نظام التصنيف الجديد للخط الطباعي العربي
The new Arabic Type classification System
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Abstract

One of the main concerns of contemporary Arabic designers is the lack of a comprehensive classification for Arabic typefaces. Since the spreading of printing press in the Arab world by the first half of the 20th century, Arabic typographers, and design scholars learning, working and communicating without classification system. This deficiency creates misinformation within graphic design practices, and education. The increased number of newly designed Arabic fonts, which exceeded the one thousand, and the difficulties by the offered courses: Arabic font design, typography, and editorial design, boosted the demand for a clear and user-friendly classification system.

This paper is aiming to establish an agreeable classification based mainly on the form-language and can facilitate the communication between all parties involved with type and letterforms – designers, typographers, type designers, calligraphers, printers, students, manufacturers, and scholars. In chapter 2, the previous categories and terms by other classifications will be briefly discussed. Questions will be raised about the misuse of terms such as "Neo". "Post-modern", "Black headlines", and "Grotesk. Chapter (3) will explain the new classification's recourses, method, and used tools, on the light of arguments raised by Elin K. Jacob (2004), the prototype theory, Downer's explanations for the meaning of "originality" of typefaces (2003), Kühnel's classification (1972), and "VOX-ATYPI" classification for Latin typefaces. In chapter (4) the final list of classes and their subordinates will be established, and supported with short description for each generic. The research paper will end up with an infographics for the main classes and their subordinates."

Arabic Typeface, Arabic Type Classification, Arabic Typography.

Background: Challenges and Critiques

The first challenge by the classification is the finding of proper approach and helpful tools to identify models and building classes, where types organized in groups upon their form similarities and without overlapping or creating fuzzy boundaries. It is quite obvious that the characteristics of Arabic types demystify

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variations of models that started with closely follow classical models, through out types follow a mixture of two or more classical models, till types that reflect different new aesthetics, point of views for "modern" typography, and the evolution of print, and display technology. The based typefaces on older forms are easily identified as clones or revivals and assigned to one of the classical groups. But the majority of the newly well-designed typefaces couldn't be classified as subordinates of one of the classical styles (Figure 1). Most of them carry hybrid features, and appeared simultaneously. (Compare Smitshuijzen, E., 2015) The technological developments by the mid of the 1990s, facilitate the programming of Arabic letterforms that have been often discussed in terms of the need for simplification due to new aesthetical and practical functions and technological limitations. The huge number of previously produced transferrable decal types, have been digitalized. By the beginning of the 2000s, the number of Arabic typefaces have been increased and appeared in a wide range that started from extremely playful types with sloppy baseline like Diwani, till semi-geometric, that reflect a mixture of different recourses. The second challenge is the finding of appropriate terms for each class and subordinate those reflect understandable clear syntactic and semantic patterns. Unfortunate, the most well known and great classification of Arabic script of Kühnel can only help by the identification of archaic styles and tracing form developments form the 7th century A.D. till the 19th century A.D. Since the 1940s, appeared few trials to classify Arabic typefaces. By the E. Smitshuijzens' classification it was quite

obvious that we are standing in front of contradicted interpretations of historical scientific facts, and misusage of term. (Figure 2) The classification doesn't impose a systematic and syntactic order on its member categories, and doesn't establish meaningful relationships between categories. The entire book of Smitshuijzens reflects very confusing mechanism for grouping, where the Arabic typefaces defined by: 1) function (e.g. Black Headline), 2) by the process of creation (e.g. Hybrid), 3) unfamiliar terms within the Arabic calligraphy and typography (e.g. Grotesk), 4) by Zeitgeist (post-modern), 5) traditional or classical subordinate such as (e.g. Thuluth and Ruqaa) and, 6) classical classes (e.g. Naskh, or Kufi). Even if we are going to argue and assume that a constitutive classification is also an example of a simple mechanism for grouping; in the case of E. Smitshuijzen, dividing the Arabic types into a set of "closely follow original" "loosely follow original" and "unrelated to any Arabic model" without reflecting any meaningful relationships among them, is incomprehensible.

However, we have to admit that Smitshuijzen's book is one of the greatest efforts we ever seen in our field. The authors had raised important issues, and clarified type design processes, historical developments, technological challenges related to programming of Arabic typefaces, and explained how to use the new typefaces within the concept of modern typography. Important was the raised issue about the lack of unified terminologies and categories by the Arabic typeface anatomy and classification. (Smitshuijzen 2015) Reasons behind that are not explained! Hypothetically, the intensive usage of

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hybridization's techniques (Latin and/or to Arabic) by Arabic type designers, along with the lack of Arabic researchers, and type designers, who are interested on examining and analyzing the typeface variations as a result of different functional aspects, build the main reasons behind this dilemma. It is quite obvious that most of today's Arabic designers are using hybrid ideas, borrowing design techniques and features from successful Latin typefaces such as Frutiger, Helvetica, and Universe, without knowing how to classify or categorize their new creation! Some of them used the term "Grotesk" because their fonts maybe based on one the above-mentioned Grotesk fonts others used terms like "Hybrid", "Post-modern" or "Black Headlines".
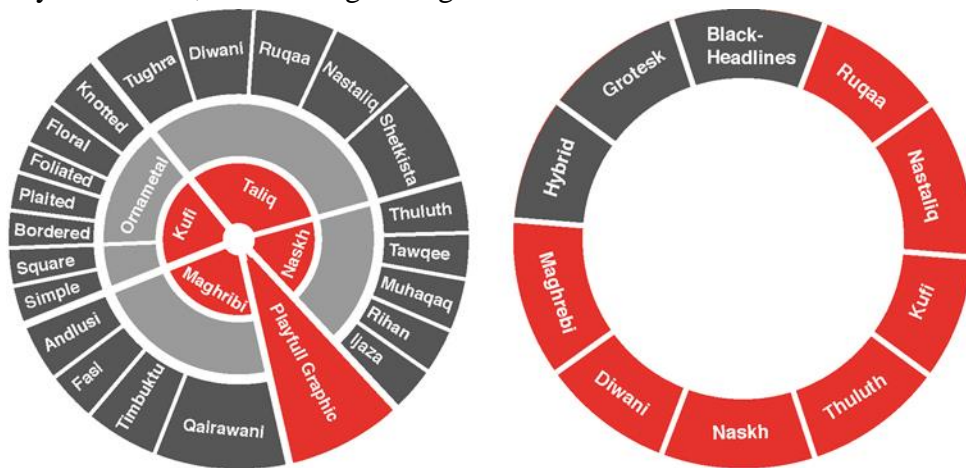

Figure 1 (Left): The classification of Kühnel (1972), based on the five archaic models of Arabic script. Figure 2 (Right): The classification of E. Smitshuijzen (2015), based on eleven models of Arabic script and types. Abdalla 2016.

Neo-Naskh or Neo-Kufi

The term "Neo" stands out the Greek word néos which means as much as "new," "recent," "revived," "modified," and used in the formation of compound words: neo-Darwinism; Neolithic; neo-orthodoxy; neophyte. It reflects almost the same meaning in the Arabic term "Jadid", which means as much as the "new". Logically the Arabic term "Jadid" can replace the term "Neo-". Especially when it is assigned to those newly designed typefaces that are closely following an archaic model. The question here is: How close the new fonts to the model should be? And if the newly designed typefaces include borrowed features from other cultural domains, and new typographical aesthetics, is it still possible to categories them under "Jadid"? Generally the answer can't be easily given with yes, or no. Any "new" or "neo" font should share common features with its descender, which is the Arabic script. No matter how closely or loosely follow the new design the resources, the term "neo" indicates the extraction from a model or class. Even when many modern Arabic art historian signify that the Latin Gothic, Fraktur or Black types, are strongly manipulated by the archaic Kufi, still the usage of the term Neo- remain limited up to the tide relation between the new type, its

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archaic ductus, and cultural environment. Finally, none of the great and well-known paleographers, epigraphers, and art historians categorized such "mixed-resulted" scripts under "Neo-Arabic", but under "pseudo Kufi". The pseudo Kufi and Naskh styles were known in Europa during the renaissance and have been used for centuries. They were the "Latinized imitations" of Arabic scripts in European environment.

Grotesk

The term "Grotesk" is closely linked with the industrial developments' Europe and later with the idea of democratizing the Latin letterforms, and has no translation in the Arabic language. The economic characteristics of the Grotesk typefaces were mainly created to fulfill the demands of modern European industry, education and culture. The usage of the term "Grotesk" for Arabic typefaces is like a squeezing's experiment of foreign terms into orthodoxical body? The Grotesk typefaces such as "Akzidenz-Grotesk, "Franklin Gothic", and

"News Gothic" are resulted out of the modern Europe in the 20th century, and arrived the East with the French and British and other colonialist European states.

Interesting is that Grotesk typefaces are in use in the Arab world since the beginning of the 20th century, but still unknown neither by the designers nor by the printers. The majority of Arabic typefaces that looks like one of the Grotesk Latin typefaces are called "hadith = modern". (Bahnasi 1995, Alif-Alif) According to Bahnasi, the new Arabic letterforms reflect the "Arabic" modernism and the visual language, upon the artistic, and aesthetical criteria. (Ibid) Fact is that the Arabic outcome has nothing to do with the Grotesk typefaces, which are intentionally designed after the less-is-more principle, and not only because of the used tools or materials. However, the argument of using such terms by the classification of Arabic typefaces because of their similarity to European Grotesk is irrelevant.
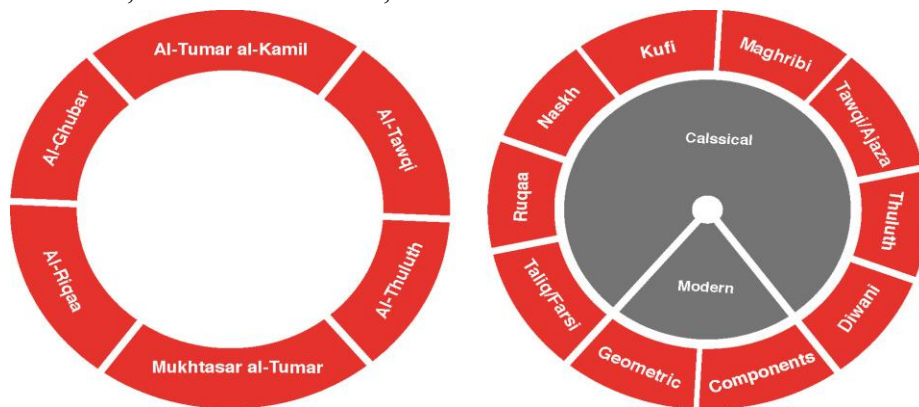

Figure 3 (Left): The classification of Al-Qalqashandi. Figure 4 (Right): After Bahnasi classification, 1995.

Abdalla 2016

Even though the characteristics of many newly designed Arabic typefaces showing similarities to Latin types, this doesn't change the fact that we are talking about "inspiration"

and not about "extension" or "remixing". Otherwise, once again, the usage of the term "Pseudo" will suites better the imitated copies or clones of foreign scripts.

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On the other hand, what can learn from the usage of the term Grotesk within the Vox classification is the way of categorizing all kinds of Grotesk as subordinates of the main class "modern-linear". For example the Neo-Grotesk, the Humanist, and the Geometric categories are equally side-by-beside categorized. For laypersons, the four categories looks similar, but by a closer look, their forms are distinguishable such as between the geometrically- constructed Futura, Avenir and Avant-Garde, and the humanist typefaces like Optima, and Tahoma, which are not based on the Grotesk of the 19th century but on the Roman inscriptional letters and the Carolingian script.

Humanist
The term stands out the renaissance humanism, which was a philosophical and ethical stance, that emphasis the value and the ethical of human being. Humanitas is the original Latin word;-ism, entered English in the nineteenth century. The name itself comes from "studia humainitatis", the renaissance term for the study of classical history, moral philosophy, rhetoric, poetry etc. This means that the term is far from the religious text, and reflects the shift from normatively to individuality. But Humanist "fonts" are those typefaces that basically designed during the 15th century, and following human proportion that are imparted by bonae litterae or humane learning (literally "good letters"). By Vox classification, there are two different categories of humanist typefaces: humanist serif, such as "Janson" and san-serif like "Gill Sans" and "Optima". Both reflecting human proportion, rounded letterforms and stoke variations.

In Arabic, the word "Humanitas=Insani" means as much as human, and has never been used by Ibn Muqlah (9th - 10th AD.), who "redesigned" the Arabic rounded ductus upon human proportion. According to Maher Rayef (1975) Ibn Muqlah never described his proportioned script as humanist-Naskh or humanist-Kufi! Even by AL-Qalqashandi (1355-1418), Al-Tawhidi (923-1023), and by Raseal Ikhwan Al-Safa "Brethren of Purity" (between the 8th and the 11th century), there is no Evidence that such a term is assigned to a certain style. (Rayef 1975)

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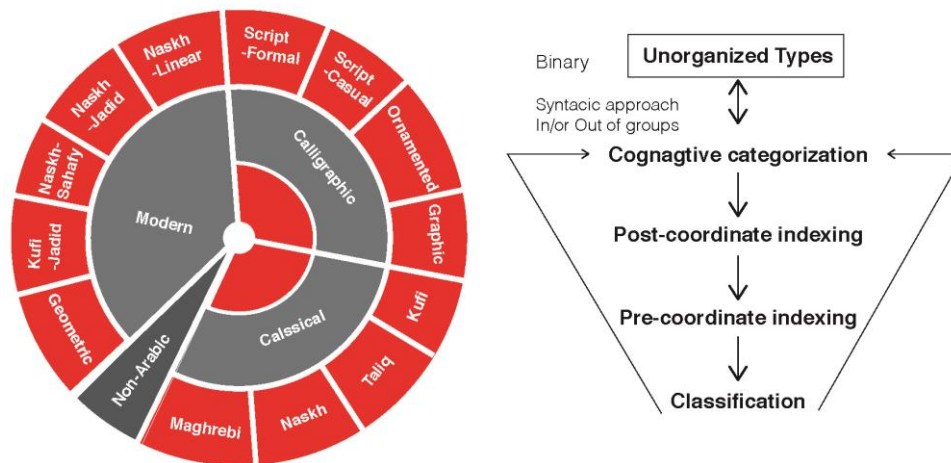
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Figure 5 (Left): The new classification. 2016-17. Figure 6 (Right): The classification process after E. (Jacob 2012, 533). Abdalla 2016

However, within the Latin classification there are many new critic against the usage of the term "Humanist". In his article "The history of 'humanist' type", Craig Eliason argued that while the term specifically denotes certain fifteenth-century texts, only its "humanist" connotations made it attractive to Maximilien Vox. Eliason goes further and even warranted its use in future classifications. Added C. Eliason:

"…Maximilien Vox's employment of "humanes" in his influential 1954 classification scheme did not codify an already accepted category; before Vox the term was rarely used for type, and when it was it sometimes referred to types other than those which Vox would group under the labels. Moreover, the stylistic features that distinguish a humanist seriffed font in Vox's scheme are not the same features that distinguish the faces later named humanist sans types. Given these vagaries of definition, it is worth asking how and why "humanist" has persisted as a label." (https://www.atypi.org/type-typography/the-history-of-2018humanist2019-type)

Eventually, it is not clear why big companies like Monotype allowed the categorizations the Arabic version of the typeface "Palatino" (designed by Nadine Chahine and Hermann Zapf) under "humanist-Kufi"? Neither the letterforms are matching with the Latin typeface the "Palatino", which is a humanist typeface of the 15th century, nor with Kufi as Arabic old-style typeface. The design is based on the Al-Ahram typeface designed by Zapf in 1956 and modified to fit the Palatino nova family.

Black Headlines

Another term appears during the 6o's and 70's is the "Black Headlines". The explanation for its existence is:

"….The old Arabic callig-raphic styles don't have the needed weights to make hierarchically distinctions in the modern typogra-phy." (Smitshuijzen, E. 2015, 20) In fact this clam needs to be discussed. Firstly, there is a calligraphic pen called Al-Tumar or Tumar in Arabic = Al-Sahifa, which means in English as much as the newspaper. (Al-Jburi 1999, 65) Al-Tumar or Tumar is the boldest formal version of the cursive script. It is mostly used for short texts at larger type sizes. (Ibid. 1999) Secondly, there is other old Arabic term that

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could be chosen which is "Jalil", which is well known by the Arabic typographers and researchers boldest traditional weight among the rounded duct. With Tumar pen calligraphers wrote in big Thuluth or Diwani a size named Al-Jalil or Jalil, which means in Arabic as much as the big or bold.

However the term "Sahifa" or "Sahafi" has almost the same meaning of "Black Headline", and logically, it were be better to use it -even as tentative term- in order to fulfill the new Arabic typographical demands at the time. The term "Black" could be better used as a font styles, rather than a class. Today we create Arabic typefaces with families having light, regular and bold styles that could be extended to include extra bold, black and extended black styles. Moreover the term "Black Headlines" indicates certain letterforms, which are closely linked with the aesthetics of the 60s and 70s: High contrast between horizontal and vertical strokes, relatively small counters, and exaggerated bold horizontal lines, and almost function as visual products of Op-Art.

Table 1: John Downer Differentiation's Criteria

Closely follow the original	Loosely follow the original
Revivals / Recuttings / Reclamations Closely based on historical models (metal type, hand-cut punches, etc.) for commercial or noncommercial purposes, with the right amount of historic preservation and sensitivity to the virtues of the original being kept in focus-all with a solid grounding in type scholarship behind the effort, too.	Reconsiderations / Reevaluations/Reinterpretations Loosely based on artistic successes (of any medium) as a kind of laboratory exercise, often without much concern for their immediate or eventual commercial viability.
Anthologies / Surveys / Remixes Closely based on characters from various fonts all cut by one person, or cut by various hands, all working in one particular style or genre-like a medley or an overview done more for the sake of providing a "sampling" than for the sake of totally replicating any one single cut of type.	Homages / Tributes / Paeans Loosely based on historical styles and/or specific models, usually with admiration and respect for the obvious merits of the antecedents - but with more artistic freedom to deviate from the originals and to add personal touches; taking liberties normally not taken with straight revivals.

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Knockoffs / Clones / Counterfeits	Encores / Sequels / Reprises
Closely based on commercial successes (of any medium) to belatedly muscle in on part of an unsaturated market, often by being little more than a cheap imitation of what has already been deemed by experts as a legitimate revival. "Me Too" fonts, or "Copy Cat" fonts, as they are called, tend to focus on opportunism rather than on originality. These don't rate as revivals because they don't revive.	Loosely based on commercial successes (of any medium) as a means of further exploring, or further exploiting, an established genre; milking the Cash Cow one more time.
	Extensions / Spinoffs / Variations
	Loosely based on artistic or commercial successes (of any medium) for only rarely more than minor advancements in a tried, popular, accepted style; akin to previous category.
Figure 7: Definitions for types qualities by John Downer, Tributes, 2007.	Caricatures / Parodies / Burlesques
	Loosely based on prominent features of the model, often with humor or satire as the primary objective, but quite often also with humor or satire as an unexpected effect.

After John Downer 2012, "Call It What It Is".
Abdalla 2016.

The process of classification
Resources
The process of the new classification starts with revising Abdalla's classification, where scripts are chronologically connected with the main Islamic epochs and dynasties. (Abdalla 1997)
The form-language of a script has been explained upon the aesthetical norms and values of a dynasty, its states dogma, and used technology and tools. The second reference was Kühnel's classification - Ernst Kühnel, "Die Kunst der Arabischen Schrift" 2nd edition. 1972, which gives a macro overview for the development of styles with focusing on the characteristics of main archaic models. His classification is partly based on form models (rounded, stiff, and playful graphic) combined with geo-political chronology, which is a curtail issue by Kühnel's classification. (Figure 1) The third group of references is the different published papers and books of Adam Gacek, especially the book "The Tradition of Arabic Manuscripts", 2001. In the Arabic language there are important references such as Bahnasi (1990), Al-Jaburi (1990), and Masoud (1990). They are selectively chosen

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upon their popularity and well-documented terms and visual samples of archaic styles.

The paper depends on the most comprehensive references about the roots of the Arabic archaic models such as the texts of Gelb (1958), Jensen (1929), Friederisch (1966), and Abbott (1938). They are great help for the chronological documentation, visual comparison, and understanding for the form-developments, mainly by the causal scripts and formal calligraphic styles. On the other hand, the book "Arabic font specimens book" from Smitshuijzen, published by Khatt book in 2015, built the main source for the examined fonts. Finally, it was important to examine transferable decals types from Linotype, Mecanorma, and transtype, which build, along with all the previous references an important physical evidences of the fashionable and well-known styles between the 1980s and the 2000s.
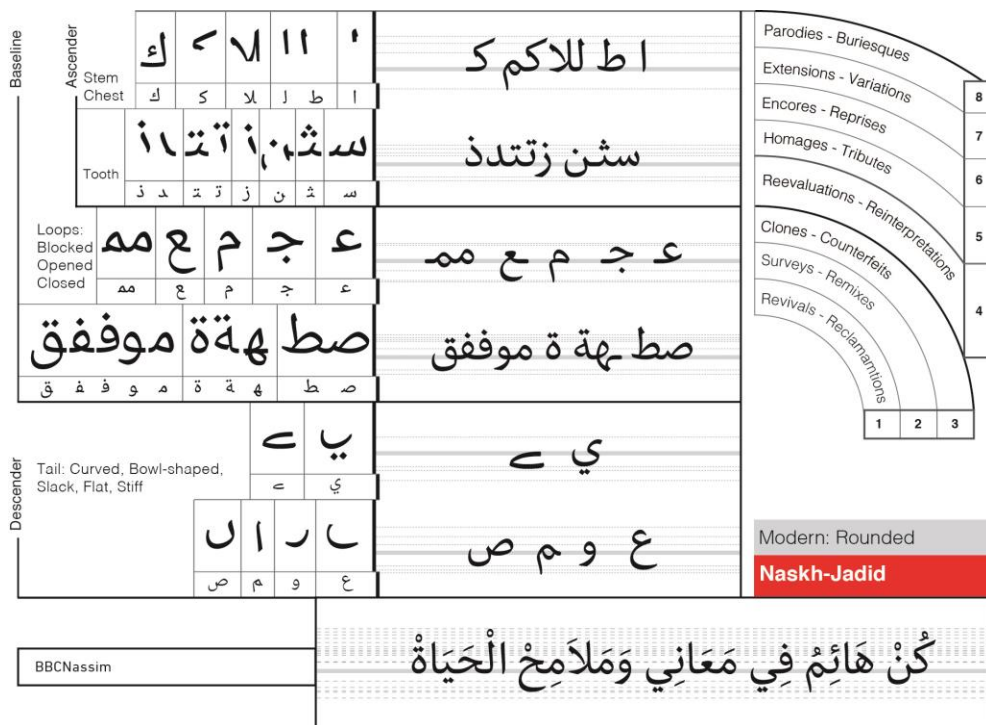
Figure 7: The evaluation sheet for the class: Classical: Rounded: Naskh-Jadid. Abdalla 2016.

From categorization to classification

Between form-based and chronological: The new system is form-based distinctions between groups of entities. Through its supplementary mechanism such as the semantical or/and historical perspectives of the typefaces, access can be provided, whether to individual categories or to unique category members. The formal criteria of each class and subordinate and the establishment of meaningful of information-bearing

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relationships build and organized together the system. (Jacob 2004, 532) If we admit that classification is the process of assigning group membership labels to unlabeled observations, it will be understandable the reasons behind classifying types chronologically upon "pre-labeled historical periods". But, "while this is a good way to categorize many of the typefaces from the past, chronological methods become impractical when it comes to contemporary design. Art critics know this problem all too well: what comes after postmodern? Post-postmodern?" (Coles 2012, 23). I. Kupferschmid, shared in his article "Thoughts on Classification of Typefaces" (Published: 27. JULY 2009), almost the same point of view. He suggested to classify typefaces primarily upon their form-qualities and not upon a historical timeline. Even Kühnel's classification of Arabic scripts has its chronological strength; it is based on classifying the archaic styles upon their from-qualities and not only upon their historical order.

Categorization: The process starts with categorization, followed by indexing and ended up with well-identified classes. By the "cognitive categorization", typefaces have been viewed, analyzed and assigned to "labeled" and also "unlabeled" groups based on old or/and newly found "prototypes". Some classes accepted not only the natural grading of typefaces and tend to be fuzzy at their boundaries, but also the inconsistency in the status of their components members, such as the "Calligraphic: Graphic class" (see next chapter). Referring to E. Jacob, the process of categorization is a creative synthesis of entities based on context or perceived similarity, in contra, the process of classification is a systematic arrangement of entities based on analysis of necessary and sufficient characteristics. (Compare Jacob 2012, 528). The differences between both of them go further: The boundaries between classes and

categories are fuzzy or fixed, the membership is flexible or rigorous, the criteria for assignment are context-determined or predetermined, etc. Theories of categorization such as the "classical view", which is the oldest well-known approach of grouping "types" upon their similar properties, was difficult to use and classifying typefaces upon discrete entities was impossible to start with. Neither a proper set was available, which allow to identify models or prototypes, nor the existed terms are clear and closely linked with certain models. Aside from the "conceptual clustering", which is considered as the modern variation of the classical approach, the prototype theory or/and the fuzzy set theory allow types to belong to one or more groups in varying degrees of similarity, which was the case by different classical types. However, the operation of organizing items was very creative and full of dynamic, where the differences have been recognized, and initial visual comparison of properties and characteristics have been executed. It was sufficient as initial step, where huge number of types with unclear resources have been grouped upon syntactic benchmarks based on models.

Indexing: The post-coordinate indexing system allowed us to formulate models with conceptual descriptions after the indexing of typefaces has been compiled. Only by the classical well-known classes, an action of grouping according the pre-listed descriptions has been executed (Figure 1, and 2). The pre-listed descriptions from Kühnel and Al-Qalqashandi assess by sorting the memberships' level in a set that is previously designed according to a bivalent condition — an element either belongs or does not belong to the set (Figure 8). It was necessary to use such binary system.

Classification: In order to continue the classification, following steps were needed: 1)

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create new classes with proper terms: Many of the newly designed types resulted out of hybridization's methods, and carrying features of different categories. This point has been raised by Paul Kay (1973), who observed that, in some cases the grade of membership of an object, u, in the intersection of two fuzzy sets A and B may be greater than its grade of membership in A (or B) [(Zadeh, 1982)]; 2) Ending up with a system that permit the existence of mixed aspects of classes, and hierarchal levels such as the taxonomy in biology or zoology, where the "life-form level, middle level: generic or genus level, and lower level: the species level, could be used. For example: to place the Arabic stiff style, which is known with (Kufi or Yabis) in the higher level: "Form quality" level = stiff, middle level: "generic" level = Maghribi or geometric, and lower level: the "structure" level = Geometric Kufi. (Figure 3) The stage of identification was followed by listing down the main description of each subordinate upon three main classes: 1) Classical: includes all the archaic typefaces; 2) Modern: contains all the newly designed typefaces since the 1940s till today; 3) Calligraphic: all styles that owns calligraphic or script effects are included, which will be explained in chapter 4. (Figure 8)

Tools: Evaluation sheet, creating classes and subordinates

When letters enlarged, all sorts of information about any typeface are pulled out: The functions of negative space are easily discovered, and how the shape of one letter affects the shape of the others. More important is discovering that seemingly minor attributes can affect the personality of a typeface as a whole, and forced us to reevaluate its position within the classifications' system, and make assumptions about its originality's level, and to ask to which class it could belongs!

John Downer (2012), the well-known American typeface designer and typographer, explained in his article "Call It What It Is" published in Emigre's Tribute type specimen booklet in 2012, a prototype concept that includes semantical differentiation notions, where the originality of typefaces can be measured. Downer divided his descriptions into two categories:

"One for designs that closely follow the original, and the other for designs that loosely follow the original" [(Downer 2012)].

Downer's suggestion has been used and tested successfully in this paper. It allows the creation of evaluation sheets to examine typefaces, in relation to their fidelity to a certain model. The models and the distinction is based more on characteristics rather than chronological accuracy and the pros and cons of modification of historical norms. The evaluation had started with designing one template for the four main classical styles: Kufi, Naskh, Slope, and Maghribi. The comparison's processes are followed with measuring's process that focused on discovering how the examined typefaces implies tradition and conventions, i.e. checking if letterforms have been handed over, and deliver up traditions, or showed legacies (Figure 4). Some of the examined typefaces own a combination of one known model such as Naskh and new characteristics. In those cases, it was necessary to group such typefaces together, without using a concrete generic name. In a later stage the same evaluations' sheet has been used to categories the newly created groups, which ended up with creating thirteen templates, one for each model.

The evaluations' sheet is divided into four main parts: Left: Main characteristics of the model: Middle: the examined typeface (single letters); Right: Downer's criteria with its two

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categories and eight levels; Bottom-left: the name of the examined typeface as appears in its reference. Bottom-right a sample Arabic sentence that includes the most important letters that can give an impression about the typeface. (Figure 8) The Left part contains the original characteristics of one model, and is divided horizontally into three sub-sections: A) The upper section: The stems (=Swayed), upstroke nature - straight, or curvy Ascender(s) height(s); B) The middle section: Baseline strokes nature (curved/stiff connection – the Mada) organic or straight, X-height (in some cases), counter-form: closed, blocked and open, eye form; almond-form, geometric, angels: sharp or semi-curvy, rounded-, and thickness, loop height(s), tooth height(s); C) The lower section: Exit stroke (tails), number of descenders and tail's shape: Slack, rounded or straight.

Conclusion: The classes and their subordinates

In conclusion, a holistic classification of Arabic typefaces system certainly needs more research and contribution from various specialists, and not only from Arabic typographers and type designers, but also calligraphers and design scholars. Even though, and after examining 400 Arabic typefaces from different companies, and individual type designers, the research resulted with establishing an initial attempt, which includes three main classes for Arabic typefaces and one for non-Arabic typefaces, as follow:

1) Classical: (old) form models: forms, contrast and structure, derived mostly from writing with reed pen, but also inscribed into hard martial like wood, and stone, and small brushes.

2) Modern: new and rational (modern) form model: forms derived mostly from drawing the linear skeleton with or without the usage of Latin tools such as a pointed pen = expansion.

3) Calligraphic; (old and new) forms: forms reflect a big variety of used tools, from peer pen, up-to linear based. It includes old und new styles.

4) Others: (Non-Arabic): like Latin, Devanagari, Hebrew, etc.

Most of the previously discussed terms in chapter two have been avoided or replaced. In order to reach well-organized conceptual arrangement within the set that reflects mutually exclusive and non-overlapping classes, it was necessary to create systematic structure of hierarchical, genus-species relationships. [Jacob, 2004] The classification ended up with thirteen subordinates or generics. The relationships between classical generics such as Kufi, Naskh, slope, and Maghribi, and the newly created: Kufi-Jadid, Naskh-Jadid, etc. are meaningful and information-bearing because they specify principled connections between two or more well-known models (Compare Figure 1 with Figure 5).

Class 1: Classical

The term is used for those typefaces that carry characteristics, which are excellent revivals of the five well-known Arabic categories. It is indicate in this regard has less to do with the term "classics [plural], which is the study of the languages, literature, and history of ancient Greece and Rome". [Longman dictionary 2009, 185]. According to Kühnel the ductus are:

1) Stiff: Also known as Kufi

2) Rounded: Also known also as Naskh,

3) Slope: Also known as Taliq = hanging or Persian

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4) Western: A mixture of Naskh- and Kufi-based forms in different variations.

5) Playful Graphic

The classical classes are here to understand as those typefaces with roots that got back to the 7th and 8th century. They are categorized upon the nature of their letterforms (Stiff/Rounded), and baseline (Straight/Sloppy). The Maghribi ductus has been differently developed and carry characteristics of the stiff and rounded ductus. All the variations of the classical typefaces are classified as subordinates and assigned into groups that have traditional terms and are in use since the 9th century till today. Kufi, Naskh, Slope, and Maghribi.

كُنْ هَائِمٌ فِيـــ مَعَانِيـــ وَمَلامِحْ الْحَيَاة

Figure 8: Classical: Stiff: Kufi. Font: AGA Mashq 72.
Abdalla 2016.

Classical: Stiff: Kufi (7th Century A.D.)
Most of the text about the historical development of the Arabic script starts with writings about the simple Kufi rather about the Naskh styles. However both ductus have been used during the 7th century A.D.- before Islam in different variations. The most dominant version in manuscripts between the 7th to 10th centuries was the Kufi Mushafi = Quranic. Out of the simple Kufi appeared a lot of variations in architect, textile, pottery, etc. with ornamented tails and stems (see class: Calligraphic: Ornamented), and playful skeleton. Between the 12th and the 13th century, Persian extracted other version with sharp edges and square-angular look. The square Kufi (known also as geometric or eastern Kufi), as its name suggested based on straight lines and angels. However, the simple Kufi shaped the model of this class. It is characterized with its its not so sharp edges and relatively geometric small loops. The oldest versions, as appeared in different references, demystify a mixture between round and straight strokes, but with a holistic stiff image. (Compare S. Graves 2011, 24, with Enzyklopaedia des Islam, B1-4, Tafel II, III, and IV, 1938) Because of its bold nature and relatively short descenders, it was widely used in display sizes for titling in many architectural and decorative applications on fabrics, ceramics, or wood, etc. (Jensen 1925, 130). Many of Kufi variations won over the past fifty years enormous attention by contemporary font designers, which will be clearly seen by the second class the" Modern".
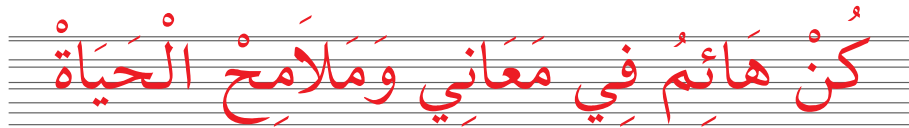
كُنْ هَائِمٌ فِي مَعَانِي وَمَلامِحْ الْحَيَاةْ

Figure 9: Classical: Rounded: Naskh. Font: KacstBook.
Abdalla 2016.

Classical: Naskh (7th Century A.D.)
The Naskh ductus (Arabic = Naskhi) won it's Arabic name from the act of "copying" i.e. writing texts. It has been used in applications that need to be written in small text sizes and in a short period of time. The term itself used

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as a "generic" name for a huge variety of Arabic rounded styles that have been used since the 7th century and till today. Most of the dated Naskh scripts in 7th century are profane texts. Naskh style is known with its organic nature that encourages great calligraphers, and later contemporary type designers, to create new variations of well-functioned body-text typefaces. The proportional system and the writing rules of the Naskh are created by the calligrapher "Ibn Muqlah". (Rayef 1975) Ibn Muqlah created out of the Naskh the writing's rule and proportion of the "Thuluth" (means the third of the widest used pen "Tumar" at this time), which is the most elegant formal version of the cursive script. It is mostly used for short texts at larger type sizes, and for titling. (Bahnasi 1995, Sad) The overall lightness, the short descenders, and the tall ascenders characterize it. However, the oldest Quran manuscript in Naskh was written by Ibn Al-Bawwab in Baghdad between the 1000 and 1001 A.D. (Khalili 2008, 51) Naskh has also been used to indicate the styles used in papyri between and the 7th till the 9th century, Naskh is an archaic style, which is characterized by its compact, clear, simple, and curvy letterforms.

Figure 10: Classical: Rounded: Slope. Font: IranNastaliq.

Abdalla 2016.

Classical: Taliq: Slope (10th Century A.D.)

Unlike all other Arabic styles, the slope ductus comes in four different variations: Taliq (12th century) Diwani (14th century), Nastaliq (end14th century, Shikesta (18th century), and later the Ruqaa (18th century). (Abdalla 1997, 135-145) The oldest is the Taliq is based on rounded forms, long descenders, blocked counters in some letters, and arch-shaped Kashidah. The Diwani won its name from the Turkish term Al-Diwan, which means as much as the palace, and originally used for official Sultan's court during the Ottoman dynasty. It is famous with its hanging baselines and exaggerated low-hanging ending swashes. The third variation is Nastaliq from 15th century. This elegant slope-cursive style is used mostly in Iran, Pakistan and Afghanistan. It served mainly the Urdu language, and barely used for Arabic language. Nastaliq is derived from the two words: Taliq and Naskh. (Papadoppolo 2006, 337) It is fluid with letters that hang in clusters like grapes. The fourth slope variation is the informal version of rounded ductus the Ruqaa from the 18th century. It has been created in Turkey by (Mumtaz Bic). The written word in Ruqaa is originally set on a sloped baseline, and it is slightly heavier than Naskh, but more compact script.
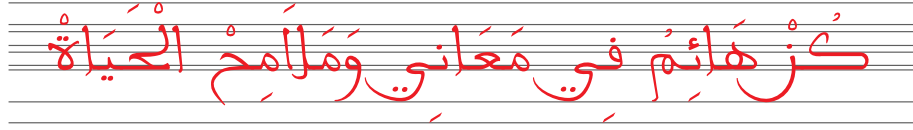
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Figure 11: Classical: Semi-Stiff: Kufi. Font: AXtAl.
Abdalla 2016.

Classical: Western: Maghribi (10th Century A.D.)

The cultural and aesthetical nature of the western part of the ancient Islamic world (from Tunisian till Cordoba and Andalusia), has a strong impact on the Maghribi ductus and on its subordinates. They come in Maghribi-Kufi and Maghribi-Naskh and under many other names, such as Andalusi, and Timbuktu). The well known are the Andalusi, the Qairawani, the Tumbuktu, and the Maghribi. The latter is the most playful and ornamented style and has been further developed under the calligrapher Al-Qundusi (18 century) with new aesthetical norms. However, Kühnel explained how the forms of Maghribi ductus are extracted, and how they are resulted out of used tools, and material. A semi-cursive variation of the Kufi style has been developed in Northern Africa. It is characterized by the rounding of its letterforms into small circular loops or eyes, delicate cursive strokes, and open semi-circular large descenders that hang low from the baseline. It is generally used as text faces set at large type sizes.

Class 2: Modern

The term "Modern" is related to the act of departing from traditional styles and values. It was coined in the 16th century to indicate present or recent times (ultimately derived from the Latin adverb modo, meaning "just now"). Historically there are three periods: Early modern period (early 16th century in Europa); Late modern period (late 18th century); and contemporary history (relevant to present time). The term and its usage within non-western culture characterized the usage of up-to-date ideas, art and design waves, and technologies. A modern typeface is described as resulted type that based on hybrid processes between revived styles or old ductus with Latin types such as Grotesk, Neo-Grotesk. It is well known in the Arabic culture as Hadith and widely used to signify all the cultural activities and products that are happing at our present time. For example the translation of modern Arabic art will be "Al-Fan Al-Arabi Al-Hadith". Rarely, and almost within art historians', specialists in art or design, a distinction between "contemporary" and "modern" will be executed.

Figure 12: Modern: Stiff: Kufi-Jadid. Font: B Elham.
Abdalla 2016.

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Modern: Linear: Kufi-Jadid

Kufi-Jadid is won its name form its descender the Kufi, and same while from being appeared by the 1960s. The increased modernization of the Arabic world forced designers to the extract new models out the known classical styles. From the Kufi inherited the new model the stiffness, the unified stroke thickness, the short and unified descender and the semi-bold to bold appearance. These characteristics allow Kufi-Jadid to be an excellent style for display size applications.

Figure 13: Modern: Rounded: Naskh-Jadid. Font: Droid Arabic Naskh.
Abdalla 2016.

Modern: Naskh-Jadid

The Naskh-Jadid appears in late 20th century and is based on the proportion and shared the cursive characteristics with its descender the classical Naskh. This model inherits not only rounded effect, but also the stroke variation and the arch nature of its baseline. The term Jadid means as much as "new" or "neo" in English, and indicates the modernity of typefaces' features. It distinguished itself from the Naskh in the stroke variation mixed with geometric linear construction.
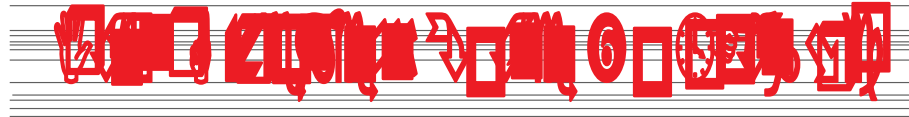
Figure 14: Modern: Semi-Geometric: Naskh-Sahafi. Font: AXtNada Bold.
Abdalla 2016.

Modern: Semi-Geometric: Naskh-Sahafi

The style is closely connected with the development of Arabic newspapers and magazines in the 1970s. It is also known as "Headline". The Naskh-Linear inherited from the archaic Naskh the rounded effects of the loops, bow, upper-parts of round open counters that looks like half moon, and tails, combined with geometric construction appeared clearly in the thick baseline-stroke, and sharp edges. The Naskh-Sahafi is also more rounded, and without sharp edges.

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كُنْ هَائِمٌ فِي مَعَانِي وَمَلَامِحْ الْحَيَاةِ

Figure 15: Modern: Semi-Geometric: NasKufi. Font: Frutiger LT Arabic.
Abdalla 2016.

Modern: Semi-Geometric: NasKufi

The NasKufi appears by the 2000s, and is resulted out of the overlapping between Naskh and Kufi, and based on inspiration of Grotesk. The new hybrid characteristics are revived through the parallel study of the Latin and archaic Arabic styles. The letterforms are carrying economical structure in the height and width.

كُنْ هَائِمٌ فِي مَعَانِي وَمَلَامِحْ الْحَيَاةِ
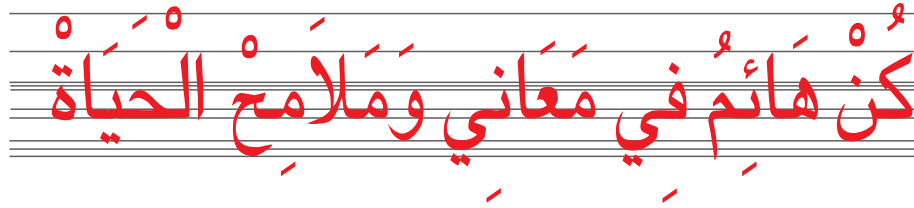
Figure 16: Modern: Semi-Geometric: Naskh-Linear. Font: AXtDamour.
Abdalla 2016.

Modern Semi-Geometric: Naskh-Linear

The Naskh-Linear is one of the first typefaces that appeared by the 1960s. It is the legal and

normal linear extension of the classical-Naskh. Its straight horizontal baseline with its slightly curved angels, middle sized to closed loops, and angled tails and stem endings indicate a mixed process between the calligraphic effect of the Naskh and the geometric structure of the modern.

كُنْ هَائِمٌ فِي مَعَانِي وَمَلَامِحْ الْحَيَاةِ

Figure 17: Calligraphic: Rounded: Script-Formal. AXtLAkhdarLight.
Abdalla 2016.

Class 3: Calligraphic

The third class in the system is based on the calligraphic-based typefaces that reflect the used tools in the skeleton and letterforms. It includes four main subordinates, two kinds of scripts, one ornamented, and one graphic. The latter embraces the largest amount number of typefaces with huge number of form variations, where decorative forms are dominant. Unlike the script-formal typefaces, which own a lot of classical characteristics, the script-casual typefaces are freely scripted

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and reflect the subjective visions of the calligraphy. The ornamented subordinate is also known with ornamented Kufi, where all known Kufi styles with ornamented ending are included.

Calligraphic: Script-Formal

Although the script-formal sharing common characteristics with classical subordinates, but they are not strictly following their calligraphic bases: proportion, stroke variations, etc. At the first glance, laypersons will barley notice the differences, which are based on remixed old calligraphic principles mixed with subjective aesthetics and/or commercial influences.

Figure 18: Calligraphic: Rounded: Script-Casual. Font: AXtNadine.
Abdalla 2016.

Calligraphic: Rounded: Script-Casual

Casual scripted typefaces are those that own a mimic of calligraphic writing. They are mostly rounded and connected. The letterforms appear to have been written with a speed flexible pen, or different brush thicknesses. Most of the members of this category own Ruqaa, or Naskh characteristics.

Figure 19: Calligraphic: Stiff: Ornamented. Font: AXtNova.
Abdalla 2016.

Calligraphic: Linear: Ornamented

The term ornament within the Arabic culture will be understood as decorative (= Zokhrouf). This linear ornamented style is extracted from the simple Kufi. (fig. x) The Ornamented Kufi appears in different epochs, regions, and applications with large amount of variations in the stroke nature, thicknesses and stem's heights. We can primarily differentiate them through their tail's and stem's endings, which often reflect the nature of the used mediums and the functions of products such as written text with brush or pen on ceramics plates, graved signature or text on copper, etc. Because of the numberless and the decorative look of the ornamented Kufi, like knotted Kufi, or Floral Kufi, it will be possible to categorize them separately in a new category under "Ornamented Kufi" or Decorative Kufi".

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Figure 20: Calligraphic: Graphic. Font: Asmaa Font.
Abdalla 2016.

Calligraphic: Graphic

Most of the Arabic classical and modern typefaces can be differentiated according to the styles and form clarity, which include certain numbers of basic characteristics. The Calligraphic: Graphic class is quite different. It plays a considerable role in visual art and free graphics, or function as display face. It is to compare with any other art medium, such as lettering. It's graphically shaped letterforms are meant to look at rather than through. The graphic letterforms are largely determined by the former writing tools – e.g. the broad nib or pointed nib – and based on stroke contrast, but also reflecting geometric constructions and module-shaped forms.

Others: Non-Arabic

All non-Arabic scripts all included in this class, no matter their roots or letterform natures, such as Latin, Devanagari, Hebrew, Chinese, Cyrillic.

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Figure 21: The new Arabic type classification system.
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In 1983 graduated from Faculty of Applied Arts, Helwan University, and hired as teaching assistant in advertising department; between 1983 and 1990, work as freelancer, and researcher for typography; 1990 obtained the master degree in graphic design, and promoted to assistant Senior teaching assistant; 1993 obtained the diploma in graphic design, in FH Muenster; Germany; 1997 obtained PhD in design, Wuppertal, Germany; 1999 promoted to assistant professor; 2005 promoted to a associate professor in Advertising department, faculty of applied arts; 2005-06 acting HoD of advertising department, Damietta University; 2009-11 HoD in faculty of art and design, RUW, Bahrain; 2013-14 Associate professor of visual communication design, GUC, Egypt; 2014-16 Associate professor of graphic design, RUW, Bahrain; 2016-till today Associate professor of graphic design, advertising department, faculty of applied arts, Helwan University, Egypt. Since 1983 and till today, known as visual artist and typographer under the professional name Hazem Taha Hussein, exhibited in many countries like Germany, Italy, etc., museums such Bonn museum 2007; designed more than 40 design projects in Egypt, GCC, and Europe; Supervised six master's and PhD's thesis. Published till today nine papers about Arabic typefaces design, Arabic typography, and Arabic visual language; Translated thirteen books about European modern art 2007-09.

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الملخص:

إحدي المشاكل التي يواجهها المصممين العرب هو القصور في وجود نظام متكامل لتصنيف الخطوط العربية الطباعية. فمنذ إنتشار الطباعة بالحروف المتحركة وحتي الآن يتواصل التيبوغرافيين ويتعلم طلاب التصميم ويتواصلون مع بعضهم البعض بدون نظام موحد لتصنيف الخط. هذا القصور أدي إلي ظهور معلومات خاطئة وإستخدام لمصطلحات غير مناسبة بتعليم التصمميم الجرافيكي، وعدم وضوح الرؤية التيبوغرافية الحديثة لدي المصممين بالأسواق العربية. ومع الإزياد السريع لنماذج خطوط عربية طباعية جديدة، تفاقمت مشكلة التصنيف، وأصبح من الضروري إقتراح لتصنيف يصلح للتدريس والتواصل بين المتخصصيين وغير المتخصصيين.

تلك الورقة البحثية تهدف إلي حل تلك المشكلة، ووضع مقترح جديد لتصنيف الخطوط الطباعية العربية، كما هو الحال في الخط اللاتيني وخطوط أخري. ففي الفصل الأول يتناول البحث بالنقد والتحليل المصطلحات الدخيلة علي اللغة التيبوغرافية ومدي أهميتها إلي التيبوغرافيا العربية مثل خطوط "مابعد الحداثة" ، "المجددة"، "العناوين السوداء"، وأيضاً خطوط "الجروتسك". وفي الفصل الثاني يستعرض البحث أسلوب التصنيف وإعتمادة علي كتابات ألين ك. ياكوب (٢٠٠٤)، ونظرية النموذج المبدئي، تفسيرات جون دونر (٢٠٠٣) لمفهوم الأصالة في تصميم الحروف، وتصنيف كونيل لأنواع الخطوط العربية اليدوية أو الكاليجرافية (١٩٧٢)، وعلي تصنيف فوكس للخطوط الطباعية اللاتينية (١٩٥٤). وبالفصل الأخير يقدم البحث مقترح جديد للتصنيف يشتمل علي أربعة نماذج رئيسية وثلاثة عشر نموذج ثانوي مصاحب بوصف لكل منهم. وينتهي البحث بإنفوجراف لكل النماذج المقترحة.

الخط الطباعي العربي ، تصنيف الخط الطباعي العربي ، التيبوغرافيا العربية

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