

Proceedings

Chair_Ludus & Zoo_Ludus Metamorphosis of Objects through Survey and Drawing Techniques †

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† Presented at the International and Interdisciplinary Conference IMMAGINI? Image and Imagination between Representation, Communication, Education and Psychology, Brixen, Italy, 27–28 November 2017.

Published: 20 November 2017

Abstract: The playful experience described by this contribution has been developed through a survey/drawing path that emphasized the young students need for direct contact with shapes and materials. The activities carried out concerned two kinds of objects, chairs designed by Gerrit Rietveld (Berlin and Red-Blue) and toys of the company Sevi. The objects have been surveyed and studied through a playful act to reach its formal and conceptual metamorphosis that produced new inventive actions. The ludus experience enabled the development of analytical and experimental actions, taking advantage of the spirit of social adaptation and creative language of the students.

Keywords: survey; re-drawing; representation techniques; industrial design; furniture; 20th century culture

1. Introduction

Playful and non-playful behaviors are difficult to distinguish between animals. In fact, the game, as Erik Erikson said, is a “frontier line that divides a series of human activities and tries to avoid any definition” [1]. The psychological framework that makes playing possible is therefore extraordinary and blends non-trivial actions (mimesis, fiction, freedom, abstraction, assimilation, etc.). As an intermediate phenomenon, it is possible to mix conscious and unconscious processes by operating some mechanisms for the development of brain and creativity: the games are the false tokens that, in a splendid image of Ernst H. Gombrich, “trigger our biological locks” [2]. These locks guarantee that mental digestion, as Jean Piaget wrote, so much needed for the cultural creation of the individual [3]. The game is a language that uses manipulative, combining, explorative activities, always finding the way to integrate symbol and practice. Johan Huizinga in his book “Homo ludens” had the intuition of defining the game as a creator of culture and today’s scientific discoveries are proving it. In our species creativity is very prolonged during development and for some adults (amongst which are the designers and architects) it is socially allowed to continue playing all their lives [4].

That’s why this research has been analysing and experimenting possible combinations of ideas, objects and behaviours. This combination of factors has always produced cultural innovations that are socially selected and adopted [5]. This ludus experience is also etymologically a translation contest (and therefore a kind of transformation and metacommunication) [6], between the students of the Drawing Laboratory Course of the Industrial Design programme of the University of Ferrara (Figure 1). The playful experience has been developed through a survey/drawing path that emphasized the young students need for direct contact with shapes and materials. Understanding the shape through its reconstruction has in fact been essential for both the transposition of the two-dimensional into the three-dimensional and the articulation in the space of the different

components. The activities carried out with the students mainly concerned objects such as the chairs of Gerrit Rietveld, Berlin and Red-Blue, and the toys of the company Sevi (www.sevi.com).

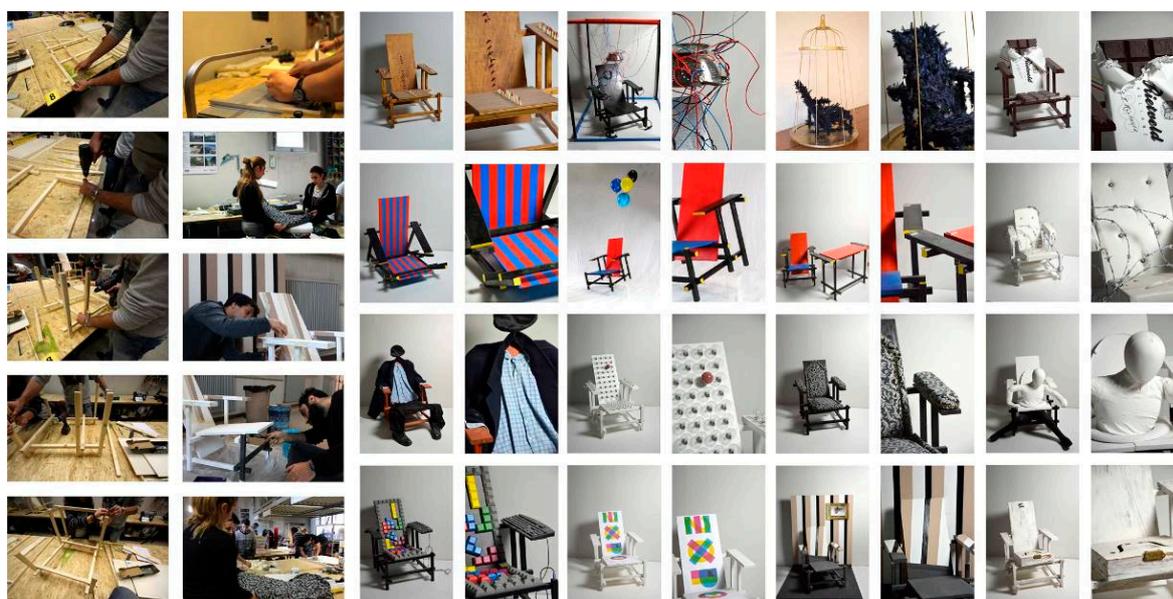


Figure 1. The creation process of the wooden models of Rietveld's chairs and their modified copies.

2. The Objects

The selection of objects was based on the apparent simplicity of shapes and components—as well as on their assembly; these aspects were ideal for an exercise that involved unskilled students in their first year of the bachelor course. Furthermore to re-draw pieces of design could be for a young student an important exercise able to improve skills in both drawings techniques and design approach [7]. For these reasons the Berlin and Red Blue chairs and the Sevi's toys have been taken as the starting point for an interpretative process concerning space and the relationship that body and perception can trigger.

2.1. The Gerrit Rietveld's Chairs

Gerrit Rietveld designed the Red-Blue chair (in Dutch: Rood-blauwe stoel) in 1917 and after producing a prototype of the chair in 1918, it became one of the most significant examples of Neoplasticism given its strict application of the typifying concepts of De Stijl, [8]. The Rood-blauwe stoel was declared a manifesto by supporters of De Stijl already in its first version, which was uncoloured. The chair was painted in primary colours plus black, only in 1923, when the object was described by Theo van Doesburg as an “example of furniture as abstract, realistic sculptures for our future interiors”, [9]. In 1923, Rietveld also designed the Berlin Chair specially for the Dutch exhibition in Berlin. The chair was the first asymmetric piece to be designed by Rietveld: in it, the traditional elements (legs, arms, seat and backrest) were abandoned in favour of a system of interconnected panels fitted in a balanced asymmetry, [10]. Made of high-quality lacquered beech, it was offered painted in white, grey and black, [11]. During the course of a century of studies of the Dutch architect and craftsman, a number of elaborations and reinterpretations of the piece have been made. Recently, the didactic experiments linked to the redesign and re-interpretation of design in Italian universities (by professor Cecilia Polidori, for example) and internationally (see the activities of the Gerrit Rietveld Academie, in Amsterdam, The Netherlands) have shown how the perception and interpretative ability of students can be significantly stimulated in a very promising process.

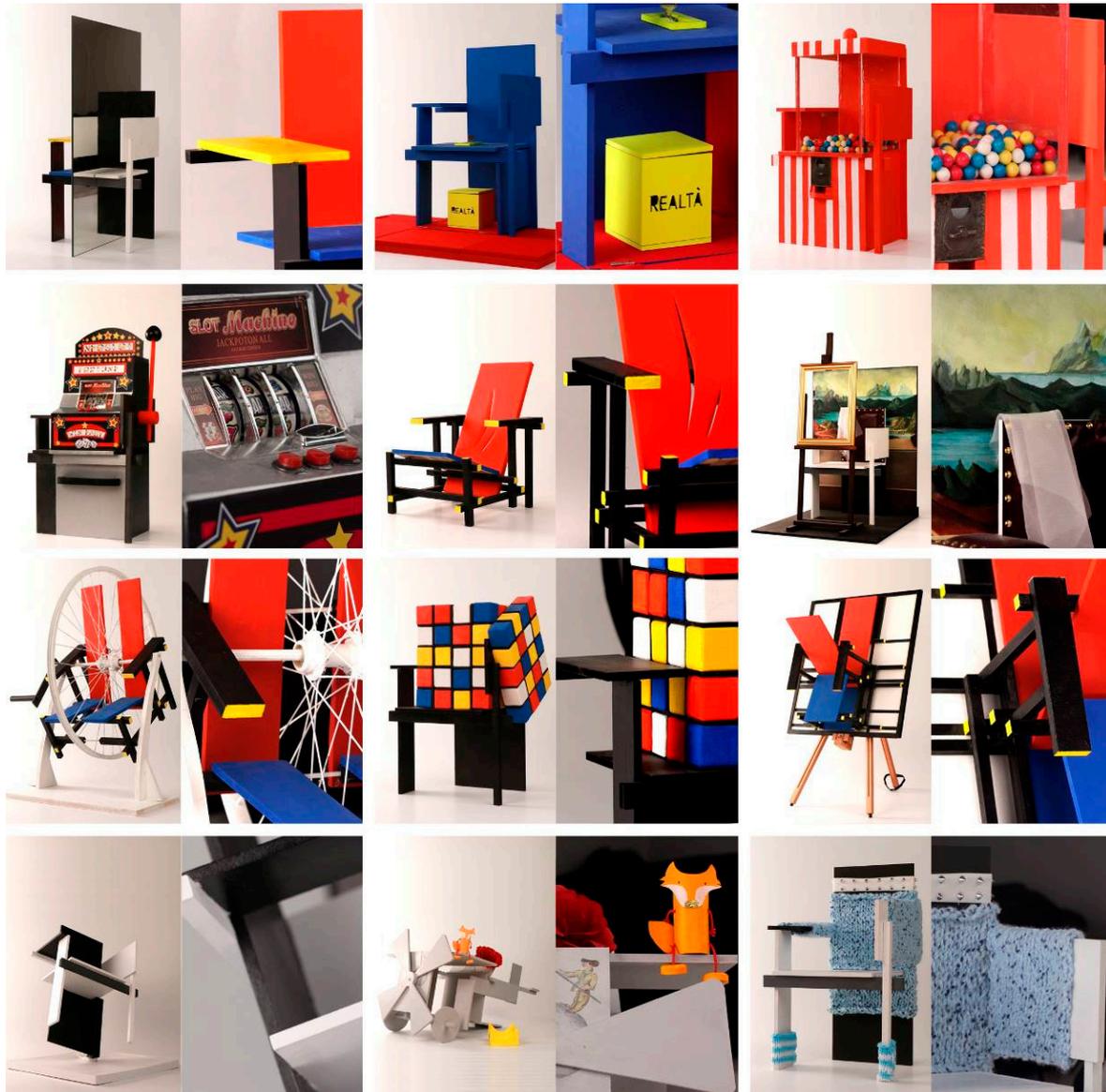


Figure 2. Some of Rietveld’s chairs, conceived and built by the students.

2.2. The Sevi’s Toys

Taking into consideration the toys produced by the Italian company Sevi (www.sevi.com), allowed the students to develop an “understanding” path related to shape and colours. Sevi is one of the oldest Italian toys manufacturer, founded in Ortisei in 1831 by “carving artist” Josef Anton Senoner and today belonging to the Trudi Group that unifies Trudi, Sevi and Olli Olbot. The company based in Val Gardena, north of Italy, would become famous all over the world for the style and philosophy of its wooden toys, furniture and furnishing accessories. From some catalogue toys selected by each student (drawn and reshaped in the model lab) other toys were born (dismantling and combining pieces, inventing, creating new shapes). It is a little zoomorphic and a bit objectionable metamorphosis that requires the representation to be explicit. The light-hearted experience develops through a drawing/survey method that we may define a “reading process”, the need for direct contact with the shape. Understanding the toys form through its reconstruction is essential for the transposition of the two-dimensional form into a third dimension and the articulation of the components in space.

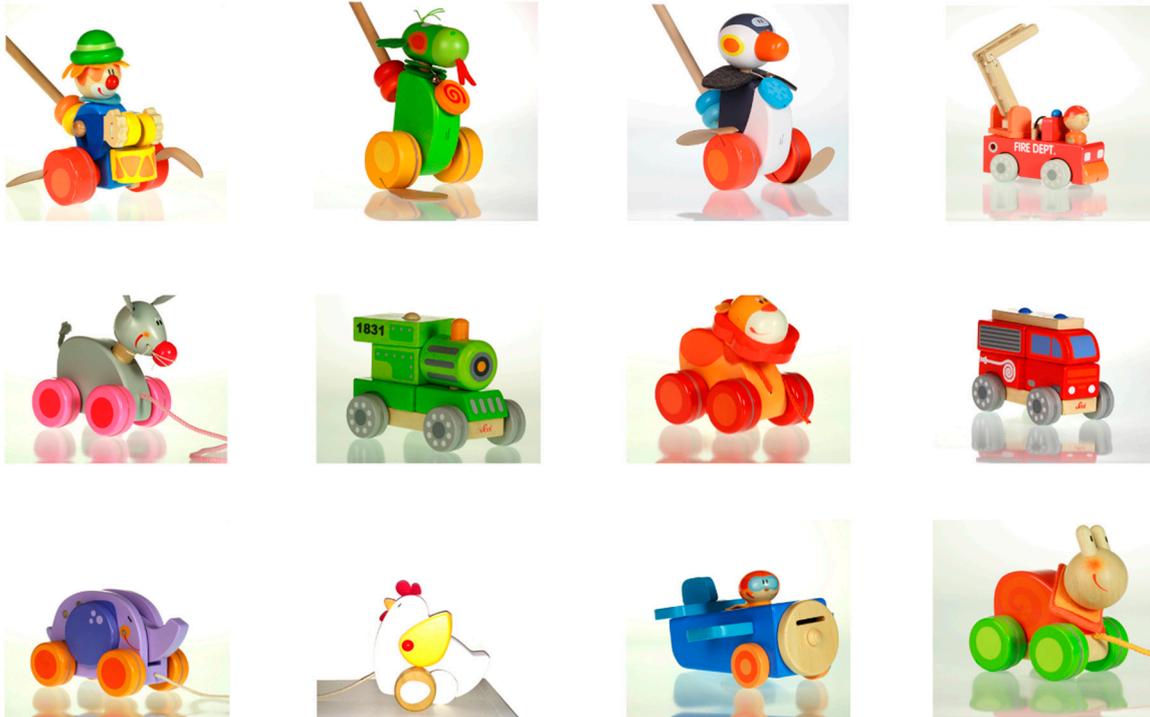


Figure 3. Copies of original Sevi's toys rebuilt by the students.

3. The Methodology

In the initial phase of this educational experience, students were engaged in research and cognitive analysis of the objects. After compiling a list of the parts, they then moved on to choosing materials and the re-building technique. The initial goal was to produce a scale of 1:1 objects as they were originally designed. The relevant functions of sketching found in theory are: (1) supporting a re-interpretive cycle in the individual thinking process; (2) supporting re-interpretation of each other's ideas in group activity; and (3) enhancing access to earlier ideas, [12]. The effort undertaken was to convey "meanings", even though these would be inevitably misrepresented or distorted compared to the originality that is triggered with the need for change, development and evolution. The absence of neutrality in the search for authenticity offers many interpretations, and (in some cases) may also seek to bring out the meaning of history and the value of the testimony (Figure 2).

By technical drawing and representation techniques students have been learning by doing, from the survey of the objects and their graphic representation (by both hand drawing and CAD software) to the elaboration of different and new types. The representative experience contained a powerful descriptive, formal and geometric component but also had an equally powerful evocative and representational capacity, which was the main trigger of the process. At the end of the course, each group of young students were able to develop both the wooden model of the original objects (as originally designed) and the elaborated copies, the metamorphosis, (Figure 3) submitting to the academic board (that have been evaluating the results giving related marks) A2 size books describing the whole process, [13].

This is how and with what goals the didactic schedule was developed toward the final exercise and the delivery of related outputs. The Ludus experience (academic years 2014–2015, 2015–2016 and 2016–2017) was accomplished above all with the powerful involvement of the *maquette* laboratory and of the representative translation acting according to a material and formal understanding.

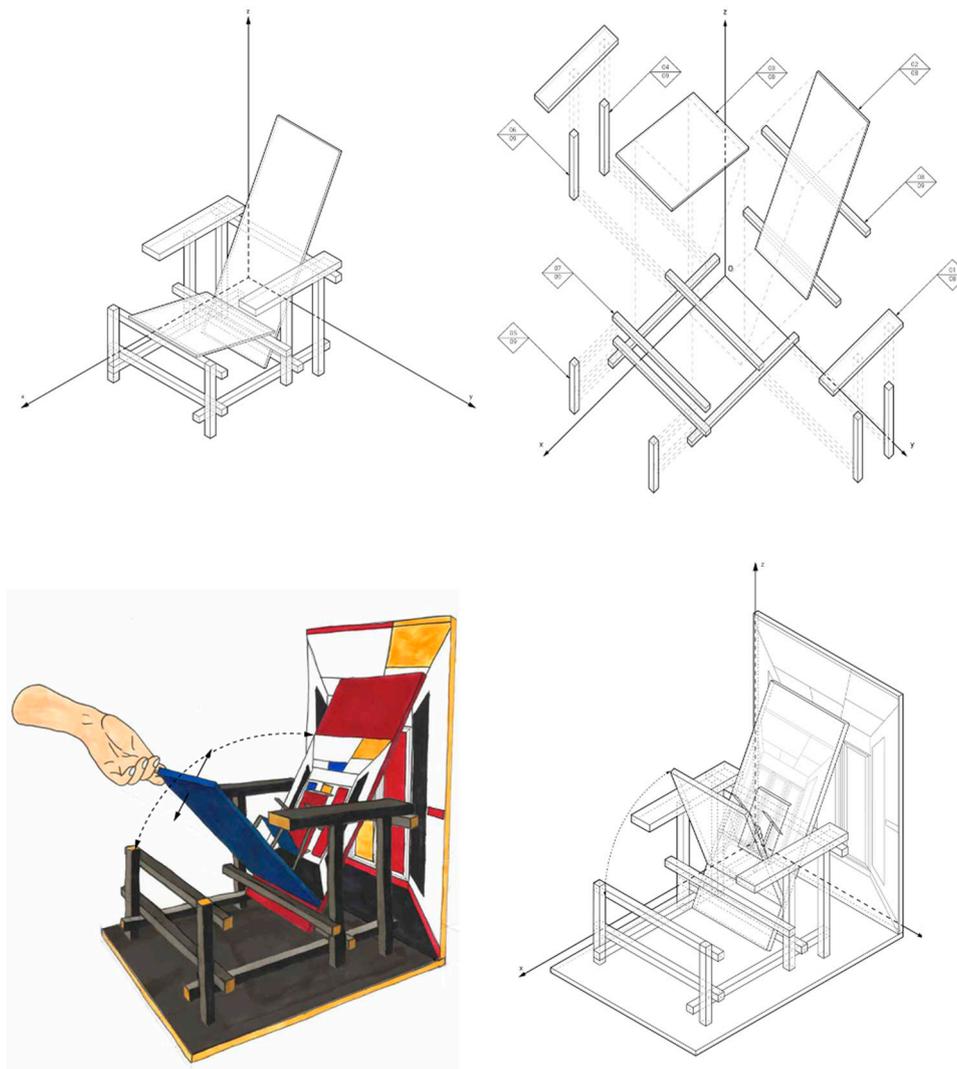


Figure 4. Survey and redrawing process of a chair and its components. After this step the students had to develop a sketch of the intended metamorphosis and then technical drawings related to the concept.

4. The Process

After an accurate survey of the objects shape, colors and dimensions, the reconstruction of these objects using spruce, plywood and textiles involved the fixing of the components using glue and wood screws. The articulation of the components in space, like in a layout of Cartesian coordinates, was the stimulus leading to the choice of these design objects (Figure 4). In the first phase of their educational experience, students were involved in research and cognitive analysis of the objects. After compiling a list of the parts, they then moved on to choosing materials and the re-building/re-drawing techniques, [14].

4.1. The Chairs' Metamorphosis

On the basis of the reconstructed model, a meta-model was then developed: a metamorphosis of the chair that was carried out in accordance with certain rules:

- the components of the original chair could not be modified: in other words, it was possible to disassemble and reposition, coat, colour, overturn, etc., but not cut or deform the individual pieces;
- the metamorphosis had to take place in strict compliance with the formal constraints of the original chair components (the spatial components);

- an obligatory element was assigning a new name to the chair; a name that would also be a message to understand the transformation process or (linguistic-formal) ‘betrayal’ of the original chair;
- it was therefore necessary to describe the cultural references underlying the transformation; the sources of inspiration for the process of metamorphosis: art, music, photography, comics, cinema, advertising, literature, etc.; what contaminating viruses were injected into the chairs to meta-shape them.

These few and simple rules were applied and generated new representations of Rietveld’s chairs in the form of scale drawings and then morphological adaptations of each individual component, which were then immediately given material form in a new model, which had to regenerate through the material support of the first wooden model: a genuine metamorphosis of the chair.

Within the trial, no choice could be imitated, and this thus led to a wide number of new variants of the Rietveld chairs (Figure 5). It was not a matter of mimicking the original project, but of taking a first step towards a more ambitious personal meta-project, the aim of which was a transposition, a process of interpretation [15], able to create a relation between form, space, relationship with the body and its needs, and with the emotional and cultural stimuli aroused in the young future designers.

And this was the most educational aspect in the process of spatial material and formal acquisition of knowledge, since the invention had always to try physically to identify one or more material “transforming elements”, which would make possible the construction of the new meta-model (on a scale of 1:1) in the best possible way, [16].

When all is said and done, one does one thing instead of another, taking or finding the place of something else (which is in part also the logic of homology) and determining a likeness, which often appears as an effective and efficient substitute for some (formal and descriptive) features that are as symbolic as they are emotive, [17].



Figure 5. The Berlin chair transformed into a toy.

4.2. The Toys’ Metamorphosis

The toys study and elaboration of new concepts has gone through a process of measuring and detecting the variation and only after that it became a path of physical interpretation toward the re-creation of shapes and colors. These are, in summary, the words that guided the didactic iteration of the second final subject for the students.

Educated at first to the interpretation of the configurational genesis of the surfaces and their geometric intersections, the students of the drawing course, soon translated into equivalent flat images, through the projective processes of descriptive geometry, the shapes and conformations of small wooden toys by Sevi.

The simultaneous cognitive attention to the interpretation of the wooden toy components (cylinder, sphere, parallelepiped...) by using a free-hand color sketch, also encouraged the student

in an extensive discretization and representation of individual components, also verified at the *maquette* laboratories of the Architecture Department by means of wood reproduction (in real terms) of the toy object. The expanded flexibility of geometry, together with the acquired rendering capabilities (Figure 6) and the model reproduction potential, has allowed each pair of students to revisit and elaborate a personalized compositional solution of the original toy, transforming or recomposing the various geometric component of the Sevi toy (Figure 7). The representative and modeling outputs of the course are a clear example of how the students of the Design Laboratory's course have learnt about the combination of double interpretative process of the built reality, which is the genesis of shapes on one side and representation-modeling on the other.



Figure 6. Hand drawing concepts by students representing the toys' metamorphosis in imaginary locations.

5. Conclusions

To conclude, within the *Chair_ludus* & *zoo_ludus* project, three possible options/stimuli for the procedure were proposed to the young students so they could make choices that were significantly aware:

- biological locks or false tokens: which comes from Gombrich's famous phrase in the aforementioned book, in which a possible strategy of play lies in generating substitutes (the broom-hobby horse, the ball-mouse for a cat, the finger-breast for a baby) capable of opening biological or psychological locks; these are "false tokens able to operate the mechanism if introduced instead of real tokens". In other words, they use the evocative (fantastic, symbolic, representational, etc.) capacity of the representation;
- the law of counter-step: that is, in the manner of Dante, to do the opposite of what custom (or sense, habit and the physical nature of things) indicate; in other words, to understand the limits of the passive dynamic that often does not transform or invent anything; if something is heavy, it becomes light; if it is rigid, it bends; if it is hard, it becomes transparent, etc.;

- practical deconstruction: to tear apart the object and then reassemble the parts obtained in a different way to how they are proposed in the ideal catalogue, through the adoption of new rules (of the game).

There are three approaches that make possible the transfer of new meanings and lead one to imagine a solution to the problem. These can also be used simultaneously and make a process surreal (on the surface), symbolic (in function), etc. [18]. Play introduces a different reality to the everyday sort, with precise limitations of space and time and according to predetermined rules to which the player must submit. It is always a game. In this case, the game was developed through an understanding of the form and by means of its reconstruction and the transposition of the two-dimensions into three dimensions.



Figure 7. Original Sevi’s toys (A) and their metamorphosis; (B) wooden models by the students of the course.

Author Contributions: M.B. conceived and designed the student exercises; L.R. analyzed the outputs; M.B. wrote the paragraph number 1, 3, 4, 7; L.R. wrote the paragraph number 2, 5, 6.

Conflicts of Interest: The authors declare no conflict of interest.

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