

# **ARCHDESIGN '16**

**III. INTERNATIONAL ARCHITECTURAL DESIGN CONFERENCE  
ON DESIGN AND NATURE**

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# “SCALE” AS THE DESIGN DIALECT OF INTERIOR ARCHITECTURE

## ADEM VAROL

‘Scale’ as the Design Dialect of Interior Architecture, Hacettepe University Institute of Fine Arts, Department of Interior Architecture and Environmental Design, PhD.

### ABSTRACT

Design is the struggle of mankind to create his higher self in another dimension in a dynamic process; it is also about revealing an idea, a thought, and a project in an aesthetical form by artistic means. Final design is the result by means of “dialect” which the designer brings character and soul of those products into light. The product unveiled speaks the language of the designer and bears the imprint of him. What’s more, it is shaped according to the acquisitions and knowledge of the designer. An interior designed and applied harbors the perception, previous acquisitions, experiences and fingerprints of its designer. While every single thing that has been designed bears the imprints of its designer, the proper designer is supposed to reflect the universal principles and rules. When reflecting what is universal in her product as a result of her own experiences and acquisitions, the designer should not neglect ‘human’ and ‘scale’ elements. So to say, the human being who is the only and precise scale should form the starting point of the design. Interior Architecture which as a design discipline takes the human being as its starting point forms its designs in an original and livable way based on the human scale.

TMMOB (Union of Chambers of Turkish Engineers and Architects) will present the original position of Interior Architecture among other design disciplines and its distinct ‘design dialect’ comparatively with visual documents based on the legal legislations stated by The Chamber of Interior Designers. Relationships of Location-Human, Human-Furniture, Furniture-Location are scale and proportion problems. The solution to this problem should be the scaling and mechanical drawing rules based on the legal legislation of the Chamber of Interior Designers, TMMOB.

The aim of this study is to put an emphasis on the differences of scale which are at the design and application phase. At the same time, introducing the position and significance of Interior Architecture among similar disciplines that have many things in common but differ in the application area. It will be underlined that Interior Architecture uses scale, mechanical drawing and semiotics specific to its own area and it also uses values closer to human criteria in this wise. Besides these, it will be stated that these values are more effective on human behavior and psychology and that they direct the behaviors more efficiently one to one.

**Keywords:** Design Dialect, Interior Architecture, Scale

### I. INTRODUCTION

Interior architecture is a field of profession which creates solutions for providing the optimum design to users in terms of functional, structural and aesthetic criteria. Interior Design Educators Council's (IDEC) definition of interior architecture/interior design is as follows:

“Interior design is a multi-discipline field, which implements creative and technical solutions within a structure, in order to create an internal environment. These implemented solutions improve quality of life and culture, they are functional and aesthetically appealing. Designs are created in relation to the building shell, and acknowledge the physical location and social context of the project. Designs must adhere to code and regulatory requirements, and encourage the principles of environmental sustainability. The interior design process follows a systematic and coordinated methodology, including research, analysis, and integration of knowledge into the creative process, whereby the needs and resources of the client are satisfied to produce an interior space that fulfills the project goals.” (Url-1)

Interior architects create designs in order to create new and economical solutions in space organization. As professionals, they research human-hardware-space problems again with concern for today and the future, beyond basic data of ordinary forms and criteria. In the hand book published in 1991 by The International Federation of Interior Architects/Designers (IFI), which was established in 1963, definition of Interior Architect/Designer is as follows:

“Professional interior architects/interior designers, with their education, experience and talent, are the people who;

- determine, investigate and creatively solve problems regarding the functions of internal environment;

- conduct programming, design analysis and space planning with regard to the internal environment; supervise the work-site, have specialized knowledge on internal construction, building systems and elements, building rules, building equipment, materials and furniture;
- and prepares documents and drawings about interior space design to increase the quality of life, for the good of society, health and safety.” (IFI,1991)

Interior architect is an individual, who is concerned about the fundamental problems of the occupant, provides creative, functional and aesthetical solutions to their problems, on an equipment level. Therefore, referring to interior architecture also as *space equipment architecture* will not be wrong. Garden, street and even an automobile are spaces. The important thing is the scale at which one approaches the space. Urban and regional planners approach the street on a neighborhood or city level, however, a space equipment architect approaches the street on an equipment level. Space equipment architecture definition provides a broad field of work to the interior architect. Neither the exteriors of the buildings, nor gardens and streets are outside the working field of interior architecture. Therefore, the term *interior* architecture creates an unnecessary contradiction in *interior-exterior* terms.

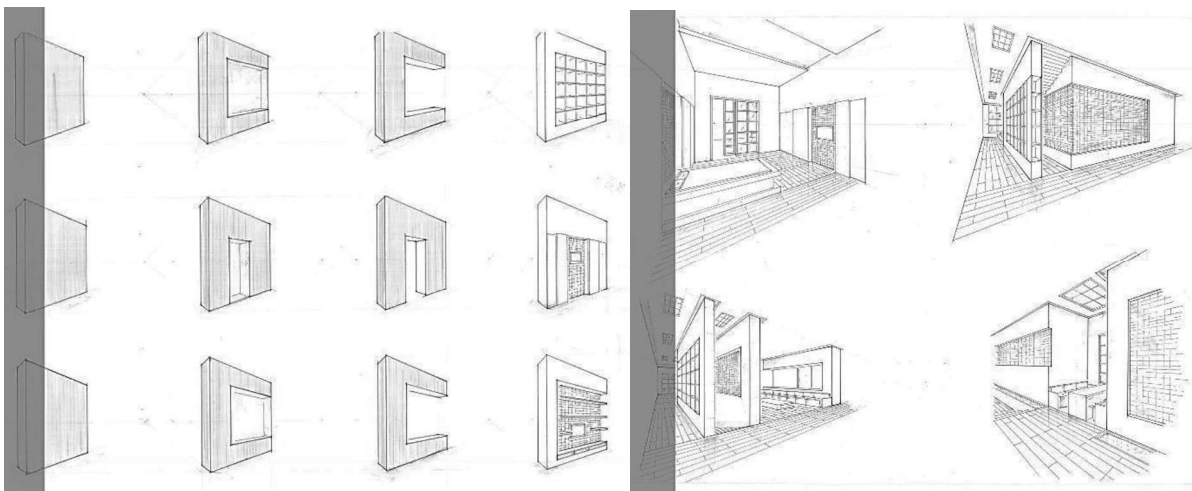


Figure 1: Analysing of Interior's (Personal drawings)

Designed space that comes forth, speaks the language of its designer, that is, the interior architect. The final product takes shape according to the experience and knowledge of its designer. A designed and implemented interior space carries the perception, past experiences and acquisitions, hence the fingerprint of the interior architect or interior designer that designed it.

While every designed thing carries the fingerprint of its designer, designer also has to reflect universal principles and rules. While reflecting the universal onto the product through their own experience and acquisitions, the designer should not ignore *human* and *scale* factors in their designs. Martin Pawley, who said that “it is the humans themselves that give meaning to the environment in the acts of creation and alteration” (Martin Pawley, from Spankie, 2012) indicated that humans, as the one and true scale, should constitute the starting point of design. Interior architecture, which is a discipline that takes humans or occupants as its starting point, creates its unique and habitable designs based on this human scale.

## II.CONTRADICTIONS IN BETWEEN OF SCALE and RATIO

The terms scale and ratio are semantically closely related to each other and for this reason they are often confused with and compared with each other. First giving a definition of ratio and pointing out the difference between these two concepts will get rid of this contradiction in terms.

Comparisons made with a reference yield ratio. The relation of object with human, human with space, space with environment are described with ratios. Numerical relation between two things and between a whole and its constituents are defined with the concept of ratio. This balance of measure within a structure itself can be described in terms of ratio. “Existence, position and relationship of the design in physical environment is defined with the concept of measure. However, relationship between these objects and humans is defined by ratio” (Kaptan, 2011). We understand objects are whether thin or thick or wide, long or short via ratios. It gives the relationship between a whole and its parts, between horizontal and vertical, between depth and width or between height and length. “In short, ratio is the device used in critical comparisons made with respect to the individual's body measurements. Concepts like big-small, short-tall, thin-thick are comparisons with regard to ergonomic data of the individual” (Kaptan, 2011).

It is knowing that in any design that is *beautiful*, along with many factors, there is a true system of ratios constructed among the elements of design. "If we want to give an example from spatial design; within a spatial composition, elements, whose composition in terms of ratios with each other and with the space is designed, can provide an aesthetically and functionally correct relation to its user. A good ratio can only be created by correctly constructing the whole of relationships, that is harmony" (Alexander, 1977).

Although in principle ratio answers more to a visual search within the design; scale answers to a technical search in the act of design. While ratio includes inexact numerical data, scale includes exact and clear numerical data. While there needs to be at least two objects in order to present ratio data, numerical values on one single object is enough for scale. "In the definition of an existing thing, there are some properties of that thing that differentiates it from other things. If these properties are given meaning with numerical values, these are called measures. Measure, makes all things objective in two or three dimensions" (Kaptan, 2011). Unitizing the area occupied by objects in space can be called a measure. Measure; "Is unitizing the area of space occupied by existing objects, their functions, etc. Whether two or three dimensional, congruent or converse, forms play their roles in a system with their "required dimensions" (Atalayer, 1994, p204)".

As it is with the concepts of measure and ratio, the concept of scale also involves interpreting the dimensions of objects in relation with each other. As opposed to ratio, units given in a scale are determined, standard and fixed. "Scale, is to represent measures of a design element or space in relation with a known standard or a fixed value. Objective scale is given by calculating an element's physical measurements with standard measurement systems; visual scale is given by the dimension obtained by comparing an element to other elements around it" (Özkan, 2007, p37). "Objective scale is the correlation between an objects real dimensions and standard measurement systems. Visual scale is about our conclusions regarding mutual ratios of objects and it is not related to the scale used in drawings." (Dodsworth,2012). *Is the width of the table here shorter than the other? Are the window openings on the side shorter than the door openings? Are the kind of questions with which we knowingly or unknowingly compare objects we see?*

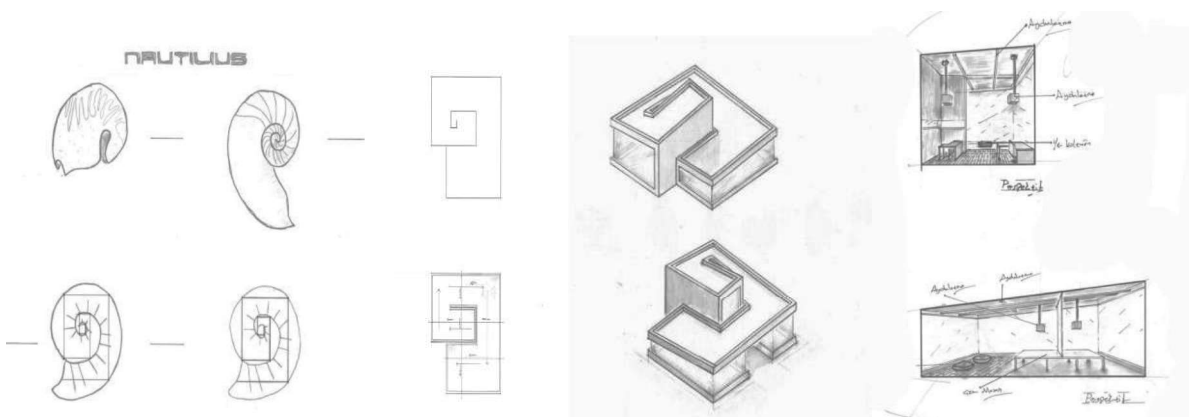


Figure 2: Analysis of Ration and Scale (Personal drawings)

"Human scale takes it a step further and compares the dimensions of a space or objects to human body. If an object or a space is designed in a manner that enables it to function harmoniously with the human body, it is designed in a human scale. Sometimes buildings, furniture or other objects are not designed in a human scale and they create contrast. Large and wide spaces can create astonishment and/or awe, however, at extremes this disproportion becomes illogical. On the other hand, small spaces can be private and cute, but they can also be claustrophobic" (Dodsworth,2012). *Consciously created disproportionality in a design represents the priorities of the designer.*

Usually, all spaces are designed for humans. Whatever their function or dimensions may be, humans will be a part of those spaces. Like in all design fields, the common concern of Urban and Regional Planning, Architecture and Interior Architecture disciplines is human. What differentiates these three design disciplines from other fields of design is that their area of activity is generally space. In the intersection of human-space, most fundamental means of expression in these three different disciplines is the different *scales* they use. While planners create design with regard to collective actions of humans, architects and interior architects design with regard to both collective and individual actions of humans. When saying "Architects do not draw the space, they are interested in the surfaces of stationary objects, they assume that they can control the space this way" (Kevin Rhowbotham, from Spankie, 2012), Kevin Rhowbotham, in fact,

tries to explain the difference between interior architects and architects in terms of technique and implementation. As a result, different, distinctive means of expression and scale techniques used by these three disciplines have emerged.

### III. SCALE AS a LANGUAGE in INTERDISCIPLINARY DESIGN FIELDS

"Planning, also called *urban planning or city and regional planning*, is a dynamic profession that works to improve the welfare of people and their communities by creating more convenient, equitable, healthful, efficient, and attractive places for present and future generations" (Definition of American Planning Association, APA). In their designs, urban and regional planners have to reflect all cultural differences from the universal to the regional, while preparing an action plan from the country level to local regional level. Sometimes they have to synthesize different cultures in the same region, and sometimes they have to use the same cultural elements in order to add value to their designs. Regional planning discipline, like other disciplines that are at the intersection of space and culture, provides a large work area for architecture and interior architecture disciplines. While the limits of working area of the architect is the plot and block determined by the planner; interior architects working area includes functionally and aesthetically equipping inside and surroundings of the shell that is designed and applied on the area determined by the planner. Since the working area of urban and regional planners are larger, their numerically large scales represent rather small values. Some of the scales and respective values used by them are as follows:

*Spatial Strategy Plan for the Country*: It is the plan that presents spatial and political strategies of the country; it is prepared with a scale of 1/1,000,000 and above; it is a whole that is comprised of plan notes and action plans. It is the plan that determines the country's naturally, culturally, historically and environmentally sensitive areas and its underground/above ground resources, while determining long term settlement policies. *Regional Spatial Strategy Plan*: It is the plan that is based on the spatial strategy plan for the country, and lays out the policies and strategies determined in this upper scaled plan; it is prepared in 1/250,000 scale; it is a whole that is comprised of plan notes and action plans. It is a plan that arranges development and sustainability of transportation, technical, social and infrastructural strategies within the new and developing urban structure while determining long term settlement policies. *Environmental Plan*: It is the plan that is prepared in accordance with country and regional spatial strategy plans with 1/100,000 and 1/50,000 scales; determines industrial, agricultural, touristic and transportation use of areas with respect to urban-rural relationship; it is a whole that is comprised of plan notes and reports. *Land Use Plan*: Cadastral conditions are marked on approved present maps according to environmental plan; general usage, important region types, future population densities of the regions, various urban and rural settlement areas, their development directions and sizes, policies, transportation systems is shown; land use scale of 1/5000 is used, unless otherwise specified by special laws; includes a detailed report and constitutes a whole with that report. *Tentative Plan*: Cadastral conditions are marked on approved present maps according to land use plan; building blocks and their use, density and layout are indicated; floor area ratio, building coverage ratio, precedent, height, building distance, front and back sides lines, transportation relations, vehicle, pedestrian and bicycle ways, car parks, squares, public and government service zones, landscaping areas are indicated; implementation phases and principles that will form a basis for the required zoning application program are included; if necessary, parcel planning arrangement principles are included; urban design principles that include the urban design project of the area in question and other details are included in 1/1000 scale and presented along with a report" (Chamber of Turkish Urban and Regional Planners drawing and presentation standards).

Urban and Regional Planners, who design action plans on country, region and area levels, provide field of action for other designers. Architects, who use appropriate grounds, implement their designs within limitations. Architects, who will use their own scale, start their own design in accordance with the land use plan included in the strategic plans prepared by the urban planner. At this point, numbers get smaller as the scale increases. Details increase. Here, the transition from the act of *planning* to the act of design begins. In the act of design, *human* is at the center and the only true scale is the human himself.

"*Architecture* profession involves providing necessary occupational services for designing, building, developing, preservation, renovation and repair of structures or structure groups related to urban planning. These occupational services include planning, land use planning, urban design, preparing designs, drawings, models, specifications and technical documents of preliminary projects, providing coordination between other technical works prepared by professionals (consulting engineers, urban planners, landscape architects, interior architects and other professional consultants) where necessary, structure economy, contract management, construction supervision and project management" (International Union of Architects - UIA, 1999).

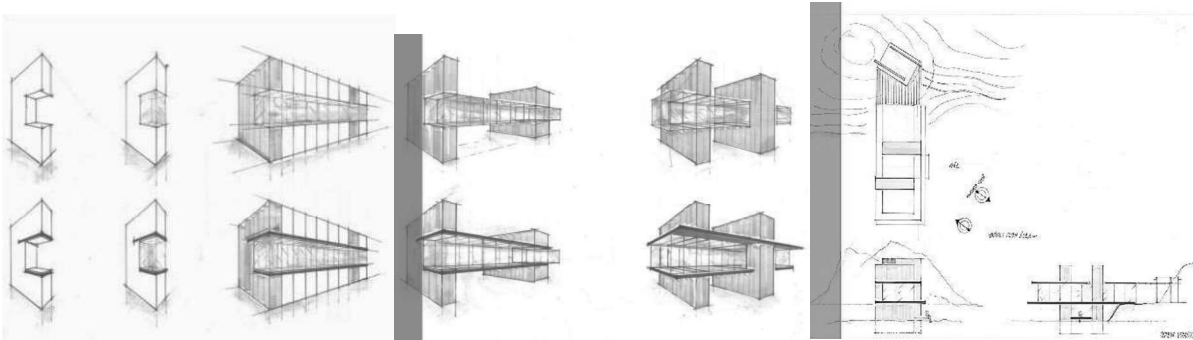


Figure 3: Analysing of Architectural Model for Interior Space (Personal drawings)

The architects, who create their design in the appropriate area in accordance with national and regional strategy plans and laws, make their designs in the most efficient manner within their area of responsibility. They design a structure-shell inside the area defined by the planner, in which user can their own functions to meet their needs. They make this structure in accordance with its surroundings, with the texture of the city and applicable technical details and parameters. These parameters are generally the scales with which structure designers can describe and implement the structure they are working on. While the numbers diminish, the scale grows. Scales used by architects, like it is with other disciplines, change according to the area they are working on. These scales are:

*Location plans:* This document includes the location of designed building on the parcel or block it is going to be built on and information regarding surroundings of that parcel, and it is usually created using 1/1,000 scaled zoning maps. According to the size of the project and the scale of informational maps, usually 1/2,000 and 1/500 scales may be used. *Layout plans:* This document indicateds the location of designed building on the parcel or block it is going to be built on, and it is usually in 1/200 scale. According to the size of the project and the scale of informational maps, usually 1/100 and 1/500 scales may be used. *Conceptual projects:* Conceptual projects of a building are generally drawn in 1/200 scale. However, if the architect desires, it can also be in 1/100 or 1/50 scales, or any other appropriate scale. *Preliminary projects:* Preliminary projects of a building are generally drawn in 1/100 scale. However, provided that the information included and the drawing method used remains the same, the architect can use 1/200 or 1/50 or any other appropriate scale. *Final projects:* Final projects of a building are generally drawn in 1/100 scale. However, provided that the information included and the drawing method used remains the same, the architect can use 1/50 or any other appropriate scale. *Construction projects:* Construction projects of a building are generally drawn in 1/50 scale. However, provided that the information included and the drawing method used remains the same, the architect can use 1/100 or any other appropriate scale. *System details:* System details are generally drawn in 1/20 scale. However, if it is necessary to convey specific information, 1/10 or 1/5 scales may also be used. *Manufacturing details:* Manufacturing details are generally drawn in 1/1 scale. However, provided that the information included and the drawing method used remains the same, the architect can use 1/2 or 1/5 or any other appropriate scale” (Chamber of Turkish Architects drawing and presentation techniques).

Australian architect A. Schwanzer defines an architectural structure as *something that is more than just four walls and a roof*. In fact, floors, walls and roofs define the volume. The architect creates the building by joining volumes together. “A building is like a soap bubble. The bubble is perfect and harmonious if the breath has been evenly distributed from the inside. The exterior is the result of an interior” (Corbusier,1974) said Le Corbusier. By that he emphasized that designing the structure-shell cannot be complete without designing the interior volume. As part of his job, interior architect, who will finalize the act of design, starts to think about all areas of action concerning the interior volume. Interior space, which will stimulate 5 senses of the people, starts to increase in scale. While the numbers in the scale decrease, details increase. Scales used by the *interior architect* encloses a range of scales starting from the public to the private. The scales used are as follows:

*Survey:* This is the measurement process conducted for obtaining details necessary for two dimensional drawings, cross-sections and views. It is in 1/100, 1/50, 1/20 scales. *Preliminary/Avant/Conceptual Project:* It is the presentation of definitive requirements of a new spatial design or a refunctioned space, furnishing elements, materials, sample catalogues and reports regarding the area in question. It is drawn with 1/100, 1/50 scales. *Location plan:* It is the plan that describes the relation between the space and its environment, in 1/500, 1/200, 1/100 scales. Samples of materials, colors and textures are written in the plan. *Floor Plan:* This is the plan that describes equipment and circulation spaces, movable and fixed furnitures, flooring materials according to the function of the space, in 1/100, 1/50, 1/20 scales. It is ordered from the lowest floor to the highest floor. In ground floor plans, environmental planning (sidewalk, access road,



etc.) is included as necessary. *Cross-sections*: Technical drawings of longitudinal and lateral cross-section of the interior space, in 1/100, 1/50, 1/20 scales. Measurements that cannot be seen in the plans are given in cross-section views. Materials are described. *Views*: It is the representation that shows surface finishes or lining materials and furniture at the sides, with a vertical view on the planes parallel to the sides; it uses 1/100, 1/50, 1/20 scales. Measurements that cannot be seen in the plans are given. Door and window views are shown; open wings are marked. All used materials are indicated. *Manufacturing details*: This is the technical drawing that describes all details and manufacturing technical drawings in accordance with manufacturing technique, with measurements and scale; in 1/20, 1/10, 1/5, 1/2, 1/1 scale technical. Material names, colors and types are written. *System details*: This includes rough and fine construction manufacturing details of the structure are collected along with required data for all related disciplines. 1/20, 1/10, 1/5, 1/2, 1/1 scale technical. Material names, colors and types are written. *Furniture and Equipment Manufacturing Details*: This is the technical drawing that describes equipment used to fill the interior space, materials, fixed and movable furniture; in 1/20, 1/10, 1/5, 1/2, 1/1 scale technical. All material properties and manufacturing notes are written. Clear measurements necessary for manufacturing are given” (Chamber of Turkish Interior Architects Drawing and Presentation Standards).

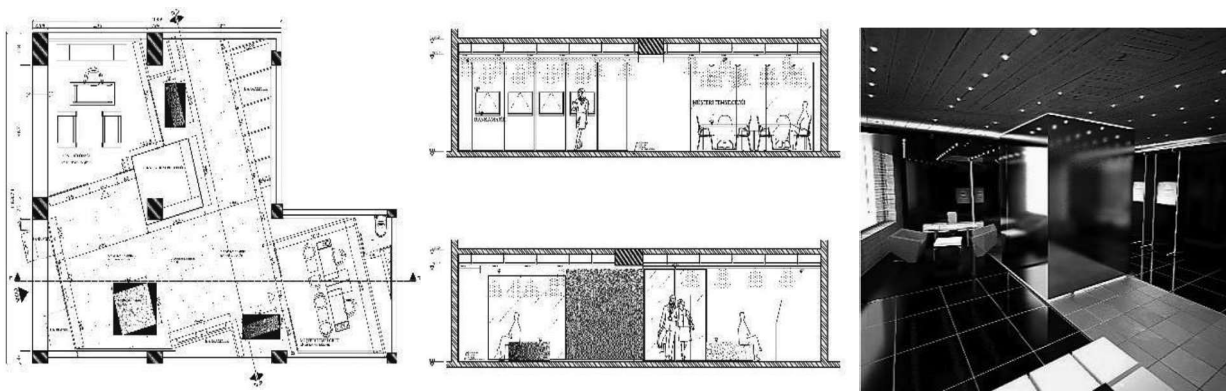


Figure 4: A Bank Interior's Project. (Personal drawings)

“While creating interior architecture drawings, both the scale of the building and the scale of objects inside the interior space should be considered. Furniture and objects inside the space are as important as the architecture itself, they have to be drawn together in order to match up with each other. Scale of the interior space is like a mediator between the building scale and body-object scale. Movable furniture should be drawn in scales between 1:5 and 1:50 along with architectural elements to show how the space is used” (Spankie,2012). Most important difference between interior architecture and other disciplines is that it designs the relationship between the individual and the objects in their private space. “We covet the best table at the restaurant. We make arrangements with the service employees and we move to that table as soon as the customers leave. We imagine relaxing on our favorite couch when we get back home. Our spot at the dining table is determined. If we share our beds, the owners of right and left edges are determined at day one. In the street, at the office, at home, this strategy continues and without ever thinking, it becomes the rituals we always repeat” (Ilgin,2008). These repeated rituals are how the individual manages their personal space (proxemic space) against other individuals and objects. Proxemics (the theory of personal space), is concerned with the increase and decrease of human interaction in a determined space, relative to distance. Because, the price of interaction between two people or a person and an object, above all, depends on the distance between them. According to this theory there are four kinds of distances between an individual and other individual, groups and objects: *intimate space*, *personal space*, *social space*, *public space*. Only very close individuals with very close relationships can enter the *intimate space*. It is inside 45 cm radius from the body. These relationships are touching, whispering, hugging, kissing, etc., which appeal to 5 senses. The fundamental area concerned with this space is interior architecture. Interior architecture has a great effect at the intersection of human-space-furniture, and it appeals to five senses. *Personal space* starts at 45 cm from the body and extends to 1.2 meters. It is the space reserved for close friends and persons with whom you have strong connections. Disciplines concerned with the action plan within this space are interior architecture and architecture. There is no direct contact with the equipment but due to the distance from the structural shell this space also concerns the architect. Social space starts approximately at 1 meter from the body and it extends to 3.6 meters. It is defined to indicated distances at which we do not have a high level of comfort. Action plan for this space concerns interior architects, architects and urban,

regional planners. It starts from around the space and includes the areas without intimate relationships. Regional planners, who also plans environmental organization of the space, can be affective within this space. *Public space* starts at 3.6 meters from the body. It is the public communication space; it is the distance between people while they are walking at a park or a mall. It is the field of action for all three disciplines. As space equipment architects (interior architects) have the authority to desgin any equipment at the park, they have a say in the space.

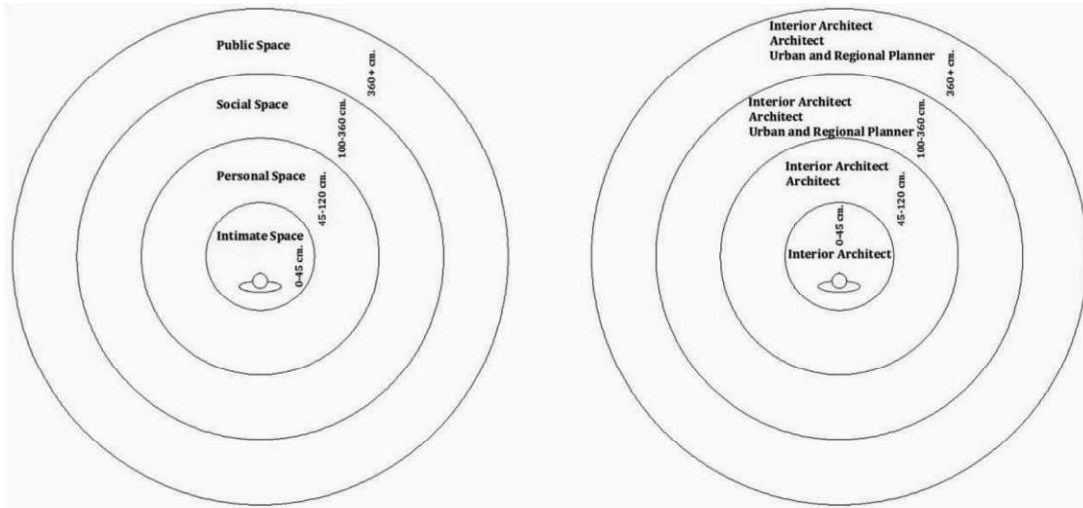


Figure 5: Proxemics (the theory of personal space) relationship with interdisciplinary design fields. (Ilgin,2008)

The only discipline included in all spaces, from the closest to the farthest, is interior architecture. Interior architecture, which is the discipline that takes human body as a scale, has to plan and consider all activities of an individual, from the closest to the farthest. Interior architect, who has to have a thorough understanding of human behavior and psychology, must know that their designs appeal to all five senses.

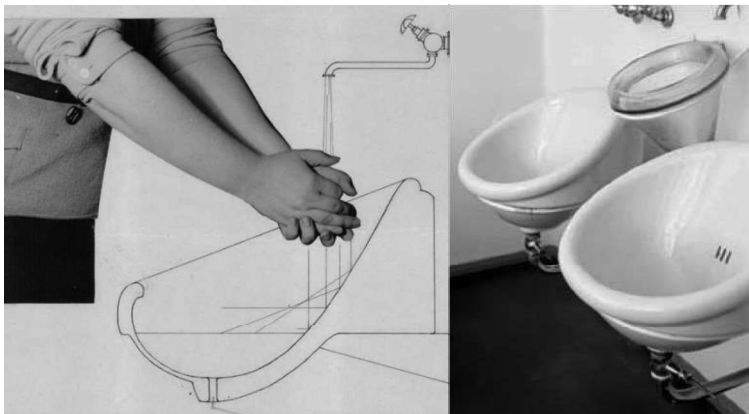


Figure 6: Scale and Detailed Drawing. (Spankie, 2012)

“We decide which scale we are going to use while we are drawing. The purpose is to give maximum possible level of detail regarding the space and we use optimum scales that will both fit into the map and describe the project. 1/1 scale may be used for implementation details of specially manufactured equipments or furniture. Under some special circumstances, in order to describe how some details are going to be implemented, even larger scales can be used; for example, a scale that will show things twice their original size is indicated as 2/1” (Dodsworth, 2012). It is the interior architect's responsibility to organize the details of space-object-human intersection that appeal to 5 senses and directly affect human psychology Therefore, interior architecture has to have necessary technical knowledge and experience in order to work on very small details.

#### IV. CONCLUSIONS

In all three design disciplines, while the numbers diminish, scale and details increase, and vice versa. Therefore, detail is minimum in the plans of urban and regional planners, who use 1/1,000,000 and above scales. A designer who plans at 1/1,000,000 scale, in fact lays the ground for the architect, who designs at 1/1,000 scale level. At these scale levels, it is enough for the planner to use only a single line in order to represent the groundwork for the architect. Material and statics are not important for them. The architect, who prepares a 1/1,000 scale plan, indicates conjunction details, materials and wall thicknesses. They have to plan whether the roof will be inclined or flat, which material is going to be used and what will the inclination be. While representing materials and conjunctions of the framework, they also note the heights in the project. While the largest scale can be shown by an architect in their project is 1/50, it is 1/20 for the interior architect. At 1/50 scale, wall thicknesses of the structure is shown with combing technique and materials are noted. At 1/20 scale, interior architect has to indicate wall plaster, cement and finish. If there is drywall among the dividers, steel box profiles that provide structure has to be shown at 1/20 scale. At 1/50 scale, it is enough to indicate drywall using combing technique. While skirting boards at floor and wall conjunctions are not shown in views in architecture, it has to be included as the most important equipment in interior architecture. While the space is completed by the interior architect in growing scales, actually the interaction space of the individual is being completed. Individual no longer sees a plaster chosen by the architect, but they see a wallpaper or a natural stone with color-texture. At that moment, applications of the interior architect enter into the individual's intimate space. The space, which appeals to their five senses, not only directs the individual's behavior and psychology, but also affects it. If we assume that most of the individuals' time is spent at interior spaces, the importance of the 'scale language' used by the interior architect must be acknowledged among design disciplines.

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