

Research Article

Umbra-Structure: Exploring the Psychosomatic Extension of Architecture

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Abstract

This study aims to understand context's role in architectural education and the potential of body-space interaction. This work centers around the body and its spatial arrangement, incorporating architectural extensions as limbs and portraying emotional expression by adding limbs. An experimental study was conducted with second-year architecture students to achieve this goal. The study involved altering the context and distorting the student's connection to a particular place. They were then tasked with creating a structure that could be incorporated into their body while conveying an emotional expression. The experimental study aimed to assess architecture students' sensory and artistic reflexes following trauma. On February 6, 2023, Türkiye experienced two significant earthquakes. Education resumed after a certain period. Trauma determined the project's criteria, focusing on the body, emotional state, and connection.

This paper consists of five sections. The first part consists of the problem statements and scope of the study, while the second part is about architecture and context. The third part delves into the evolution of the relationship between the body and space in the posthuman era. In the fourth part, a method of analysis is proposed by utilizing literature. The visuals, words, articulation, metaphors, analogies, and stylizations used to describe the projects are tabulated. Adjectives for analyzing the visual form were used in the evaluation. It was observed that the words evoking positive emotions were expressed in soft forms. When the context pressure on the place was reduced, the relationships the students established between form and their bodies were diversified. The words used to create context supported the formal and semantic richness of the designs. In architectural education, this study increases the awareness of the sensory aspect of architecture.

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1. Introduction

Space is an empty expanse that harbors existence, and its formation requires the presence of constituents. The floor, walls, and ceiling are the most fundamental elements that define the space. The designer also constructs the internal and external organization of the space. In addition, the designer defines relationships, creates unions, and presents them to the user. Building such systems and relationships requires structures and constructions that ultimately shape the architectural configuration. Lefebvre (2014, p.231), an urban sociologist, refers to the space in the designer's consciousness (the ultimate architectural combination described in the preceding paragraph) as the conceived space. The architectonic shape exists primarily in the designer's mind and depends on the user's ability to create the space. According to Lefebvre, space production occurs within the context of a triangular relationship. These are conceived, perceived, and lived spaces. He even positions the perceived space in front of the conceived space. In this context, space is a system created in the designer's mind and where life and user interaction occur. This study examines this space definition, incorporating Lefebvre's space production approach. Space embodies an imaginative expression of sensory perception and experience. What happens if it is a whole of architectural elements, which is life, not in space but where it is articulated? How is space defined if feeling becomes a structure composed of imaginatively expressive architectural elements? What if the architect's purpose is reversed, and the designer's emotions and body serve as the context? This study does not aim to resolve these problems. In contrast, it aims to challenge the conclusions and investigate what has been learned in depth. As a result, the contexts are reversed. What is the design itself? How does the emotional state of the designer affect the design? What if the location became the body's context? What happens if the architectural form completely defies gravity? In addition to the pandemic, two major earthquakes and hundreds of aftershocks that hit Türkiye on February 6 and 7 are the reasons for the alterations to the context within the scope of this study. Efforts in this study promote a critical and curious approach to architectural education and eliminate the barriers that prevent students from braving out, expressing their emotions plainly, and designing.

This paper presents the results of preliminary research carried out among the students of the Department of Architecture at KTO Karatay University, Faculty of Fine Arts and Design, in the aftermath of the earthquake. The research, commonly referred to as a kick-project, assesses the student's responsiveness to post-trauma architecture. Before conducting the study, a literature review was performed. A new experiment was designed. The novel experiment design considered the cultural codes and traumas specific to Türkiye and Turkish architecture students.

1.1. *Why Does Architecture Need Context?*

Context is one of the most essential characteristics that differentiate architecture from art. According to Hinton (2014, p. 25), it is the agent's knowledge of the relationships between the elements of the agent's environment. However, Koçyiğit (2022) provides a more inclusive definition, emphasizing the individual and the environment. According to Koçyiğit (2022), context is a concept that establishes the relationship of an element with other elements, refers to the integrity that makes sense of the coexistence of elements, determines the connection of

many unique situations with the general, enables the thought of individual entities (particulars) together, and can be the ontological basis of universals. Context also implicitly refers to regularity, pattern, and serialism. It is the determination of an architectural object's conditions in architecture.

According to Koçyiğit (2022), context is defined in two ways. Ontologically, it pertains to physical and social reality; epistemologically, it is normative and dogmatic. In the article, Koçyiğit (2022) classifies context as physical, cultural, phenomenological, and historical, and the paper attempts to unravel multiple contexts. The concept of context, a topic that has undergone historical changes and extensive discussions, holds significant importance in architectural discourse.

In their study, Alagöz and Güner (2022) present a diagram illustrating historical context transformation. This diagram depicts the concept of context as originating from CIAM in 1928. Notably, Lewis Mumford's (1947) "Skyline Article" delves into this subject. Furthermore, the Team10 works and the symposium organized by MoMA in 1948 also devotes their efforts to examine the trajectory of Modern Architecture. In architectural discourse, contextual influences hold significant importance. The works and ideas by Alvaro Siza, Norberg Schulz, and Louis Kahn play a pivotal role in shaping this discourse. These influential figures have contributed valuable insights and perspectives that have significantly impacted the understanding and appreciation of context in architecture. By examining their discourses and studying their works, one can better understand the multifaceted nature of context and its profound influence on architectural design. In the Salk Institute, the setting sun plays a significant role in enhancing the visual appeal of the perfectly symmetrical courtyard. As the sun descends, its rays extend the lines within the courtyard, creating a sense of continuation and amplifying the overall context of the space. This natural phenomenon adds an extra layer of depth and aesthetic charm to the architectural design of the institute (Figure 1).

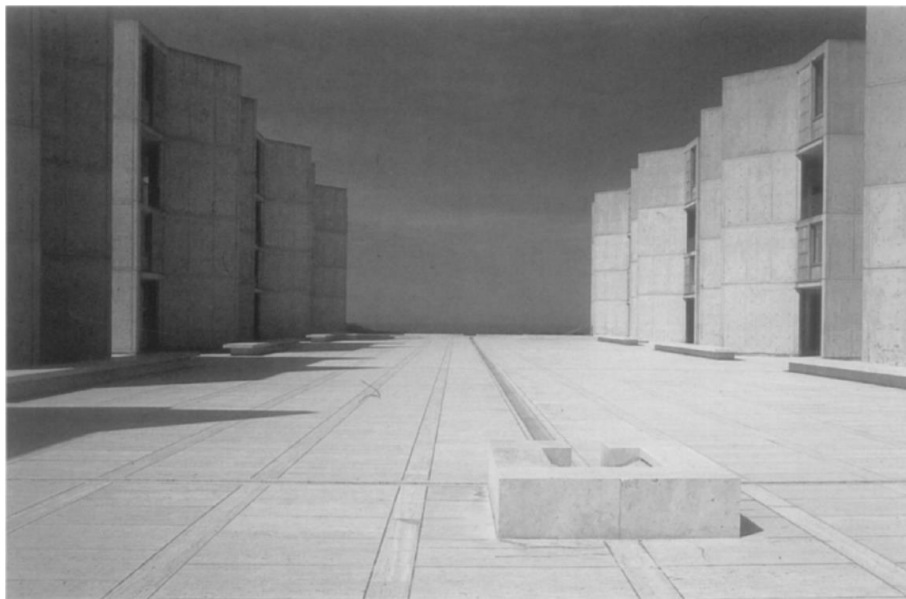


Figure 1. Salk Institute, Louis Kahn, Torrey Pines (La Jolla), California, 1965, Courtyard, View West (Treib, 2006).

Thomas Schumacher (1996), in his article "Contextualism: Urban Ideals plus Deformations," defines context as emphasizing its role in bridging a city's old and new aspects while considering its future trajectory. The author references Colin Rowe's influential book, *Collage City*, to provide illustrative examples. The article by Schumacher, Colin Rowe, and Koetter (1996) was included in the book, *Theorizing A New Agenda for Architecture*, which was edited by Kate Nesbitt and published in 1996, with a specific title, *Urban Theory After Modernism: Contextualism Main Street and Beyond*. This book provides a comprehensive overview of architectural approaches that emerged between 1965 and 1995, following the era of modern architecture. It explores various historical perspectives and trends (Nesbitt, 1996).

In addition, in his book, *Image of the City*, Kevin Lynch (1964) presents a radical perspective on context by introducing his method of analyzing the semantic side of form. The method aims to map the user's mental image of the city after their experience and explores various contexts associated with the city. Researchers shift their focus from the physical context to imagism.

Furthermore, contextual interpretivism, also known as critical regionalism, emphasizes the significance of place. In their article titled "The Grid and the Road", Tzonis and Lefaivre (2016) introduce a concept further expanded upon in Frampton's (1983) article titled "Towards a Critical Regionalism: Six Points for an Architecture of Resistance". In their work, Tzonis and Lefaivre (2016) draw inspiration from the ideas put forth by Habermas and Shklovsky. Critical regionalism is characterized by rejecting repetitive architectural forms derived from historical references. The aim is to explore novel approaches in integrating the tangible and intangible aspects that shape a particular location. Critical regionalism is a concept that emphasizes the significance of place in design without imposing specific norms or standards. Frampton (1983) focuses on the development of contemporary place-oriented culture. However, he is against the repetition of local forms. Differentiation can be used in unity with architectural elements.

As stated above, Koçyiğit (2022) categorizes the context into four main categories: Physical, cultural, phenomenological, and historical. Additionally, the author includes the context of becoming a phenomenological evaluation. The foundations of the context of becoming here are laid by Heraclitus and developed ontologically by Whitehead, Bergson, Dewey, and Deleuze. According to Koçyiğit, the close connection of architecture to the past is broken in the context of becoming. Displacement initiates with the advancement of communication tools, and new contextual frameworks emerge.

Metaphors are one of the various contextual frameworks that emerge. Furthermore, they employ a semantic analysis of the context. According to Demirkaynak (2010), architects of the 20th century frequently employed metaphors as modes of thought. The author argues that the architectural object is a form of communication analyzed using symbols, signs, conceptual processes, and metaphorical context. Barnet (1999) reconsiders context and attempts to reconstitute it with Derrida's discourses in "Deconstructing Context: Exposing Derrida". The author views deconstruction as an instrument for reconstructing context and questions the context's norms. It utilizes the context-reproducing function of deconstruction at this juncture but does not formulate the context. Jakobsen (2012) considers physical and experiential context. The author uses Gilles Deleuze's concept of cinematic materiality to characterize the relationship of material to movement and image in cinema, which consists of two distinct

differentiation and specification processes. New Acropolis is a case study investigating the structure's allure in this context. Jakobsen (2012) demonstrates that context is not only a comprehension of the inputs of architectural form during the design phase but also a recurrent concept in the experience of architectural form.

Rem Koolhaas (1996, p. 502) presents one of the most radical perspectives on context. "Fuck the Context" is the quote sourced from the essay titled "Bigness, or the Problem of Large" in Rem Koolhaas' book, *S, M, L, XL*.

When considering the historical, definitive, ontological, and epistemological aspects, the concept of context arises as a defining factor in architecture. It shapes the form and is continuously shaped by the user experience. However, the question remains: Why do architects require context? What happens if the context is differentiated and inverted?

1.2. Body as an Alternative Unit of Context

Merleau Ponty (1962), in his book *Phenomenology of Perception*, provides a precise definition of sensation as a condition that is both influenced and personally encountered and is inherent to the one experiencing it. Furthermore, it is an integral component of the overall experience. Sensation highlights the physical form as an entity. Additionally, it explores the encounter of the physical body and its spatial dimensions and motion. In the chapter titled; *The Body as Object and Mechanistic Physiology*, he refers to a hypothetical limb. He illustrates an individual who experiences amputation of their limb. By substituting a stump for the leg, the individual has a sensation of having a non-existent limb. However, this reflection pertains to the cognitive representation of a limb with which the individual has already encountered and familiarized. The hypothetical appendage provides tangible encounters for the individual. Ponty (1962) contends that this dream may originate from the individual's past experiences, sensations, emotions, and intentions of the limb. Humans enlarge their organs using tools. Stiegler (2018) cites Georges Conquillhem in his work *The Neganthropocene*. Humans extend beyond the organism. The human body possesses several tools, such as organs, that enable it to perform a wide range of actions. Stiegler's idea primarily revolves around producing and utilizing synthetic organs and information generation.

The body becomes essential. According to Erkenez and Ciravoğlu (2020), the body has the possibility of shaping space. Recognizing/defining/understanding the body is essential for our predictions and determinations about space. While the body is shaped by bearing the traces of structures of domination, not only mind/body dualism but also culture/nature, women/male, and subject/object are at a critical point for the influence of hierarchical oppositions. The Industrial Revolution can be examined in anthropocentric, anti-anthropocentric, and post-human periods until the 2020s. They exemplify the concepts of organisms, disembodied organs, body without organs, cyborg body, and their relations with space. In this context, Stelarc's works are essential for Erkenez and Ciravoğlu (2020). Based on the idea that the human body is outdated, biologically no longer adequate, and obsolete, the artist argues that the body can be healed, developed, and strengthened by adding new limbs. For this reason, he argues that a third ear, a third hand, or a new leg can be added to the body (Kılıç Gündüz, 2023).

2. Material and Method

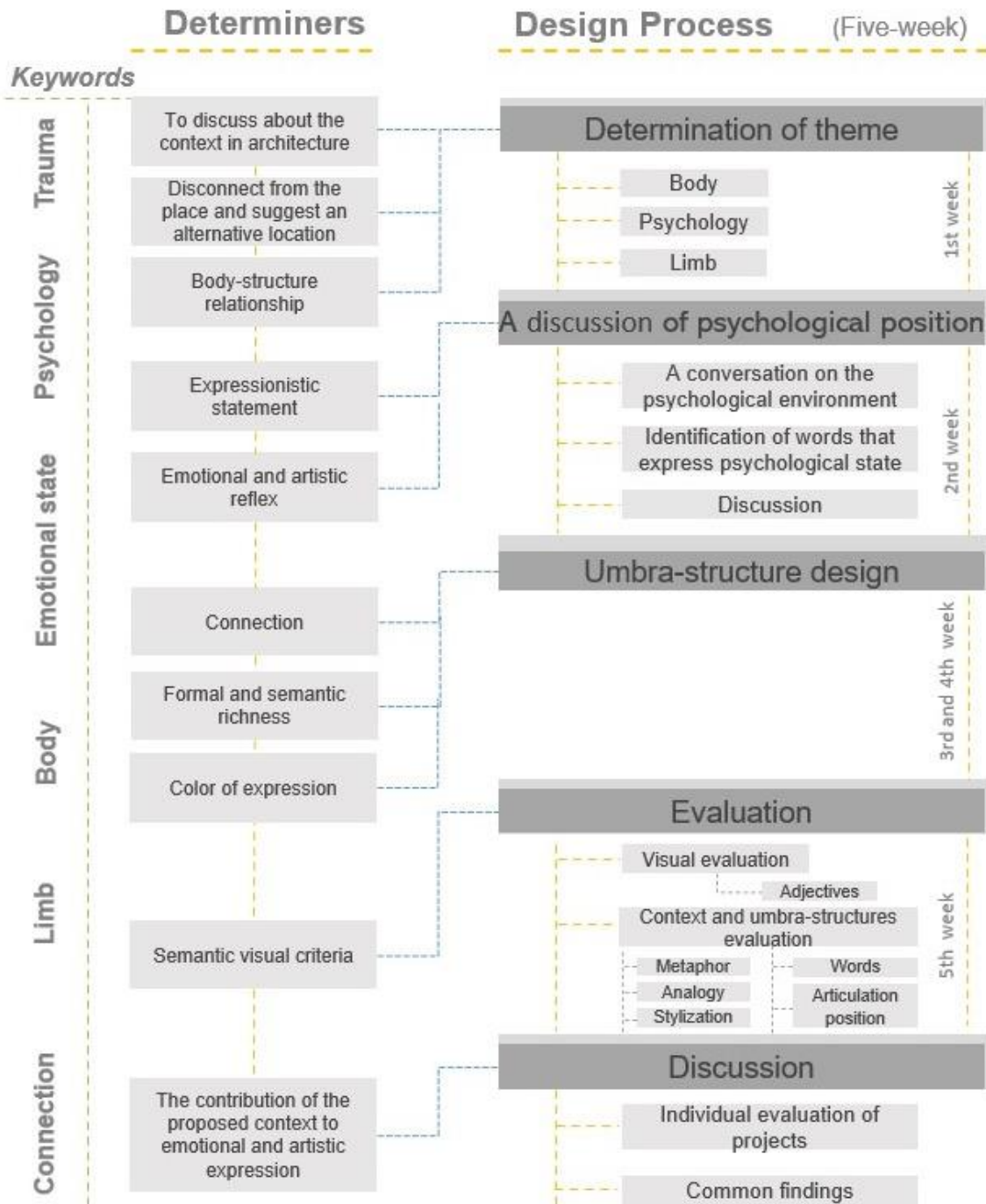


Figure 2. Design Process Schema (Created by author 1 and author 2).

The study was conducted for the 2nd year students of KTO Karatay University, Department of Architecture, in the spring semester of 2022-2023 within the scope of Architectural Design 2 course. The experiment required students to collaboratively design a model that represents their psychological state, incorporating their bodies as an integrated component, such as a limb, while considering basic design principles. Before commencing the design process, the project coordinator instructed participants to select words that expressed their psychological

moment. The formal counterparts of these words were the structures that assimilate into their bodies and synchronize with their movements. Architecture is a manifestation of the psyche within a given context. The task assigned was to simulate shadow or umbra structures. This research was part of an architectural studio experience. Students worked on concepts with words and phrases reflecting their psychology. In the following process, they worked with sketches and models to visualize their designs based on their concepts. They designed the concept, integration, structure, and material of a new limb added to their bodies. 1/1, 1/2, 1/5, and 1/10 scale used for the drawings, while 1/1 scale used for the models. Finally, the students physically exhibited their designs by carrying them on their bodies and moving with them. When examining context historically, definitively, ontologically, and epistemologically, it becomes evident that it is a concept that shapes the boundaries of architecture. The user experience reformed it. This study aims to investigate the potential changes in the visual impact of design when altering the fundamental criteria in architecture that are associated with the context. The user body is the location. Contexts are emotions (Figure 2).

In Çırakılımaz and Aydın's (2021) article on the visual effect of form in architectural design, they utilize adjective pairs to determine the visual impact. Semantic evaluation adjectives are simple/complex, dynamic/stagnant, strong/weak, balanced/unbalanced, full/empty, hard/soft, harmonious/harmonious, ornate/simple, animated/immobile, original/populist, free/restricted, ruleful/ruleless, emotional/rationalistic, dominant/reserved, and traceable/forgotten. In this context, the adjective pairs determined by Çırakılımaz and Aydın (2021), which are about the visual effect of form in architectural design, are utilized. These adjectives, evaluated quantitatively in the article, are handled qualitatively in this research, and evaluated by the project instructors. Out of 19 adjective pairs, 13 are selected as appropriate within the scope of the project, and two adjectives suitable for the definition of umbra-structure are added. These pairs of adjectives and the reasons for their selection are given in Table 1. The authors prepare two tables to describe and evaluate the projects. The first table (Table 2) aims to introduce the projects, umbra structure, and context in detail. The ID information, photographs, sketches of the projects, and the words that the students started with while preparing the project are part of the table. Information about umbra-structures and articulation style are also parts. The study focuses on analyzing the utilization of metaphor, analogy, and stylization to assess these conceptual tools' role in conveying abstract thoughts and emotions inside design projects. The present analysis focuses on how students alter the visual impact of designs, specifically by exploring how they remove and reverse the conventional influence of context on location. The students made lexical choices, articulated their manner, and recorded the incorporation of metaphor, analogy, and stylization alongside these adjectives. Researchers attempt to analyze the relationships among lexical semantics, adjectival usage, and metaphorical expressions.

Table 1. Pairs of Adjectives and the Reasons for Their Selection.

	Types of Adjectives	Reasons for Choice
Adjectives of Çirakyılmaz and Aydın (2021)	Simple/Complex	Students can assess the design as a selectable, easily identifiable form or a hard-to-identify structure.
	Dynamic/Stagnant	Investigation of the liveliness and excitement or the calm and stable effect of the design in people with frontal and mass movements at first glance.
	Strong/Weak	Whether the design symbolizes its power by having a dominant feature around its surroundings.
	Balanced/Unbalanced	Whether the design has a balanced mass placement.
	Harmonious/Unharmonious	Compatibility of the parts that make up the design in terms of their relations with each other.
	Full/Empty	The effect of fullness due to the closed nature of the design form or the impact of emptiness due to its openness (connectivity of interior and exterior).
	Ornate/Simple	The state of being simple or ornate.
	Original/Populist	Whether the design has an ordinary formal expression or an original formal design.
	Free/Restricted	Whether the formal expression of the design makes people feel freedom or restraint.
	Ruleful/Ruleless	Does the design have an orderly and clear understanding?
	Emotional/Rationalistic	Whether the design creates an emotional effect with a lyrical and poetic expression or whether it displays a logical attitude with rational and rigid solutions.
	Dominant/Reserved	Does the design have leadership and freedom features or a recessive attitude according to its environment?
	Traceable/Forgotten	Whether the design is permanent and long-term in memory or is it short-term and temporary.
	Added Adjectives	Animated/Immobile
Hard/Soft		Whether the design has hard or soft lines in the expression.

3. Results

Fifteen practical projects are selected for the analysis study (Table 2 and Table 3). The individual projects are reviewed below:

- The starting point of project No.1 is that emotions inside the individual are like pearls. It is attached to the body with a belt and button. The shell in which the pearl is hidden is stylized. The metaphor used is that emotions are hidden deep inside. A simple design concept is chosen when the semantic evaluation table is examined. Contrary to the stagnant of the pearl, the student uses a dynamic design concept. The design is not dominant over the body. It has a weak character. Design elements have a harmonic feature when examining their relationship with the whole. Although the design is in three dimensions, no fullness or empty nature is formed. Form ornaments the design. The design resembles a folding fan, so its visual connection is marked as populist. It is free and regulated. It is determined that the student makes the design with an emotional approach. It is dominant. It is traceable. It is not mobile and has a soft character.

- The starting point of project No.2 is that small emotions can cause significant changes. The articulation is direct, and no element is used for attachment to the body. The metaphor used is the butterfly effect. Analogistic is the flight of the butterfly. The student stylized the butterfly. The design is simple, not complicated. It goes from the part to the whole. The stylized butterfly is reproduced, and a dynamic work is obtained. However, it has a weak character when the relationship between design and body is examined. It needs to be balanced. It has a harmonic structure. Elements follow each other in the same way in different colors. It has an empty sense of design. It is ornate, especially the colors and the stylization make the design ornate. It has a populist understanding because it tries to match the butterfly, one of the first animals that comes to mind, with emotions. It is a free design. No rules are used. Colors are randomly placed. It is an emotional approach. It is recessive; he is not forming a dominant character on the body. It does not have a catchy form. The student does not use movement as a design element. It has a soft character.
- The starting point of project No.3 is to have loads behind it but to maintain a positive outlook on the future. However, the student associates the future with the front of the body and the past with the back; the student hangs it directly on the neck. The design uses past and future as metaphors. The design is simple. It does not possess a deconstructive attitude. The design character remains static. Researchers determine that the design is a weak character, examining its relationship with the body. However, the student searches for balance. She tries to design the rear form with the previous form in similar size and density to prevent the body from tipping over. It does not harmonize because it exploits contrasts. The use of color gives it an ornate character. The student attempts to attribute different meanings to the word balance. This originality lies in its attempt to capture the balance of two different formats. However, the student limits the design concept and cannot move freely. It is irregular. She does not seek rhythmic balance. This work also evokes emotions. A dominant character does not cover the body. The forms are not catchy; they are formed randomly. She does not consider motion as a design input. The stern character portrays the back side using the past as a metaphor. On the other hand, positive emotions are referred by the front forms, and they have a soft character.
- The starting point of project No.4 is flowers and thorns. The student directly integrates this work into the body. Although the student stylizes flowers, she makes connections with realistic shapes. The design appears simple. The student creates a composition with flowers and places it from the shoulder down to the waist. The composition is static. It is weak when considering its arrangement with the body. There is no balance. The stylized flowers are randomly placed, which creates disharmony. The design has no gaps. The object is ornate. Populism is evident. Constructing the whole is free and unregulated. It evokes emotions. Its relationship with the body has a recessive character. It does not catch attention, partly because it appeals to the masses. The student does not use movement as a design element. The colors used in harmony with nature make it soft and versatile.
- The starting point of project No.5 is carrying the load on the shoulders. The student uses sadness as a metaphor and stylizes the clouds. Plastic clamps attach it to the body. Although sadness is one of the interesting features here, the language of the form is sharp and extroverted. There are two structural elements and one color. Different dimensions

place it in various parts of the arm, making it dynamic. It is weak, judging by its relationship with the body. The design does not search for balance. White creates a series in color and rhythm, making it harmonic. The room is empty. The design does not have a complete character. Its direct use of clouds makes it particularly fancy and leads to a populist approach. Since it uses the same articulation style in a single-arm placement, its understanding of design is limited. Creating a particular order makes it regular. It evokes emotions. When viewed visually, it dominates. The mind retains it permanently. The system moves with the movement of the arm, even though it does not use movement as a design element. Therefore, it operates on mobile devices. The clouds have a soft character, but the dominant character is harsh.

- The starting point of project No.6 is an unstoppable chaos and hubbub. The headband and wire are integrated into the body and become a part of it. The student does not use any metaphor or stylization here. Design is a complex concept. It has dynamism. Examining its relationship with the body, we find that it is vital. The balance is off. It lacks harmony; it does not have a rhythmic sequence; it does not attempt to be harmonious. The student uses filled forms. The hubbub originates as an embellishment. The design is original. It is free and has no rules. It does not stylize or use metaphors, making it rational. The form dominates the body. The design leaves a mark on the mind. We do not find movement as a design element. The design language is strict.
- The starting point of project No.7 is reluctance and dragging feet, using a root metaphor and stylization. The reason for its inactivity is its rooting. This root, however, inhibits movement. Using aluminum foil, he wraps the design around his legs. It has a straightforward design concept. Although using a single color slows the foot's movement, it is active and dynamic. Examining its relationship with the body reveals that its personality is feeble. It is well-balanced because it stands on two legs and moves towards the earth. It lacks harmony. It is vacant. There is no complete form. It is intricate because of the nature of aluminum foil. Rooting is populist due to its direct application. It has limited knowledge of design. It is visceral and disorderly. Regarding hue and texture, it is subordinate to the body. It is not an attractive layout. The design now includes leg-movement functionality. It is soft.
- The starting point of project No.8 is the knives on the back. The student wears it by integrating the design into a t-shirt and stylizing the knife. It has a simple design language. It is stationery. When its relationship with the body is examined, it has a weak character regarding height and design language. There is no search for balance. Despite the color transition, it is anharmonic. There is no empty or filled character. It is plain. It is populist because it is designed like a shield. It is limited. There is no rule for the design. The elements that make up the whole are arranged randomly. It is emotional. It is recessive in its relationship with the body; it has remained regional. It has a forgotten character. The movement is not used as a design element. It is hard to understand.
- The starting point of project No.9 is a stress cube. It is attached to the neck with a hair band. Stress and emotions are used as metaphors. The student mentions that her neck hurt when she is in challenging situations. This pain stress cube, which she experiences daily, becomes the starting point of her project with the synonym of a stress ball. It is complex. It is formed by combining the cube and two design elements with different characters. It is

dynamic. Considering its relationship with the body, it is weak. It needs to be more balanced. There is no search for balance. It is incompatible because two different elements are used. Due to the cube shape, a void is formed. It is ornate due to the elements inside the cube and the use of color. It is original. It is not popular. It needs a greater understanding of design. Although the shape of the cube is regular, an irregular design has been formed. It is emotional, primarily based on neck pain. It is recessive. It is memorable because of its location. Movement is not included as a design element. It has a soft character.

- The starting point of project No.10 is carrying the weight of emotions on the neck. It is attached to the neck like a necklace. The weight of emotions is used as a metaphor. The design is simple and dynamic. Its relationship with the body is strong and balanced. It is compatible. It is full. It is decorated due to the use of color. It is an original work. It does not resemble a form that has existed before. It is a free design. It is regular. It is a rational work. It is located predominantly on the neck. It is traceable. Motion is included in the project as a design element. Rigid forms are used.
- The starting point of project No.11 is the mind spheres. These spheres move within a specific structure. The T-shirt is used as a form of articulation. A simple systematic is followed. It is dynamic as different sizes are used. When its relationship with the body is examined, it is weak. It is balanced and harmonious. Black and white colors are used. It is an empty character with spheres and moving balls. It is simple. It is original. It has a free design concept. While design is free, it is normative. All spheres and balls are placed in the same way. It is rational and recessive. It has movement. It is soft.
- The starting point of project No.12 is the expression of the colors in the mind. The form of attachment is the hair band. It flows from the back of the head like hair. The student chooses the colors of emotions as metaphors. It has a simple design concept. The elements are formed with the same system. It is dynamic and strong in location due to its use of color and mobility. However, it is of an unbalanced character, which is compatible with the body. It is full and intense. It is ornate. It is not populist; it has a free design concept. It is ruleless because desired colors are used. It is emotional. Considering its position in the body, it is dominant and has a design that leaves an impression and remains in the memory. The parts are movable when walking, but where they are attached, they are stationary. It is soft.
- The starting point of project No.13 is the sharpness of the loads. These words are used as slogans. Emotional loads are used as metaphors. The form of articulation is direct. Fullness and space are used together. It has a simple design language. It is stationary. It is weak. There is no balance. Considering its relationship with the body, it is harmonious because it is formed in the same way as the body's movement. It is simple. It is a populist approach because only triangles are used. It is recessive. It does not leave a trace in the mind. It is motionless and rigid.
- The starting point of project No.14 pain. It is placed on his shoulder with triangles. It is directly connected to the body. It has a simple design language. It is stationary. It has a weak character. Although any search for balance is not visible from the front, balance emerges as the design spreads to the back. There is no harmony. It has created fullness. It is plain because of the use of color and form. It is populist because specific formats are used. It is limited, regular, and rational. It has a dominant character in the body area where

it is placed. However, it is not a design that leaves a mark. Movement is not used as a design element. The language is rigid.

Table 2. The Projects, Umbra Structure and Context.

PROJECT				UMBRA-STRUCTURE			CONTEXT		
ID	Photograph	Sketch	Words	Articulation Position	Way of Articulation		Metaphor	Analogy	Stylization
					Direct	Using Attachment Element			
NO 1 D.E.K.			Our emotions are hidden deep inside us like pearls			Beit, Button	The feelings hiding the deepest		Mussel shell
NO 2 T.T.			The butterfly effect. (big consequences of small feelings) Butterflies in the stomach		D		Butterfly effect.	Butterfly flying	Butterfly
NO 3 H.N.E.			Getting rid of the burdens on the back; think positive about the future		D		Load on the back and being positive		
NO 4 R.U.			Garden of emotion: flowers and thorns		D				Flowers and thorns
NO 5 B.D.			Carrying sadness on the shoulder, Cloud of sadness			Plastic handcuffs.	sadness		Cloud
NO 6 S.B.			Hubbub and inexpressible chaos			Wire hairband			
NO 7 E.S.			Drag one's feet			Aluminium foil	Unable to move		tree root
NO 8 E.I.E.			Stab in the back			T-shirt			stab
NO 9 E.A.K.			Stress cube			hairband	Stress and feelings		
NO 10 M.B.K.			feeling the weight of emotions on your neck		D		weight of emotions		
NO 11 M.F.K.			Mind sphere			T-shirt		Brain-sphere	
NO 12 S.M.A.			The colors of emotions in my mind		D	hairband	The colors of emotions		
NO 13 S.T.			Sharp Load		D		Emotional load		
NO 14 T.S.			Shoulder pain		D		Pain		
NO 15 T.I.S.			Anger glove			glove	anger		

- The starting point of project No.15 is anger. The glove is cut from certain parts and integrates with the hand shape. Its metaphor is anger; it can be identified with a fist. It is a simple design. It is dynamic because of the needle's shape and direction of movement. When the relationship with the hand is examined, it is strong and dominant. It is unbalanced. It is compatible with the body. However, there is no harmony. It has a complete and empty balance. It has created fullness in form. It is plain because of the use of one color and form. It is original because of the articulation and the use of metaphor. It is free to place the form but limited in space. It is ruleless; it is emotional. Considering its relationship with the hand, it is dominant and is a work that leaves a trace. It is immobile, and its form language is rigid.

Table 3. Evaluation of Projects According to Adjectives.

ID	Simple	Complex	Dynamic	Stagnant	Strong	Weak	Balanced	Unbalanced	Harmonic	Unharmonic	Full	Empty	Ornate	Simple	Original	Populist	Free	Restricted	Ruleful	Ruleless	Emotional	Rationalistic	Dominant	Reserved	Traceable	Forgotten	Animated	Immobile	Hard	Soft
NO 1 D.E.K.	✓		✓		✓		✓	✓					✓			✓	✓		✓		✓		✓				✓		✓	
NO 2 T.T.	✓		✓		✓		✓	✓				✓	✓			✓	✓			✓	✓			✓			✓		✓	
NO 3 H.N.E.	✓			✓	✓		✓		✓	✓		✓	✓		✓			✓		✓	✓			✓		✓	✓	✓	✓	
NO 4 R.U.	✓			✓	✓		✓		✓	✓		✓	✓			✓	✓			✓	✓			✓		✓		✓		✓
NO 5 B.D.	✓		✓		✓		✓	✓				✓	✓			✓		✓	✓		✓		✓		✓		✓		✓	
NO 6 S.B.		✓	✓		✓		✓		✓	✓		✓	✓		✓		✓			✓	✓		✓		✓		✓		✓	
NO 7 E.S.		✓	✓		✓		✓		✓		✓	✓	✓			✓		✓		✓	✓			✓		✓	✓		✓	
NO 8 E.I.E.	✓			✓	✓		✓		✓				✓		✓			✓		✓	✓			✓		✓	✓	✓		✓
NO 9 E.A.K.		✓	✓		✓		✓		✓		✓	✓	✓		✓			✓		✓	✓			✓		✓		✓		✓
NO 10 M.B.K.	✓		✓		✓		✓		✓		✓	✓	✓		✓		✓		✓		✓	✓		✓		✓		✓		✓
NO 11 M.F.K.	✓		✓		✓		✓	✓			✓	✓	✓		✓		✓		✓		✓		✓		✓		✓		✓	
NO 12 S.M.A.	✓		✓		✓		✓	✓		✓		✓	✓		✓		✓		✓	✓		✓		✓		✓		✓		✓
NO 13 S.T.	✓			✓	✓		✓	✓		✓	✓	✓	✓		✓	✓		✓		✓	✓		✓		✓		✓		✓	
NO 14 T.S.	✓			✓	✓		✓		✓	✓		✓	✓		✓		✓		✓		✓	✓		✓		✓		✓		✓
NO 15 T.I.S.	✓		✓		✓		✓		✓	✓		✓	✓		✓		✓		✓	✓		✓		✓		✓		✓		✓

The network map (Figure 3) shows the connections between the adjectives and the words chosen by the students. When Figure 3 is examined, it is seen that the adjectives ‘unbalanced, emotional, simple, and weak’ are prominent. Students use situations such as sharp load, chaos, sadness, getting rid of burdens, anger gloves, and feeling the weight of emotions on their bodies while designing their structures integrated into their bodies as limbs.

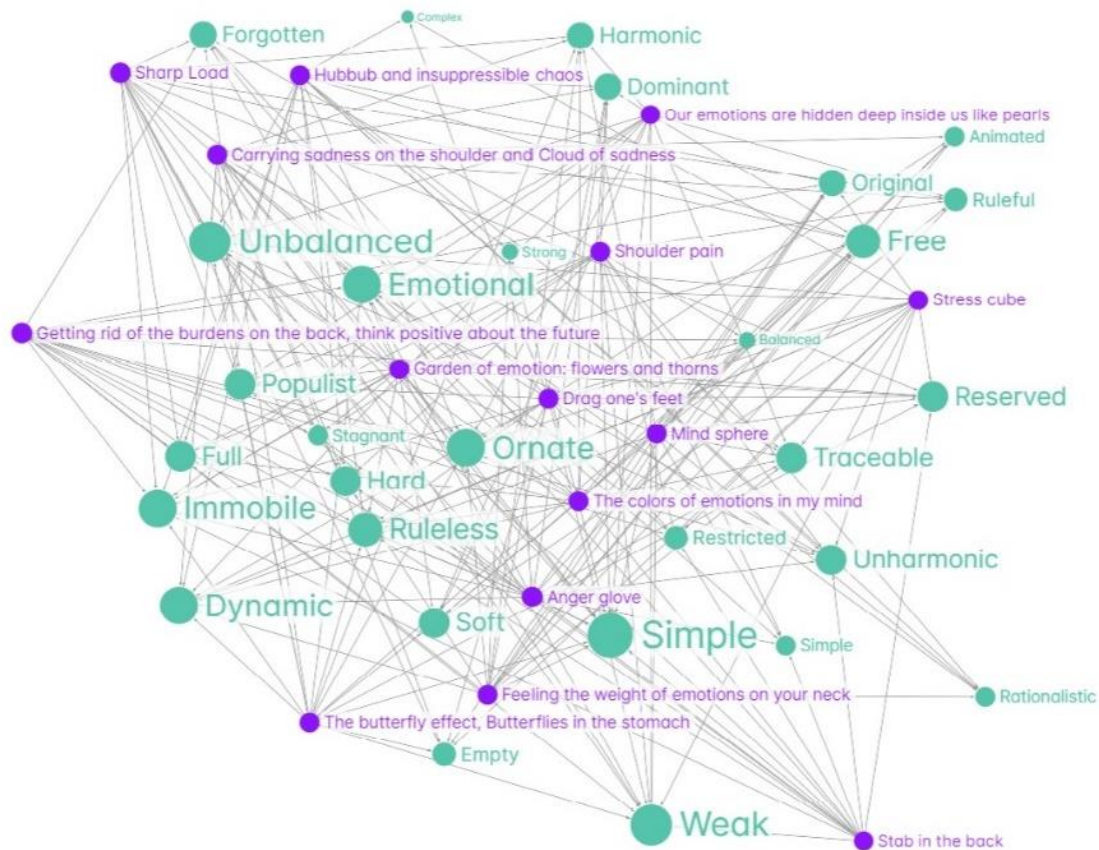


Figure 3. Network Map (Created by author 2 via Graph Commons).

4. Conclusion

This study aims to improve architecture students' design reflexes following trauma. Instead of seeking definitive and unchangeable results, the study wants to start a discussion about the context in architecture and body architecture relation in the posthuman era. In this context, the formal reflexes of the students that correspond to their emotional reflexes are evaluated. The emotions identified by the research are negative. However, they attempt to mix these negative emotions with positive ones. They articulate using all body parts (shoulder, head, back, foot, hand, and midsection). They tend to stylize the object they employ as a metaphor. They attempt to convey their emotions through color. Darker colors represent negative emotions, while a range of hues represents positive emotions. Ten or more is considered a dominant score for adjectives. Simple, dynamic, feeble, unbalanced, ornate, emotional, and immobile describe these adjectives. Negative emotions, such as anguish and burden, are evoked by rigid forms, whereas words with soft forms evoke positive emotions.

Furthermore, the design of the sharp uniforms emphasizes the body. The students project their negative emotions onto the organs where they experience discomfort. When the burden of the context on the ground is reduced, students' relationships with form and body form diversify. The words adopted as context and chosen by the students contribute to the formal and semantic depth of the visual meaning. This study heightens awareness of the sensory aspect of architecture.

Declaration of Ethical Standards

The article complies with national and international research and publication ethics.

Ethics Committee Approval was not required for the study.

Conflict of Interest

There was no conflict of interest between the authors during the research process.

Authors' Contributions

Özlem Demirkan (Author 1): (%60) Data collection, design of the study, interpretations of results, article writing and publishing process.

Ayşenur Dağ Gürçan (Author 2): (%30) Data collection, design of the study, interpretation of results, article writing process.

Büşra Yılmaz Erdoğan (Author 3): (%10) Data collection, tables

Declarations

The authors take full responsibility for the content and any modifications made during this process.

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Originality Report

According to the originality report obtained from the iThenticate software, this article's similarity rate is 5%.

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