

# “The Script Does Not Respond” – Arabic Script’s Difficulties in the Digital Realm. A Visual Approach

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## Abstract

*This article examines different layers of the problematic visual representation of Arabic as a writing system in the digital realm. It starts with the often false, sometimes severely distorted representations of Arabic script. Although most obvious in daily office work and strolls through Latin-Arabic Linguistic Landscapes, this phenomenon has not yet been systematically looked into. The many unintended and often unnoticed misrepresentations that lead to illegible texts and reader-unfriendly websites are only the tip of the iceberg. They give visibility to a fundamental lack of script-specific visual organization of knowledge in digital surroundings and the virtual absence of Arabic-based digital infrastructure. These phenomena may be examined as a case in point of Latin dominance.*

*This article is a visual account. It investigates the common faults from a typographic and aesthetic perspective against the background of different layers of Arabic scribal tradition. It, therefore, moves from single letters and Arabic script’s specificities over to bi-scriptual encounters and then to more complex text arrangements in websites, programming, and manuscripts. While research in this very field necessarily focuses on deficiencies and problems, possible solutions will also be presented and discussed.*

## Keywords

*Arabic script, linguistic landscapes, bilingual typography, digital divide*

The visual qualities of the works, when properly displayed, and when gazed upon with care, would help the viewer to move from pleasure to learning (Fetvacı 2015, 136)<sup>1</sup>

The starting point for the reflections set out in this article is a simple observation: there seem to be many obstacles when it comes to writing in Arabic script with digital tools. They cause false representations of letters and words. And these obstacles remain, despite updates and online forum

discussions. Other than in obvious bi-scriptural encounters such as bilingual signs, this phenomenon suffers from an invisible relation to the Latin script that needs exploration.

In contrast to pseudo-Arabic writings that do not aim for a correct display of the script, the incorrect renderings often turn out to do the opposite of what was intended: where content is meant to be forwarded, knowledge shared, and messages promoted, words become hard to read if readable at all (Figure 1). While in Islamic calligraphy, illegibility has been used as a tool and expression of higher, transcendent reading practices (Beinhauer-Köhler 2011, 42), in the digital realm of word processing and websites, content is meant to be comprehended quickly and without obstacles.



Figure 1. Anti-Frontex poster in English and Farsi by Watch the Med, who offer a hotline for boat people in the Mediterranean. Photographed by the author in Berlin (2018).

Through a “multi-disciplinary ‘reading’” (Dominguez 2018, 190), this article will examine the problematic relationship of Arabic and the digital, integrating approaches used by graphic design through Islamic Studies to computing and philosophy. Questions need to be raised about the significance of errors, the relationship of script and scripture, and invisible forms of Latin and thus the dominance of Western thinking. In the end, we must also address issues of equal access – to knowledge, but also to means of transmitting knowledge.

I write this as a researcher of Arabic script in an Islamic framework, as an operator of a partly bilingual website, and as a trained observer of the Linguistic Landscapes (Rodrigue and Bourhis 1997) of bi-scriptual cities across Muslim cultures and societies world. Last but not least, I am a user of digital tools, just like almost everyone, depending on them for work and leisure time. Hence, I will not ignore the perspective of lay users. The reader will not find a comprehensive account of all programs or tools, nor can I guarantee a cutting edge view of these, since changes happen too quickly, and older versions and methods remain in the user world. Rather, this article expounds the problems that a very special script and its writers and readers face in a world where long traditions of manual writing are being marginalized and digital workflows have become mandatory for specialists and laypeople in almost every field.

### The significance of the Arabic script

Distortions of text in writing systems other than Latin are by no means limited to Arabic script. Faulty renderings in the digital realm happen to writers and readers of several languages and their systems of writing. The phenomenon of *Mojibake* (Japanese for “garbled”) might be the most extreme: a systematic replacement of symbols with completely unrelated ones, many times from other scripts.

While every single language and writing system deserves correct representations and equal access, there are three facts that justify a special interest in Arabic as a writing system. First, Arabic is the second most widely used alphabetic writing system in the world. Beyond Arabic, various other langu-

ages use Arabic as a script, among them Persian, Kurdish, Sindhi, Balochi, Pashto, Urdu, Kashmiri, and Mandinka.<sup>2</sup>

Second, this wide circulation can partly be traced back to the fact that Arabic is the script of scripture, the Quran. Arabic, as a language and a script, is fundamentally linked to the Islamic revelation; it *is* the script of the revelation. In the Muslim faith, this script is widely believed to carry special powers, like the ability to heal through the transmission of *baraka*, a divine blessing. As a faith-related script, Arabic is present and used in countries with Muslim communities around the world, even if they have a different official writing system. The close connection between writing, faith, and religious practices might not be constantly present to every writer or reader of Arabic. It has to be considered, though, when looking at distortions of the script.

Not least, Arabic is characterized by an outstanding *script grammar* (Milo 2013; 2011). It is the basis not only for complex manners of applying this script, in Islamic calligraphy for instance but also for “complex mistakes,” as will be explained.

### Coming to terms with writing about Arabic writing

This multilayered significance of Arabic for Islam led to outstanding scribal production. What is more, the Arabic script has literally shaped what is considered “Islamic Art” to the greatest extent. Arabo-Islamic calligraphy and ornamentation are two distinctive features of “Islamic Art” across all genres. And they are closely linked since throughout “Islamic Art” history and across regions, words flow out of ornamentation and calligraphic phrases turn into an ornament. They embellish and even decide on the shape of material carriers as diverse as ritual objects, household items, textiles, and buildings.

While the content of texts written in Arabic has been studied quite intensively in Western academia, Arabic as a script has not received its share of attention. Despite its unquestionably salient role in historical and contemporary Muslim cultures and societies, time and again we witness “Western

failures to come to terms with Arabic writing,” to the extent of depriving it of basic script qualities. The leading academic force in linking historical and contemporary Arabic script issues, Thomas Milo, states that these “Western failures” are even “presented as a defect of that script and its users. The real problem is that Arabic script structures and aesthetics remain an intriguing black hole in Western perception of the Middle East” (Milo 2011). Gharipour and Schick describe Western ignorance from the viewpoint of Islamic calligraphy: “The orientalist scholarship held (...) that texts were often meaningless, full of errors, and/or illegible; and that those that had a discernible meaning, such as Qur’ānic verses, were haphazardly chosen, formulaic, and seldom constituted a coherent epigraphic program” (Gharipour and Schick 2013, 1). Latin dominance, it seems, concerns not only typography but even our thinking – but we will get back to that later.

Many of the recent studies and accounts that deal with contemporary issues tend to focus on applied research and techniques. In the field of IT, this touches upon topics such as (machine) readability, that is, software-based recognition of text in Arabic (Elanwar, Qin, and Betke 2018; Razzak et al. 2012). The field of Arabic-language graphic design is prolific, most likely due to the calligraphic tradition and its vast number of historic script manuals (Sperl and Moustafa 2014) and the ever-growing need for bilingual or bi-scriptual representations of corporate identities and logos. Abdel Baki (2013) has researched “bilingual design layout systems” with a focus on examples from Beirut; from her, I borrow the term “Latin dominance.” Shayna Blum offers an overview of bilingual typography in Saudi Arabia (Blum 2020). A lighthouse in studies of contemporary Arabic and bilingual graphic design is the Dutch Khatt Foundation with its own publications and Huda Smitshuijzen Abifares in the background. Her early foundational work on Arabic typography (2000) laid the basis for this graphic think tank. The edited volume “Bi-scriptual” offers a comparative view of bi-scriptual encounters from the point of view of relevant graphic design practitioners (Wittner, Thoma, and Hartmann 2018).

In her examination of the iconic Dubai logo designed by Tarek Atrissi Shannon Mattern (2008) gives a fine example of bridging practice and theory. A

study of pre-digital bilingual branding in Kuwait is offered by Al-Najdi and Smith McCrea (2012). The typographic issue of text justification and hyphenation is profoundly addressed with regard to the ability to stretch a line (*kashida*) by Benatia, Elyaakoubi, and Lazrek (2006). Forum threads dealing with practical issues must not be left out here, since they serve practitioners and bring together broad technical knowledge, as well. A very comprehensive and ever-growing account of text layout requirements for Arabic script is the thread on the open-source community platform Github on *Text Layout Requirements for the Arabic script* (Esfahbod et al. 2020).

The trend, though, seems to be that academia lacks user and application experience and perspective, and users lack background knowledge for putting the script in a historical and societal perspective. Here and there, though, well-lit spots can be found. First and foremost, Milo (2013, 2011) has to be mentioned, with his bridging between the earliest manuscript culture and cutting edge digital phenomena. Osborn (2017) undertakes an analysis of Ottoman script use extending to contemporary issues of Arabic script on computers. Among the rare historical examinations of script encounters is Eldem's analysis of script change in Atatürk's Turkey with regard also to its effect on a letter-page layout (Eldem 2013). Nemeth presented an extensive study of *Arabic Type-Making in the Machine Age* (2017), shedding light on the issue of (late) printing in Muslim cultures and societies with a strong background in graphic design. He also tackles contemporary digital writing forms. Islamic art historian Auji examines 19th-century printing practices in the context of the American Mission Press (Auji 2016). Little can be found on the historical development of formatting practices, whether handwritten or printed (Rustow 2020; Wollina 2019; Dédéou and Jeppie 2017; Daub 2016).

Explorations, criticism, and creative solutions from actors in the Islamic sphere could not yet be examined. Since typography and graphic design are highly internationalized, but English-based work fields, I do not expect to find a vast number of studies here. Recent manuscript studies approaches raise my hopes for forthcoming studies on the traditions of visual organization and layout. In the following section, the most common and obvious

mistakes that Arabic script users have to face in word processing programs will be examined against the background of the distinctive features of the Arabic script.

### On faulty renderings – Common mistakes and their background

Probably everyone slightly familiar with the Arabic script has come across some distorted renderings of text written in Arabic, especially in multilingual surroundings. Although “computerized and digital systems eased, to some extent, the persistent challenges of typesetting Arabic script” (Osborn 2017, 164), we encounter renderings of Arabic script that signal ignorance of the most basic rules of correct writing in Arabic. What is it that makes Arabic as a script in digital surroundings so prone to error? To answer this slightly provocative question, some peculiarities of the Arabic script have to be elucidated and put into the context of Latin-Arabic encounters.

### Some notes on Arabic as a writing system

The rules for writing Arabic correctly are complex. This does not mean spelling as understood in the context of Latin script: “It is ‘mistake’ not ‘mistake’.” It starts with the correct way of placing individual letters in their position in the text and touches upon the graphic representation of certain letter sequences. It extends to assimilation and dissimilation, vertical and horizontal dimensions, and stretching. Thomas Milo has brought into focus a precise understanding of the Arabic term *qarwa'id al-haṭṭ* to do justice to Arabic as a writing system. Instead of the common translation as “rules of calligraphy,” which implies aesthetic considerations only, he translates it as “script grammar” (Milo 2011). Different styles of writing “differ not just in shapes, but also in system. Western Oriental Studies does not have a tradition of analyzing and describing these systems. The lack of analysis of the style-dependent systems inescapably leads to misunderstandings” (Milo 2011). In order to avoid these, some basic shared rules will be explained now.

Arabic is written and read from right to left. While Latin characters may be capitalized or not, most Arabic letters take different shapes depending on whether they stand at the beginning of a word, appear in the middle, or form the end.<sup>3</sup> Arabic is a consonantal script (*abjad*). This means that (almost) only consonants are written and readers are required to carry out a “simultaneous linguistic reconstruction” (Gründler 2001, 140), which alre-



ady presupposes a certain knowledge of the word structure of the language. Vowels that are not represented with letters may be noted with vocalization marks. What Gründler calls *miniature letters* (Gründler 2001, 141) adds another dimension to the already nonlinear script (Figure 2). Arabic, furthermore, is a cursive script. This means that letters are connected and there is no alternative, block letter writing. What initially looks like a strange limitation turns out to be *the* fundamental characteristic of the script. It is the line (*al-khatt*) that links script(ure), calligraphy, ornamentation, and architecture in Islam. As noted above, this is the basis of the very distinct graphic quality of many items of what has come to be called “Islamic Art.” The line, therefore, is a fundamental component of the Arabic term for calligraphy: *fann al-khatt*, which literally means “the art of the line” and, unlike the Greek term *calligraphy*, not “writing beautifully” (Kokoschka 2019). Why is that? Because the line in Arabic script is – within a set of rules dependent on the style – free to stretch and shrink according to the context (Benatia 2006, 143), that is, the length of the text line and the measurements of the writing substrate, be it paper, bowl, or facade. At least in contemporary contexts, this is usually referred to as *kashida*. Lines may be extended or reduced not only horizontally but in every direction. This allows for most figurative calligraphy.



Figure 2. Circular calligraphiti with extensive use of “miniature letters.” Photographed by the author in Gemmayze, Beirut (2017).



The meaning of the line becomes visible in Arabic script's many ligatures. These connections appear between most letters, as 22 out of 28 letters are necessarily connected to the surrounding letters, and they are completed by particular letter combinations that form an independent ligature. Within the framework of the Islamic use of Arabic, even complete sentences appear as ligatures of their own, in particular phrases that are mandatory and thus frequently used: eulogies (*taṣliya*) that are meant to praise Allāh or to invoke God's blessing upon the Prophet Muḥammad. These ligatures can be considered ideographic – and are only a small hint at the “iconic capacity” (Campo 1987, 295) of the Arabic script. They contribute to the intellectual structure of a text, and they visually organize the content (Krämer 2005, 36). Thanks to Unicode standards, which have been widely adopted since 1993, they are easily integrated – free of errors – even in Islamic texts written in Latin script.

### How many errors fit in one letter?

On the level of letters, the most usual mistake we witness is threefold: instead of right-to-left, writing is from left to right. Ligatures do not appear; all letters are unconnected. The individual characters are mirrored (see Figure 2). Words can no longer be identified without hard work. Companies like Microsoft or Adobe might argue that these problems have long been addressed or even solved. But this is in theory. In practice, administrations work with outdated program versions. They produce leaflets on childcare or domestic violence that are barely legible. Civil society groupings produce campaigns in Arabic or Farsi to reach migrants but fail to recognize that slogans require the reader to reconstruct the script. “Faulty renderings” like these are a frequent phenomenon of the nonprofessional use of Arabic script. Many lay users are just not well versed with computers in general, and thus installing extra packages demands too much of them. But this problem also appears in contexts that demand professionalism. The Bauhaus, famous for its typographic revolution, advertised its new museum building in the German town of Dessau with the same threefold error (Figure 3). Although still recognizable as Arabic script, interviews on-site have shown that native Arabic speakers and readers find it hard to read it at all. This contradicts Sherry Blankenship's statement that “distortions of the letter-

forms rarely affect [*sic*] legibility. In Arabic, the reader understands first, and then reads” (Blankenship 2003). This is true for calligraphic representations of Arabic script and some iconic names and phrases that appear in an Islamic framework (Kokoschka 2019). In the case under discussion though, the errors have no tradition. In addition to that, they destroy the script grammar and thereby destroy a proper reading context.



Figure 3. Construction fence around the now opened Bauhaus Museum with the slogan “Bauhaus Museum in the city of Dessau.” Photographed by the author in Dessau, Germany (2017).

This is the basic and most obvious problem Arabic script faces in the digital realm and happens with the most common word-processing programs. I put the most obvious at the forefront because letters and words that cannot be read cause misunderstandings about the text itself. They also have a symbolic dimension and thus societal implications: what does it say about a practically multilingual society like the German one when official institutions, as well as social activists, fail to address Arabic- (or Farsi-) speaking groups in a comprehensible manner? The relevant actors might have good intentions. From the viewpoint of Linguistic Landscape research, though, this indicates the low status and societal power of the Arabic script commu-

nity (Landry and Bourhis 1997, 25; Wachendorff 2016, 58), which is most likely quite perceptible to the Arabic script communities. Studies of their perspective are missing so far. But let me put forward some reflections on the significance of errors in this very context.

### Significant errors? – Thoughts on Arabic script’s fault tolerance

A script – be it a writing system or a cultural or programming script – has a certain fault tolerance beyond which it cannot be recognized or understood anymore. Scientific approaches can measure this tolerance in a particular case, like word recognition in Arabic (Maroun and Hanley 2017). What I am interested in, though, are the social, cultural, and religious conditions for handling errors. In the present stage of research, this matter can be addressed only speculatively.

It has become clear that Arabic script grammar has the potential for making mistakes – in writing and reading. The Arabic Studies expert Beatrice Gründler crucially notes that the script’s complex set of rules not only contributes to an exclusiveness but at the same time also “safeguards the inclusiveness of Arabic script, for it tends to veil the mistakes and hyper-corrections of uneducated writers” (Gründler 2001, 140). The same grammar then makes it possible to prove knowledge (for instance when reading texts with case endings) and hide ignorance. Through its ambiguous structure, Arabic script might train users in “error competence.” It has been mentioned that Islamic calligraphy does not aim for readability. It rather hinders instant reading in order to open a gaze that sees beyond the script, and many times calligraphies are legible only for those who already know what is written (Kokoschka 2019). In pre-print times, diacritics were left out even in business and private correspondence, “an entirely unmarked epistle conveyed a writer’s respect for the learning of the addressee” (Gründler 2001, 140).

It could be argued that this long-term training by a script community in deciphering and recognizing led to an ability to recognize, tolerate, or even not notice mistakes. The remaining question is if this ability to overlook mistakes in favor of the bigger picture is a factor also in accepting the continuous deficiency of digital tools to handle Arabic script without mistakes. A complex script grammar has been identified as one condition for the

prevalence of faulty renderings of Arabic. Another factor is the Latin-Arabic relationship underlying digital typography, word-processing programs, and programming in general.

### Latin-Arabic graphic encounters

Examples from bilingual or bi-scriptual Linguistic Landscapes illustrate the effect Latin script has on the way Arabic is represented: it appears to be smaller and is thus less pleasant and less easy to read. The reason behind this is that graphic designers take the x-height in the Latin typeface as a unit of measurement. So, Latin's letter "l" presets the height of the verticals in Arabic, like the letter *alif*, even though the proportions of upper case and lower case in the Latin alphabet are not applicable to proportions in Arabic (Figure 4). The graphic designer and script researcher Randa Abdel Baki calls this a *Latinization* (Abdel Baki 2013, 46). And this is found on most bilingual signs that are *not* based on a manual outline but done digitally. In contrast to that, manually designed and cut signs often show typographic equality (Figure 5, 6).



Figure 4. Bi-scriptual Nivea-logo on the iconic blue can. From the author's collection, photographed by the author (2016).



Figure 5. Manually designed and cut bi-scriptual shop sign by the aged Lebanese commercial artist Kassab. Photographed by the author in Beirut (2017).



Figure 6. Pre-digital bi-scriptual shop sign. Photographed by the author in Beirut (2017).

The renowned graphic designer Tarek Atrissi states that the Arabic and Latin alphabet “are ‘not compatible’ – aesthetically, logistically, linguistically” (Mattern 2008, 489). Still, he himself and others have been trying to find ways to make the two scripts’ encounters equal in some way. First, Arabizing Latin typefaces is an option famously practiced by the type designer Nadine Shahin, who produced an Arabized Helvetica typeface. But “the problem with her adaptation is that Arabic type looks westernized” (Ajeenah 2018). Then, the script-responsive bi-scriptual design is a possible solution, “giving the two types equal size and weight” by applying “glyphic-geometric syn-

chronization” (Ashrafi 2015, 149). This has led to graphic experiments, for example by the Khatt Foundation’s 2009 *Typographic Matchmaking in the City*, which can also be witnessed in bilingual examples that were produced before the contemporary graphic design debate. (Figure 7). “Sensitivity to individual scripts,” though, might be of greater importance than “stylistic uniformity across scripts,” leading to what David Březina calls “loose harmonization” (Wittner, Thoma, and Hartmann 2018, 17). In line with this “loose harmonization” lies the third variant. Hence, lastly, there are approaches that value the two scripts’ differences. Atrissi’s famous bi-scriptual Qatar logo is “a mix of the qualities represented by each” (Mattern 2008, 490), leading rather to two independent graphic entities. In this way, at least theoretically, the two writing systems can keep their script-specific connotations and enrich each other and the practitioner and reader with their respective peculiarities. Latin dominance influences the design of characters, but it also applies to wider text settings such as spacing: “While the approach to spacing in the Roman Script is thus dissecting and analytical, the Arabic script lacks this dissecting function of spatial intervals and thereby produces the opposite effect. Rather than singling out words and letters as separate entities, its spacing mirrors the continuous flow of human speech” (Sperl and Moustafa 2014, 42).



Figure 7. Pre-digital bi-scriptual shop sign. Photographed by the author in Beirut (2017).



Besides, the two scripts can be merged with the goal of being graphically most effective, but this assumes that readers are fluent in both scripts (Figure 8). Arabizi and, earlier, Franco are scripts that emerged due to script restrictions online. In both, characters from two scripts (Latin and Arabic) appear in the same word. Franco shows a mix of Arabic letters and Latin script numbers in order to omit diacritics (Panović 2018; Yaghan 2008). The latter case is of special interest when we consider that the numbers used in Latin typefaces originated from the Arabic script.



Figure 8. Advertising with merged scripts. Photographed by the author in Beirut (2017).

### The script behind the script – toward a script-specific visual organization of texts online

Latin script's dominance is not limited to the digital realm, but here it becomes most evident and hindering. It has been shown that programs like MS-Word have had difficulties displaying Arabic letters with the necessary ligatures and orientation. Beyond that, many applications, let alone pro-



programming languages, just cannot “read” Arabic letters. Users receive standardized pop-up messages like “A relevant disclaimer: The Arabic spelling won’t render in our CMS (Content Management System).” This is the focal point of the digital divide. A lack of hardware and Internet connection is one thing. Finding next to no Content Management System or programming language in Arabic script is another. It not only excludes a vast number of possible practitioners but also deprives the digital community worldwide of the insights and advantages that alternative writing systems have to offer. When it comes to multilayered text arrangements online, for example on websites, the outlined approaches toward equal representation of scripts seem to disappear. Behind this lies a structural problem: Latin as a standard is much more hidden in web design than it is in typeface design.

Allow me to take an essayistic approach in view of the scarcity of preliminary works. A small excursus on handwritten Arabic mise-en-page will highlight alternative forms of visual organization in multilayered text conglomeration. This is not an attempt to draw a direct line from Arabic manuscript cultures to web design, but an attempt to make something visible. I consider this a necessary step to provoke a discussion on expanding “visual literacy” (Dominguez 2018, 190) and thinking about its roots in century-long habits of organizing content, on the one hand. On the other, “Western” and thus Latin fixation on linearity has to be debated, especially once we realize that linearity is held onto even in contexts that are by definition not linear, like the web. My questions here aim at a general reconsideration of how conditions of thinking and of putting these thoughts down influence each other. In the end, this leads to a necessary reevaluation of typography. The way we note verbal content is not only a nice gown for words but also a fundamental tool of communication as much as of cognition.

### *This script runs on Latin*

Programming languages are indispensable to build information architectures online. When MS-Word, Adobe InDesign, and the like hinder the proper readability of Arabic words and sentences and when websites designed with a Latin oriented template make multiple text arrangements hard to absorb, then the absence of Arabic-based programming languages excludes

people from constructing the medium itself that carries the textual content. Linguist Gretchen McCulloch (2019) explains:

It's true that software programs and social media platforms are now often available in some 30 to 100 languages – but what about the tools that make us creators, not just consumers, of computational tools? (...) Even huge languages that have extensive literary traditions and are used as regional trade languages, like Mandarin, Spanish, Hindi, and Arabic, still aren't widespread as languages of code. (...) I've found four programming languages that are widely available in multilingual versions. Not 400. Four (4).<sup>4</sup>

The artist and programmer Ramsey Nasser has identified this problem and developed a programming language based on Arabic. And yet, experiments like Qlb (*qalb* meaning “heart” in Arabic) will never be able to run properly, because “once they start trying to interact with the rest of the web, everything falls apart. File names can't be read, the operating system rejects the syntax (...) But a side effect to that is that it's all in English – the standards we've adopted have encoded that alphabet” (Smith 2015). So, if we aim for script alternatives in the digital realm nothing less than a redefinition of its standards is needed. This seems to be true not only for programming but also for web design.

### Staring at Arabic Websites

Websites should “communicate the functions and data, or tools and content, of computer-based media” (Marcus and Hamoodi 2009, 387). According to expert interviews with Arab web designers and website operators, users often experience Arabic websites as confusing, without clear hierarchies, and without visual balance and rhythm, both of which are important to properly grasp content (Aspillage 1991). The complexity of Arabic script grammar makes it highly questionable if a simple right-to-left (RTL) mirroring of standard templates is sufficient for Arabic web design. RTL websites “require a different structure, typography, and imagery,” whose development is costly (SteelKiwi 2017). Also, the typefaces in use often show a Latin orientation, and the reduction in size affects the decisive graphic entities

around the baseline that help viewers recognize the words. In the meantime, creative tools to improve Arabic websites' looks have been developed, like the browser extension *huruf* (Arabic for "letters") that makes Arabic script appear larger on websites (Scullion 2018). Again, there are persuasive forerunners in Arabic-friendly web design, as can be seen on the websites of Al-Jazeera and Al Arabiya, including a font that shows no Latin orientation. I hope that future studies will take a closer look into this seemingly strictly technical subject, a look beyond questions of tools and techniques. Hence, "the universal practice of selecting and excerpting, summarizing and canonizing, arranging and organizing texts and visual signs (...) never has neutral outcomes" (Bausi et al. 2019, vii). The "strict 'division of labour' (...) between the Arabic and Latin scripts" (Eldem 2013, 467) – content only on one side and content, aesthetics, and technique on the other – needs to be questioned further.

### Linear self-restrictions? – Web layout and the visual organization of knowledge in a manuscript culture

Just like manuscripts, websites consist of "different visual devices, such as symbols, blank spaces, colors, and writing styles. However, a visual organization is not always just a mere device used for dividing the various levels of a text; it may be the effect or the manifestation of religious and literary textual traditions" (Bhattarai 2020, 3). When (Marcus and Hamoodi 2009) analyze "the impact of culture on the design of Arabic websites," they apply Geert Hofstede's culture dimension, including categories such as time orientation, gender role differences, and the level of individuality. Without wanting to discuss Hofstede's approach as such, I propose to more fruitfully consider script-specific manners of visual organization in order to critically look at existing and constructively talk about future website design.

Western-inspired *mise-en-page* found its way into Arabic script documents with Arabic mechanical print.<sup>5</sup> Bringing all the varying shapes and combinations of Arabic script's graphic entities to mind, one just has to imagine how "the sheer number of metal glyphs needed to form a complete set

of type made early Arabic printing endeavors technologically difficult and costly, where most efforts could not compete with the refined aesthetics of centuries-old calligraphic conventions” and, thus, “manuscript traditions were still central to authorship and printing at Arabic presses in the nineteenth-century Middle Eastern and Islamic worlds” (Dominguez 2018, 187–188). I propose that the visual organization of manuscript traditions is still valid in the visual cultural memory of cultures and societies that are strongly influenced by Arabic script.

Some recent research on Multiple-Text Manuscripts (MTM; Ciotti et al. 2018), “multiple production units collected in a single volume” (Bausi et al. 2019, x), proves to be stimulating when we think about script-related visual organization of knowledge in the digital realm. What Bausi et al. declare for MTM is truly a goal for websites: “putting in direct, physical contact, and consequently in conceptual proximity, different knowledge from different times, places, and contexts, causing hybridizations, new alchemies, and new interpretations, by transferring mental assumptions to the physical level and vice-versa” (Bausi 2019, ix). This description can be considered the ideal of online information architecture, and it becomes even more valid in the light of Konrad Hirschler’s adding definition of MTM “not as ‘production units,’ but as ‘circulation units’” (Hirschler 2019).

The visual organization of “core content” and “paracontent” (Ciotti et al. 2018)<sup>6</sup> of Arabic manuscripts is mostly nonlinear. Paracontent, just like exegesis commentaries (*tafsir*), almost revolves around the core content. These text units, building up through annotating processes, frame the core content from all sides.<sup>7</sup> The added units often seem bent with no straight baseline. There is no grid as in Latin *mise-en-page* that divides a page into square fields with a visually top-down hierarchy. Although digital techniques and the Internet finally allow for a rather free way of allocating and linking information visually, none of the nonlinear visual organization features described above for MTM can be found on Arabic-script websites. Rather, the square-and-grid style is predominant, as can be seen in the extreme case of Al-Azhar’s online presence (Figure 9).



Figure 9. Homepage of the Al-Azhar University. Screenshot (2020).

For reasons that still need exploration, “physical design constraints are continued in the new virtual environment (...) in spite of the fact that in a digital environment simpler solutions are possible” (Milo 2011). The ignorance of “simpler solutions” goes beyond questions of handling and user-friendliness. Omitting the outstanding visual qualities that Arabic manuscript layout traditions have to offer for arranging multilevel text also means omitting a chance for alternative ways of organizing and transmitting knowledge. This has to be taken into account in order to design contemporary layout structures that are responsive to the writing system and context as much as the “visual literacy” of the users. Otherwise, web design based on Arabic-script content might well fail to reach the second-largest reading group. In line with what has been said on the missed chances that result from Latin-Arabic encounters with no equal footing, looking at Arabic script mise-en-page or layout traditions would be most enriching also to web design beyond websites in Arabic script. Hence, Arabic typographic and mise-en-page traditions mirror a specific and rather nonlinear way of reasoning that matches the associative character of thinking itself. They are an example of how a script – as a tool – shapes our way of arranging thoughts, arguments, knowledge: the script behind the script.

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## Notes

<sup>1</sup> Unfortunately, not only pleasure, but also learning is hindered.

<sup>2</sup> Historically, languages as diverse as Medieval Spanish, Ottoman Turkish, Azeri, Serbo-Croatian, Malay, Swahili, Hausa, Fulani, and Afrikaans have been spelled with Arabic characters for a while (Gründler 2001, 136).

<sup>3</sup> For a differentiation in graphemes, allographs, letter blocks, and archigraphemes, see Milo (2013).

<sup>4</sup> In more detail: "The four widespread multilingual programming languages have had better luck so far with fostering that community than the solitary non-English-based programming languages, but it's still a critical bottleneck. You need to find

useful resources when you Google your error messages. Heck, you need to figure out how to get the language up and running on your computer at all.” (McCulloch 2019)

<sup>5</sup> Although not from the beginning, as Hala Auji has shown. First, scribal conventions had been emulated in printing. In the case of Lebanon aesthetics changed by the mid- to late 19th century (Dominguez 2018, 175, 185).

<sup>6</sup> “Paracontent is a set of visual signs (writing, images, marks) that is present in a manuscript in addition to the core-content(s). It provides data either on the manuscript and/or its core-content(s). This distinguishes it from guest content(s). Its three main functions are structuring, commenting, and documenting.” (Ciotti et al. 2018)

<sup>7</sup> “It can sometimes be assigned a predetermined place within a manuscript as well as specific properties according to the patterns of the relevant manuscript culture. These properties may range from null-highlighting over segmentation marks to elaborate visual organization. It can be part of the original production plan of the manuscript in which it is found or be a later addition. It can be optional or mandatory according to the patterns of a particular manuscript culture.” (Ciotti et al. 2018)