

1 7.2 Icon design

2 Icons are signals [2] that are designed to transmit essential information about different actions to a large
3 number of people. They help people to find their way in various complicated places, so they should be
4 designed to be understandable and easily perceived by most people. Thus, visual perception concepts play
5 an important role in the icon design.

6 To design an icon, one needs to choose the attributes that best convey the message while
7 minimizing the perceptual processing of the icon [2]. Then, they need to carefully combine these
8 attributes into a single configuration that perceived as one object. By using proximity, links or other
9 means of combining multiple elements, designers can create a perception of one identifiable, separate and
10 distinct object [1]. Taking the restaurant icon shown in figure 1 as an example, consists of three different
11 elements (a fork, a spoon and a plate) that are combined in one icon by using proximity and the semantic
12 relation of the elements. As a whole, they convey a certain interpretation of a food place. Hence,
13 perceptual organization and object perception play an important role in designing icons which helps
14 perceiving the attributes of an icon as one unit promoting fast processing.



Figure 1: Icons: (from left to right) restaurant, help, automobile, and taxi

15 Applying some of the Gestalt principles (e.g. similarity and proximity) in designing a collection
16 of icons helps maintaining the consistency. It can integrate several icons into one group. For example, the
17 use of proximity and similarity in icon size, lines, and light direction integrate the icons, shown in figure
18 2, into one group that defines the drawing tool palette and attracts users' attention to them as a group.

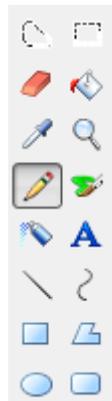


Figure 2: Drawing tool palette

19 Designers could add new features to the known icons to create new ones that are distinguishable
20 and easy to find by applying a principle of asymmetric visual search [4] where added feature could make
21 objects easily distinguishable. This is applied to the icon design as shown in figure 1, where the added
22 characteristic sign on the top of the automobile icon communicates a new concept, a taxi here. This
23 simple added feature makes the icon for a taxi easily distinguishable from other automobile icons.

24 Preattentive processing and visual attention also play roles in enhancing and designing effective
25 icons. The effective use of contrast and negative space principle make icons stand out, preattentively
26 processed and easily grabs users' attention. It helps focusing the attention into the important details of the
27 icon and creates visual interest [3]. For example, the good use of the negative space and contrast in the
28 question mark icon shown in figure 1 directs user attention, makes it stand out and easily recognize its
29 semantic.

30 In conclusion, this essay has presented some examples of how object perception, perceptual
31 organization, preattentive processing, and visual attention could be applied to enhance icon design and
32 make icons easily perceived and recognized by many people.

33 References:

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