ITU A|Z
VOL:11, NO:1, 158-173, 2014-1

The role of interpretation in basic design[1]

Ethem GÜRER, Mine ÖZKAR, Gülen ÇAĞDAŞ
Istanbul Technical University, Faculty of Architecture, Department of Architecture, Istanbul, TURKEY

Received: February 2014 Final Acceptance: May 2014

Abstract:
Interpreting is rarely discussed in the context of basic design, which is mostly deemed as an overly rationalized teaching of the fundamentals of designing. This paper sheds light on the relation of designing and interpreting based on design protocols where novice architectural design students are asked to create basic organizations and write about their processes. Utilizing the basic tension between deeds and words, we explore and identify an articulated relation between acting and interpreting.

Keywords: *Design thinking, interpretation, language, design process, protocol analysis.*

1. Introduction

Interpretation in design is often characterized as an essential part of critiques of finished works. The interpretative tradition in design generally grounds on questioning what buildings, monuments or architectural spaces mean and how they embody this meaning. On the one hand, this understanding of it, may bridge the gap either between a designer's general ideas and her/his design in specific terms or between a design and its place in architectural history. On the other hand, it neglects the fact that interpretation begins indeed as soon as the design process begins. A designer's construction of the world experienced is through interpretation (Kelly & Gero, 2009).

Tabula rasa is not a suitable metaphor for design processes since designers never give up their pre-understandings. There is always a connection between a designer's past and her/his actual experience. Both the ways that a designer reveals meaning from a design situation and the perspectives that she/he offers to produce concepts link to her/his pre-understandings. Interpretation in a design process always involves pre-understandings; moreover, it begins within them. A designer involved with a design task sees the world in a particular way that is both useful for her/his acts and meaningful for her/his *being*. What then is the relation between what a designer does and what she/he thinks about? Based on a protocol analysis of ten novice architectural design students in design action, we discuss firstly how novice designers interpret while and after designing, and secondly, how a re-positioning of *being* by writing affects what they think and do.

[1] *A philosophical framework on hermeneutics that complements this study as its articulated background has been prepared as a separate publication and is currently under evaluation.*

1.1 An interpretational framework

Interpretation (or the theory of Hermeneutics as more commonly referred to in the field of research,) largely focuses on uncovering meaning through language. Influential thinkers such as Heidegger (1996), Gadamer (2008), Gallagher (1992) concur that all interpretation is linguistic. Ricoeur (1981) puts emphasis especially on writing and that it is fixing a linguistic description, as it offers a detachment from immediate experiences. An interpreter can be either close to or distant from the activity. This means that interpretation involves both experiencing through pre-understandings and the context of the situation, and a linguistic distanciation. This correlation provides a back-and-forth motion between being a part of the world and operating on it. The continuous interplay between words and acts triggers new meanings to be interpreted. As we get distanced from the activity, not only do we alter the way we interpret it but we also open up to new ways of seeing. The historicity of both the subject and the object comes from this instability which relies on a continuous communication that operates on both.

1.2 Acts and words in design

Interpretation plays a key role in a design process for two main reasons. Firstly, it provides for a designer a new understanding through a dialogue with the design situation. The level of comprehension increases through the chain of interpretations. Designers interpret in order to extend their understandings and to improve their dialogue with the design situation. Interpretations give rise to understandings which necessitate new interpretations towards new understandings and so on. Secondly, interpretation bridges the gap between design actions and thoughts. Especially for novice designers, there is a hole between acts and thoughts. They are not generally aware of what/how they act while designing. Their tacit knowledge and pre-understandings often remain covered. For instance, even though they discover relations between design elements, frame these relations by rules and apply these rules with variations, all of these may proceed in an implicit way. Therefore, interpretation becomes crucial for both extending understanding level in a design situation, and objectifying and influencing design acts.

The ideas above find their parallel in the way contemporary hermeneutics incorporates experience and thought. Hermeneutics discusses the ways we evolve our understanding with the interplay of acting as a part of the world and of objectifying and influencing it. Language, in this regard, rather than an existing system of signs, serves as the mediation between the evolving understanding and static forms around us (Brown, 2002). Winograd and Flores (1986) introduce the view of language in hermeneutics by claiming *"...how practice shapes our language and language in turn generates the space of possibilities for action."* In this sense, language in action holds significance for not only the dissolution of the meaning of an action, but also the generation of new actions.

Brown (2002) claims that "there is no ultimate understanding of practice since it always continues to evolve. Nevertheless, writing is a product which can be held on to in a fixed form and offers an approach to accounting for the reality to which we attend." The structure of the studies of concern in this paper, is based on experiencing design both within acting and writing. Acting has to do with a continuous practical evolution of being-in-design. Writing has to do with a linguistic exposition, an objectification and more particularly a fixation of design acts, ideas, strategies etc. Such a fixation naturally

triggers opportunities not only for articulating ideas or actions but also for operating on them. For example, one's writings concerning one's act during an action are retrospective for that action while differently influencing any future action. We can claim that writing (in action) offers both a fixation for our ways of seeing the world in an explanatory way and a network of possibilities for our future acts. Writing thus constitutes an important moment of critical regard within the process of interpretation in design. Designer's acts change in a continuous manner but the meaning of these can be framed and interpreted in a fixed manner.

2. The protocol study

The study consists of two different design exercise sets each of which includes three tasks. The only difference between the two exercise sets is the timing of the interpretation for design moves or/and rules in the second tasks. In the first set, participants are asked to describe their moves or/and rules after having completed their compositions whereas in the second one, the same task is postponed to the end of the design process. The duration of each task is 5 minutes. A total of 10 participants perform the exercises. The participants we recruited for this study are all first year students in the Department of Architecture at "X" University. Each exercise set is performed only by one half of the participants. The experimental sessions are video recorded and the participants' writings are retained. The same exercises with the same participants are repeated five months later, to observe changing interpretative qualities and quantities beginning design education (Figure 1).

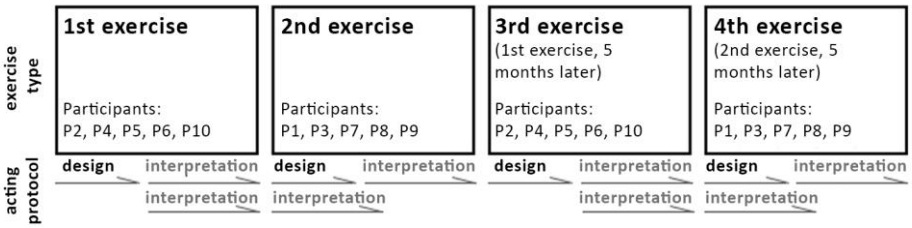

Figure 1. *Taxonomy of the design exercises.*

Participants are first presented with the design elements shown in Figure 2. Three main criteria influenced the selection of these elements. Firstly, since the participants are all first year design students, the idea was to provide them easily-controllable geometrical forms (in a similar approach to the main concept in Froebel's block selection). Secondly, we considered the modular balance and hierarchy between elements. Each element is related to others in terms of proportion, modularity and size. Finally, four different colors are used both to introduce a new relational criterion additional to the geometrical similarity and to make each element unique.

Participants are asked to carry out the following tasks:
First set of design exercise for 5 participants:

1. Make a meaningful composition of design elements given to you.
2. **After having completed** the composition, describe your design moves or/and rules by writing.
3. After having completed your composition, describe it within computational expressions by writing.

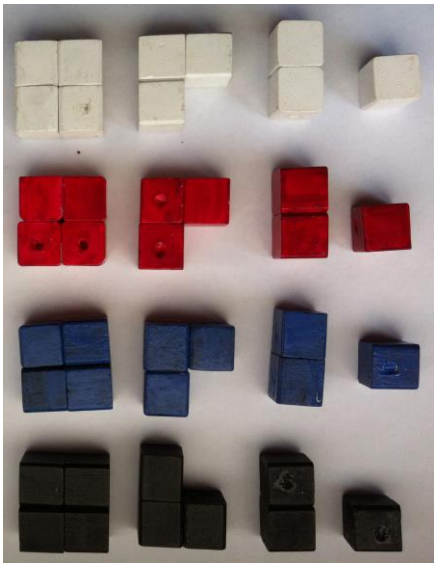

Figure 2. *Design elements of the experience.*

Second set of design exercise for other 5 participants:

1. Make a meaningful composition of design elements given to you.
2. **While making** the composition, describe your design moves or/and rules by writing.
3. After having completed your composition, describe it within computational expressions by writing.

2.1 Interpretation of different acting characters in design processes

In the first task of the design exercise, participants are asked to produce meaningful compositions. The primary aim of this given task is to frame how participants reveal meanings in design terms. The secondary aim is to observe how a meaning evolves, once it is revealed. According to the writings and the video records, we monitored that participants generally conduct two sub-processes of different characteristics while trying to produce meaningful compositions. Here, we name these sub-processes as playing and construction. These sub-processes appear to be related and complementary segments of a design process. They proceed in a continuous way in connection with one another. At the same time, different acting strategies emerge in each.

Playing has to do with design acts frequently performed without being questioned and that are conducted within a naïve understanding. In these, various attempts are freely carried out to reveal a meaning in composition. Initial attempts are always of a playful character and none of the participants deal with their acts in an investigative manner. Preliminary attempts towards revealing a meaning are easily let to go away (Figure 3). Moreover, although participants are asked to describe their design moves by writing, almost none of them try to articulate what they do in the playing segments.

Playing in a design situation does not involve objective rules and judgments; it is more a naïve understanding that is actualized in a design process. Any naïve understanding here comprises of design compositions which may or may not be carried on for future design moves or strategies. In playing, the uncertainties coming from the participant's pre-understandings add onto the participant's experience. Pre-understandings include cultural prejudices and preconceptions. They depend on varying historical backgrounds and are not stable. Snodgrass and Coyne (2006) define practical rules, which bring together pre-understandings with practice, as the rules that "govern the conduct of societies or games, being efficacious and appropriate to the degree that they are capable of giving rise to inexhaustible possibilities of interpretation and action." Understanding the material world begins through a historicity re-shaped by the practical rules of a particular context of experience.

Obviously, there exist many ways both to form relations practically and to give meaning to them linguistically. It is observed in the experience that a relation between given elements is interpreted differently at times whereas different relations yield to one meaning. On the one hand, this fact relates to differences in pre-understandings. On the other hand, it relates to the diversity of interpretation that generates new relations to be built in a

divergent sense while playing. Consider the following examples regarding the differentiation among the relations set between elements and meanings attributed to them. P1 (participant 1), from the second exercise set, began her process by producing different small compositions with the elements. In these attempts, she discovered a meaningful relation between a square element and an L-shaped element. She named this relation as forming a “window”. P2, from the first exercise set, named the relation of two L-shaped elements as a “door”. Similarly, P3 from the second exercise set interpreted a “door” in a different configuration of two L-shaped elements. The first common point in these discoveries is that they all came about in different attempts. All three participants produced several relations between elements but one resulted in avoiding the rest by being articulated in the writings.

Figure 3. *Compositional trials and changes in playing sequences of the first two exercises, compared to final designs.*

Playing, in these cases, is revealing multiple actual possibilities. There is no pre-existing rule that governs the search. The second point is the tendency of attributing the voids in the compositions to well-known architectural figures such as “door” and “window”. In a limited architectural vocabulary, they match a perceived void with the very common architectural elements. Such a common behavior is naturally related to the pre-understandings of the participants.

Questions arise: at which point does this playing sequence reach to an end or more appropriately, how does this playing sequence evolve? Ending a playing sequence in a design process indicates the moment where practical design rules are generally comprehended by the designer but no longer sufficient to open up new ways in their practical local system. Hence, there is a need for escape from the physical world of explicit acts as well as from the direct references of relations through which the designer plays. Pre-understandings, intentions, preliminary trials to reveal meaning, which are all for understanding are insufficient to proceed. The designer then complements understandings with objectifications. Revealed meanings such as “door” and “window” require additional explanations both to be objectified, rationalized and to be formally demystified. This naturally involves a questioning about what makes a relation a “door”, what a “window” is (or can be) or how a “corner” can be reconstructed. In this regard, a sufficient and total understanding of a design relation, takes into account the importance of understanding rules that explain how and why to name this relation as “door” or “window” in order to re-build, re-shape and evaluate these relations.

Rules commonly referred to in design but visually defined by Stiny (2006) as tools to talk about the ambiguities in design, play a crucial role in design interpretation. As alternatives to the reality of these practical concerns (not only acts but also representations such as sketches, drawings, models etc.), rules are the medium where designer carries his/her playing to a radical questioning. In the three examples discussed above, students discover not only a specific visual relation from which they can reveal a meaning but also a particular rule that creates this particular relation between design elements and through which they can operate on in the future. The function of the rules in a design process thus includes not only a translation of an expression or an idea into another one in a “comparable quality” but also a new formation. Building up rules indicates the moment where a playing sequence evolves into a new sequence: construction.

Construction begins within the subjective character of the act of revealing meaning through relations. It continues within the objective character of validating the hypothetical assumption regarding meaning by generating a design strategy. Construction has to do with the bearing of specific ideas by building up design strategies and rules towards a more sophisticated understanding (Figure 4). What designers tend to construct is the validation of a meaning uncovered by the relational aspects in a naïve playing sequence. Noticeably, there exist many forms of such an act in repetition, variation, hierarchy, rhythm which all relate to local quantitative and qualitative differentiations in global similarities. P1, after having noticed the relation between the square element and the L-shaped element, named it as “window”. Meanwhile, she also noticed the rule of what gives the meaning of “window”. This was the moment where she left playing and began to construct. This is because she discovered a rule in order to proceed. She then tried to validate this hypothetical rule by producing repetitions of it with

different element pairs (Figure 5). P4, from the first exercise set, produced various relations between the design elements. He ended the playing sequence by making sense of a combination of a square element and an L-shaped element as a “corner” for a space. This was a constructionist approach rather than a functionalist one. He kept the rule forming this relation and he then applied it in a complex repetition to determine the borders of a composition (Figure 5). P3 chose a different way of validation; she created no repetitions of her basic configuration. Rather, she made an adaptation of the rule of combining three identical elements of different colors (Figure 5).

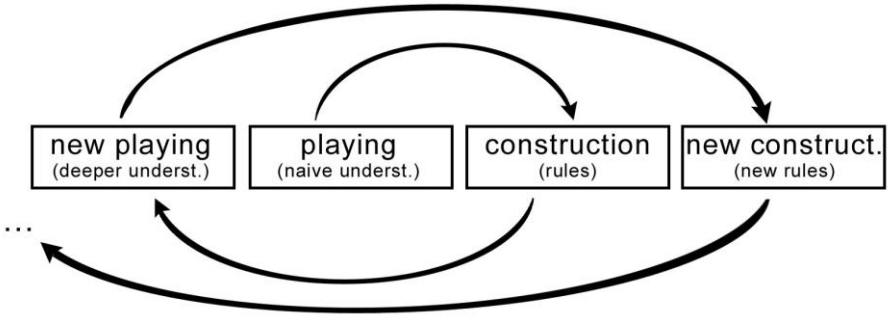

Figure 4. *Diagram of how the playing and construction sequences correlate in design process.*

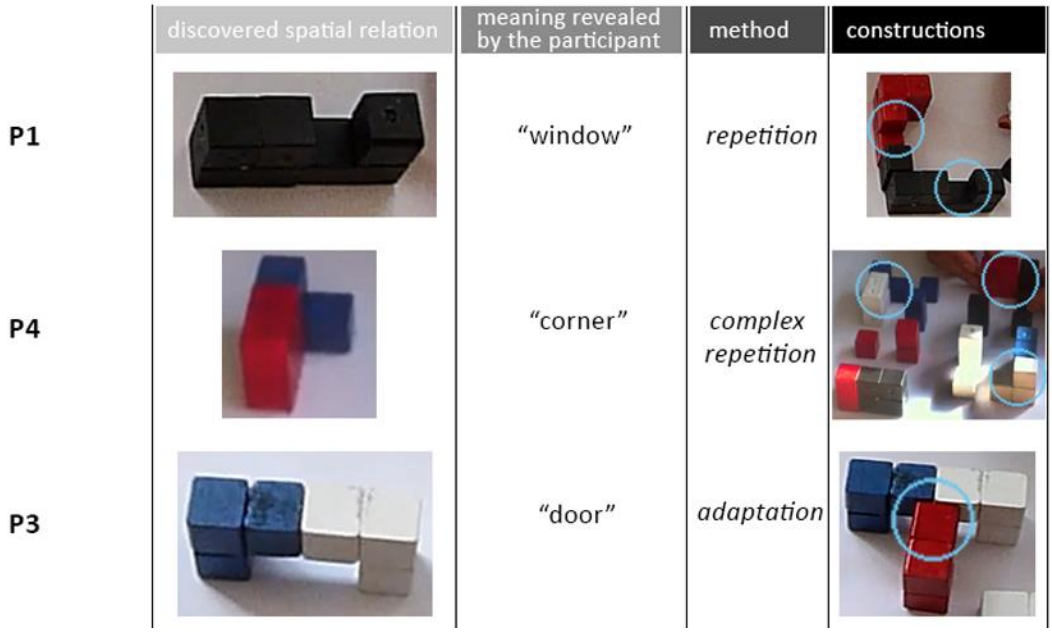

Figure 5. *Participants’ different construction methods in the first two exercises.*

Construction consists of different rule-based possibilities that ground on reasoning. Whatever these possibilities are, the common point in construction is the validation of a “meaningful” relation through a more generalized rule. This does not mean that a design process goes on accompanied with the reasoning of a single rule. Plenty of rules exist in a process. That is why playing sequences often motivate new constructions that cause new acts of play again (Figure 6).

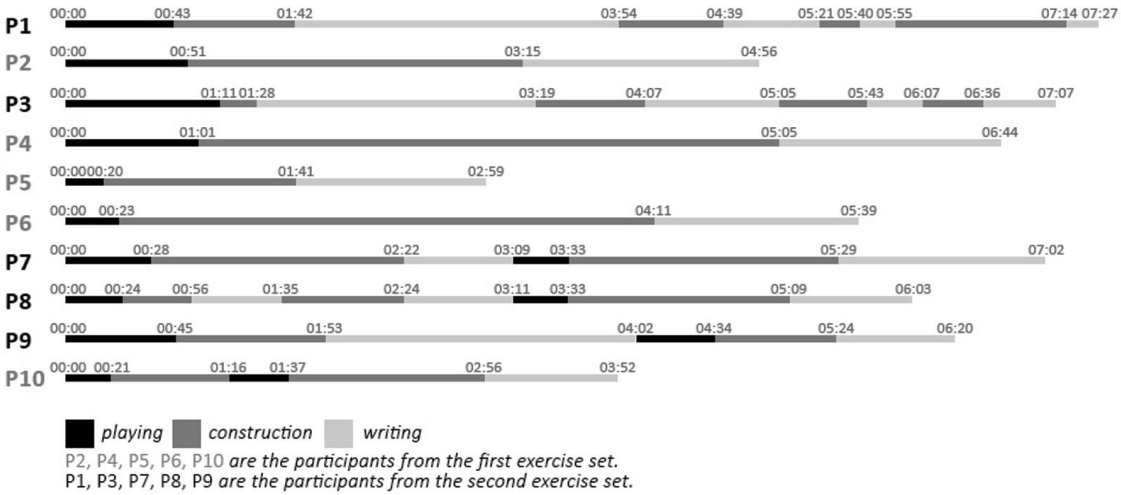

Figure 6. *Duration and order of the sequences of participants' playing, construction and writing.*

3. Observations of interpretation in design

From the participants' protocols and writings, we are able to make several observations on the nature of interpretation in design. We classify these observations under five main headings below: the timing, the type, the coherence, the uncertainty and the effect of interpretation.

3.1 Timing of interpretation

In the second task of the first exercise set, participants are expected to shape their descriptions after having shaped their design process whereas in the second task of the second exercise set, they are expected to shape them together. The essential purpose is to capture the effects of driving design acts and words together to the design qualities in the sense of interpreting. The following example from a student's writings is introduced in order to show these qualities.

P7, from the second exercise set, tried to conduct his design moves with a description of 5 steps:

1. I separated the elements in 4 different colors.
2. I placed separately the square elements on the ground.
3. I gave altitude with the L-shaped elements.
4. I built towers with the small elements left.
5. I built a closed garden with 4 entrances.

The most significant point in this case is the timing of the participant's writing of these 5 statements (Figure 7). P7 first wrote the first 2 steps after having separated the elements and placed some of them as he described. Then, he returned to acting and continued designing until the end which is when he completed his description by adding the other 3 steps. So what was the reason for the split in the descriptions and when he made them? In the first step, we see that P7 not only explained what he had done but also offered a general rule for the whole design process. This general rule was the grouping of elements by color. In the next step, related to the first one, he offered the application of this rule for placing square elements. After having described these two steps, he almost appropriated his actions and came to understand his design strategy. He used writing both for describing what he

had done and for continuing to process the rule that he can use in the future. Thus, he never turned back to writing until the end of the process. The subsequent 2 steps were all related to this appropriation. What he wrote for the fifth step was already in his mind since he completed the first two ones: "…a garden with four entrances".

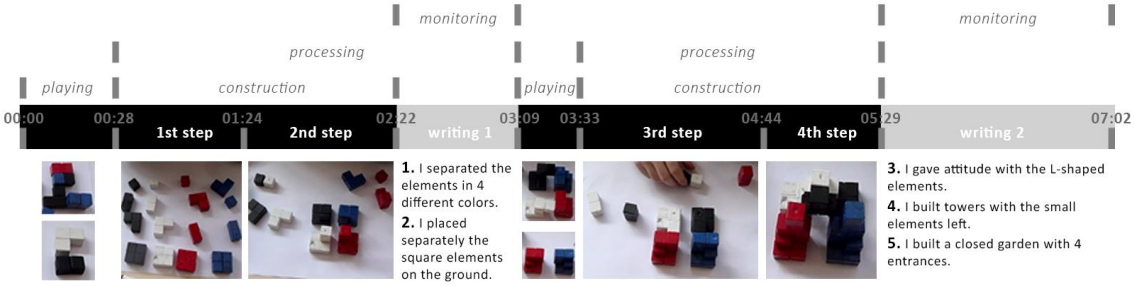

Figure 7. *P7's interpreted protocol in the second exercise.*

We also compare the writing times in exercises shared with the same participants in different times (the first two are before having started design education, the third and the fourth ones are after having spent five months in design education). The results show that, in the fourth exercise, the relation between acting and writing became more frequent for the participants from the second set of exercise, after having spent one semester in basic design education. P7's, P8's and P9's writing frequencies increased while P1's and P3's remained same (Figure 8). Moreover, times that were spent in writing diminished. One of the possible reasons for this is the fact that more participants get experience, more they become able to explain their moves: they are generally more connected to build up interpretations and also faster while doing this. The second reason is related to language use. They are more used to reveal meaning from a design practice, since they have a richer design vocabulary to attribute varying situations, problems etc.

Figure 8. *Durations and frequency of the participants' acting and writing in 2nd and 4th exercises.*

3.2 Type of interpretation

Interpretation is always an interpretation of something; it targets an object, a fact, a situation, an action etc. Thus, an interpretation cannot be interpreted without referring to its target. In the protocol analysis, we discovered that interpretations generally include different abstractions varying according to the target. Tversky (2005) points out the importance of making different connections in design, between features of objects, events and places through different levels of abstraction. This implies that while some features call up properties of appearance, some call up functional properties and what make for a productive level of thought are these connections between form and function. In this regard, in the first two exercises, which the participants performed at the very beginning of their design education, we

observed that writings for describing the design process generally include functional abstractions whereas writings for describing the final composition generally include definitional abstractions. For instance, consider the following passages written by the participants P2, P5 and P6 in the first exercise:

For the 2nd task:

> P2: …I began with making a door…I used blue cubes to form a wall…I wanted to construct a roof and a roof window by placing two L-shaped elements one on the top of the other…
> P5: I wanted to make a conference hall. Firstly, I intended to form the stage by placing the white rectangular prism between two red and blue small prisms…I thought to use a regular form for audiences.
> P6: I saw different relations forming a stair…Then I found out that I can generate different partial stair compositions in one whole…

For the 3rd task:

> P2: There are 8 cubes at the door, 12 at right, 5 at left, 1 at the center, 6 at the back and 10 at left back.
> P5: The composition begins with a vertical 2x1 form and goes on with a horizontal placement of the same dimensions…1x1, 2x1 and 2x1 forms are consecutively placed…
> P6: 1 unit, 1 unit, 2 units, 3 units, 5 units, 1 unit, 2 units, 4 units and units from the front view. Different descriptions are possible.

In contrast to the results of the first exercises, the same participants in the third and fourth exercises, which they performed after having spent one semester in basic design education, it is observed that participants use less functional but more abstract references while describing both the process and the product; function oriented interpretations are replaced with definition oriented ones. This also affects the articulation of design rules in the written language. Consider the following passages written by the participants P2, P5 in the third exercise as displays of more specific descriptions:

For the 2nd task:

> P2: I placed L-shaped elements at the corners. By moving diagonally 2 units from north and 1 unit from south, I made them to meet in the middle; and by placing the square element on top of the junction point, I made that point stronger.
> P5: With the cubes I have, I composed squares which can be defined as 5 different modules, by considering the form of the cube. By bringing them all together, I made the form closer and proper. I added the single pieces left, to the closed from occurred; considered to the whole, the pieces remained more independent. They were all connected to each other within themselves.

For the 3rd task:

> P2: A form with 6 units of height and 10 units of width. The form is vertically symmetrical. In the height, the distance is equal. There is a ratio of 1 to 4 in its width…
> P5: Although the form looks symmetrical, it is different in some points. Cube was the base element and I composed a rectangle with the squares. Triangular and square connections occurred between the single pieces and the main rectangle…

According to these results, we can claim that contents of interpretations depend on the target of interpretation (process or product) as well as on the changing motives of language. A basic design education of even one semester is enough for expanding the vocabulary quantity (such as symmetry, orientation (north, south) etc.) and the interpretative quality which are all related to the use of language.

3.3 Coherence of interpretation

Participants seemed able to describe how they produced more precisely. Nevertheless their descriptions concerning the final stage of the composition were less coherent than their descriptions of what they produced. This is despite the fact that the descriptions of what they produced seemed to include more detailed information. Possible reasons for this are that students are either used to describing actions more than describing static situations or they discover new visual relations while reconsidering the whole composition. The first reason correlates with the idea that teaching and learning basic design should be more focused on the interpretation of the design situations as well as on the interpretation of the design actions. The second correlates with the ambiguities and uncertainties which emanate from a part/whole relation.

3.4 Uncertainty of interpretation

The crucial difference between the two types of writing tasks is about participants' descriptions for the same design state. Besides the fact that they often use different levels of abstraction to explain the process and the product, participants use different descriptions even in a specific abstraction level which is related to the ambiguous quality. (The importance of ambiguity in design is highlighted in several texts by Stiny (2000), Knight (2002) and Özkar (2007) where visual uncertainties are related to creativity. Here, we pay attention to underline such uncertainties in more "certain" ways of externalization such as writing since writing offers firstly a fixation in time as already discussed in the theoretical parts of this text and secondly a medium to discuss meaning through changing interpretations).

The key difference between writings regarding a situation that is similar across the second and third tasks can be seen in a part/whole relation. In these examples, participants tend to describe their actions independently where every element or relation used in these actions and the meanings of them are separately explained: one meaning for elements or relations used in an action. This is also the reason for naming this kind of description as more coherent and less ambiguous. Contrarily, while describing the final designs, we discover that participants tend to form relations between independent parts. This changes the meaning of a situation as well as the interpretation of it. The exclusion of procedural descriptions provides the formation of new relations between elements towards an understanding of the whole. So these two types of writings form a twofold understanding of the relation between the parts and the whole in different ways: the first one focuses on "how?" and moves from a unitary understanding towards an elucidation of the parts and the second one focuses on "what?" and moves from the parts towards a total composition.

The ambiguity of shapes and relations discovered in a design process has impact on the interpretational possibilities for a designer. More meanings are revealed from relations, and thus more interpretations occur. This destabilizes the produced interpretations whereas writings provide anchor

points fixed in time so that the designer continues to pursue design while building up an understanding of change.

3.5 Effect of interpretation

The more we drive design acts and words together, the more we benefit from the changing motives and perspectives of language in design. Process-oriented descriptions and product-oriented descriptions offer complementary ways for understanding design. On the one hand, these descriptions each refer to different qualities of designing such as the disclosure of the evolutionary relations between acts and the exploration of meanings through elemental and spatial relations. On the other hand, they both utilize the articulation character of language. Since they both refer to past events or to actual existences, they do not offer a possibility for the future ones. Nevertheless, writing in design serves both the roles of monitoring and processing. Monitoring depicts and articulates the states in which the designer acted on in the past and sought meaning for. Processing operationally creates of the states and the actions through which the designer can produce new variations to seek meaning for.

As discussed before, in the second task of the first exercise set, participants are expected to shape their descriptions after having shaped their design process whereas in the second task of the second exercise set, they are expected to shape them together. The main point is to observe the effects of articulating an action in language to future actions and meanings. For example, in the first step of the description, P7 defined his action as “separating”. Directly in the next step of writing and the rest of the exercise, he used this definition and he always tried to make a separation between elements of different color. A similar example can be observed in the third step of the description. He defined his action as “giving altitude” which was later associated to “building towers” in the fourth step of the description. Therefore it is possible to claim that writings here reflect on future actions as well as on the future meanings.

In another example, P8, one of the students who participated in the second triplet of exercise, made a description of 6 steps for describing her moves:

1. I formed a big square with the small ones.
2. I added the L-shaped elements on the corners of it.
3. I put the rectangle elements on the midpoints of the big square.
4. I formed a bigger rectangle with small elements.
5. I rolled the L-shaped elements and the rectangle elements.
6. I put the small elements between the L-shaped elements.

P8’s process in the exercise is quite similar to P7’s. She started with a playing sequence where she searched for meaning in various elemental relations. She found it meaningful to use the same geometrical elements of different colors in mutual compositions. The processing began with this rule discovery and proceeded within writings where she externalized the conditions (“a big square of small ones, L-shaped elements on the corners”) for this rule. Unlike P7, she completed her writings in 3 steps which were all again the extensions of the constructions sequences (Figure 9). In the first step, she wrote that she had formed a big square using the small elements. This can be interpreted as that she points at a part/whole relation. In the second step, she wrote that she had formed a big rectangle using the small elements. There are such similarities between other descriptions too. For

instance in the first writing, she wrote that she had added the L-shaped elements on the corners of the “big square”. Again in the second and the third writings, she related to this particular interpretation of her action which signifies an addition of new small design elements to the actual big one, another pointer for part/whole relations: “I put the rectangle elements on the midpoints of the big square” and “I put the small elements between the L-shaped elements.” This implies that for P7, the written articulation of design acts shifts to a general operational strategy for the whole design process.

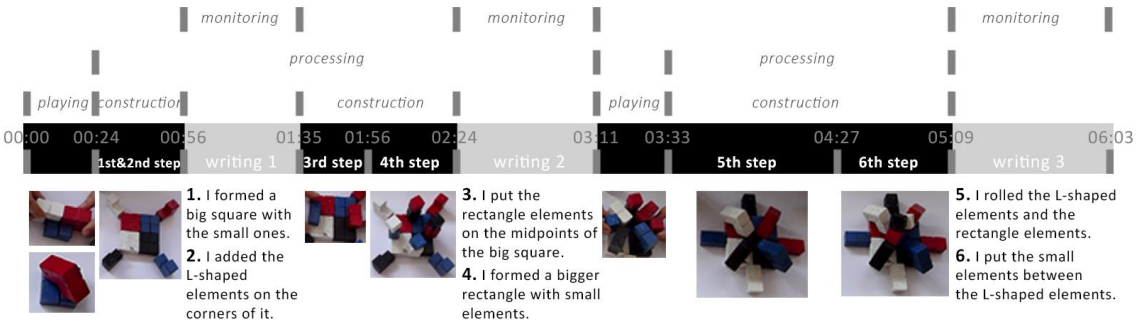

Figure 9. *P8’s interpreted protocol in the second exercise.*

From the empirical findings briefly sketched, it is possible to draw out some implications of how acts and words work together in a design process:

- Bonta (1979) argues that when designers discuss their works, they become the interpreter, rather than the designer. In this study, we observed that as design actions are externalized by writing (and inevitably by reading), more meanings are uncovered and carried on to future actions and writings. As design actions and states are objectified through writing, paths to follow become clearer.
- Instant transformation of visual relations to the linguistic domain opens up new horizons for future design moves. Vocabularies used to describe both the actions and the relations between elements trigger the invention of new vocabularies and in turn the creation of strategies for future actions. Participants’ oscillation between assigning language to design actions and loading the meaning onto language through reflection sustains the accumulation of experience as well as linguistic production. Interpretations are neither fixed nor arbitrary.
- The monitoring character of writing has to do with the objectification of design situations and actions, whereas processing has to do with the creation of ways to influence and to orient design actions. By integrating writing activities to the design process (writing in action), writing becomes part of the things being monitored and processed, and provides a medium for reconfiguring the design situations for future moves. That is, interpretations made by the participants also affect the reality attended to by them.

5. Conclusions

In this paper, interpretation is related to basic design through a protocol analysis of sample design tasks. Interpretative aspects of design are reconsidered in both the theoretical and the practical sense. As in the metaphor of the hermeneutics, design is assumed to begin where prejudices (such as initial perspectives, design languages) meet an explicit situation to lead to the discovery of unannounced, unexpected results of playing. It is

observed in the exercises that these discoveries then require a new understanding that can be acquired through the revision of the initial understanding, or alternatively through the creation of a new understanding. In both cases, they also require validation through construction. Specifically in design, such a validation often relates to the creation of a general rule or a strategy to be applied in similar design situations or on their variations. The new understanding then emerges as the new initial point for the next spiral of the design process. Thus the design process might be seen as a collocation of discovering spatial relations through some divergent playing in a context and of validating the usability of these discoveries through design rules and strategies produced in a convergent construction.

Although the fact that practical reasoning is crucial in design (as in playing and construction), especially novice designers are generally not aware of it. Acting requires a distanciation. In this study, such a distanciation has been supported in the writing of descriptions for the process and the product. Moreover, writing has been introduced here as the means to produce new understandings for future acts through processing how and what has been so far revealed. Participants' different timing for when to describe design moves or rules in the process have significantly followed the construction sequences. This conforms well to the generalizable claim that designing can be grounded on the dialogue between the construction sequences and writing.

Acknowledgements
The authors would like to acknowledge the anonymous group of students who participated in the design exercises as well as Zeynep Bacınoğlu and Ahu Sökmenoğlu who organized and monitored the data collection.

References

Bonta, J.P (1979), **Architecture and its Interpretation: A Study of Expressive Systems in Architecture**, London: Lund Humphries.

Brown, T. (2002), **Mathematics Education and Language: Interpreting Hermeneutics and Post-Structuralism**, Kluwer Academic Publishers, Dordrecht.

Gadamer, H.G. (1960), Wahrheit und Methode, **Hakikat ve Yöntem**, trans. H. Arslan, İ. Yavuzcan (2008) Paradigma Yayınları, İstanbul.

Gallagher, S. (1992), **Hermeneutics and Education**, State University of New York Press, New York.

Heidegger, M. (1953), Sein und Zeit, **Being and Time**, trans. J. Stambaugh (1996) State University of New York Press, New York.

Kelly, N. & Gero, J. (2009), Constructive Interpretation in Design Thinking, **Computation: The New Realm of Architectural Design, 27th eCAADe Conference Proceedings**, Istanbul, Turkey, 16-19 September 2009, 97-104.

Knight, T. (2002), Computing With Ambiguity, **Environment and Planning B: Planning and Design** (30:2), 165-180.

Özkar, M. (2007), Learning by Doing in the Age of Design Computation, **Computer Aided Architectural Design Futures 2007**, Proceedings of the 12th International CAADFutures Conference (11-13 July 2007), eds. A. Ong, A.V. Moere, J.S. Gero, Springer, Dordrecht, 99-112.

Ricoeur, P. (1981), **Paul Ricoeur Hermeneutics and the Human Sciences**, ed. and trans. J.B. Thompson, Cambridge University Press, New York.
Snodgrass, A., Coyne, R. (2006), **Interpretation in Architecture: Design as a way of thinking**, Routledge: Taylor & Francis, New York.
Stiny, G. (2000), How to Calculate with Shapes, **Formal Engineering Design Synthesis**, eds. E. Antonsson, J. Cagan, Cambridge, UK: Cambridge University Press.
Stiny, G. (2006), **Shape: Talking About Seeing and Doing**, MIT Press, Cambridge, MA.
Tversky, B. (2005), On Exploring Parts and Wholes, **Computational and Cognitive Models of Creative Design VI**, Key Centre of Design Computing and Cognition, eds. J.S. Gero, M.L. Maher, University of Sydney, Australia, 3-16.
Winograd, T. Flores, F., (1986), **Understanding Computers and Cognition: A New Foundation for Design**, Addison-Wesley Publishing Company Inc., Menlo Park California.

Temel tasarımda yorumlamanın rolü

Tasarımda yorumlama, tamamlanmış tasarım ürünlerinin eleştirilip değerlendirilmesinin önemli bir parçasını oluşturmaktadır. Tasarımda yorumlama geleneği, yapıların, mimari mekanların ya da yapay çevrenin ne anlam(lar) taşıdıklarını ve bu anlamları nasıl temsil ettiklerini sorgulamaya dayanmaktadır. Bu durum tasarımcının tasarımı yaparken geliştirdiği düşünceler ile tasarım arasında veya tasarım ile tasarımın mimari gelenekteki yeri ve önemi arasında bir köprü görevi yapmaktadır. Ayrıca, yorumlamanın tasarım sürecinin içinde başladığı ve tasarım ediminin önemli bir parçası olduğu gerçeği göz ardı edilmemelidir.

Her tasarım süreci, içinde aynı zamanda bir yorumlama sürecini de içerir: Tasarımcı bir yandan yapar (tasarlar), yaptığını anlamlandırmaya çalışır, yeni anlamlar üretir ve bu anlamları eyleme aktarır; diğer yandan da yaptığını kimi zaman içselleştirerek, kimi zaman da dışsallaştırarak yorumlar üretir. Tasarım süreci, tasarım eylemleri için faydacı bir dünya algısı yanında, tasarımcı için anlamlı bir dünya algısını da içermektedir ve bu noktada tasarımcının yorumları ile biçimlendirilip yönlendirilir. O halde, tasarımcının eylemleri ile bu eylemlerin tasarımcıdaki anlamı arasındaki ilişki, temelde bir yorumlama olarak ifade edilebilir.

Bu düşünceden hareketle bu çalışma yorumlamayı, tasarım yapmanın temel bilgisini çoğunlukla rasyonalize ettiği kabul edilen temel tasarım bağlamında tartışmayı amaçlamaktadır. Mimari tasarım eğitimine yeni başlayan on tasarım öğrencisi ile gerçekleştirilen bir protokol analizine dayalı bu çalışmada, tecrübesiz tasarımcıların tasarım yaparken ve tasarımdan sonra işlerini nasıl yorumladıkları ve bu yorumların onların tasarımları ve düşünceleri üzerindeki etkileri tartışılmaktadır. Katılımcılar, beşer kişilik iki farklı gruba ayrılmış, iki farklı gruba üçer soruluk bir temel tasarım egzersizi verilmiştir. Egzersiz, katılımcılara verilen tasarım elemanları ile kendileri için anlam ifade eden bir düzenleme yapılması, bunu tasarlarken yaptıkları tasarım hamlelerinin ve/veya kurallarının yazarak ifadelendirilmesi ve son düzenlemenin sayısal ifadelerle yazılarak tariflenmesi olarak üç aşamadan oluşmaktadır. Her aşama için tanınan süre beş dakikadır. İki katılımcı grubuna verilen egzersiz seti arasındaki tek fark, hamle ve/veya kurallara ilişkin yazılı tarifleri, ilk gruptaki katılımcıların düzenlemeyi bitirdikten sonra, ikinci gruptaki katılımcıların ise düzenlemeye devam ederken oluşturmalarıdır. Aynı egzersiz aynı katılımcı grup ile, Mimarlık eğitimine başlamalarından 5 ay sonra yeniden tekrarlanmıştır. Tüm egzersizler video kaydına alınmış, katılımcıların yazıları muhafaza edilmiştir.

Araştırmada temel amaç, tasarım eğitimi almamış katılımcılardaki yorumlama potansiyelini göstermektir. Tasarım ifade ve temsil araçlarına uzak olan katılımcılarda yorum, en alışık oldukları ifade ortamı olan dil üzerinden açığa çıkarılmaya

çalışılmıştır. Bu noktada dilin, salt bir temsil veya gözlem aracı olmaktan öte, tasarım düşünce ve eylemleri arasında bir arabuluculuk yapan ve bu süreçte de evrilerek değişen karakterine vurgu yapılmıştır. Özellikle tasarım eylemlerinin ve bu eylemlere (ve/veya sonuçlarına) yönelik yorumların birlikte yürütülmesinin, hem tasarım sürecinin parça ve bütün şeklinde anlamlandırılması, hem de tasarım eylemlerinin yönlendirilmesi noktalarındaki katkıları tartışmaya açılmaktadır.

Egzersizlere dayalı bulgular, iki ana başlıkta toplanmıştır. Bunlardan ilki, katılımcıların düzenleme süreçlerini yürütürken ortak biçimde gösterdikleri iki farklı eylem biçiminin nitel ve nicel olarak sorgulanmasıdır. İkincisi ise, katılımcıların tasarım eylem, kural, ilişki vb. durumları yorumladıkları yazıların analizine dayanmaktadır. Yorumların incelenmesi yorumun zamanı, yorumun tipi, yorumun tutarlılığı, yorumun muğlaklığı ve yorumun etkisi olarak beş alt başlıkta toplanmıştır. Bunların yanında, 5 aylık bir Mimari Tasarım eğitimi sonunda, katılımcıların değişen yorum niteliklerinin ve dağarcıklarının incelenmesi de çalışmaya dahil edilmiştir.

Bu anlamda çalışma, yorumlamanın ve özellikle eylem eşliğinde yazmanın, gerek tasarımda düşünce ve eylemlerin ifadelendirilmesi ve izlenmesi süreçlerinde, gerekse de gelecek eylem ve düşüncelerin kurgulanması ve işlenmesi süreçlerindeki katkıları üzerinde durmaktadır.