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## The Impact of the Educational Process to the Perception; Evaluation of the Urban Elements Relative to The Gestalt Theory

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### Abstract

Urban elements are of capital importance and make different sense to both the city and the users. These elements enable users establish visual or physical relationship with the city, they are three-dimensional elements which provide visual richness and identity to the city and to define, identify and specialize the environment in terms of the city. As stated in Gestalt theory, perception of urban elements is the impact in the whole organized by the relationship between the element and other elements in its sight. In order to present the whole, the sight and viewpoint that change depending on the vertical and horizontal eye movements in different distances are to be discussed. Regarding the design of urban elements, the sight and viewpoint play important roles in making decisions for connecting the element with the main circulation of the place and designing other stable and moving elements such as tree, people, building and furniture surrounding the element. In this sense Ataturk Monument in Meydan Parki, one of the important focal points of Trabzon with its historical background and sustainability of city, is evaluated by the users as part of Gestalt theory and principles. The purpose of the study is to identify, in the distance with the highest perceptibility, how these urban elements are perceived and whether the other elements in the sight are effective in perception of the element or not. What the users perceive and how they perceive it in the point with the highest perceptibility, what are the prominent Gestalt theories and principles in the photo with the highest perceptibility, and these theory and principles are studied by means of the students of landscape architecture with different degrees. The study is composed of two sections, introduction and research. In the introduction, perception, environmental perception, factors that affect the perception, and Gestalt theory and principles are briefly explained whereas in the research the purpose of the study, the field of the study, the stages and the methods of the study are determined and as an analysis of data, results, discussions and conclusions are found out. The study indicates that the design problems of the urban elements are not limited with the single design of the element but also the contextual and perceptual aspects have to be discussed and interdisciplinary studies are required. It has been come through that in designing urban elements, determining where the

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highest perceptibility of the element is required and in this position everything/elements in the sight must be considered as a part of the design and the design of the element must be discussed as this whole. The study is important as it points to the extent of the design problem of an urban element.

Keywords: Perception, Gestalt theory, Trabzon Meydan Park, Ataturk Monument

## 1. Introduction

Perception is the interpretation of the elements and figures that alert sense organs by the brain. Human brain makes this interpretation in parallel with its instincts and experiences. Promoting this idea, Aksoy (1977) states that people understand the environment by the brain but the process is not just limited with the sense organs. According to Gurer (1990) perception is a significant and complicated brainwork that stimulates the sensation and images received before at different times, unites this stimulation as a set, and combines them all with what causes sensation.

Rapoport (1977) defines the perception of the environment as the process of selection and decision as a result of the sustainability of understanding and consideration of the environment, sensation of the environment by five senses, understanding the way environment is perceived, and identification of qualifications of the environment. According to the formal approach of environmental perception, to be able to identify the environment it is to be comprehended thoroughly and evaluated as a whole. According to Erkman (1973) every single form is not perceived as what it is but as a part of the environmental whole to which it belongs. In other words, there is not a certain factual form but there is a form in the unified whole.

Perception also changes according to who perceives (subject), what s/he perceives (object) or s/he wants to perceive and how s/he wants to perceive it. Erkman (1973), states that perception is a phenomenon which changes from person to person and it depends on the people's perception systems, personalities, social groups, culture and environment. Namely, the perception of the place is, the perfect understanding of the messages that it delivers physically (dimension, color, pattern, light, sound, smell, rhythm, sustainability, configuration, movement etc.) by the perceiver together with his/her collectives, livings, and experiments, in short his/her whole life related to this place (Izgi, 1999).

Movement as one of the important concepts that effects perception is a changeable factor for people's experiencing the place. Different perspectives are formed in people who are moving in continuation like transitions between interior and outer spaces and the circulation, direction, and connections in the place. As a result of this different images related to the place are created The spatial relationship between the place and the people moving in the place and the relationship between the elements that form the place change by moving. As the point of view constantly changes, people form a whole place image with combining different place details in their minds.

Zevi (1957) states that a place is not a stable phenomenon but it becomes meaningful in the continuation of movement and time with the experiences of people who are living in the place. He especially lays stress on the effect of the concepts of people, movement, and time in perception and experience of the place. On the other hand Kuban (1992) emphasizes that an architectural place is to include the characteristics of personal life as well as being formal and it could only exist with the movement and lighting so it must be handled with these features.

Studies directed to perception have made a start with the first definition of stimuli-object relationship in Gestalt psychology and made a progress primarily in figure-object relationship (Ittelson & Franck, 1976). The psychologists get involved in Gestalt psychology mention different factors to gain the perception of the figure. These factors have all been effective in all design-based disciplines.

Order makes it possible to focus on what is alike and what is different, what belongs together and what is segregated. When nothing superfluous is included and nothing indispensable left out, one can

understand the interrelation of the whole and its parts, as well as the hierarchic scale of importance and power by which some structural features are dominant, other subordinate (Arnheim, 1971)

Knowing how people perceive their environment, finding out the factors that effect perception, and searching out the factors that cause different perceptions of environment by people while it is seen in the same way are significant in terms of architectural practice (Erturk, 1984). Every design makes sense only when people perceive it. People are both the determiners and the evaluators of the places. Also Gestalt theory and principles which makes how people organize what they perceive into rules with some principles offers an essential method by means of explaining the perception of the product with the framework of some rules in architecture.

### **1.1. Gestalt Theory And Principles**

*“Seeing is a process of ordering”*

Lupton (1993) states that: “According to Gestalt theory, the brain spontaneously orders and simplifies sense data into structured, wholistic patterns (Moszkowicz, 2011).

Gestalt (is defined as form, shape; configuration, structure; arrangement, organization; figure. Also gestalten (verb): to organize, arrange, structure, shape, carry out, fashion, mold, give artistic or literary form; to become, develop or turn into something (Shorter Oxford English Dictionary, 2002; Harper Collins German Dictionary, 2004).

“Gestalt qualities,” also called “form” or “whole” qualities, were first systematically formulated in 1890 by the Austrian philosopher Christian von Ehrenfelsin. He delineated two types of form qualities, temporal and nontemporal. Temporal qualities are processes over time, such as a melody. Nontemporal qualities are spatial shapes, such as a square or triangle (Smith, 1988; Sabar 2013).

Gestalt psychologists expanded on Ehrenfels’s qualities, applying them to human psychology. Their work greatly increased our understanding of perception, cognition, thinking, learning, memory, emotional expression, patterns of behavior and movement, aesthetics, motivation, field theory, and the human organism (Kohler, 1959; Sabar 2013).

Gestalt psychology began as an academic experimental psychology in early twentieth century Berlin. Max Wertheimer, Wolfgang Kohler, and Kurt Koffka were the founders of the Berlin School, and their work focused on visual perception. In laboratory experiments various visual images were presented to subjects, who reported back on how they organized these stimuli into subjective perceptions (Ehrenfels, 1988; Corsini, 2002; Sabar 2013).

As far as the design field is concerned, Gestalt theory has had two main contributions. The first is that it tried to formulate the rules of visual perception through an analysis of object patterns and groupings, and secondly it has formulated principles of problem solving and creativity. Gestalt means shape, form, pattern or configuration in German, and Koffka claimed that ‘in addition to the sensory elements of a perceived object, there is an extra element which, though in some sense derived from the organization of the standard sensory elements, is an element unto itself’ (Koffka, 2000).

**Figure/Ground:** figure-ground organization occurs when two adjacent regions in the visual field are perceived as if one region (the figure) is nearer to the viewer and shaped by the common edge, whereas the other region (the ground) is farther from the viewer and not bounded by the common edge, appearing instead to extend behind figure (Palmer 2002; Burge, 2008).

**Principle of *Pragnanz*:** Literally, the German word *Pragnanz* means conciseness, simplicity, or precision. In Gestalt psychology, Wertheimer’s Law of *Pragnanz* is the “principle that the organization of any structure in nature or in cognition, will be as ‘good’ as the prevailing conditions allow” (Corsini, 2002). This high level of organization is what has been called a “good Gestalt.” This “good”

encompasses the qualities of order, equilibrium, sharpness, harmony, integrity, completeness, and complexity, together with the requisite interrelationship and integration of all parts into a meaningful whole (Sabar ,2013).

**Experience:** Our perception automatically removes from deviations occurring in the differing circumstances or are incomplete states.

**Constancy:** If the forms are associated each other, the character and structure of forms becomes more specific and gain a better form feature (Aydinli, 1986).

**Law of organization:** The meaning of “organization” can best be understood by looking at this word from several perspectives: structure; figure/ground; dynamics or forces; levels of organization. Gestalt psychologists formulated a number of principles of perceptual organisation to describe how certain perceptions are more likely to occur than others. Some of their principles were primarily to do with the grouping of sub-regions of a figure from ground.

**Proximity:** One of the most important factors determining the perceptual organization of scene is proximity of elements within it. Things that are close together.

**Similarity:** Things that look “similar” are grouped together. Benzerlik form, büyüklük, renk gibi ortaklıklarla sağlanabilir.

**Common fate;** Things that appear to move together are grouped together. Johansson’s demonstrations suggest that common fate involves much more than simply grouping together elements that have a common speed and direction.

**Good continuity:** Gestaltists argued that perceptual organisation will tend to preserve smooth continuity rather than yielding abrupt changes.

**Closure:** Is a basic qualitative Gestalt principle about the completion or closure in the mind of visually incomplete images. The closure principle grounds upon all previous principles and expresses the Gestalt tendency towards unification and wholeness. This principle is also closely related to the issue of Gestalt simplification for it may work through the addition of missing parts, as well as the elimination of redundant ones, a choice that seems to depend on the degree of simplicity or complexity of the image.

When Gestalt theory became more popular in the design field, further rules were added (like closure and closed forms) that were deliberately used by designers of the environment. The well-known design principles of symmetry, alignment and simplicity are also parts of the Gestalt rules. Common fate and connectedness became attributes of design too (Bruce V., Green P.R. & Georgeson M.A., 2003; Mennan, 2009).

## 2. Research

### 2.1 The Purpose and Field of the Study

The purpose of the study is to identify how the urban element is perceived in the distance with the highest perceptibility and whether other environmental elements in the sight are effective in perceiving the element. Accordingly, how the monument is perceived in different distances is asked users and some questions like what the distance is between observer and observant in the point with the highest perceptibility, what the users perceive and how they perceive it in this distance, what are the prominent Gestalt theory and principles in the photo with the highest perceptibility, and whether the quality and principles change depending on educational background are answered. The study shows that the design problem of the urban element is not just limited with the single design of the

element but the contextual and perceptual aspects of the element are to be discussed and this requires an interdisciplinary study.

For this purpose Ataturk monument in Meydan Parki, node of the city, is studied. Meydan Parki is located in the place between Gazipasa uphill and Taksim uphill, the centre of Trabzon. It is in the interface of the trading axis between the streets of Uzun Sokak, Maras, and Kunduracılar in Trabzon. Also, it has a strategic location where administration axis of the Old Town Hall and local transportation axis cross (Fig 1).

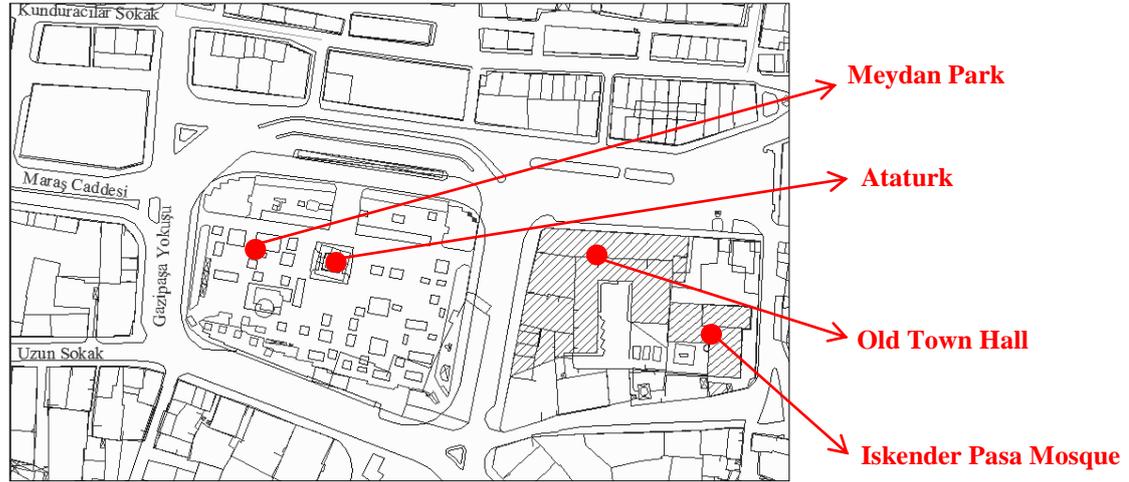


Figure 1. Location of Meydan Park and Ataturk Monument (the Archive of Trabzon Municipality)

The park, known as Belediye Parki or Meydan Parki today, was called Millet Bahçesi before and it has been an important social place which is known for its famous restaurants and tea gardens even also hosted a cinema hall dating back World War i which is formerly known as Turan cinema than called Sumer cinema (Capa, 2004) (Fig 2, 3).



Figure 2. Old conditions of Meydan Park in 1940, 1925 ve 1950 (<http://forum.bordomavi.net>, <http://www.koprubasi.net>, <http://www.trabzonum.net>)



Figure 3. Old Town Hall, Sumer Cinema (Turan Cinema), Meydan Park  
(<http://maviboncuk.blogspot.com.tr/2013/02/trabzon-opera-sumer-cinema.html>)

Meydan Parki was renovated in 2011. Before the renovation the park was an area surrounded by heavy traffic as a bus stop. In the park there were some urban furniture such as phone-boxes, a stall, a statue, flagstaffs, stil existing historical trees, and Ataturk monument.

The renovation of the park was carried out by Trabzon Municipality within the context of the project called “the reconstruction of Meydan Park”. The renovation was accomplished by 2011 European Youth Olympic Festival held in the city. First of all the street between the park and the old Town Hall was pedestrianized. The park includes some places like cafeteria, postoffice, tourist information and also urban furniture like seating elements, surface elements, fountains, lighting elements, and garbage bins are designed in the park. Ataturk monument and historical trees are protected within the context of the project. The old and new conditions of the park are displayed in figure 4. with the photos belonging to the same location.



Figure 4. Before The Renovation of Meydan Park in 2008, After The Renovation of Square Park in 2013 (Archive of Yildirim Y. D.)

The only element which is protected and isn't damaged in terms of placement, location, form, and etc. after the renovation is the Ataturk monument. The monument itself hasn't changed but the elements around it have changed. Both before and after the renovation the monument is situated nearby the inner circulation (main pedestrian line) (Figure 5). The most important reason why Ataturk Monument is studied is that the place and location of the statue have stayed the same despite the dramatic changes both in and around the park.



Figure 5. Location of Ataturk Monument Before And After The Renovation of Park (the Archive of Trabzon Municipality)

## 2.2. Stages/Working Process and Method

Since open, half-open, and closed areas, greenery, and urban furniture are situated in the park, it is the study field of landscape architecture and it has been used by the youth in recent years. For these reasons the interview group is composed of landscape architecture students. In addition, the study is carried out with the 1<sup>st</sup>, 2<sup>nd</sup>, 3<sup>rd</sup>, and 4<sup>th</sup> grade students of Landscape Architecture who got the same points in the university entrance exam in order to determine if the perception changes according to the educational status. Among 252 landscape architecture students, a questionnaire is carried out with totally 50 students by 10 among 1<sup>st</sup> and 2<sup>nd</sup> grade students and by 15 among 3<sup>rd</sup> and 4<sup>th</sup> grade students. Classroom sizes are taken into account in the total number of the questionnaires and its distribution by classes; therefore, much more 3<sup>rd</sup> and 4<sup>th</sup> grade students are involved in the study. The number of the questionnaires is determined as 40 as a result of reliability test; however, considering deficit answers the numbers of interviewees are increased by 50.

$$n = \frac{N \times (t)^2 \times (p) \times (q)}{(N - 1) \times (d)^2 + (t)^2 \times (p) \times (q)} \quad 40 = \frac{252 \times (1,96)^2 \times (0,8) \times (0,2)}{(252 - 1) \times (0,1)^2 + (1,96)^2 \times (0,8) \times (0,2)}$$

N: the number of individuals in the universal

p: incident

q: non incident

t: error level

d: deviation depending on incident (Sumbuloglu, 1998)

Through a right-angled movement of the monument emphasized in the study, the exact distance covering the sight that contains the whole monument is determined as 6 meters. Therefore, 36-metered-distance between the monument and the eastern entrance of the park is divided into 6-

metered spaces and totally 6 points are identified then totally 6 photos are taken in these points (Fig 6).

These photos are demonstrated to the subjects in a questionnaire form with the nine of Gestalt principles such as proximity, similarity, closure, good continuity, pragnanz, constancy, experience, and perceptibility.

However, as the questionnaire is applied to the students with different degrees all Gestalt Principles are exemplified to the students and all the students are provided with the same level of knowledge.

The photographs of the study are shown to the subjects with a reflector one by one at the same time and at the same place then the students are asked to number these principles from 1 to 5 and identify the most suitable elements for these principles. Also the students are asked to number the perceptibility of the elements in each photo from 1 to 5 and order the elements from what they perceived first to last. Based upon the viewpoint of moving people, area into view, in other words the sight, of the monument with the highest perceptibility is determined. The other environmental elements like people, trees, and fountain that affect the perceptibility of the monument are asked to be evaluated.

Average points of interviewees to the Gestalt Principles during the movement are counted first separately for each grade then totally for all grades by using Excel. The data gathered is detailed with tabulation and graphical presentation.

As one of the results of the studies examining the visual field and design relationship  $D = L \times a / 3400$  is stated by considering the viewpoint and the distance between observer and observant in order to make the objects seen better in visual field (URL 1).

D: observed dimension as given metres

L: the distance between the observation point and the observed

a: angular size as given minutes

In the study the viewpoint in the distance with the highest perceptibility is determined to correspond with the viewpoint which is calculated by the formula above.

Finally the results are revealing depending on the data analysis and evaluation.

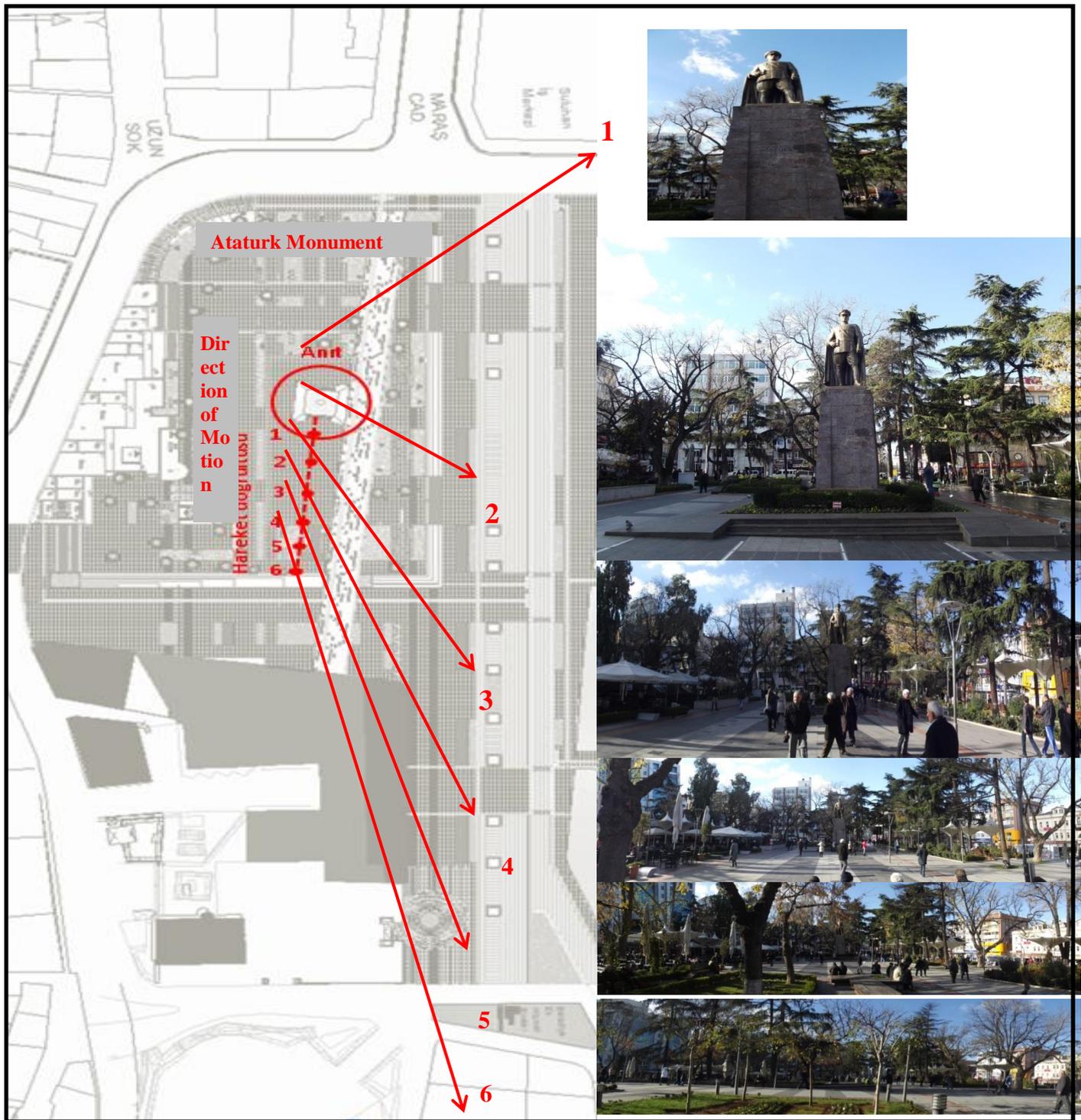
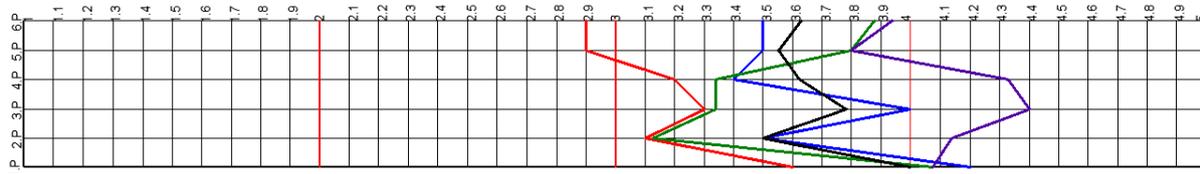


Figure 6. Photos and their locations

### 2.3. The Results

Six photos taken in the distance from the focal point, the monument are evaluated from 1 to 5 by the 1<sup>st</sup>, 2<sup>nd</sup>, 3<sup>rd</sup>, and 4<sup>th</sup> grade students of landscape architecture students in terms of proximity, similarity, closure, good continuity, pragnanz, constancy, perceptibility, and past experience principles. In the scoring system, the score intervals are determined as [1-2] much less effective, [2-3] less effective, [3-4] effective, [4-5] more effective. In the graphics 1<sup>st</sup> grades are pointed in blue, 2<sup>nd</sup> grades are in red, 3<sup>rd</sup> grades are in green, 4<sup>th</sup> grades are in purple, and the average for all grades are shown in black. The results are as follows:

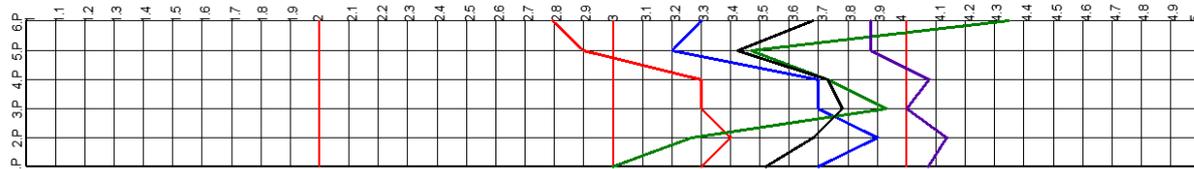
- According to the average, closure principle decreases from 1st photo to 2nd, increases from 2nd to 3rd, decreases again from 3rd to 5th and increases again in the 6th also *closure is effective in all photos*.
- For 4th grades, while proximity principle is *very effective* in the 2nd, 3rd, and 4th photos, it's just *effective* for other grades.
- For 2nd grades, while proximity principle is *poor* in the 5th and 6th photos, it's just *effective* for other grades (Fig. 7).



blue color: first grade , red color: second grade , green color:third grade , purple color:forth grade, black color: average of grades

Figure7. Proximity principle according to the grades

- According to the average, similarity principle constantly increases from 1st photo to 3rd, decreases from 3rd to 5th, and increases again in the 6th also *similarity is effective in all photos*.
- For 4th grades, similarity quality is *very effective* in the first four photos, but they are just *effective* for other grades.
- For 2nd grades, while similarity quality is *poor* in the 5th photo, it is *effective* for other grades.
- For 2nd grades, while similarity quality is *poor* in the 6th photo, it is *very effective* for 3rd grades and *effective* for other grades (Fig. 8).

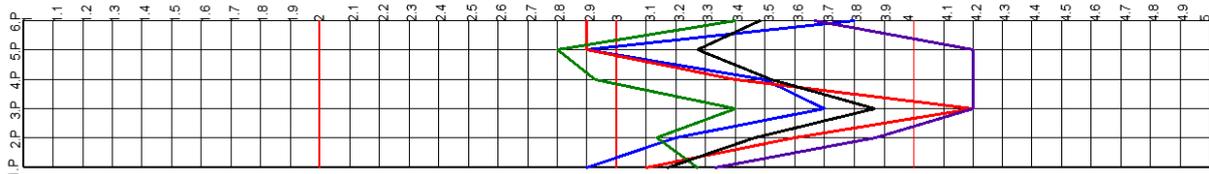


blue color: first grade , red color: second grade , green color:third grade , purple color:forth grade, black color: average of grades

Figure 8.Similarity principle according to the grades

- According to the average, it is seen that closure principle increases in the first 3 photos, decreases from 4th to 5th, and increases again in the 6th also *closure is effective for all grades*.
- For 1st grades, while closure quality is *poor* in the 1st photo, it is *effective* for other grades.
- For 4th grades, while the closure quality is *very effective* in the 4th photo, for 2nd grades it is *poor* and it is effective for other grades.
- For 4th grades, while closure quality is *very effective* in the 5th photo, it is *poor* for other grades.

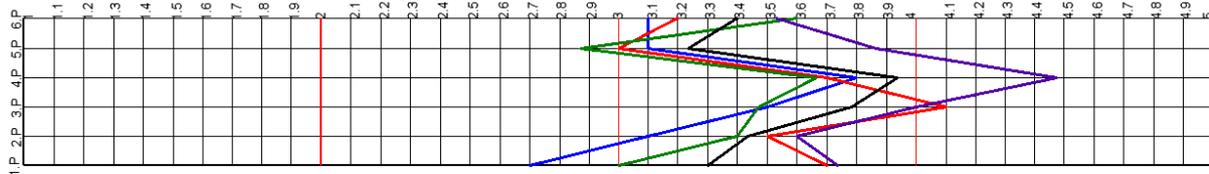
- For 2nd grades, while closure quality is *poor* in the 6th photo, it is *effective* for other grades (Fig. 9).



blue color: first grade , red color: second grade , green color:third grade , purple color:forth grade, black color: average of grades

**Figure 9. Closure principle according to the grades**

- According to the average, it is seen that good continuity principle increases in the first 4 photos, decreases in the 5th, and increases again in the 6th also *good continuity is effective in all photos*.
- For 1st grades, while good continuity quality is *poor* in the 1st photo, it is *effective* for other grades.
- For 2nd and 4th grades, while good continuity quality is *very effective* in the 3rd photo, it is *effective* for other grades.
- For 3rd grades, while good continuity quality is *poor* in the 5th photo, it is *effective* for other grades (Fig. 10).

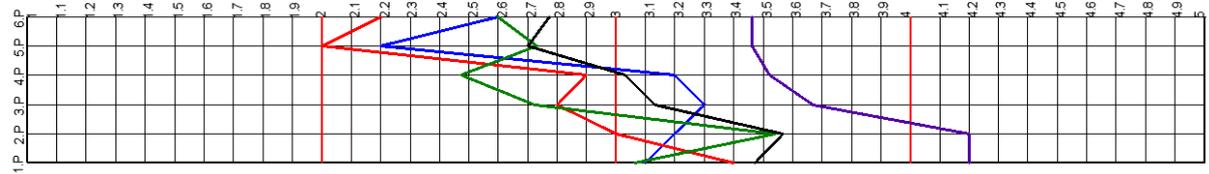


blue color: first grade , red color: second grade , green color:third grade , purple color:forth grade, black color: average of grades

**Figure 10. Good continuity principle according to the grades**

**Discussion of pragnanz, constancy, experience concepts:**

- According to the average, it is seen that pragnanz principle increases in the 2nd and 6th photos and decreases constantly in other photos.
- Pragnanz quality is effective in the first 3 photos for 1<sup>st</sup> grades; for 2<sup>nd</sup> grades in the 1<sup>st</sup> and 3<sup>rd</sup> photos; for 3<sup>rd</sup> grades in the first 2 photos; and for 4<sup>th</sup> grades in all photos.
- For 4th grades, while pragnanz quality is *very effective* in the 1st and 2nd photos, it is *effective* for other grades.
- For 2nd and 3rd grades, while pragnanz quality is *poor* in the 3rd photo, it is *effective* for other grades.
- For 1st and 4th grades, while pragnanz quality is *effective* in the 4th photo, it is *poor* for other grades.
- For 4th grade, while pragnanz quality is *effective* in the 5th and 6th photos, it is *poor* for other grades (Fig. 11).



blue color: first grade , red color: second grade , green color:third grade , purple color:forth grade, black color: average of grades

**Figure 11. Pragnanz principle according to the grades**

- According to the average, it is seen that constancy principle increases in the 2nd photo and decreases in other photos. Constancy is effective in the first four photos for 1st and 2nd grades, and effective in all photos for 3rd and 4th grades.
- For 1st and 2nd grades, while constancy quality is *poor* in the 5th and 6th photos, it is *effective* for other grades (Fig. 12).

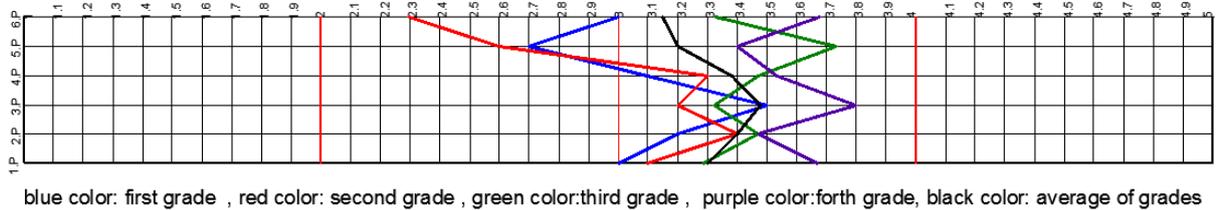


Figure 12. Constancy principle according to the grades

- According to the average, it is seen that experience principle increases in the 1st photo and decreases in other photos. Experience is effective in all photos for 4th grades; in the first five photos for 1st grades; in the first 3 photos for 2nd grades; and only in the 2nd photo for 3rd grades. Experience is only effective in the first four photos.
- For 4th grades, while experience quality is *very effective* in the 1st photo, it is *poor* for 3rd grade and *effective* for other grades.
- For 4th grades, experience quality is *very effective* in the 2nd photo and *effective* in other photos.
- For 4th grades, while experience quality is *very effective* in 3rd photo, it is *poor* for 3rd grades and *effective* for other grades.
- For 2nd and 3rd grades, while experience quality is *poor* in 4th and 5th photos it is *effective* for other grades.
- For 4th grades, while experience quality is *effective* in 6th photo it is *poor* for other grades (Fig. 13)

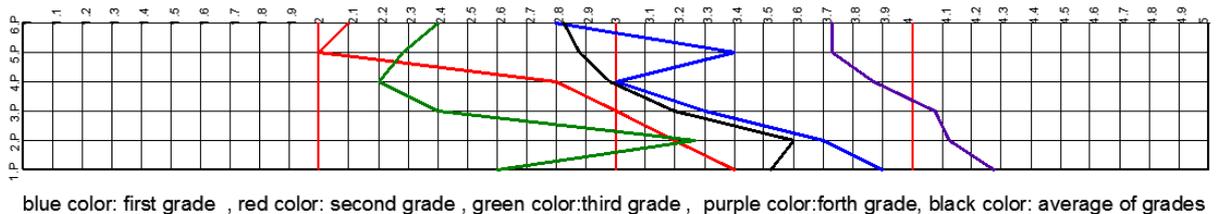
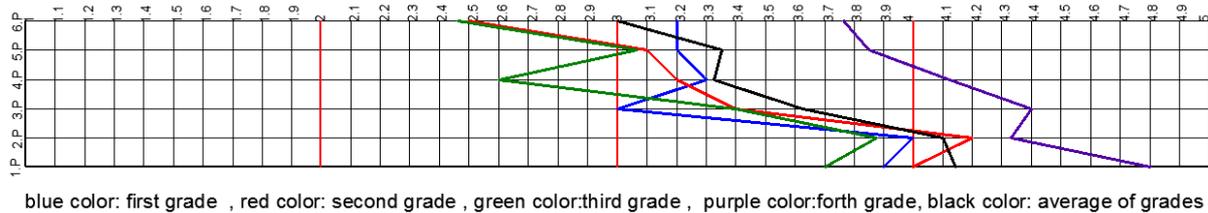


Figure 13. Experience principle according to the grades

- According to the average, it is seen that perceptibility decreases from the 1<sup>st</sup> photo to the 4<sup>th</sup>, increases in the 5<sup>th</sup>, and decreases again in the 6<sup>th</sup> photo. For 1<sup>st</sup> and 4<sup>th</sup> grades, all photos; for 2<sup>nd</sup> grades, the first five photos; for 3<sup>rd</sup> grades, the 1<sup>st</sup>, 2<sup>nd</sup>, 3<sup>rd</sup> and 5<sup>th</sup> photos are perceptible.
- For 2<sup>nd</sup> and 3<sup>rd</sup> grades the perceptibility of the 2<sup>nd</sup> photo and for 4<sup>th</sup> grade, the perceptibility of the 1<sup>st</sup> photo is the highest (Fig. 14).
- For 4th grades, while perceptibility is *very high* in the 1st, 2nd, and 3rd photos, it is *high* for other grades.
- For 4th grades, while perceptibility is *very high* in the 4<sup>th</sup> photo, it's *low* for 3rd grades and *high* for other grades.
- For 1st and 4th grades, while perceptibility is *high* the 6th photo, it is *low* for other grades.



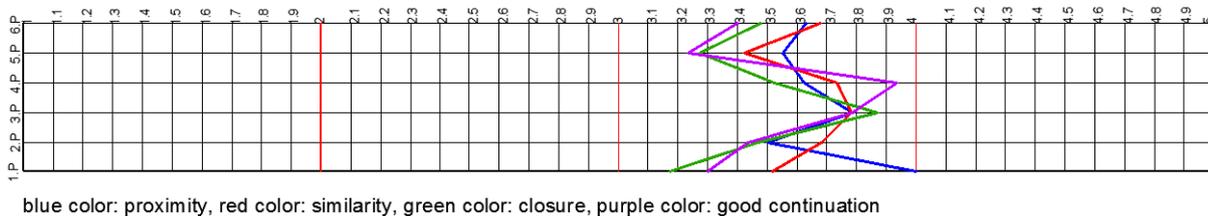
**Figure 14. Perceptibility principle according to the grades**

## 2.4 The Discussions

### 2.4.1. General Discussions

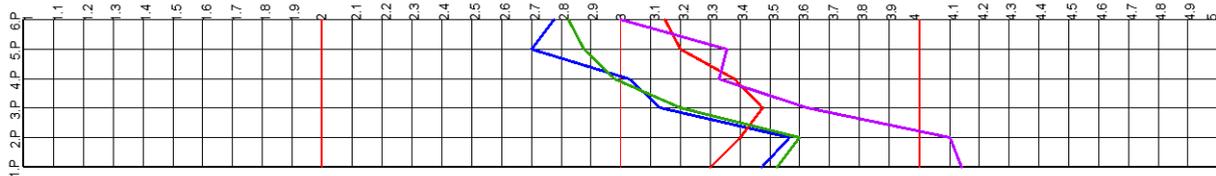
When all the averages of all the questionnaires are evaluated according to Gestalt principles (proximity, similarity, closure and good continuity) and concepts (perceptibility, experience, constancy, pragnanz) the following results have been find:

- Gestalt principles are effective in all photos and in the first photo it is proximity, in the second photo it is similarity, in the third photo it is closure, in the fifth photo it is good continuity, and in the sixth photo it is similarity which becomes prominent.
- Increase of the sharpness of borders causes the closure effect to increase.
- The effect of the linearity caused by sustainability effects good continuity quality.
- As you move away from the focal point, the variety of the elements in perspective increases, so making a connection between the similar elements becomes prominent. Excessive increasing of the variety weakens the relationship between the elements (Fig. 15).



**Figure 15. The changes of the proximity, similarity, closure and good continuation principles averages according to all grades**

- Gestalt concepts are effective in the 1<sup>st</sup>, 2<sup>nd</sup>, and 3<sup>rd</sup> photos and all concepts except experience are effective in the 4<sup>th</sup> photo, constancy and perceptibility concepts are effective in the 5<sup>th</sup> and 6<sup>th</sup> photo.
- A connection between pragnanz and perceptibility is difficult to be made. The reason of this problem is thought to be the difference between the levels of grades. Only for 4<sup>th</sup> grades, pragnanz concept is very effective in the 1st and 2nd photos. That the monument can be seen clearly in these photos and it has a symmetric design puts forward the pragnanz concept (Fig. 11).
- That the location of the monument has stayed the same axis before and after the renovation of Meydan effects the experience concept (Fig.16).
- The low concept of experience of 4<sup>th</sup> grades is thought to be related with the high frequency of use of Meydan Parki by those students (Fig. 13).



blue color: pragnanz, red color: constancy, green color: experience, purple color: perceptibility

**Figure 16. The changes of the pragnanz, constancy, experience and perceptibility averages according to all grades**

Data gathered has been generally discussed under the titles of perceptibility, figure-ground effect, figure-ground effect of the monument, and also in the 2<sup>nd</sup> photo which has the highest perceptibility, the titles of perceptibility, effective Gestalt principles and concepts, sight and viewpoint has been studied.

- Perceptibility



**Figure 17. The perceptibility of photo**

For 1st, 2nd and 3rd grades the perceptibility of the 2nd photo and for 4th grade, the perceptibility of the 1st photo is the highest.  
For 1st grade the perceptibility of the 5th and 6th photo for the other grades the perceptibility of 6th photo is the lowest (Fig. 17).

Perceptibility	The highest	The lowest
1.grade	2 photo	5 ve 6 photo
2.grade	2 photo	6 photo
3. grade	2 photo	6 photo
4. grade	1 photo	6 photo

- Figure-Ground Effect;



**Figure 18. Figure-Ground Effect of photo**

According to the average of all grades the monument is the most perceived element in the second photo which has the highest perceptibility. So the monument is a

	Figure	Ground
1.grade	monument	buildings
2.grade	monument	buildings, tree
3. grade	monument	-
4. grade	monument	shade structure, human

- Figure-Ground Effect of Monument;

Figure effect of the monument changes according to the grades. Figure-ground effect is the highest in the 2<sup>nd</sup> photo. This effect is weaker in other photos (1,3,4), so the realizing of the monument (preminent perception of the monument) creates differences between the grades. According to Gestalt principles, with the approach that the first active thing that is perceived is generally the figure, so the monument is perceived as a figure for 1<sup>st</sup> grades in the first two photos, for 2<sup>nd</sup> grades in the first three photos, for 3<sup>rd</sup> grades in the first four photos, and for 4<sup>th</sup> grades in the first two photos (Table 1).

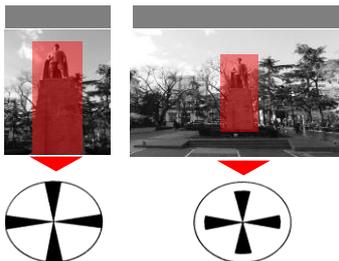
**Table 1. Figure-ground relation according to the different grades**

Figure/ground	1.grade	2.grade	3.grade	4.grade
1. photo 	<b>monument</b> /building	<b>monument</b> /tree	<b>monument, tree</b> /-	<b>monument</b> /human, building
2. photo 	<b>monument</b> /building	<b>monument</b> /building, tree	<b>monument</b> /-	<b>monument/</b> shade structure, human
3. 	human /tree	<b>monument,</b> /building	<b>monument</b> /-	human /building
4. photo 	pavement /monument, tree	tree, pavement /structure, sky, tree, bust	<b>monument, tree</b> /-	tree, stem /building
5. 	tree /monument	tree, stem /building	tree /flower parterre	stem /monument
6. photo 	tree /bush	tree / shade structure	tree /-	Tree /shade structure, human

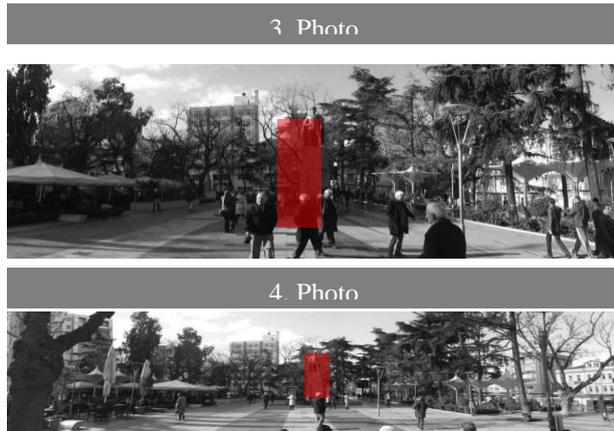
**2.4.2. Discussion about 2nd photo which is the most perceived**

The second photo which has the highest perceptibility has been studied and evaluated under four titles as perceptibility, effective Gestalt principles, evaluation depending on grade levels, sight and viewpoint.

- Perceptibility;



When the figure-ground analysis is made in the photos 1, 2, 3, and 4 in which the monument is indicated as a figure; the difference between the photos 1 and 2 is that the monument which is perceived as a figure in the second photo is surrounded by various elements. Thus, in the second photo, the monument can be clearly seen as a whole. This corresponds with the concept of 'being surrounded by' (Bruce, Green 2003)



The fact that there are people in front of the monument in the 3rd and 4th photos has weakened the figure effect of the monument. It can be explained with the changing of the depth perception and covering/closing. The foremost form is perceived as the figure. As Gungor (2005) states, covering means the objects' blocking one another. The object which blocks is perceived in the front and the one that is blocked is perceived behind. Thus, finding out the difference between closeness and remoteness creates a depth expression and figure effect (Fig. 19).

- The effective Gestalt Principles in second photo

In the second photo in which the figure-ground effect is the highest, all the principles (proximity, similarity, closure and good continuity) are effective (between 3-5) and it is especially stated that these principles are in the elements of tree and pavement. However, tree and pavement that creates the ground effect become prominent. This situation, as stated in Gestalt principle, perception is an organization and the whole means more than the parts (Table 2).

**Table 2. The effective Gestalt Principles in second photo**

	<b>proximity</b>	<b>similarity</b>	<b>closure</b>	<b>good continuation</b>
1.grade	3,5-bust floor	3,9-tree	3,2-tree	3,1- tree
2.grade	3,1-bust floor	3,4-pavement	3,6- tree	3,5-pavement
3. grade	3,13-tree	3,27-tree	3,13- tree	3,4-tree
4. grade	4,13-tree	4,13-tree	3,87- tree	3,6-pavement
average	3,5-tree	3,68-pavement	3,46- tree	3,42-tree

(1-2) much less effective, (2-3) less effective (3-4)effective (4-5) more effective

- The effective Gestalt principles and concepts according to the grades

When the highest and lowest values that were given to Gestalt principles and concepts are considered in terms of grade levels in the second photo in which the perceptibility is the highest, 4th grades can be simply distinguished. With the knowledge gained by education and experience, again the 4th grades reveal all the principles and concepts in the most effective way (Table 3).

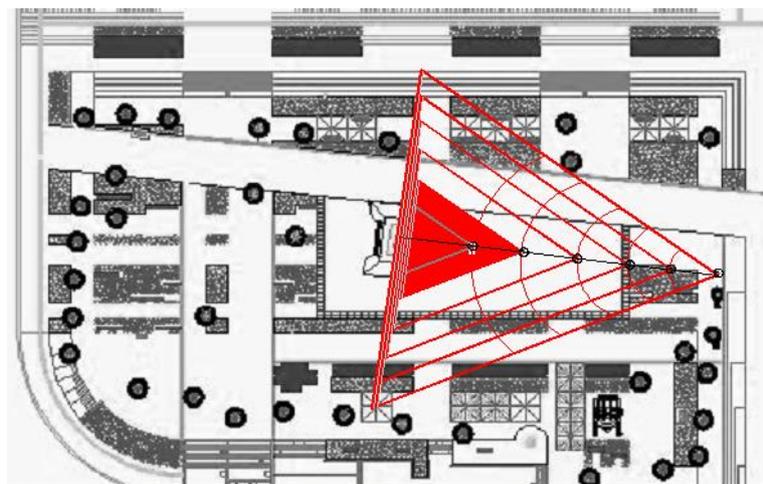
**Table 3. Grades given the highest and lowest level to the Gestalt Principles in the second photo**

**the highest and lowest level to the Gestalt Principles**

	proximity	similarity	closure	Good continuation	pragnanz	constancy	experiment	perceptibility
highest	4 grade	4 grade	4grade	4grade	4grade	4grade	4grade	4grade
lowest	2 grade	3 grade	3grade	1grade	2grade	1grade	2grade	3grade

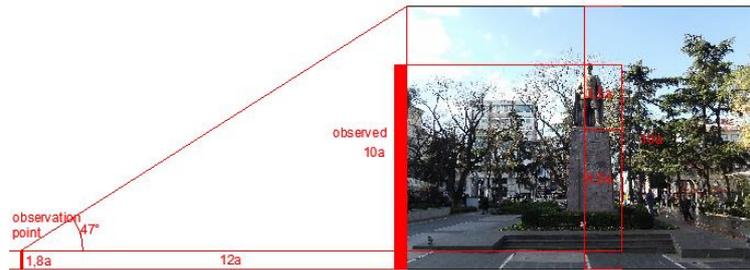
- Sight and viewpoint

In visual perception, eye is the most crucial component and the sight that the eye scans extends and narrows with the man’s movement. During the movement made from 1 to 6 point, space that the eye scans horizontally extends. Thus, in the second point where the perception is the highest, not only the monument but also the borders which include the surrounding of the monument (shaded part) constitutes the sight. Observer perceives the monument in this whole (Fig. 20).



**Figure 20. Changing sight according to horizontal movement**

In the second picture where the perceptibility is the highest, it is shown that the most suitable distance for perceptibility is 12 meters at the movement made with the monument horizontally. When unit a is stated as 1 meter, the observer’s eye height becomes 1.80 a, the observant (monument) becomes 10a the distance between observer and observant becomes 12a. When this parameter is applied on the work, with the Formula  $10=12xa/3400$ , angular magnitude is found to be  $47^\circ$ . In other words, the space scanned by angle of  $47^\circ$  horizontally is the sight of the user (Fig 21). These data obtained horizontally and vertically at the point where the perceptibility is the highest are of great importance to reveal the designer’s workspace.



**Figure 21. Viewpoint and vertical sight in the second photo**

## 2.5. Conclusion

It is known that Gestalt principles are so important in designs and works with perception driven environmental scale. In the result of the questionnaire, the second photo was decided to have the highest perceptibility and it was seen in this photo that all Gestalt principles were used efficiently. In the study, the sight and viewpoint in the distance where the perceptibility is the highest is formed the study area of the element.

No conclusion could be reached except small differences even though Gestalt principles were retold in all grades and also it was thought that their perception levels change in environmental elements depending on grade levels and especially there are striking differences between first and fourth grade. As a result of increasing the number of subjects in the new studies which are planned to be made following this study which was made as a pilot study, it is thought that these differences will become more evident.

The design problems of urban elements are not just limited with the single design of the element. It's thought that the element which will be designed needs to be handled with the other constant and continuous elements and even the individual's frequency of use.

The individuals perceive their environments differently when they are stand-still or moving position. Therefore, in urban environments the points where the perception is the highest need to be determined and depending on these points designs should be made in enviromental scale.

As in the neighbourhood of Meydan Park, which underwent changes constantly and was rebuilt in 2011, there is no such a space within this function, it is known to be used intensively. However, considering the historical buildings surrounding and limiting the park are decreasing in number and except Ataturk monument built in the 1960s all the constant and semi-constant elements and components change, it is believed that the location of the monument in the year it was built and its connections with the other elements are not considered today.

In the arrangements/designs which will be made in the focal points in the city, interdisciplinary studies should be done not only in spatial scale but also in singular scale and this study should be detailed with the views of the users.

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