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Investigation of Philosophical Content in Design Education, The Case of Deleuze and Guattari

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Abstract
Design education exists in a chaotic and multidisciplinary structure in accordance with its own essence. Many different paradigms that exist on different layers create a complex pattern that the student must come to terms with and make sense of in the educational process. This pattern offers a model that is both high effort and high quality. Within this model, philosophy is one of the most effective tools for understanding and making sense of the essence of design, establishing a design relationship on concept, and ensuring design culture and intellectual identity. However, in the process of design education, this important part is relatively left out and educational models are shaped through materialist realities. This study focuses on this very point, the questioning of philosophical meaning in design education. A case study was conducted on the understanding of philosophical meaning and students' reactions and responses to this area were measured. At this point, the concepts and discourses of Deleuze and Guattari, which are particularly and deliberately difficult to understand and make sense of, were preferred as philosophical discourse. Dealing with these concepts constitutes the example of one of the most difficult confrontations possible. In the study, it was ensured that the students designed the concepts they did not know both without knowledge and then redesigned them with the research they did on their own, and conceptual questioning was made between the two studies. As a result, data were obtained on the use of philosophical content and thought systematics in design education. The appropriateness of the use of philosophical content in design education has been revealed.

Keywords
gilles deleuze; felix guattari; design; design education; industrial design; philosopy.

1. Introduction

The concept of design exists within a chaotic structure that includes many different parameters from aesthetics to art, from sociology to anthropology. The designer reduces and organizes this structure within its own essence. This concept both shapes the society and is shaped by the social being in accordance with its own essence. Tunalı describes design as an organization, a plan (Tunalı, 2012,20) made within all these inputs, while Kearney and Rasmussen state that design is a fiction of reality (Kearney and Rasmusse, 2001, 289). To the untrained eye, design and philosophy may be perceived as distant fields. However, with an in-depth examination, it can be seen that design and philosophy constantly express both a battle and a unity within a dynamic entity. Ülger states that the concept of design is deeply related by theoretical discussions in the fields of art, aesthetics and philosophy (Ülger, 2014, 179). In the most basic sense, philosophy can be defined as a field in which abstract concepts such as existence, morality, knowledge, reality and surrealism are dealt with, while design is a field that concretizes these abstract concepts and seeks, creates and discovers their equivalents in physical reality. These two disciplines intersect at the point of solving and creating problems. The creative style that exists in both fields constitutes

the focal point for problem solving and production. Like art, design creates a context, a bridge between thought-idea, existence, reality, object and subject. Heidegger expresses this context as “unraveling the magic of being and understanding the nature of things is the common goal of art and design” (Heidegger, 1971, 145- 161). It can be stated that one of the most fundamental carriers of this unity is philosophy. Likewise, in art, design and philosophy, there is a common goal of discovering or producing reality. In support of this, Schaeffer, in his famous work Art of The Modern Age, states that design, philosophy, art, all aim to discover the implicit reality of existence, the possibilities/potentials of the unseen. (Schaeffer, 2000, 7).

At the same time, one of the most fundamental fields of philosophy, human and nature, is the most important research field and target area of design. It can be said that design and philosophy work together in the creation and perception of human experience, in making possible and continuous the unity with nature. By incorporating philosophical existence, thought and way of thinking into the practical existence of design, it is possible to design meaning, emotion and experience at an intellectual level that aims to go beyond the expression of what is purely beautiful and functional.

The design process is essentially an intellectual and imaginative process as well as an analogical, symbolic, subliminal process. It contains a teaching, an association, a message realized through images. This message has a user, a viewer, an experiencer and a designer. And this message is realized in the commodity, service or image. Basically, this creates an object-subject or subject-object relationship.

This subject-object relationship, which exists in the very essence of design, exists within a Cartesian, dialectical and Newtonian epistomology. It is possible to state that the position of the subject, which contains an absolute definiteness with a Descartesian perspective, has been reshaped (and reshaped again) today, especially with phenomenology. Husserl and Heidegger, with a contrasting gaze, bring the subject into being, define and introduce it to experience, time and space. This way of being brought innovations to aesthetics, function and object-subject, and revealed the existence of an incomplete reality. Incompleteness and the experiential understanding of being weaken the absoluteness of the Descartesan view. Merleau-Ponty says that phenomenology creates an experiential and independent object in design, not a subject at an absolute reference point (Kearney and Rasmussen, 2001, 289-304). In support of Ponty’s statement, Barthes states that our view of both semiology and structuralist philosophy will never be the same because of the perception of the experiential and independent object (Barthes, 2000, 109-159). Strauss says that this change destroys the concept of the creative subject that existed in structural thought (Strauss, 2012, 349-382). Brecht emphasizes the importance of not blocking any kind of design artistic process (Lunn, 1994, 114)

Design is a process that involves a lot of blocked paths but is intrinsically surrounded by creativity. In undergraduate education, the philosophical context is often overlooked by design students. It can be said that the person who ponders over the act of designing experiences blockages in the form-form-shape relationship in the early period, and in the later periods, on the discovery and fiction of the concept, on the discovery of the problem and the creation of the problem.

This can be expressed as a relatively shallow but normal situation resulting from approaching design as a materialist discourse. There is a part of design that is learned through phenomenological and hermeneutic knowledge, through the knowledge of experience, that requires being in the process. In other words, it is not possible for anyone to design with just a to-do list about design. There is a dynamic relationship between thousands of parameters that need to be shaped and constantly revised according to each other in design. In order for a person to organize this relationship, he or she must have a mind model shaped by design education.

Although the value of the design-philosophy relationship, which is overlooked within this process, is a reality that is realized after undergraduate education, it can be used as an effective tool both in terms of grasping the essence earlier and in eliminating the blockages that exist in this process. For this reason, the main purpose of this study is to reveal that the unity of design- philosophy, which is overlooked in the early stages of undergraduate

education and in the design- design learning process, should be given in education. To exemplify this situation through the philosophical approaches of Deleuze and Guattari, and to try to concretize the reflections of the discourse and systematics of even philosophers with a complex thought structure such as Deleuze and Guattari on design. In this way, it is aimed to contribute to the elimination of the bottlenecks that exist especially in the project processes in design undergraduate education, and to make the design student's acquaintance with philosophy at an early age and early education meaningful.

The concept pool in the research was taken from Deleuze. Deleuze's philosophical approaches and concepts, which are relatively more difficult to understand and comprehend than many other philosophers, were chosen with the idea that the student who can come to terms with this difficult and special terminology will be able to understand many other concepts more easily. The main method of the study is to measure and evaluate the contextualization of the concepts and cores from philosophy into design. It was tried to find concrete equivalents of Deleuze's concepts in the basic design course. The visuals of the 1st grade students were included in the study. 18 people participated in the study and each student worked on 2 concepts of his/her choice. During the study, the words (concepts) "rhizo(rhizomatic), deterritorialization , the body without organs, lines of flight, grabber machine, nomadic thought(nomadism)(nomadology), war machine, schizoanalysis, the desire machine, asignifying rupture and difference" were written on the board in the classroom.

In the first stage, the concepts were given to the student without any prior knowledge, no explanation was given and research techniques such as internet and books were not allowed. In the first stage, which was designed like a sketching hour, the student was only allowed to do research in his/her own mind and not to be supported by any external source. After investigation on her/his mind and thinking about the concept, visualization was requested in two dimensions without any technical or material constraints. In the second part, the same students were given 3 days to research and try to learn the concepts they visualized. Afterwards, students were expected to visualize the same concepts again and explain these concepts again in two dimensions.

This process, which can be described as a controlled test, consists of the same student's interpretation, design and visualization of the same concepts (which they heard for the first time), first by being completely ignorant of them, then trying to understand them by investigating them on their own within 3 days, and again designing and visualizing them. These two different designs made by the same student with the same concepts were included in the semiotic and semantic analysis. What the philosophers actually meant by those concepts was analyzed. The examples were analyzed mutually. Out of 18 participants, 7 examples were selected to serve as examples in the study on the grounds that they contained relatively more successful contexts. It was observed that a certain number of the students who did the other studies submitted submissions just for the sake of doing the study and did not meet the necessary qualifications, and some of them did not conduct research.

2. Deleuze and Guattari

20th century philosophers Deleuze and Guattari have had a major impact on the field of design and art through their thoughts, texts and actions. The chaotic, multilayered and innovative ideas of the French thinkers find strength as a critique of conventional thought structures and become meaningful in their own essence. With a coexisting doctrine of differences, diversities and a marginal perspective, Deleuze and Guattari have created a perspective that characterizes themselves in their philosophical discourse. According to this point of view, Deleuze and Guattari basically did not choose a conventional methodology to make sense of the existing philosophical meaning and context, but developed a robust system of thought in a unique and creative way, and achieved this by going beyond conventionality and approaching philosophy from the middle with its own discourse (Deleuze, 1990, 31). Hudges states that Deleuze and Guattari say that Hegel is the basis for creating the concepts that produce such a vast and chaotic structure. (Hughes, 2014, 42-43).

This concept, formed with the subtext of difference, has brought a new perspective to the 20th century. This point of view exists with many important names such as Spinoza, Kant, Hume, Bergson, Nietzsche. In Deleuze and Guattari's chaotic universe, differences are not just formal differences between two commodities, but the first steps of a powerful representation as a concept. It is a driving force that carries reality into the future, forward in time and intellectual existence. In other words, Deleuze says that difference is the source of the concepts of creativity and innovation, and that the concept of difference is a key concept for the understanding and reduction of problems and reality. It can be said that another important concept like difference is desire. The concept of desire is to Deleuze and Guattari what the concept of will to power is to Nietzsche.

For Deleuze, it can be stated that philosophical existence is fundamentally an act of creation, a function of designing. This act of creation is more than an essential effort of activity; it is the representation of production that can discover or make sense of reality, life, multiplicity, continuity and motion. Deleuze expresses this as "Philosophy is the art of creating, discovering, producing concepts" (Deleuze, 2001, 12). Design is fundamentally a form of creation. This creation exists in the form of creating an aesthetic and ergonomic solution to an existing problem or creating a non-existent problem, creating a qualified thought systematics. Deleuze and Guattari's definition of philosophy is in a way like the definition of design.

Creation basically exists through an intuitive gaze. Deleuze points to intuition as the starting position and source of power (Atkinson, 2014, 281-282). Deleuze says of intuition that "through it, instead of coming from and being deduced from anything else, it presents itself" (Deleuze, 2002, 23). Bergson defines intuition as "in that it cannot use a ready-made concept and is subject to the preoccupation with the object in its essence, it gives to each of the functions an explanation that is uniquely its own" (Bergson, 1946, 35). Again, Bergson defines intuition as non-indirect consciousness, connection, and perhaps accidental knowledge (Bergson, 1946, 36), but when it comes to the act of design, it can be said that intuition is sometimes the starting energy, the competence of position, the provider of movement, and the cause of continuity in time. Like Bergson, Deleuze emphasizes that intuition is the main source and the first initiator of movement. For Deleuze, in the process of creation, intuition is considered as a force that ensures continuity beyond the starting point. In other words, he states that intuition is the most fundamental enabler for the creative process.

When analyzed in the design context, it can be said that Deleuze's approaches are a challenge to the existing paradigms in design from a new perspective and evolve the existing procedure into a new form. For Deleuze, the concept of difference, which is at the core of looking through a new window, constitutes the essence of what exists or what is to be discovered, the source, the key to creativity, an important cross-section of the reality of the chaotic structure. Subsequently, difference is the fundamental basis for reducing or making sense of these complexities. When the design discourse is analyzed within the concept of difference, it can be stated that Deleuze and Guattari's emphasis is on a discourse that is formed in opposition to the idea of a singular, linear and universal design as a battlefield. Although this battlefield is difficult to make sense of and understand due to its chaotic structure, at the point where it is assimilated, it is pregnant with a series of potential discoveries specific to the unique context of the relevant essence at the point of solving or creating problems.

Ontologically, for Deleuze, the concept of difference is the expression of a becoming that already and essentially exists in every sense, everywhere and in every way, rather than a point arrived at. In other words, difference can be said to be the essence and even the identity of every belonging. At this point, perhaps the most valuable in terms of design, it strives to reveal a difference that depicts and tries to see a moment beyond the existing reality, a reality beyond this reality, and teaches us to imagine. Difference exists not only through the possible combinations of what exists, but also through the possibilities of structuring and contextualizing relations outside the combination. In other words, beyond making sense of the basic relationships that are visible to the eye, it enables seemingly unrelated contexts

to be established and become a paradigm of design organization.

It is known that Deleuze and Guattari characterizes the concept of difference as the basis of creativity, with uncertainties, a risky reality, out of the ordinary and even effective enough to displace the existing belonging. While Deleuze and Guattari shaped the concept of difference primarily through Hume, they focused on both experience and the concept of difference based on Hume's statement that it is difference that reveals experience. Regarding Hume's thought, Deleuze states that a collection of differentiated perceptions comes into existence from the experience of a non-fixed ordering (Deleuze, 2008, 88).

As another concept, Deleuze creates a metaphor with the botanical word rhizome and deals with the essence. This metaphor essentially refers to the way knowledge is produced and the way it spreads. In contrast to the often used hierarchical diagrams, the rhizome refers to a multi-surface relationship that can relate in all directions and to all layers, like the front structure of a chaotic form, which by its very essence has no hierarchy. This concept is influenced by Spinoza in the sense that the relations established with nature are the result of their reckoning over disintegration, disintegration, unification and reunification. It can be stated that Deleuze is influenced by Spinoza, who says that the natural is an order that exists on merging and disintegration, and that within this order we, as consciousness bearers, cannot comprehend or make sense of anything other than the results of mergers and disintegrations (Deleuze, 2011, 23). The concept of rhizome, whose impact on creativity and design can be said to be as major as the concept of difference, finds its existential counterpart in design by containing its own unique meaning. Each response to each parameter in the design process constitutes a step, and each step leads to another step. This distribution scheme, far from being linear, presents a structure that is chaotically distributed in all directions and realizes this distribution in relation to each other. Just like Deleuze and Guattari's concept of Rhizome. Contrary to what happens in both administrative structures, basic hierarchies and central orientations, this concept presents a depiction of non-hierarchy, non-centralization that exists in chaotic reality. A pattern of relations that appears as an irregular context between layers within the chaotic structure and that moves in all directions and at all times constitutes the sub-cache of the idea of the rhizome. This sub-cache is a representation of an organism in which ideas relate to each other through different layers and bridges are created between layers through crossings. The core that exists at the essence of design should be nourished from information and resources that exist at different heights, distances and at different times, just like a rhizome, not only within the boundaries of design. Positioning the design on the network of the thought formed with information from different disciplines, creating the network around the design will ensure the correct channeling of a data flow beyond its normative value.

While the different methods and acquisitions of different disciplines existing in different layers merge on the design core, it is pregnant with new potentials and creativity. As an innovative attitude, this idea is always open to "change". This sub-core does not necessarily have to come from an existing discipline, it can be a culture, an art, another network of thought and many other things. And the rhizome makes the potential for creative thinking more qualified and possible through these multiplicable differences.

At the same time, it can be observed that the rhizome makes a criticism where it establishes a context with creativity. As a result of this context, which criticizes the designer's obligation to serve only basic rationality and standardization within the thought and action of design, it can be said that Deleuze expresses that even abstract ideas should not be limited and that feeding from different layers and elements in the production of creative ideas should be unlimited.

The concepts of difference and multiplicity, which are one of the most basic meaning relations that come to mind when we think of Deleuze, speculative and critical contexts, concepts of design ecologies, assemblages, the without organs, deterritorialisation, etc., are concepts that have been constantly examined in the field of design, have equivalents, are used as design infrastructure and even design core. (as an example; Marenko&Brassett, 2015; Tunca Mutlu&Demirbas, 2021; White, 2021,

Parry, 2019; Brassett&O'Reilly, 2015, Delanda, 2002; Drozynski, 2022 etc.)

The concepts of differences and multiplicities are widely used in the correct, effective and innovative organization of the multiple and chaotic data input that exists in every field of design. The concepts of differences and multiplicities offer an effective model for turning these chaotic and heterogeneous inputs into meaningful and accessible for the masses. On the contrary, although there are many design inputs that are likely to be overlooked or unnoticed, the design infrastructure of the concepts of diversity and multiplicity creates an infrastructure that enables visual expressions that enable to reveal the patterns among the inputs, making it possible to create new connections.

Speculative and critical contexts are read as a structure that is widely used in the field of design and art, which can be called marinal or critical in its own group, which is also relatively guided by political thoughts. At these points, it can generally be expressed as a method used by designers who think about social, social and political issues and issues, and who work in these fields, to make sense of, question and reckon with the relevant subject. This form of behavior, which offers the possibility of plastic intervention in sociological realities, basically creates its power with speculative and critical contexts.

The concept of assemblage, on the other hand, sets aside the reality of the finished product before the process that exists in the prototype logic and offers an improvisational, phenomenological and experimental playground for design. The concept of assemblage, which enables discovery within the process by approaching the problem at hand in a reactive and dynamic manner throughout the design and production process, is flexible and open to change, focusing on the process and experience itself. The problem at hand offers a dynamic, open-to-change (and in this way able to catch chance-innovation) method that focuses on the assemblage process itself, the experience itself, which makes the assemblage process possible throughout the design and production process with a reactive and dynamic formal approach. At this point, a quality such as being constantly open to innovations emerges while producing solutions to the problems encountered throughout the process. This quality of design includes a structure that treats the process as a living organism and allows reinvention at every opportunity.

3. Examples and Discussion

This section is designed to present the examples and discuss their semantic expressions, question their content and express their conceptual context. The examples are included in the same format, without any changes, directly with a red background and ruler. In each example, there are two works by the same student; the works on the left side are the works done without prior knowledge and the works on the right side are the results of the research. In cases where student names were written on the front of the work, the names were covered by adding the orange rectangles on the word program.The participants have two works available on the left and right. The works on the left side are the examples that the students designed on their own during the lesson without any knowledge about the concept.

On the right is the version in which the same student researched and redesigned the same concept for 3 days.

3.1. The Without Organs (study no1 and no 2)

Participants Z.A. and M.Ö.'s drawings of the body without organs, which they designed and visualized twice before and after the research (before and after), contain almost no similarities. In the design seen on the left side of study no.1, there is no situation related to the body without organs, it is seen that a figure is tied to a roof line with ropes, and the attachment points are chosen especially at the joints. The relationship established by the participant and the design cannot be read as an indirect or direct context with the body without organs. But, in work no.2, there is an abstract depiction of the without organs expressing absence. In this depiction, we can see that the presence of the audience is someone being watched on the stage, but this person is a depiction of absence that has not taken on a flesh-and-blood structure. It can be stated that the participant made inferences about the word root.

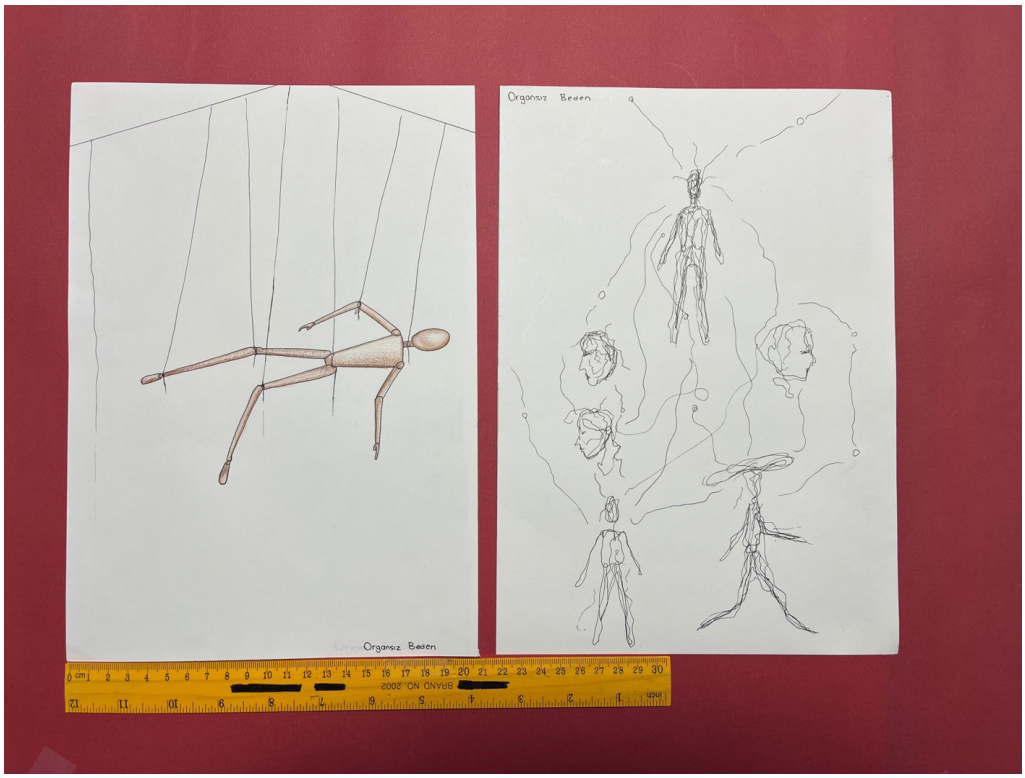

Figure 1. Study No 1 – The Without Organs / Z.A.

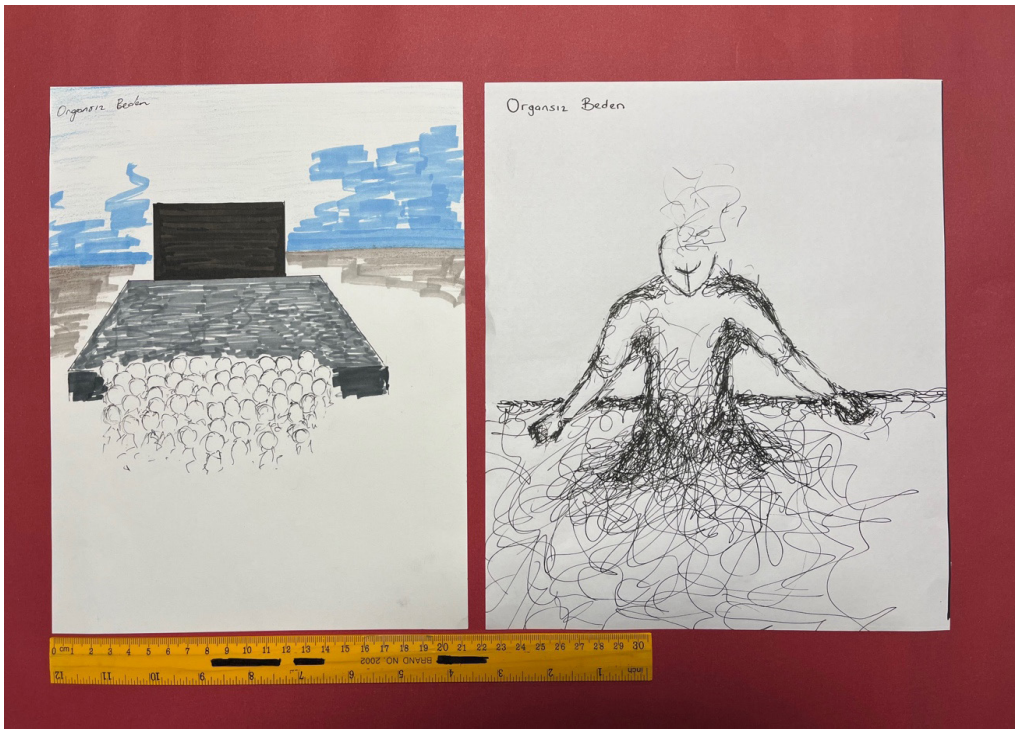

Figure 2. Study No 2 – The Without Organs / M.Ö.

On the other hand, when the designs and visualizations in the right parts of study no.1 and study no.2 are examined, it is seen that the participants were able to understand and make sense of Deleuze and Guattari's concept of the without organs at a basic level and on their own, and more importantly, they were able to visually express what they made sense of. Contexts that go beyond the conventional body and organ relationship that lies at the core of the concept can be seen in the designs.

At this point, there are meanings in the designs that integrate beyond being a biological entity, that contain more than the sum when collected with its parts, that express a reality beyond function and borders. In addition, it can be stated that meanings such as the fluid structure of the visualizations, the network mechanisms that transform motion and circular movements, organization and processes into relationship patterns, and the transition of these mechanisms beyond the body are understood and visualized.

Again, the works can be read through the concept of change, and in Deleuze's expression, they contain the representation of a dynamic movement. As an additional meaning, in Deleuze and Guattari's concept of the body without organs, it is possible to mention concepts such as power- dominance, desire and the potential for space ownership. We can find these meanings in both studies. In study no.1, concepts such as fluidity, relationship pattern, connections and directions, and in study no.2, concepts such as the relationship with the ground, organic transition, transformation of being, fluidity, relationship patterns even if chaotic, constitute the major semantic contexts and provide effective evidence that the organs without body concepts are understood.

3.2. Rhizome (study no. 3)

In the third example, participant M.B. presents a study on the concept of rhizome. When the study on the left is analyzed in depth, it can be stated that participant M.B. designed the rhizome discourse with a mental association. Although it is obvious that this design

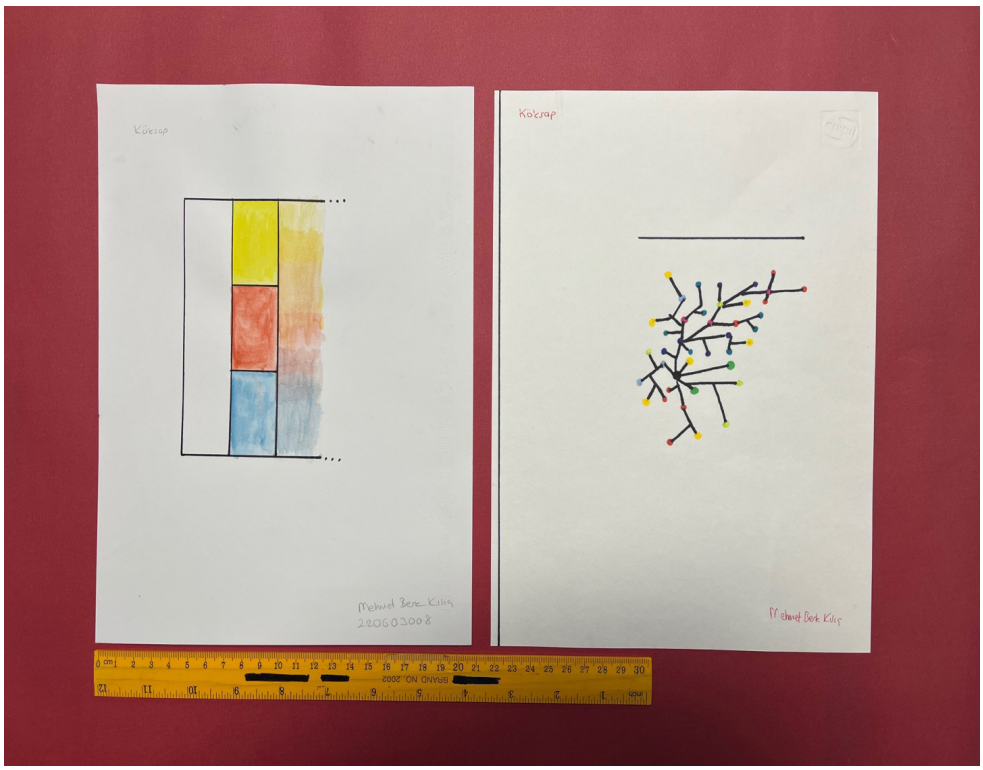

Figure 3. Study No. 3 – Rhizome / M.B.

does not fully cover Deleuze's discourse, it is seen that participant M. searches for meaning in the word with an etymological and epistemological strategy and in this context, it is seen that he creates a partial whole in which separate expressions are combined. On the other hand, the expression "contrasting void", which forms the same whole, does not communicate and overlap with the idea of rhizome.

In other words, it can be stated that participant M.B. obtained an intuition about the concept from the lexical connotation of the rhizome concept, which he designed and tried to visualize without prior knowledge, and expressed it, but could not establish a full semantic and contextual relationship.

It is clearly seen that the same participant, with the individual research he conducted in the short time given to him, understood and interpreted the same concept enough to visualize and express it in a simple and effective language, and was able to reflect the relevant semantic context to the design.

Although increasing the dominance of the volumetric and color (black) basic sphere in the center can be considered as a more accurate procedure for the context, participant M.B. could not fully establish this volumetric emphasis, but still visualized it in an understandable way. The scattered and chaotic structure of the spaces expresses a proliferative and diffusive flow in 2 dimensions with a layered content. Visual imagery such as the color clusters concentrated in the spaces and the approaches of different spaces to the center with colors reveals that the related concept is understood and expressed effectively. The chaotic, fluid and proliferative attitude that the concept has in accordance with its own essence can be expressed in work no. 3 as a structure that progresses in many and different directions with linear expressions, becomes chaotic with colors and directions, and creates specific spatial belongings and determinations with point colors and volumes.

3.3. War Machine (study no. 4)

The concept of the war machine, which is a very important concept in Deleuze and Guattari's

Figure 4. Study No. 4 – War Machine / F.A.

philosophical base, is a representation of a different kind of resistance that goes beyond the basic meaning of the word root, a concept that resists the centralized, authoritarian and hierarchical-settler structure with the meanings of difference, multiplicity, mobility, displacement and variability. As can be seen in the left part of study no. 4, there is no design or visualization that meets these meanings in any way. It can be stated that the participant F.A. has dealt with the concept of war machine as the words war and machine by breaking it down, and included these words in his depiction with their pure meanings. This depiction is basically shaped by the image of a tank, which is already a war machine, and a flag resembling Middle Eastern motifs is added to accompany this image. In addition, there are 3 different/ erroneous points in the tank image that may have been made intentionally. The depiction of the tank barrel as a gun barrel, the depiction of tank shells as missiles and the fact that the tank top rifle does not belong to the tank are situations that raise a question mark. As a result, it can be said that the design-visualization work done without prior knowledge does not establish a philosophical connection with the relevant concept, does not capture the semantic base, and contains only word-oriented expression. On the other hand, the research conducted by the participant on his own and his design and visualization of the same concept afterwards reveals a surprising change.

It is necessary to analyze the related work in three different parts. Part 1 is the giant image that expresses authority, rule, dominant hegemony, the state. The fact that the proportions of this image are extremely large compared to the other images can be expressed as an indicator of its representation of authority. On the other hand, the fact that this image is expressed as footless (unlike the other figures) suggests that it is not directly related to reality, place and life, or that the relationship is fake. The second part shows the puppet board in the hands of this authority figure and the people attached to the puppet board. One of these puppet people, who can be referred to as the public, is already dead (at the back), one of them is having fun (on the right), and two of them are unconscious (like the zombie image in cinema) or want to attack the puppeteer (on the left). At this point, it can be said that the contrast between the direction of the figure having fun and the direction of the other figures contains a criticism of the authoritative attitude. The fact that the figure who does not see the authority is having fun, facing the authority, while the figures who see its reality are not having fun, are dead or aggressive constitutes this criticism. Thirdly, the most important point of the work is the character who is freed from his strings and who is thought to have cut his own strings.

The fact that this character, which can be expressed as the presence of the concept of War Machine, is on the same level with the footless authority figure, but with feet, tells us that the relationship established with the ground is more realistic. In addition, the fact that the direction of this figure is turned towards the authority figure, that the figure is depicted in an attacking position, that it is figuratized as the exact starting moment of the movement, and that the tool it will use for the act of attack that defines the movement is actually the tool it uses to get rid of the authority (scissors) clearly reveals Deleuze and Guattari's concept of war machine. The fact that the scissors are approximately the same volume as the figure itself, but drawn in red as a contrast, expresses that the war machine is not a war to be fought in a conventional way, but a resistance with the difference, diversity and contrast that the war machine has by its very essence.

3.5. Difference (participants noted difference and repetition as difference) (study no 5 and 6)

In Study no. 5, the participant E.U., who deals with the concept of difference, depicts two different versions of the same geometry in his work (left) without prior knowledge. It can be stated that these depictions are basically depicted in a way that is suitable for perceptual completion and thus differentiated from each other. In other words, the geometries (ellipses) at the bottom of the relevant study and the geometries at the top are the same geometries, but they are repeated by subtraction to make them different, and they are left separate enough to be perceptually completed. It can be stated that the participant could not establish a sufficient and

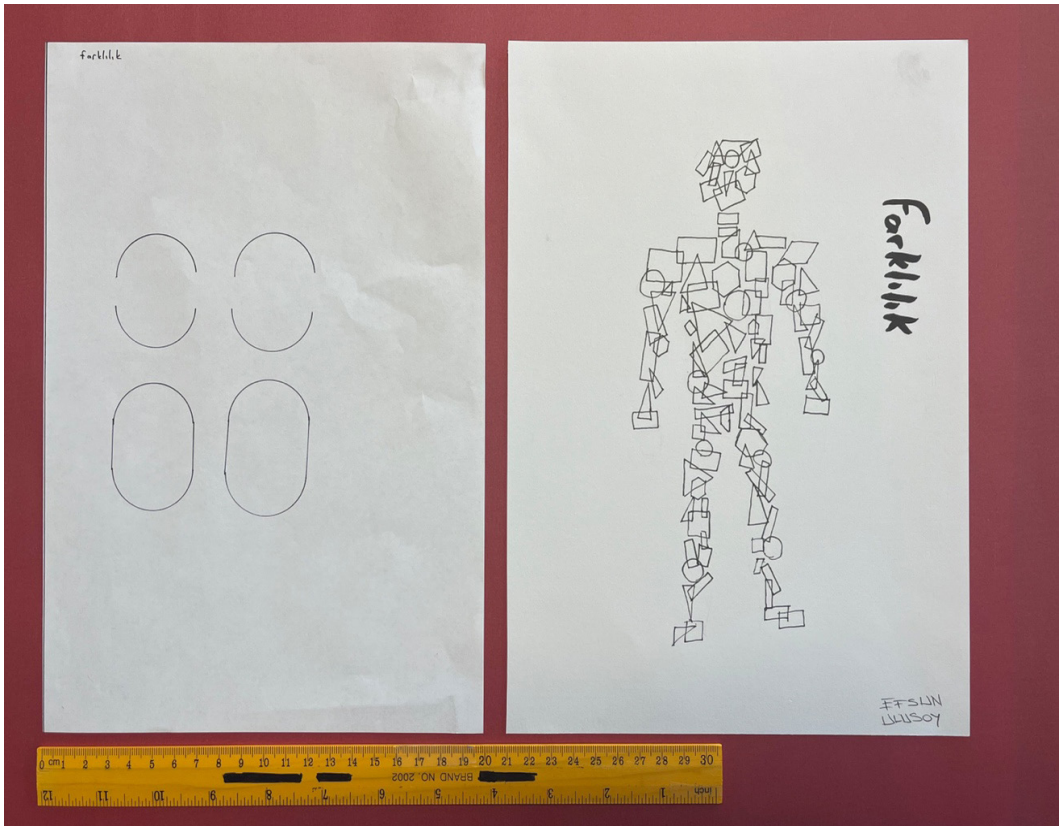

Figure 5. Study No. 5 – Difference / E.U.

correct context with the related concept in the study without prior knowledge, whereas he portrayed the concept of difference with the presence of the concept of repetition.

On the other hand, it can be said that the work of the same participant after the research expresses that the related concept is understood. Different variations of the same geometry, volumetric and directional derivatives, the organization of hierarchical form relations despite different geometries, the expression of unity, attitudes that constitute the same multiplicity with their differences, and the fact that different expressions are parts of an integrated expression can show that the concept is understood. Like Deleuze and Guattari, who express a totality consisting of a continuum of essential differences and changes, similar qualities are present in the study. Referring to Deleuze, who emphasizes that the concept of difference reveals a characterization, the depiction of differences forming a person draws attention. For Deleuze, the concept of repetition, which emphasizes the equivalent importance of the concept of difference, expresses a reality in which differences are constantly and reproduced, and the participant has integrated the organization by repeating the same differences. The structure that is handled within Deleuze concept of difference, which transcends borders, is subject to transformation, is formed and reproduced through change, is realized and integrated through this variational content. Similarly, in Study no. 5, the structures of geometries subject to transformation and change express the whole by creating variations. It can be stated that the related study can make sense of the concept and carry the meaning to the design.

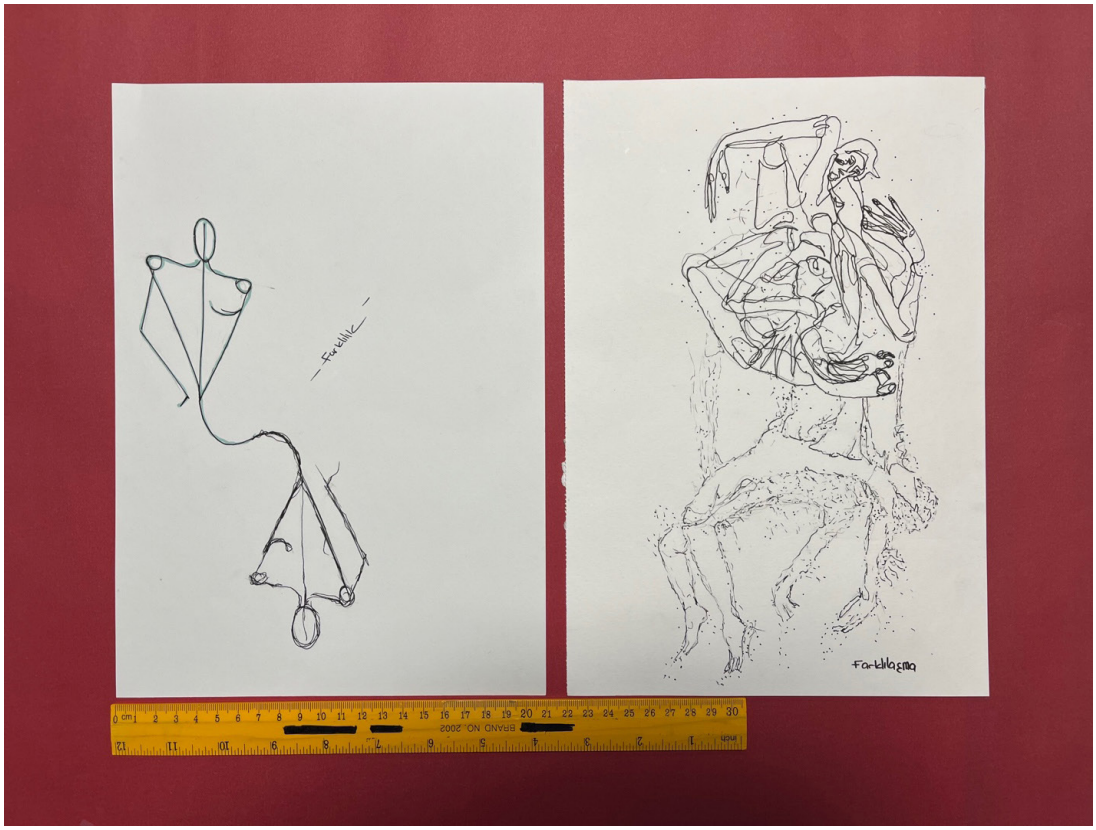

Figure 6. Study No. 6 – Difference / S.D.

In the second work of the participant Ş.D. in Example 4 study no. 6, the concept is handled correctly, but instead of difference, differentiation is written by carnality. Although there seems to be a reflection formed by reproducing the same figure and rotating it 180 degrees in the left example of study no.6, there is a situation that can be overlooked at first glance. In this study, the participant reflected the same figure, but when analyzed in depth, there is a difference in line technique between the upper and lower (original and reflection) drawings. While the upper drawing is expressed with straight, unbroken and clear lines, the lower drawing expresses the same geometry with broken, scattered, moving and fluid lines. At this point, it can be stated that the participant discovered a creative way even when expressing the concept of difference as a word meaning. Although this work, which deliberately creates "difference" between meanings such as real-form, selfreflection, positive-negative with the line technique, is creative, it does not fully reach the quality that reveals Deleuze's concept of difference.

On the other hand, when the design-visualization in the second part (the work on the right) is considered, it is seen that not only the concept of "difference" but also many concepts of Deleuze are explored, made sense of and skillfully expressed. Chaotic and organic can almost be described as schizophrenic. This work, which is a depiction of a surreal reality in which diversity is created in depictions that are different from the volume, texture, geometry and position of the limbs, yet holism is not lost, can be expressed as a deconstructivist form in which differences are blended by breaking away from what should be.

The structure, which breaks away from the defined silhouette of the human body (faint- blurred image) at the bottom and becomes clear with clear lines above, but reintegrates and regains form with differences in form and geometry, clearly shows that Deleuze's concepts are understood and the design context is established.

3.6. Deterriorialization (study no. 7)

Participant A.E.'s uninformed work (left side of work no. 7) shows a regular and orderly unity, an organism formed by the scaled repetition of the same part, and a separate (both types of) organism detached from this organism. This expression, realized with the cube as a basic geometry, is depicted with the cubes forming a large cube as a whole. In this part of the work, there is a depiction of a part that breaks away from the whole, and it is seen that a semantic context cannot be established with the relevant concept.

On the other hand, in the work on the right side, which the participant designed-visualized as a result of the short research he did on his own, it is seen that very deep meanings were discovered in contrast to the work on the left. It can be said that the participant, who started with the cube, the basic geometric expression used in the first study, used the cube as a very different means of expression this time. While the small-negative cube in the center and the large cube used as a border marker reveal the basic belonging, the presence of different colors and geometries scattered and radiating from the central cube reveals Deleuze and Guattari's expression of not breaking away from the roots and not being fully connected to the roots at the same time. This context is supported by the fact that the discrete geometries are depicted in contact with the lines of the boundary cube but outside the cube. The fact that these discrete objects of different colors and geometries are subject to the borders but outside the borders presents a depiction that both rejects belonging and feels a connection to the past.

Moreover, like Deleuze and Guattari's "cyclical-presence of specific points / haunt points" used by Deleuze and

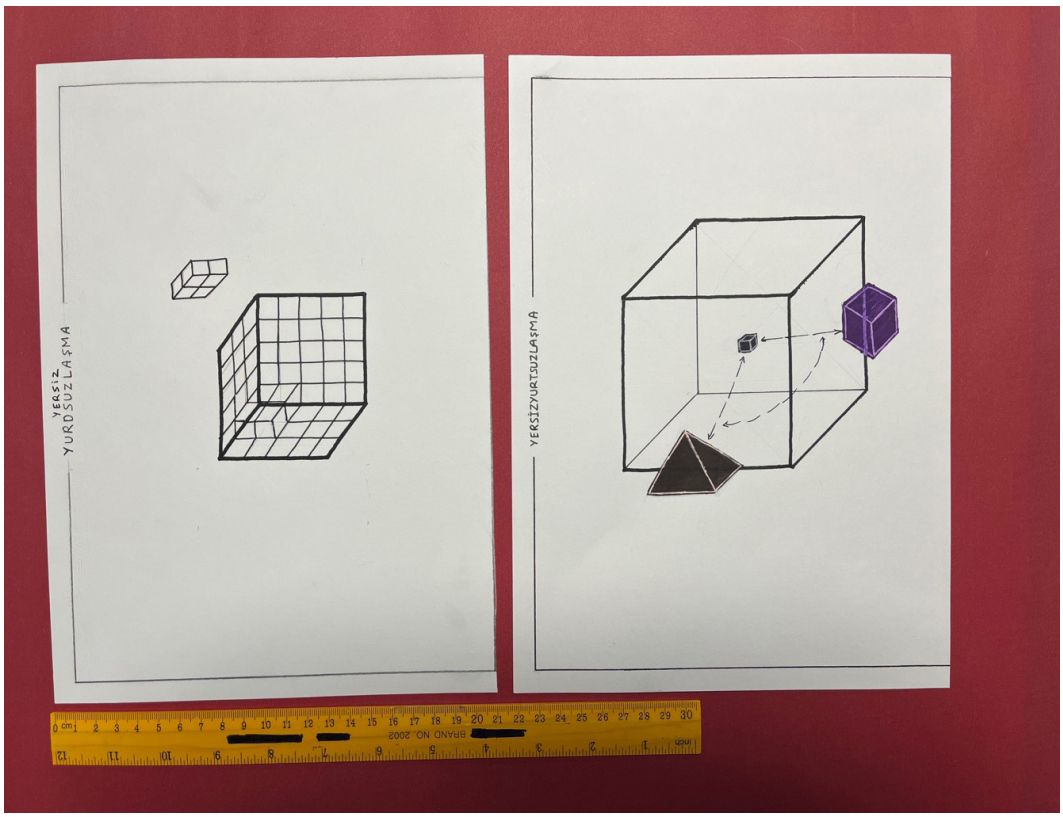

Figure 7. Study No. 7 – Deterriorialization / A.E.

Guattari to visualize migration science, it is seen that the participant creates a cycle between three geometries and treats each geometry as a haunt point / defined space. At this point, like Deleuze and Guattari, who depict movement in a cyclical and repetitive manner, the participant depicted dashed arrows defining movement, and furthermore, he showed that he could make sense of the related concept by treating these arrows as directional.

In the second work, he used the outline lines, which are the boundary expression of the large cube he used in the first work, as the conventional norm and made the boundaries of the relevant norm suitable for new potentials with different color-geometry relationships combined with cyclic, moving and bidirectional arrows.

4. Conclusion

Deleuze and Guattari are thinkers who have created many theories and concepts that have radically influenced today's world and life in too many points to count. The field of design has also been influenced both directly and indirectly by these concepts, ideas and systems of thought.

The depth and versatility of their concepts gave them a unique and qualified position in the 20th century. On the other hand, both their epistomology and etymology make it difficult to understand and grasp Deleuze and Guattari, making it challenging to capture the deeper meaning. However, leaving aside the language used and the systematics of thought, it can be stated that a basic philosophical background and literacy is required just to define the concepts produced and the relate intellectual process. On the other hand, no matter how deep and difficult it may be, Deleuze and Guattari, like many names such as Heidegger, Arendt, Jamesson, Sennett and Benjamin (Martin Heidegger, Hannah Arendt, Fredric Jameson, Richard Sennett, Walter Benjamin), are indispensable qualities for the creation of a high quality intellectual process. At this point, introducing this philosophical background, which is the main starting point of this study, to students in undergraduate education and making it comprehensible, if possible, is not available in many design education programs.

In today's design education; awareness and intellectual learning, technical knowledge, professional knowledge can be explained simply and we can even see the presence of philosophical teachings in this model. However, it can be stated that these philosophical teachings remain at the initial level, and that the student cannot reach the relevant depth before graduation. On the contrary, as it is clearly seen in the related research, first year basic design students who research and visualize these concepts that they have never encountered before, which are quite deep, difficult to understand, broad in concept and require intellectual accumulation on their own, reveal a different answer regarding the content of design education.

It is seen that the participants were able to understand and make sense of the important and complex concepts of philosophers such as Deleuze and Guattari on their own and in a limited time (3 days) without a professional instructor, and more importantly, they assimilated them enough to transfer them to their design works. Perhaps more importantly, when the participants' own statements are analyzed, it is seen that they both make this interpretation at the superconscious level and at some points they create some qualities at the subconscious level without even realizing what they are doing. This situation shows us that although some points of the concepts are understood and some points are thought to be not understood, they are internalized. In other words, the participants made sense of the concepts at the subconscious or intuitive level, internalized what they made sense of, and reflected what they internalized in their designs, even at points where they were not aware of what they were making sense of.

Moreover, the studies not only show that the related concepts can be understood. Almost all of the studies went beyond interpretation and defined the relevant concepts qualitatively. They have discovered deep meanings and used them at a plastic level. They provided conceptual integrity with analogies, abstract and concrete characterizations. There is a situation where the qualified points of the related concept are used in the design rather than a mere visualization.

As a result, it can be stated that ensuring the philosophical literacy of design students at the undergraduate level,

enabling them to come to terms with deep concepts beyond literacy, constitutes a useful and effective way both in establishing the intellectual level, in establishing the relationship between design and philosophy, and in establishing the conceptual/concept and design context. Explaining this situation in more detail and more accurately by the instructors, making it with the expression of design contexts, exemplifying how and where the concepts are used in design and establishing the relationship with the current reality will provide even more positive answers.

Beyond simply being able to draw well and use a computer well, design is essentially an intellectual organization, the art of producing high quality thought. In this context, it can be stated that philosophy is one of the most important comrades-in-arms for the orientation and organization of this quality. And it is thought that the design student's coming to terms with both basic philosophical concepts, philosophical thought structures and systematics, and deep concepts that constitute professional meta-knowledge at the undergraduate level will increase the quality. At this point, it can be stated that this infrastructure and depth should be introduced to the student in design education, that the student should make this reckoning in the early stages, and that this will positively affect both educational, professional, daily and social life in the future.

Conflict of Interests and ethics

The author(s) declare no conflict of interests. The author(s) also declare full adherence to all journal research ethics policies, namely involving the participation of human subjects anonymity and/or consent to publish

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