

The Plastic Function of Dot's Place on Farsi Typography

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Abstract

Background/objectives: The problem addressed in this research is that some deconstructions of typography occur in Iranian graphics, such as breaking the letters from attached to detached form, filling the gaps of circular letters, removing dots, etc., which may sometimes have a purely aesthetic purpose and distract typography from its main function, reading the verbal message. **Methods:** In this paper, the plastic action (direction, emphasis, balance, rotation, movement, etc.) of dot on its place in Farsi fonts has been studied through analysis of dotted letters in the application of title and slogan in which for their larger size, dots of letters take a plastic situation- based on rules of visual arts by the approach of Gestalt theory in art. Samples were dotted letters of simple Farsi fonts those are structurally similar and accessible to graphic designers. The analysis emphasizes the detached letters and an example of ligaments as a statement. **Finding:** The results show that the dot's place of dotted letter, in simple Farsi font is important from the formation of regulated visual relations viewpoint and it was emphasized the non-regulated move of dots in Farsi font impairs visual relationships that dominate it. The purpose of this study was to achieve the plastic function of letter dots in Farsi typography to encourage designers to create a plastic challenge reasonably consistent with the message content and maintaining both aesthetic and functional aspects of typography, in their graphic artwork. **Application/Improvements:** Application of this article is the need to make any changes and innovations in Farsi typography, in the context of the Cognition of the basic design that dominate them, and at the same time maintaining the ease of reading of visual message.

Keywords: Dot's Place, Farsi Fonts, Plastic Dot, Typography

1. Introduction

The graphic design purpose, depending on its medium is the transferring of message by the fastest and the most explicit way possible to the respondent and the tools for the messaging are visual and written elements having two visual and verbal aspects. In this paper, what plays the role of an image in the graphic work (including photography, illustrations or abstract pictures and signs) is not addressed. But only the layout of typography with the role

of transmission of verbal message and visual meaning is considered.

On one hand, cases may be referred to in Farsi typography include the presence of dots, ligaments, variety of directions, spaces and gaps, differences in height and direction, and etc. For years, many of the above have been sometimes regarded as obstacles to organizing graphic media for the graphic designer. Hence we observe some deconstructions to change the form of printed Farsi fonts, for example, in many cases, dots are removed or holes of

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characters are filled or even seats of characters become shifted, hoping that aspect of Farsi typography becomes similar to Latin typography.

On the other hand, what has generally been accepted as the basis of the visual arts is used more in pictures or what plays the role of a picture. However, the interaction between these principles has been somewhat neglected from the visual aspect of Farsi typography. Thus, there may be some deconstructions not so clever in Farsi typography, which in turn will create a beautiful texture of letters compromising the readability of the Farsi writing, and ultimately enigmatic and altered transmission of verbal message to the audience or any change and innovation has not been taken in this regard. The purpose of this study is the point that regarding the regulated dot's place, in addition to the role it plays in the Farsi typography readability, causes plastic action in visual design of slogan and title.

This research is important for the fact that, apart from being one of the fundamental elements of the visual arts, has a very interesting part in the letters of Farsi typography, because the readability of many Farsi letters possible with the help of dot. Thus, the application of precise and regulated dot's place in Farsi letters is important in terms of "readability" and also visual aspects to accelerate verbal messages in graphic works. So dot's place in Farsi alphabet letters leads to fast and clear in reading them and dot's displacement creates ambiguity.

In¹ studied the relation between printing technology and visual relationships of printed letters and design elements of typography and their design rules.

In² expressed some problems of Farsi letters during the creation of visual work, addressed issues such as negative space around the text in visual work, and some cases are just cited on the relation to the form and content in typography, without visual analysis. Another part was about plastic illustration with letters. So his emphasis is on the fact of making images using words.

In³ using Kronberg Academy as the case study, examined the role of space in visual communications.

Publication of books has increased in the field of typography and design of the letters in the last ten years, for example, in^{4,5}, introduced and explained the problems in the area of typography and the spirit of different fonts. "Calligraphy and character design" by⁶ and translations of these kind like "type, form and function"⁷ examine the technical issues in the field of typography. As well as books such as "principles of design and form"⁸ with a

new look at visual arts foundations endeavor to offer new expression of visual relationships. In this regard, "visual grammar" with a new approach studied the fundamentals of visual art and visual communications⁹.

In these references, visual analysis of the structure of the letters in Farsi typography has not been conducted and efforts are more from a historical perspective and for a plastic relation of typography with the whole visual work. However, the study of visual relationship of the components of the letters, so that each piece is assumed to be independent, cause the exact visual recognition of Farsi typography which may help during the creation of the graphic artwork.

Therefore, this paper discusses the plastic role of letter dots, as the first design element in the application of title and slogan, deals with the plastic function of dot's place in Farsi typography looking at the methods of teaching typography at old high school of graphic art Basel and Bauhaus by Gestalt theory approach in art.

2. Methodology

The study in terms of nature is applied and in viewpoint of methodology is descriptive and analytical with the approach of Gestalt theory in the Art. Data is collected in the form of documents, library and observation. In this paper, the visual action (direction, emphasis, balance, rotation, movement, etc.) on dot's place in Farsi typography was studied, through the analysis of simple printed fonts of dotted letters without decorations and available for graphic designers, on the rules and principles of plastic art by the approach of Rudolf Arnheim theory in the application of title and slogan (because in these applications due to the large size of the letters, dot will obtain the plastic entity). These fonts are similar in terms of plastic features. Therefore, a typical paradigm can be generalized to the entire similar font.

3. Theoretical Framework

3.1 Gestalt in Art

Gestalt, the psychology of form and shape recognition, was introduced in 1920 among the German psychologists. Gestalt theory states that "the human brain to understand the complex issues that are composed of multiple components, takes this method that all the components are considered in the form of a single sum and at

first a general understanding of the subject is obtained. Whatever the components of the set are in a more complex dependency and a more rational relationship with each other, the Gestalt of the set is stronger and understanding its complexity is also done with less effort and more easily¹⁰. According to Gestalt theory “We experience the world in meaningful wholes and do not see individual drivers, and what we see are combined stimuli in Gestalts that have meaning for us” (ibid). Gestalt concept was introduced for the first time in contemporary philosophy and psychology by Christian Von Ehrenfels. According to him, “our perceptions have Gestalt qualities, but their components are lacking in these qualities. For example, an individual can see a line consisted of a number of dots, rather than the individual dots. And like that, man listening to a melody, cannot hear all forming notes abstractly, but perceives the whole melody”¹¹. In the book “the language of picture” Kepes believes, “gestalt is a physical, mental or natural whole consisted of the coordinates of which the individual components have no such coordinates”¹². Mutual desire of Gestalt psychologists and Bauhaus artists resulted in an increasing interaction and link between psychology and Art and left a sustainable impact. On the influence of Gestalt theory in art, Wertimer article entitled “Theory of Form”, “which was released in 1923, had an increasing effect. This article was introduced by the allonym “dot treatise” as it was pictured by the abstract motives of dots and lines. Later Gestalt psychologists attended at the Bauhaus school and their lectures deepened the impact of the emerging scientific-artistic findings. Despite several theorists showed great interest in this area and released many papers on art analysis by Gestalt theory, but Arnheim (2007) widely used the implications of Gestalt theory for the perception of architecture, music, painting, poetry, sculpture, radio, cinema and theater¹³. In Gestalt theory, the results and the experiences in the field of visual perception leading to higher consciousness of the artist for the creation of an artwork have attracted the attention of many artists¹⁴.

3.2 Plastic Dot

Dot is known as the first and the most important visual element and its definition, and its emphasized role in visual work is well-known. “Dot is the most un-analytic visual element”¹⁵. “Dot is a communication tool that has silence and sound and movement and stop. It is a tool for visual emphasis and stop, with a moving force. Dot

is full of contradictions, both inhibiting and stimulating both ending and beginning ... “; “Paul Klee and Kandinsky announced a line is born from dots. Klee said that I began from where the shape starts, from dot comes to move¹⁶. “Strong dot has emphasis power, and it leads the adjacent lines toward it... consecutive dots create visual lines... every dot which is within the range depending on the amount of positive or negative space around it, comes to move and line will arise from that. Line widens and area is born”¹⁷.

3.3 Dot in Typography

But, do dots have such functions in typography? Dot is used as a unit of measurement of font, and even as a measure of Iranian traditional calligraphy such as Nasta'liq and Naskh scripts and it is consistent with the change in the thickness of the calligrapher's pen. As well as it is as the standard for accurate placement of the letters in relation to each other, together, on each other or even the exact placement of the letters' dot. But what is regarded as the main subject of this article is the role of fixed dot place in the visual aspect of Farsi typography which is applied in the “titles” and “slogans” and will be described in detail.

More than half of the Farsi letters have dot and these dots play role in creating a difference between letters having the same shape, which eventually leads to their accurate reading. Table 1 shows the number of letters with dot in Farsi typography and Table 2 shows the number of letters with dot separated by the number of dots in Farsi typography.

Table 1. The number of letters with dot in Farsi typography

Letters without dot	Letters with dot
15	17

Reference: the authors-2011

Table 2. The number of letters with dot separated by the number of dots in Farsi typography

Letters with one dot	Letters with two dots	Letters with three dots
10	2	5

Reference: the authors-2011

3.3.1 The Visual Form of Dot in Typography

In letters having one dot and three dots, dots have a role of emphasis and have focused and rotational motion

in themselves, but visually retain their role of being a dot¹⁸.

In letters having two dots, dots are placed next to each other in a row and are visually approach a line losing their visual expression of being a dot. So they have a linear function and they take a vertical or horizontal direction. Thus, dots in Farsi letters (regardless of their number) have two important visual roles:

1. The role of visually focused dot: focused dot in Farsi typography means, getting out of visual form of line and focusing on their role of visual emphasis in various forms.
2. The linear form, two dots next to each other in a same direction can create a horizontal or vertical visual line.

We can see visual display of dots in Farsi typography in Table 3.

Table 3. Visual display of dots in Farsi typography

	One dot	Two dots	
Visual form	Depending on the font square or circle	Stretched rectangle (vertical or horizontal)	Depending on the font having a circular or triangle-shaped visual formation
Visual role	Focused and anchorage (visual role of dot)	Transition (linear role)	anchorage (dot role)
Visual form display	□ ○	▬ ▮	△ ○

Reference: the authors-2011

The role and the importance of dot's place, in Farsi typography (here Mitra font) in the formation of reader's vision direction in alignment with the reading direction of Farsi typography is one of the points discussed in this article, thus by presenting a few examples of single letters the issue is discussed.

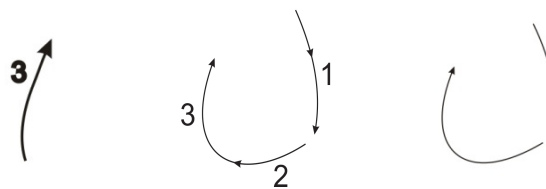
The single letter that, as an example, is examined is the letter “ن” (noon). The letter “ن” has one dot in the letter classification in terms of dot, and in terms of line type and visual form is curved. This letter is a combination of two straight and curved lines (Figure 1), a vertical line (as the top of the letter ن) and 2 curved lines (with a strong presence of line) (Figure 2). Typing direction of letter “ن”

begins in the upper right corner, so the first move in the formation of visual direction of “ن” is in vertical direction from the top to the bottom and is immediately connected to the middle curve from right to left, the curve is at the end directed from the bottom to the top and is slightly inclined to the right (Figure 3).

Because the vertical line at the beginning of letter “ن” is short, and its end tends to right, in case of loss or displacement of dot, the visual motion of the letter becomes confused, because the reading direction of Farsi texts is from right to left and the end of letter “ن” with no visual stop, is from bottom to top and inclined to the right, a opposed to reading direction, which is maybe the reason for visual disruption during reading written words by the reader (Figure 5). It may come to mind that the form of letter “ن” is like letter “و”, and why the problem does not occur for letter “و” (because it does not have dot)? The reason is its long handle and its hard and vertical motion, preventing the vision from leaving the typing axis (Figure 4), but the letter “ن” due to its short handle does not keep the vision and the responsibility is on the dot of the letter “ن”, because immediately after the curved motion of letter “ن” and deviation of the vision to the right, dot transfers the vision inward the curvature of letter “ن” and finally to the rest of the written words (Figure 6).

The existence of two positive directions aligned with Farsi text reading direction (i.e., right to left) arrows 1 and 2, an opposite direction i.e. the tendency to right that is not very strong (arrow 3). As stated, one of two strong directions of left to right of letter “ن” is the dot's place. If the dot's place of the letter “ن” is changed, the visual transfer will not be possible¹⁹.

The top vertical line of “noon “

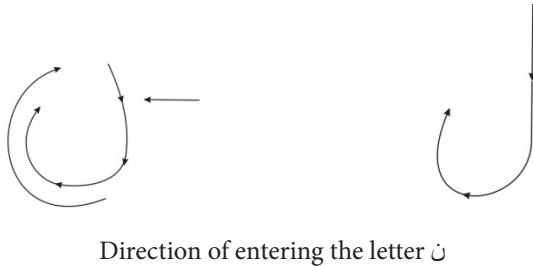


Curvature of letter “noon”

Figure 1. Separation of visual directions of letter “ن”, (Source: the authors).

Figure 2. Three directions of letter “ن”, (Source: the authors).

Figure 3. The main directions of the letter “ن”, (Source: the authors).



Direction of entering the letter ن

Figure 4. The moving direction of letter “ن” (Source: the authors).

Figure 5. Exiting direction of the vision from the letter “ن” in the absence of dot and visual confusion (Source: the authors).



Figure 6. Direction of visual rotation for the letter “ن” (Source: the authors).

Figure 7. (Source: the authors).

For letters خ, ج, چ, which are all-curved Farsi writing letters with almost no vertical or horizontal movement, visual rotation is in the same direction for their fixed and similar parts and dot's place is determinant for them. The role of dot's place in the visual direction of the reader's vision is almost clear and for letter “ح” which lacks dot, the visual transmission is done by the other letters, depending on the letter's place in the word (Figure 8).

However, other factors, such as font (in terms of its component lines), the thickness of the lines and the linear values of letters can help strengthen or weaken this orientation. But generally dot presence is not altered in any way.

In the above examples, the visual role of dot in anchorage was studied. Now, the linear role of dots in Farsi typography is discussed.

Letter “ق” is like letter “ن” in some aspects: it has a vertical part and a curved part. In addition to the two parts, there is a complete curve (a closed circle) on the top of letter “ق” and further complete the visual flux of the letter and yet acts more effective than the vertical part of the letter (Figure 9). For letter “ق” without dots, there are three main directions: 1) vertical direction from top to bottom,

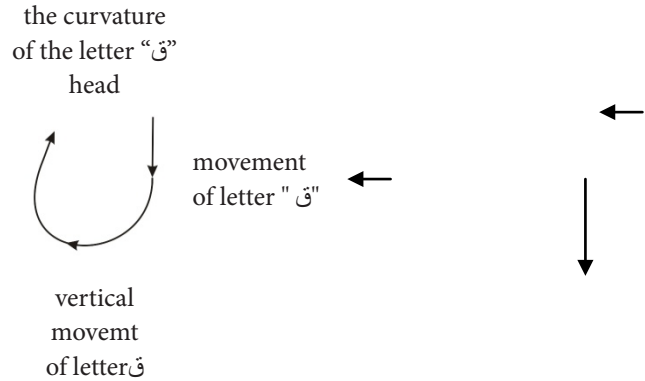


Figure 9. Component lines and their dominant direction in the structure of letter “ق”, (Source: the authors).

Figure 10. Direction of the visual movement without dot and the beginning curvature of “ق”, (Source: the authors).

2) direction from left to right, 3) vertical direction from bottom to top slightly inclined to the right. (Figure 10)

The curved end of the letter “ق” like that of the letter “ن” is in an upward direction slightly inclined to the right, but the possible curvature of the head of letter “ق”, is higher than the end of letter “ق” and dots of letter “ق” simultaneously deliver the viewer look from the end of the curve and transfer it to a line from right to left (Figure 11), then the circular motion of “ق” head again calls the vision inward and the final direction of rotation is from right to left aligned with the direction of reading Farsi text (Figure 12). Dots of letter “ق” prevent the vision from leaving the letter and particularly the visual interruption of the visual direction, resulting from the visual linear form of dots.

As there are three moves from right to left compared to one move from left to right (as a preventive visual movement) and finally, with the dots of the letter “ق” the dominant direction of the letter is from right to left in line with the reading direction of Farsi texts.

Another example of a single two-dot letter discussed is the letter “ت”, which is a non-curved letter. Horizontal and vertical lines are forming the visual shape of the letter. Stretching direction of the letter “ت” is aligned with the stretching direction of its dots but they may not be aligned in terms of orientation. By the explanation of orientations of letter “ت”, visual moves and rotations can be easily realized. Orientations of letter “ت” act like a rotating carousel and the visual rotation can also be effective in establishing calm and rest for the eyes. (Figure 13), meaning that while the effective transition of the sight make it stop a little.

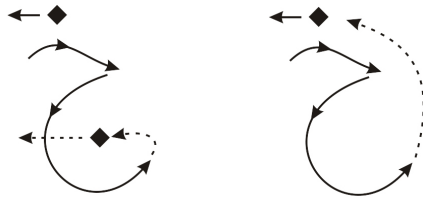


Figure 8. Direction of visual motion of lines in the letters “خ، ج، خ” (Source: the authors).

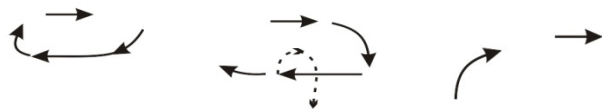


Figure 11. Delivery of the vision from the curvature end, (Source: the authors).

Figure 12. Transfer of the vision from dots to head curve of “ق”, (Source: the authors).

Figure 13. Visual transmission by dots of letter “ق”, lines and dots of letter “ت”, (Source: the authors).

This question may arise in the mind that if dot plays a strong role in transferring the reader sight during Farsi texts, then how letters without dots are placed in the visual rotating process? The advantage of ligaments between letters can be used in Farsi script for letters with and without dots, because many shifts in Farsi letters are balanced through ligaments, and prevent the vision from permanently leaving the moving text. In fact, Farsi letters, with and without dot, attached or detached, are all together, causing anchorage and visual comfort. The anchorage and comfort during the continuation of Farsi writing are very important for visual transfer and visual power, but detailed description of the issue is beyond the scope of this paper. Just to clarify the role of legal dot's place, in attached Farsi writing, we suggest the following example.

In the expression, “ادخ مان م¹ب” there are three one-dot letters (ب، ن، خ) and four letters without dot (ا، م، د). The dominant direction of letters (ا، م، د) is the vertical direction and there is almost no visual stretching, despite these inconsistencies, the expression enjoys a balanced and almost symmetric visual form and also has a direction from right to left aligned with the reading direction of letters.

¹ In the name of God

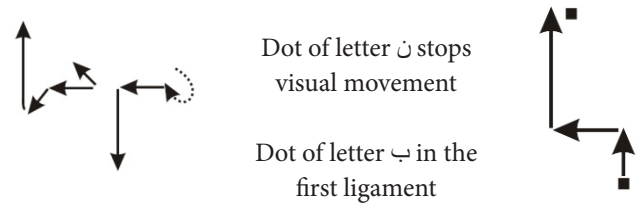


Figure 14. The visual direction resulting from dots of letters, (Source: the authors).

Figure 15. The visual direction resulting from lines of letters, (Source: the authors).

Visual direction of the above expression starts from the lower dot, i.e. the dot of the letter “ب” and continues upward in a vertical direction, then moves to left by stretching letters horizontally and moves in the vertical direction upward for the letter “ن”, this letter due to its arrow-like shape in the word “مب” quickly takes the vision to dot of letter “ن” (Figure 14).

Dot of the letter “ن” causes a visual stop and prevents visual motion in the upward direction of letter “فلا” and prevents vision from leaving and immediately calls the curve at the beginning of letter “م” to move on. In horizontal and shortly stretching direction of letter “م” from right to left visual moves to letter “خ” and then to “د”, so far the dominant direction of visual movement is from right to left (Figure 15).

But the role of dot of letter “خ” compared to some letters without dot is important for some reasons:

1. Creating a visual anchorage and visual stop in letter “خ”, which prevents the vision from leaving. Because the letter “خ” at the beginning of its visual form, is much like a triangle and moves upward and dot of letter “خ” plays an undeniable role in this place, especially for maintaining visual balance and returning of the vision to the expression (Figure 16).

2. Helping maintain visual balance of the word ‘ادخ’, due to the oblique orientation of letter “د” and the attaching to the stretching part of the letter “فلا” in the word ادخ there is a feeling of imbalance and the role of dot in maintaining the balance of the expression is determined here: a) the vertical direction of letter م due to its high downward stretching, can be effective in visual deviation from the main direction of the expression, but the presence of dot in letter “ب” in parallel with and in an opposite direction to the handle of letter “م” is important for reducing the deviating energy of letter “م” in this expression. b) At the same time dot prevents the vision from leaving resulting

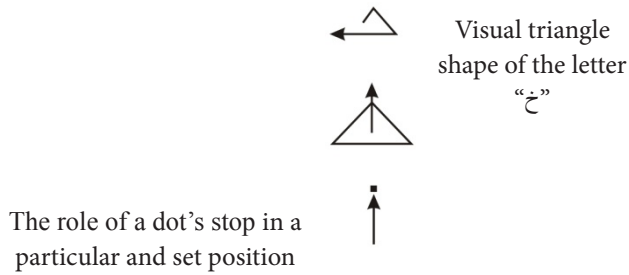


Figure 16. The visual direction resulting from building lines of letters (Source: the authors).

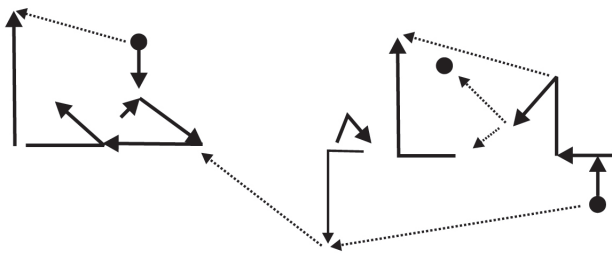


Figure 17. Dot has four preventive components of visual exit in this short expression (Source: the authors).

from vertical movement of letter **ن** attached to letter **خ** in the expression "ادخ مان مب". Visual stop resulting from dots of the letter (خ.ن) prevents the vision from leaving and visually deviating. C) Also dot of letter (خ) in the word "ادخ" prevents visual exit through triangle form of letter (خ) in the word ادخ and in the upward direction of letter (فل) (Figure 17).

It should be noted that designing procedure of monotypes, logotypes, type design, is all beyond the scope of the current discussion. The following table shows the formal presentation of dot in other Farsi letters. Table 4 shows displaying the formation of dot in other Farsi letters.

4. Conclusion

According to the material presented the relationship between the basic design of plastic arts and Farsi typography can be easily observed. Locating Farsi typography within the framework of basic design of plastic arts represents the detailed rules contained in this alphabet, although it is sometimes considered cumbersome. However, following two points should be noted:

1. visual relationships are in the essence of Farsi Typography and can be used in the design of graphical work without application of any particular changes.
2. Farsi typography with no need to make any visual changes can provide both visual and verbal attributes simultaneously to the graphical work and allow a graphic designer, to benefit from these two powers of Farsi typography.

Exact place of dot in Farsi letters is among rules and principles governing Farsi typography with visual support. Therefore the exact place of dots in Farsi typography causes:

Table 4. Displaying the formation of dot in other Farsi letters / Source: the authors - 2011

Letters with dot	Visual rotation (with effective presence of dot)	Connection	Remarks
ب-پ-ت-ث		با-بس-بو-بی-بخ- بک-بن-بل-بع- بف-بق-بر-بط-بص	The Farsi horizontal letters like "ب" dot plays role in creating a visual circulation. The circulation in the absence of binding to other letters is a turning carrousel. And in the case of ligament to other words, transfers the vision to the next letter. In letter "ب", the rotation is done by a dot, while in the letters "پ" and "ث", this role is performed by the group of dots. In these letters, dots due to the visual focus of dots, insist on their dot role and in the letter "ت", the group of dots are linear, in terms of visual function but the eye transition is still actively performed by the dots of letters.
ج-چ-خ		خا-خس-خو-خی-بخ- خک-خن-خل-خغ-خ- ف-حق-خر-خط-خص	(Fully explained in the text)

ذ-ز		زا- زس- زو- زی- زخ- زک- زن- زل- زع- زف- زق- زر- زطرزص	For letters “ز”, “ذ” due to the fact that the letters are without ligament in nature, the visual rotation usually starts from dots and continues to the left (right to left), while allows the vision to move.
ش		شا- شس- شو- شی- شخ- شک- شن- شل- شع- شف- شق- شر- شط- شص	-
ض		ضا- ضس- ضو- ضی- ضخ- ضک- ضن- ضل- ضع- صف- ضق- ضر- ضط- ضص	-
ظ		ظا- ظس- ظو- ظی- ظخ- ظک- ظن- ظل- ظع- ظف- ظق- ظر- ظط- ظص	-
غ		غا- غس- غو- غی- غخ- غک- غن- غل- غع- غف- غق- غر- غط- غص	-
ف		فا- فس- فو- فی- فح- فک- فن- فل- فع- فف- فق- فر- فط- فص	-
ق		قا- قس- قو- قی- قح- قک- قن- قل- قع- قف- قق- قر- قط- قص	(Fully explained in the text)
ن		نا- نس- نو- نی- نخ- نک- نن- نل- نع- نف- نق- نر- نط- نص	(Fully explained in the text)

1. Accurate and proper readability of Farsi text.
2. To form an effective transition direction of the reader's vision during Farsi text in line with the reading direction and progress Farsi text from right to left.
3. Visual balance of the work, visual stop or movement during the reading process of Farsi text.

The above cases in Farsi typography in each graphic media especially in the works in which “title” or “slogans” are considered as one of the visual factors along with other components, cause:

1. To prevent illegibility of letters.
2. To prevent challenging the audience and posing written riddles.
3. To prevent improper and non-timely transfer of verbal message through writing to the audience.

But since the visual role of dot in Latin typography has no resemblance to the visual role of dot in Farsi

typography, no common visual strategy can be used for organizing dots, designing layout of Farsi and Latin typography.

Based on the above it can be concluded that considering the legal place of dots is fundamental in cases where Farsi typography is used in graphic media to highlight or enhance the visual message. Place of these dots has visual principles and any change in their place, as described above may disturb visual messaging, that is mainly contrary to its function.

5. Acknowledgements

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