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A Middle East Beyond Borders Tribute to the Work of Kathryn A. Schwartz
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Kathryn's Bookends: From 'Charting Arabic Cryptology's Evolution'[1] to 'The Official Urge to Simplify Arabic Printing.'[2]

I am grateful to Malika and to the MEBB organizers for bringing us together to honor Kathryn through this discussion of her scholarship.

I chose to title my remarks "Kathryn's Bookends" because I thought the two articles mentioned were the first and last that she had published. Now, thanks to Malika's bibliography, I see that more of Kathryn's work has come out since the chapter I thought was her last. This warms my heart. She did so much in such a short amount of time. It's reassuring that her work continues to be published beyond the end of her life.

Before I talk about the two articles, I want to share a little about what Kathryn meant to me as a friend and a colleague. The last time I spoke to Kathryn was in April 2022, about a month before she died. She had heard that I was pregnant and reached out to talk. On the call, we mostly talked about babies; Kathryn was eager to share about her experiences in pregnancy, childbirth, and as a new mother. Much of her advice and stories about this transformative time in her life has stayed with me on my own journey this past year, perhaps even more so because I haven't been able to circle back to her to tell her how things unfolded for me. When we ended our call, Kathryn said that when she was back in Cambridge in the fall, we should bring our babies together for a playdate.

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[1] Kathryn Schwartz, "Charting Arabic Cryptology's Evolution," *Cryptologia,* 33(4): 297-304.

[2] Kathryn Schwartz, "The Official Urge to Simplify Arabic Printing: Introduction to Nadīm's 1948 Memo," in *Manuscript and Print in the Islamic Tradition*, ed. Scott Reese (Berlin: De Gruyter, 2022), 89-96.

I still think about this promise, imagining what it would have been like to see her in action as a mother, her laughter, warmth, humor, and kindness. These are the parts of Kathryn that I deeply admire, and that I continue to miss. They accompanied her not only in her personal life but also in her professional life. Kathryn and I talked a lot about the pains and joys of academia, our frustrations and successes related to the academic job market and publishing. I regarded her as a mentor, someone with a few more years of experience from whom I could look to for guidance, advice, and reassurance. She was always ready to offer these and more.

I know many of you had the privilege of participating in the MEBB workshops with her and probably also noted her generosity when it came to offering feedback. Whenever I workshopped a paper, Kathryn would not only give constructive feedback during the workshop, but she would also send me my paper with in-text comments, even when she had not been able to attend the workshop. This always struck me as uniquely generous, thoughtful, and constructive, all qualities that characterize Kathryn.

Turning now to Kathryn's two articles:

Kathryn's first article, "Charting Arabic Cryptology's Evolution" was based on her thesis work at the University of Cambridge, from where she graduated with a B.A. in Middle Eastern and Islamic Studies in 2008. The article was published in *Cryptologia* in 2009. Kathryn's article builds on the 1980 discovery of several Arabic cryptological treatises in the Süleymaniye library of Istanbul. These treatises establish that the world's first extant cryptologic treatise is a text by Ya'qūb ibn Isḥāq al-Kindī's (d. 873) and that the earliest nonextant text is that of al-Khalīl ibn Aḥmad al-

Farāhīdī (d. 776). While a team of scholars from the Saudi King Faisal Centre for Research and Islamic Studies undertook the transcription of these treatises into typed Arabic—in some cases translating them into English as well—Kathryn's contribution here is to chart medieval Arabic cryptology's evolution by analyzing the wider historic trends surrounding these treatises.

She explains that although other civilizations before the 9th century used cryptology, the Arabs were the first to develop a "sustained" form of cryptanalysis—the practice of deciphering coded messages without having a key.[3] According to Kathryn, Arabic cryptology first emerged in the context of the ʻAbbāsid Empire (758-1258), arising through scholarly efforts in translation. It was then advanced by ʻAbbasid courtly scribes who paired it with poetry for recreational purposes, and then later taken up by state bureaucrats as an official science to be used for affairs of state. Under the Ayyubid dynasty (1171-1250) and Mamluk Sultanate (1250-1517), administrative cryptology evolved to reflect the militarization of these two evolving bureaucracies. She suggests that the treatises from this era imply Arabic cryptology's use in espionage. Kathryn concludes that "the Süleymaniye treatises indicate the diverse ways in which cryptology was administratively applied under the ʻAbbāsids, Ayyübids, and Mamlüks, and relate closely to the bureaucratic trends of the 9-14th centuries."[4]

In the second article, a chapter titled "The Official Urge to Simplify Arabic Printing," Kathryn introduces a memo (that she also helped transcribe and translate into English) written in 1948 by Muhammad Nadīm, the Director of the Press of Dar al-Kutub. The memo proposes a simplified

[3] Schwartz, "Charting Arabic," 297.
[4] Schwartz, "Charting Arabic," 303.

way of using printed vowel markers in Arabic texts. Until this moment in the history of print in the Arab world, three factors had led to linguistic mistakes among printers and confusion amongst Arabic readers. Kathryn explains that because Arabic is written in script, it requires multiple sorts for each letter (whereas non-cursive languages require just one or two). This makes the typsetter's job difficult, but what made it even more difficult was the standard calligraphic script used in formal texts—called *naskh*—which created the need for more sorts because "*naskh* binds letters to one another in precise, though varied ways, causing them to be vertically and horizontally 'interlinked and mounted', *mutarākaba wa-mutadākhala*. Once typeset, the irregular closeness and heights of the letter sorts make their *harakat* vowels hard to enact before printing, hard to stabilize while printing, and hard to parse exactly as a reader after printing."[5] This was the problem that Nadim's proposal sought to ameliorate. He wanted to decrease the number of sorts needed to 134 (Kathryn mentions that under Muḥammad 'Alī there had been 900 sorts, but that after 1906 the number had been reduced to 464) by abandoning *naskh* interlinked and mounted letters in favor of single-letter configurations (*ṣuwar*).[6]

Kathryn's chapter situates Nadīm's memo within the wider historical context of efforts towards the reform of Arabic writing in the mid-twentieth century. She explains that in the twentieth century "the Arabic language, its script, and the act of printing came to be seen as sites that required state-sponsored monitoring and updating."[7] The institution that the Egyptian state put in charge of this task was the Royal Academy of the Arabic Language, *Majma' al-lugha al-'arabiyya al-*

[5] Schwartz, "The Official Urge to Simplify Arabic Printing", 93.
[6] Schwartz, "The Official Urge to Simplify Arabic Printing", 93.
[7] Schwartz, "The Official Urge to Simplify Arabic Printing," 90.

malakiyya, established in 1932 under King Fu'ād I. She argues that the memo is important for heralding a turning point in the Academy's work whereby reforming Arabic printing was seen as necessary for simplifying the language.[8]

Although published more than ten years apart, we see similar themes in the two articles. There is a focus on Arabic texts, their forms, and the technologies that make these possible; we see an interest in the connection between textual forms and social, cultural, and political changes, particularly within state bureaucracies. In addition, the fact that Kathryn's articles focus on such different times periods (the first on the 9th-14th centuries and the second on the 20th century) makes them speak to each other in interesting ways. For instance, whereas in the first article, the emphasis is on cryptology—a field concerned with the enciphering and decoding of messages—the second highlights 20th-century concerns with reform and clarity in order to "facilitate the literacy and comprehension of readers."[9] Yet my understanding is that a model for many 20th century language reformers like Nadīm was Arabic texts from the 'Abbasid period, which many considered clearer and more eloquent, certainly than texts printed in the postclassical period. Yet in Kathryn's treatment, we see 'Abbasid textual practices as more complex and varied, concerned with both clarity and with secrecy. This is just one example of the ways that Kathryn's work asks us to revise dominant understandings of the relationship between texts, cultural values, technologies, and states in the Middle East, past and present.

[8] Schwartz, "The Official Urge to Simplify Arabic Printing," 92.
[9] Schwartz, "The Official Urge to Simplify Arabic Printing," 89.