage the layers of relationships identified by scholars. Relationship navigation and management emerges as the key part of the digital book. It is not only the relationships to other scholarly thoughts and interpretations that matter, but also the relationships to the material world, such as extant buildings, museum objects, etc. The "text" in the digital age needs to be thought of more as a messy collage of relatable texts, text-images, physical books, objects, places, and spaces. Pieces of evidence are linked less through scholarly narrative discourse than they traditionally have been, and instead are more directly linked to each other through a scholarly data system forming interconnected datasets that become their own kind of specialized scholarly multimedia text, legible to the knowledgeable reader. Just as social media websites depend on a network of personal relationships, computational approaches might be wise to focus on creating and navigating networks of evidentiary relationships centred on space, time, and people.

Finally, a key lesson that the case of Sultanate visual cultural research reveals is that it cannot be presumed that the digitized text will always be machine readable in comprehensive or consistent ways. There are too many obstacles and too few resources. It is doubtful that in the next 25 years the corpus of Sultanate historical texts will be available in machine readable Persian text in multiple manuscripts and multiple translations with intact diacritics and a consistent transliteration system. A more likely scenario is that digital images of these various texts will be available and machine

readable text will become available in piecemeal ways. This means that one is dealing with images of text and relating regions of these images together, rather than relating the texts themselves. This means that for visual cultural researchers, the digital book remains a picture book in more ways than one.

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