

Documentation of Experimental Processes

The documentation represents the research developments and my reflective thoughts through the experimental processes, which is one of the main practical outputs.

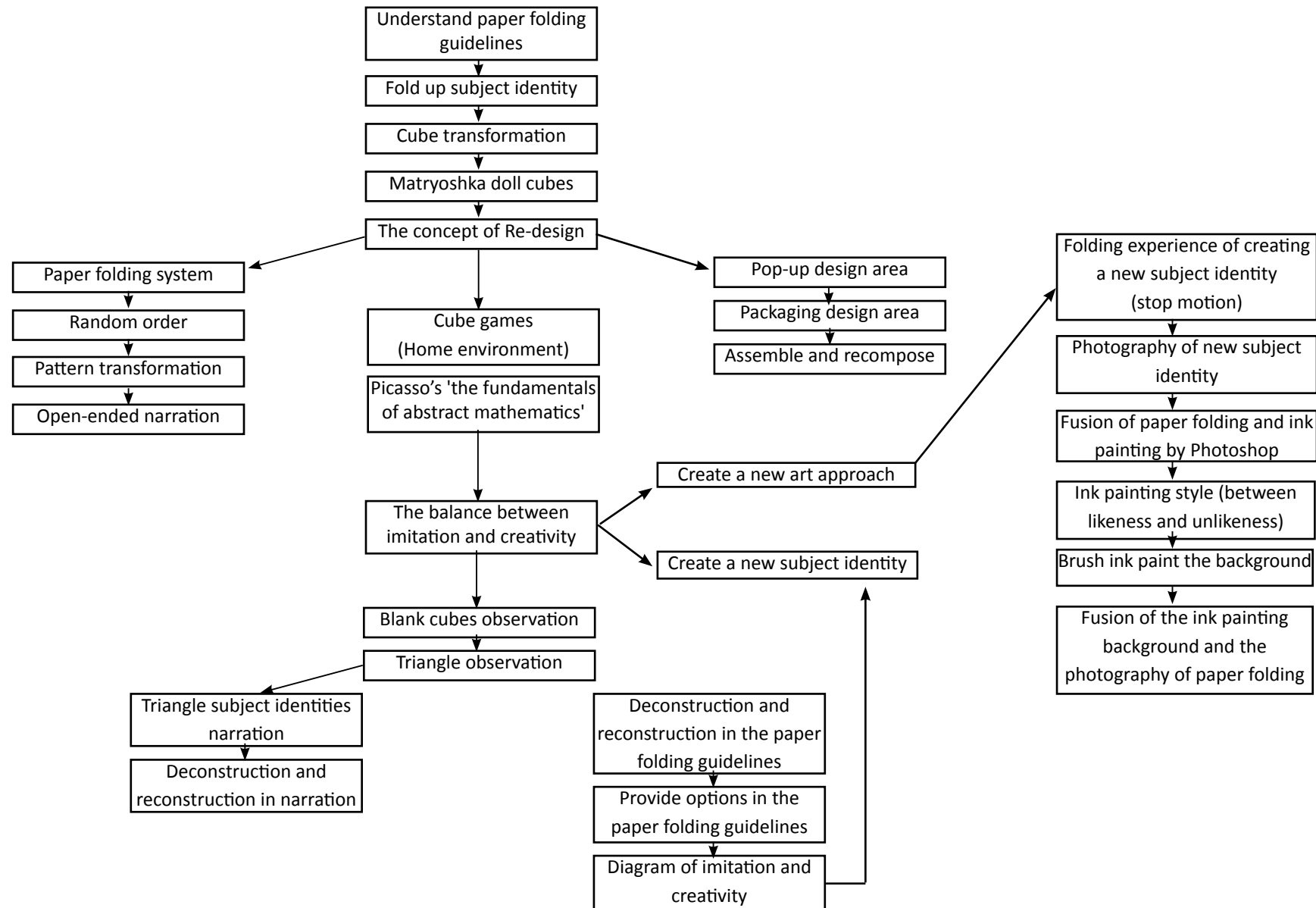
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1. Research Process Structure

The overview of the entire research

Research process structure



2. Paper folding guideline and subject identity

1. Understand paper folding guidelines

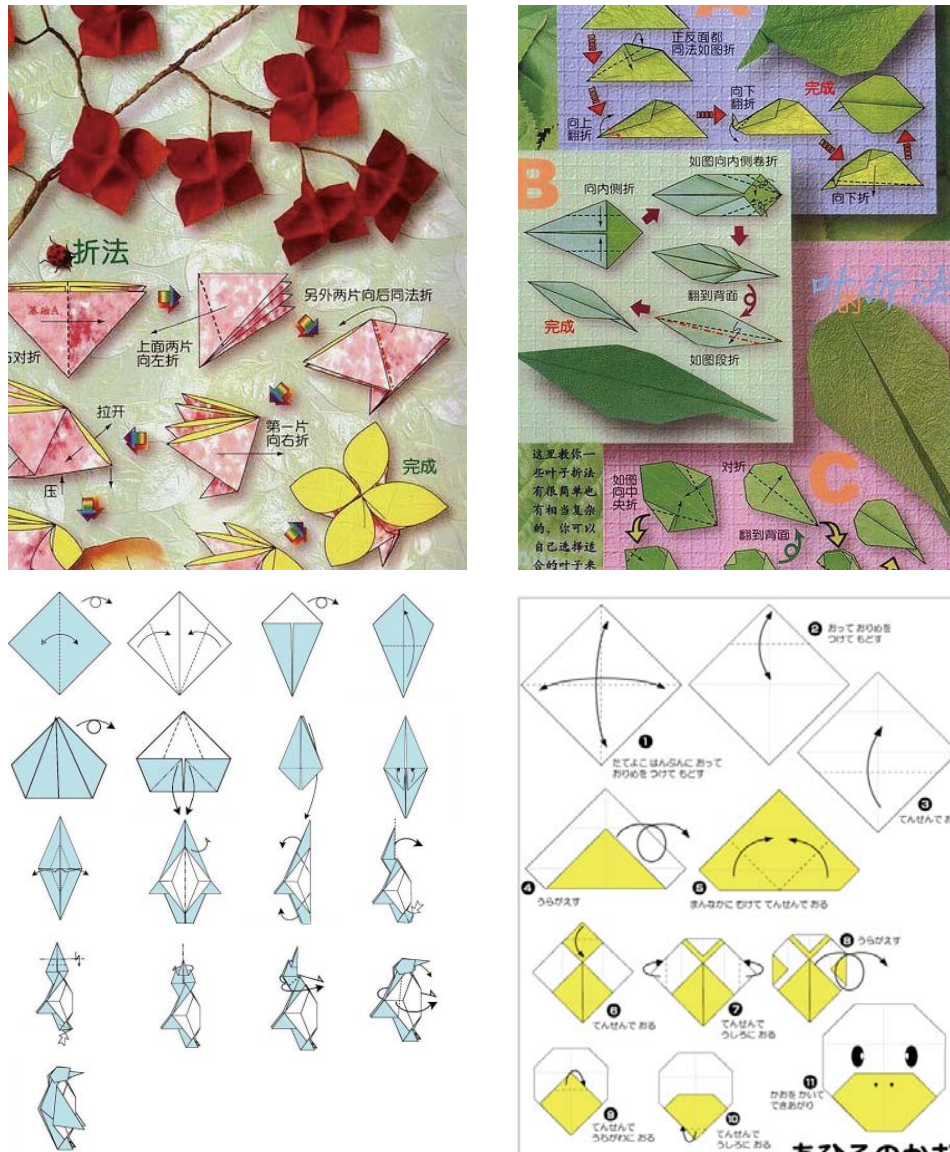


Figure 1. Paper folding guideline. Edited by Zhang (2009).

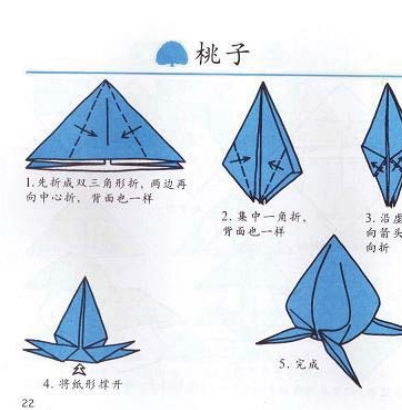


Figure 2. Paper folding guideline. Edited by Zhang (2009).

Investigating paper folding guidelines was the initial method used in this project. Although, **without clear directions or locations** of how my project would develop, I investigated the differences between diverse paper folding guidelines. I started the research with some guidelines and tried to fold the paper into different subjects by following the guidelines.

Findings and potentials:

- Some of the folding guidelines are clear and **easily communicated**; some of them are very complicated to understand.
- The already **informed subject identity** is the key obstacle that discourages the folder to create.
- What are the **connections and potentials** between these paper folding guidelines?
- Can I **break up** the traditional paper folding guidelines to offer diverse outcomes of subject identity?

2. Fold up subject identity

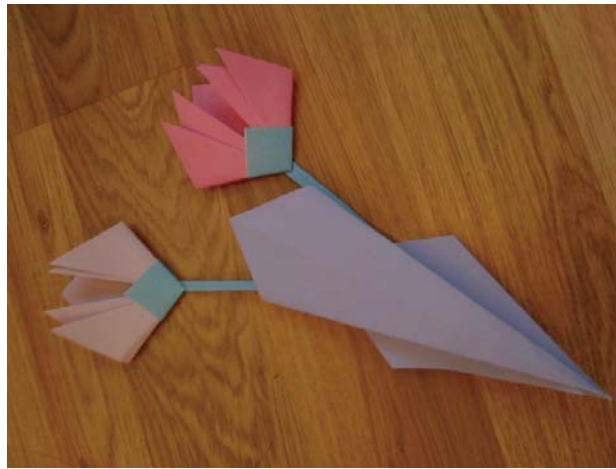


Figure 3. Experimentation 1. Zhang, Y. (2009).

'Subject Identity' describes the character of the folded outcomes, such as flowers, butterflies and cats. Subject identity means the paper folding works that human mind identities by relating to the life experience. At the start, I tried to fold a fancy subject identity. For example, I strove to fold a fancy flower, and I searched for a different flower folding guideline to experiment with the techniques.

Findings and potentials:

- Can I create my own form of subject identity based on my **imitating experience and techniques**?
- To fold up these subject identities following the guideline is a limitation process, which **limits the folder's creativity**.
- Can paper folding provide a **creative process**?

3. The concept of Re-design and cube transformation

3. The idea of Cube transformation

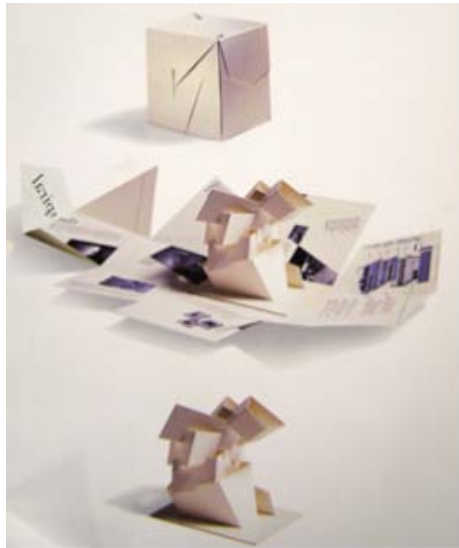


Figure 4. Victoria and Albert Museum brochure. Johnson Banks. (n.d.).

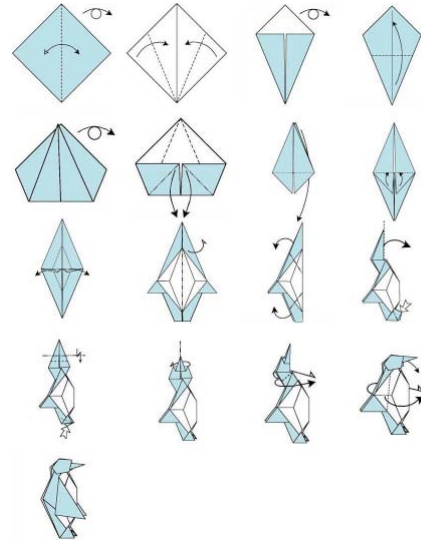


Figure 5. Paper folding guideline. Edited by Zhang (2009).



Figure 7. Experimentation 2. Zhang, Y. (2009).



Figure 6. Hailey Meyer. Liechty/Meryer Family. (n.d.).

To explore whether paper folding can provide a creative process, I arranged an experiment to imitate Banks' cube transformation. I developed a three-dimensional folding guideline. When unfolded the cube unveils the main character design of the story; when opened, a mode of the character in the box is revealed, along with the character folding guideline.

Findings and potentials:

- The relationship between the cube and the proposed character is a kind of magic, presented by the transformation of the cube into a three-dimensional character.
- What is the 'magic' mean in my project?
- The main finding is that **cube transformation** can provide the emotional of magic, and stimulate people's interests in paper folding.

4. The idea of Matryoshka doll



Figure 8. Wikipedia. Matryoshka doll. (2009).

To develop the concept of paper folding providing a creative experience, I applied the idea of Matryoshka doll to the experiment. It is known as a Russian nested doll, which recognizes the 'onion layer' paradigm that each layer of an onion can be peeled away to reveal a smaller version of the onion. The experiment involved making several cubes like the brochure of the 'Victoria and Albert Museum' with decreasing sizes placed one inside the other. Each cube ensconced within is peeled away with the paper fold guideline in it to achieve the expression of magic. The aim is to provide the audience with the creative experience through the action of peeling away the onion layer of each cube to investigate what is inside.

Findings and potentials:

- Challenge each cube ensconce is peeled.
- The problem is, why would the audience want to fold up the characters?
- The potential direction is **providing a narration** to help the audience to build up the general concept of the characters, and then fold them up.



Figure 9. Experimentation 3. Zhang, Y. (2009).



Figure 10. Experimentation 3. Zhang, Y. (2009).

5. The concept of Re-design



Figure 11. Shigeru Ban. Toilet Paper. (n.d.).



Figure 12. Naoto Fukasawa. CD Player. (n.d.).

Hara gives examples of Ban and Fukasawa to justify the key concept of re-design, which is **making the ordinary unknown**. At this stage, I had an unclear direction of redesigning a children's book as a paper folding system, such as a cube. Therefore, in this experiment, the paper folding system was constructed in the form of cube. When opened, it contains a pop-up book and four cubes. The folder is guided to read the story to build up a general concept of the entire story and characters. Subsequently, the folder opens the cubes to fold up the main characters of the story.

Findings and potentials:

- The key finding is **random order**, which is a way to deconstruct the previous creation and allow folders to re-design their own creation. In this experimentation, the previous creation is the story narration of the pop-up book, which gives children a general story. Random order is the four cubes with different characters' paper folding guideline. Children are allowed to randomly choose the character and fold it up; after folding they can use the characters to create their own story. This is a creative experience of deconstructing the previous creation and re-designing their own creation.

- The potential is to apply the random order in narration and to allow the folder to **reconstruct the narration**.
- The new direction is whether one can create a **paper folding system** to break up the traditional paper folding guideline and provide more creative experience.



Figure 13. Experimentation 4. Zhang, Y. (2009).

4. Paper folding system and the idea of pattern transformation

6. The diagram of paper folding system

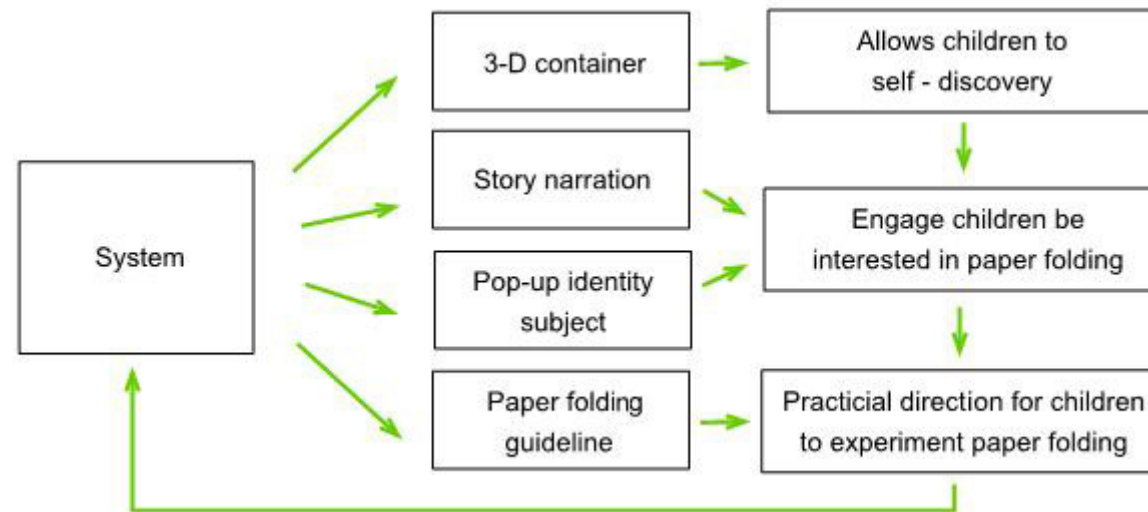


Figure 14. The diagram of paper folding system. Zhang, Y. (2009).

Therefore, I worked out a diagram for the interactive paper folding system for children.

Defining the system:

The system is a container that uses paper folding as the major method to inspire children with the magic of folding to self-discover the identity subjects and the narration of the content.

The system has four major parts; **the 3-D container** is the outlook of the system, which uses the method of allowing children to experience self-discovery.

Story narration is the main line of the system; after reading through the story, they can build up a general view of the story and characters, which engages children to be interested in paper folding.

Pop-up identity subject is the specific 3-D fold up character in the story; allowing children to touch and find out the way to fold up. The method is also engaging children to be interested in paper folding.

The **paper folding guideline** helps children to fold up the identity subject by responding to the system to build up an interactive communication.

7. The idea of random order



Idea of Cube



Idea of CD player



New idea of redesigning a book



Figure 15. Experimentation 5. Zhang, Y. (2009).

To work out the story narration part in the paper folding system, I applied the concept of random order. Random order, in the story narration, divides the story content into six parts, and places the six story fragments into the six cubes. The children are allowed to discover the narration by opening the cubes and reading through the content of **random choice**.

Findings and potentials:

- Random order became a problem in the story narration with a risk of the confusion of the stories. For example, the audience might open the ending of the story first; and when they opened the beginning of the story, they might feel confused.
- The potential is taking the **open-ended story** into consideration, which allows children to read the beginning of the story for building up a rough understanding of the story; and leaves space for the children to imagine what the ending of the story might be.

8. The idea of Pattern transformation



Figure 16. Experimentation 6. Zhang, Y. (2009).



To engage children to be more interested in paper folding by the subject identity in the paper folding system, I experimented with the pattern transformation. At the beginning, there was a pattern with unclear meaning on both the front and back of the paper. One is like a flower or a medal; the other is like a colourful frame. After folding the paper, the pattern was transformed into the subject identity of a fish.

Findings and potentials:

- The **pattern's reconstruction** is a cognitive process of a subject identity that stimulates the children's interests and provides possibilities to improve their creativity by observing and discovering.
- the transformation from the patterns with unclear meaning on a piece of paper to a three-dimensional subject identity with clear meaning is a magical experience.

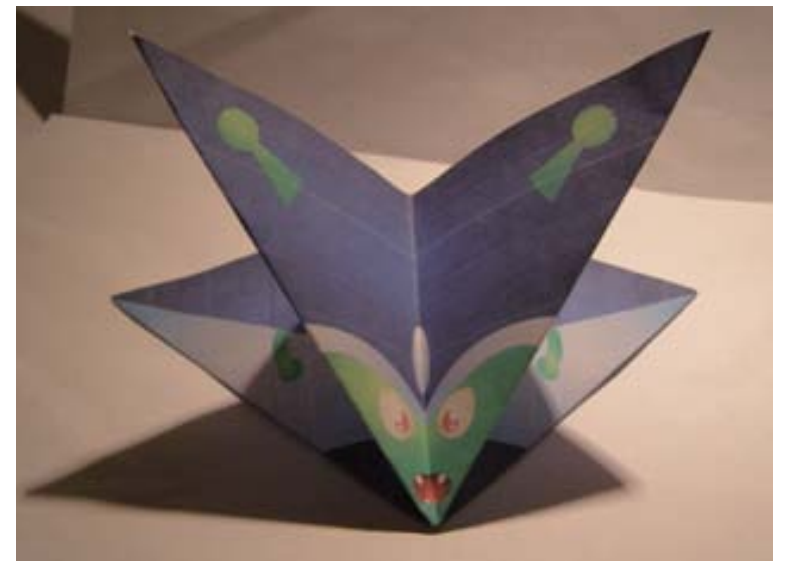
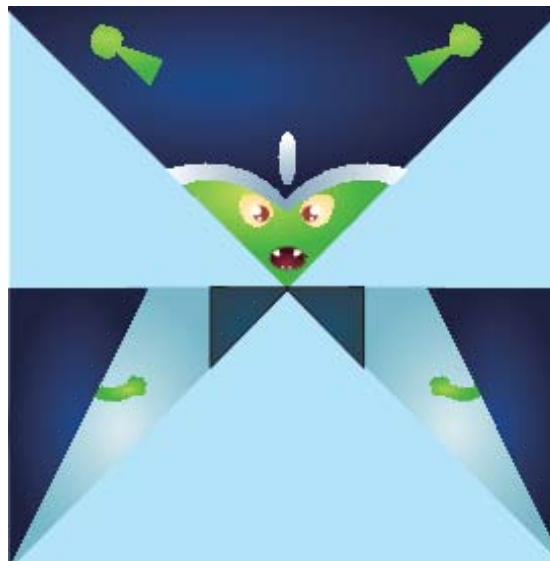
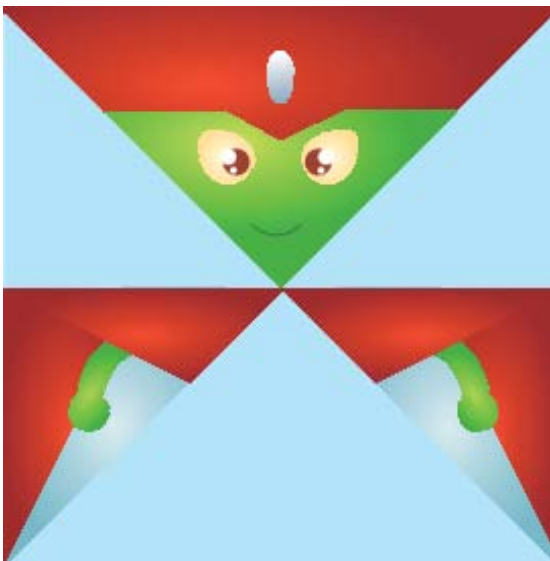
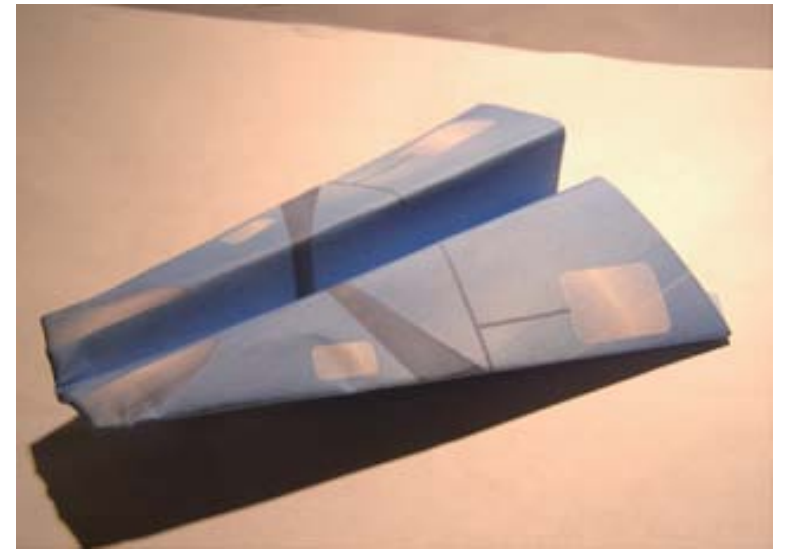
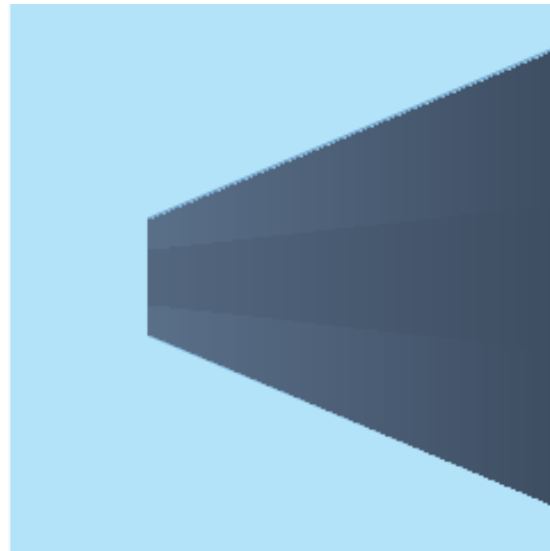
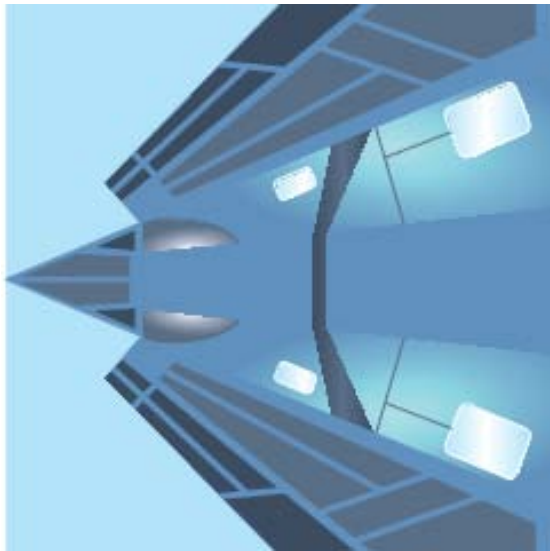


Figure 17. Experimentation 7. Zhang, Y. (2009).

9. The updated diagram of paper folding system

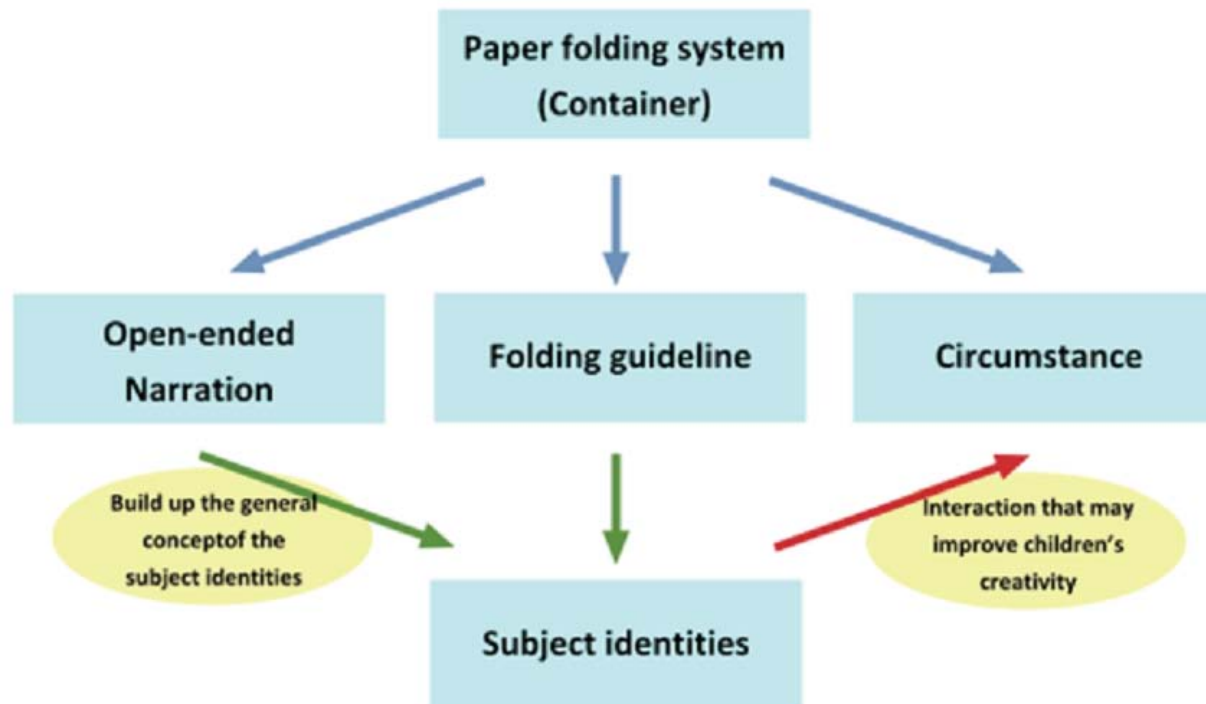


Figure 18. The updated diagram of paper folding system. Zhang, Y. (2009).

Therefore, I updated the diagram of the paper folding system, which aimed to provide children with a creative experience.

There are four major parts in the system; the 3-D container, the open-ended story narration, the folding guideline and the circumstance.

The 3-D container is the outfit of the system, such as a box or other forms. It allows children to discover by the action of opening the container. The children have to open the box and discover what is inside (Fig. 19).

The open-ended narration provides the background of the story; the children are allowed to read the beginning of the story for building up a rough understanding of the story; and it leaves space for children to imagine what the ending of the story might be.

The paper folding guideline is the direction for the children to experiment and create different subject identities from the paper folding (Fig. 21).

The circumstance is the place where the children can play with their subject identities. Through the interaction, the children can reconstruct the story fragments and create their own stories (Fig. 22).

10. Paper folding system

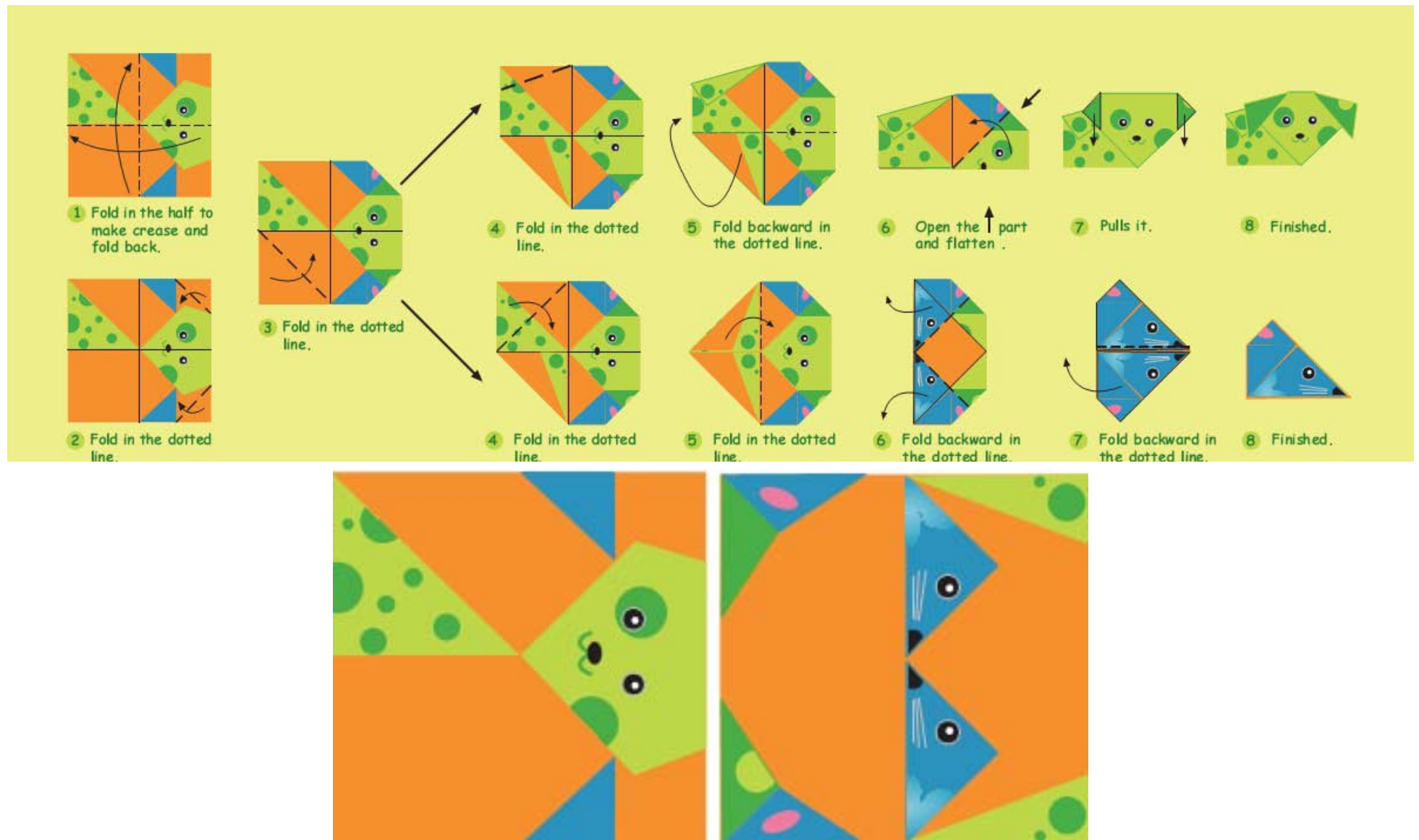


Figure 19. Folding guideline 1. Zhang, Y. (2009).

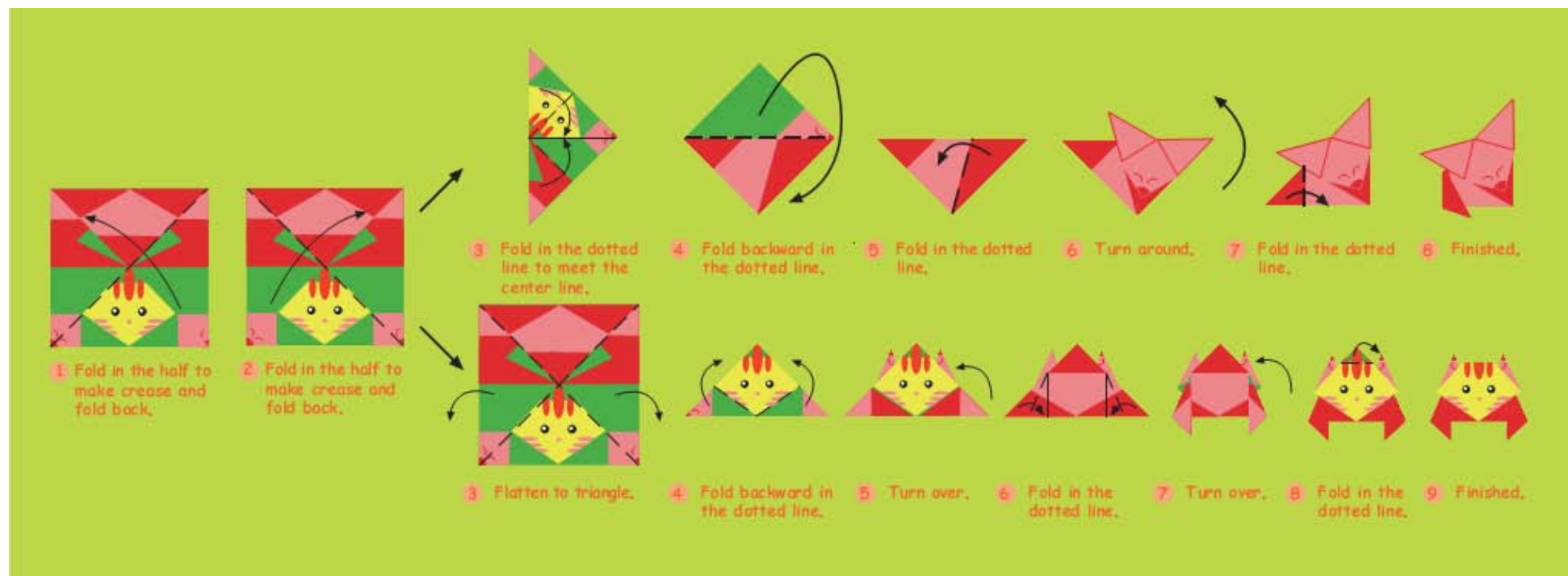


Figure 20. Folding guideline 2. Zhang, Y. (2009).



Figure 21. The container. Zhang, Y. (2009).



Figure 22. The circumstance. Zhang, Y. (2009).

Reflection on the works

- The key focus through recent practices is to **break up the traditional paper folding guidelines**, and to investigate a **new paper folding system** that provides a creative experience for children.
- The problem is, there is **not a clear aim** and research core at this stage; what is the research core? To investigate a paper folding system is not the core; it is one of the methods in my research. Therefore, I need to go deeper to find the key to this research.
- The other problem is, **childhood education** is just an area that I want to apply, actually, the applied area is not the most important. The most important is, what is the potential and research core behind it?
- The finding is, **random order and pattern transformation** are the key methods in this research, which may apply in the future research. Meanwhile, the idea of **re-design** is also a key concept found at this stage. They can help me to work out the research core in the following practices.

5. The research area of pop-up design and packaging design

11. Pop-up design area



Figure 23. Experimentation 8. Zhang, Y. (2009).

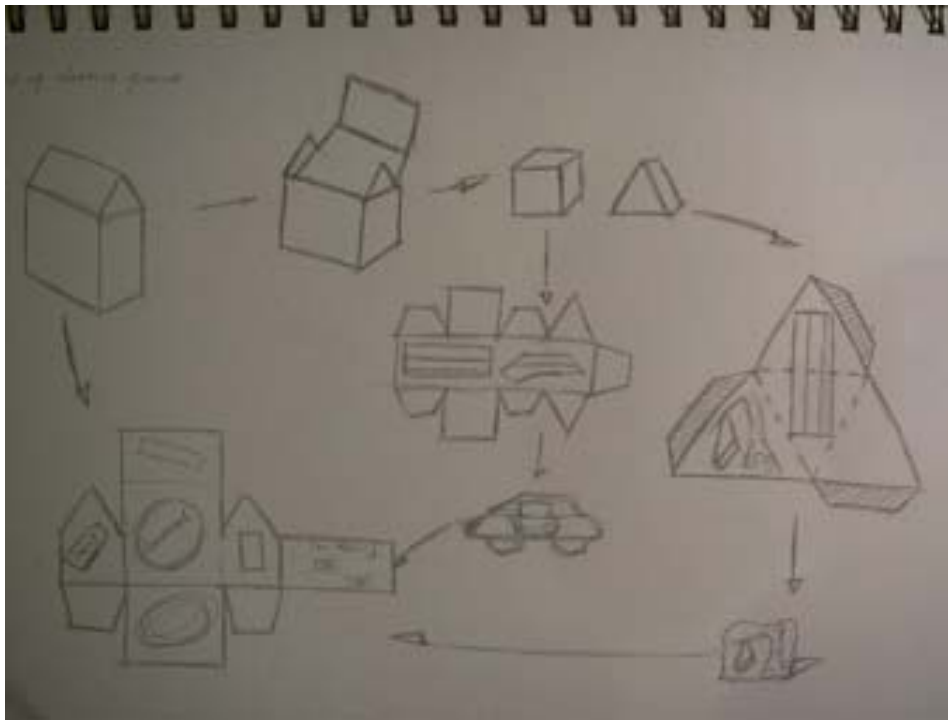


Figure 24. Experimentation 9. Zhang, Y. (2009).

To work out the pop-up circumstance, I experimented several pop up techniques that were provided in the book, 'The Elements of Pop-up'. Experimenting with these pop-up techniques helped me to build up a general view of pop-up and to have a consideration of which pop-up techniques I could use in the project.

Findings and potentials:

- Make a connection between pop-up and 3D design, which is that the cube can transfer to the template of pop-up. Cut the template out and follow the guideline to fold it by self-practise.
- The problem is, the experiment still for the paper folding system, I ask myself, what am I exactly looking at?

12. The idea of assemble and recompose



Figure 25. Ashley Buerkett. Mario World Board Game. (n.d.)



Figure 26. B.I.O. Form us with love. (n.d.)

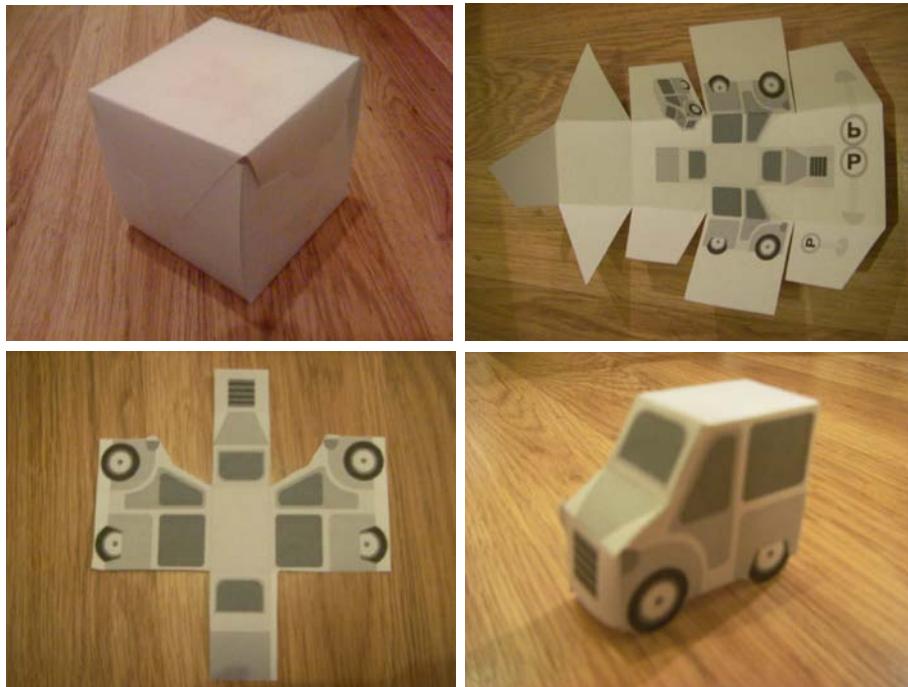


Figure 27. Experimentation 10. Zhang, Y. (2009).

To work out the research core of my project, I researched the packaging design area, which is the paper engineering area. Both examples provided instances of assembly, yield and recompose. The user can cut the prints to pieces and assemble them again. Applying to my project is to assemble to give forms and to have fun. Exploring the forms and transferring to template of kid's interactive objects, and bending it to pieces and recomposing to interesting object would be a magic experience. Combining both examples, I experimented with cube transformation. I started with a blank cube, unfolding it to become a template of a model of a car, and then cut it out and folded it to assemble it into to a car.

Findings and potentials:

- The experimentation explores the techniques of packaging and applies the techniques to the cube transformation, so as to make the 3D interactive approach more appealing to children.
- The unique packaging technique is the core focus, along with the key words, testing **assembly**, **recompose**, forms and fun.
- The problem is, does the packaging design area go for enough in my research?

13. Packaging design area

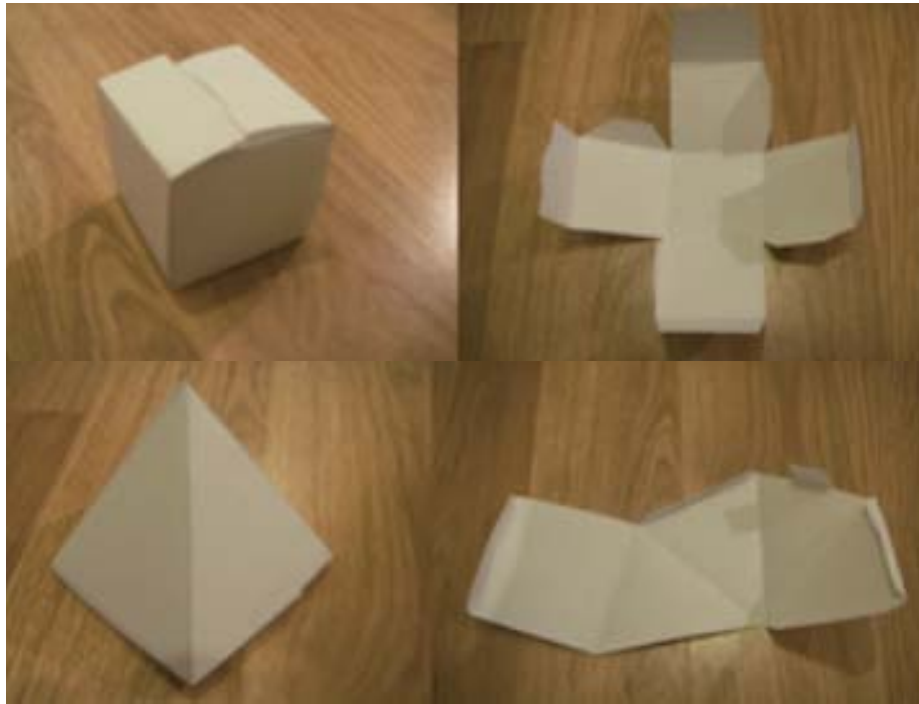


Figure 28. Experimentation 11. Zhang, Y. (2009).

I experimented with some of these templates, such as the resaleable cube, the tuck-lock pyramid with a base, the dimensional frame with a cover, and another stylish box. After experimenting with these templates with the guideline I tried to adapt the techniques to my project.

After imitating the templates, I extended the templates of the cottage-shaped box to a playful box with a raising root lid, and created the form of the house, which combined the idea of cube design.

Findings and potentials:

- The major finding is that I created a new form of house based on an imitation of the packaging design templates.
- The potential is, can I apply the ideas of imitation and creativity in paper folding? Is this relevant to my research core?

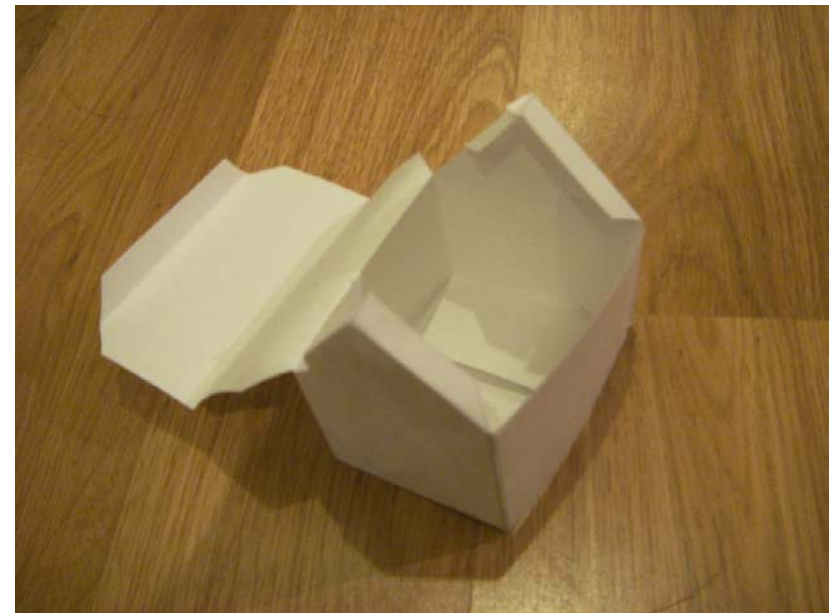
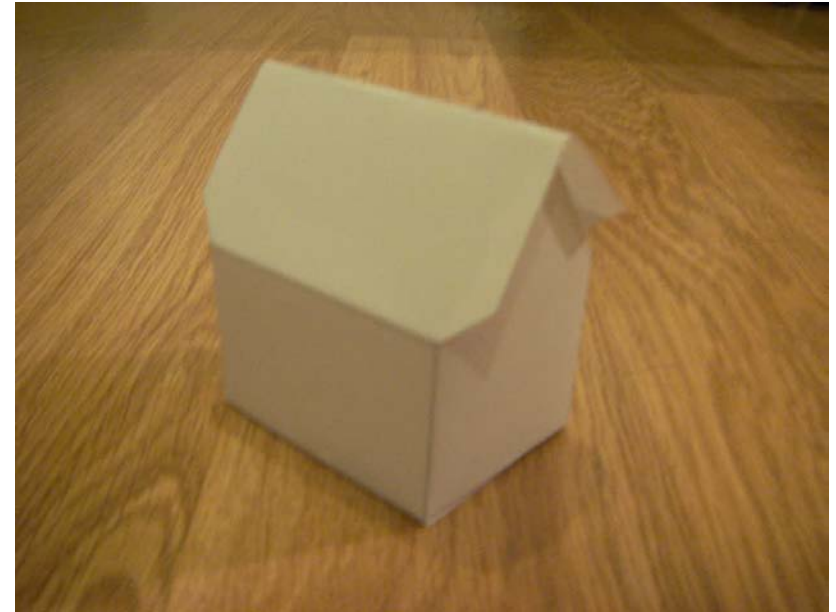


Figure 29. Experimentation 11. Zhang, Y. (2009).

Reflection on the works

- The pop-up design area and the packaging design area may **go too far**; the initial focus in this project is paper folding, therefore, I should go back to the paper folding area.
- The key finding here is whether the **research core** relates to **imitation and creativity**; paper folding is the imitation process, which imitates the subject identity by following the guideline step by step. Therefore, I need to go deeper with the concepts of imitation and creativity.
- The other finding is that the methods of **assembly and recomposition** have been shelved in the recent works, and I will apply these methods in future experiments.

6. The idea of cube observation

14. The idea of cube games (Home environment)

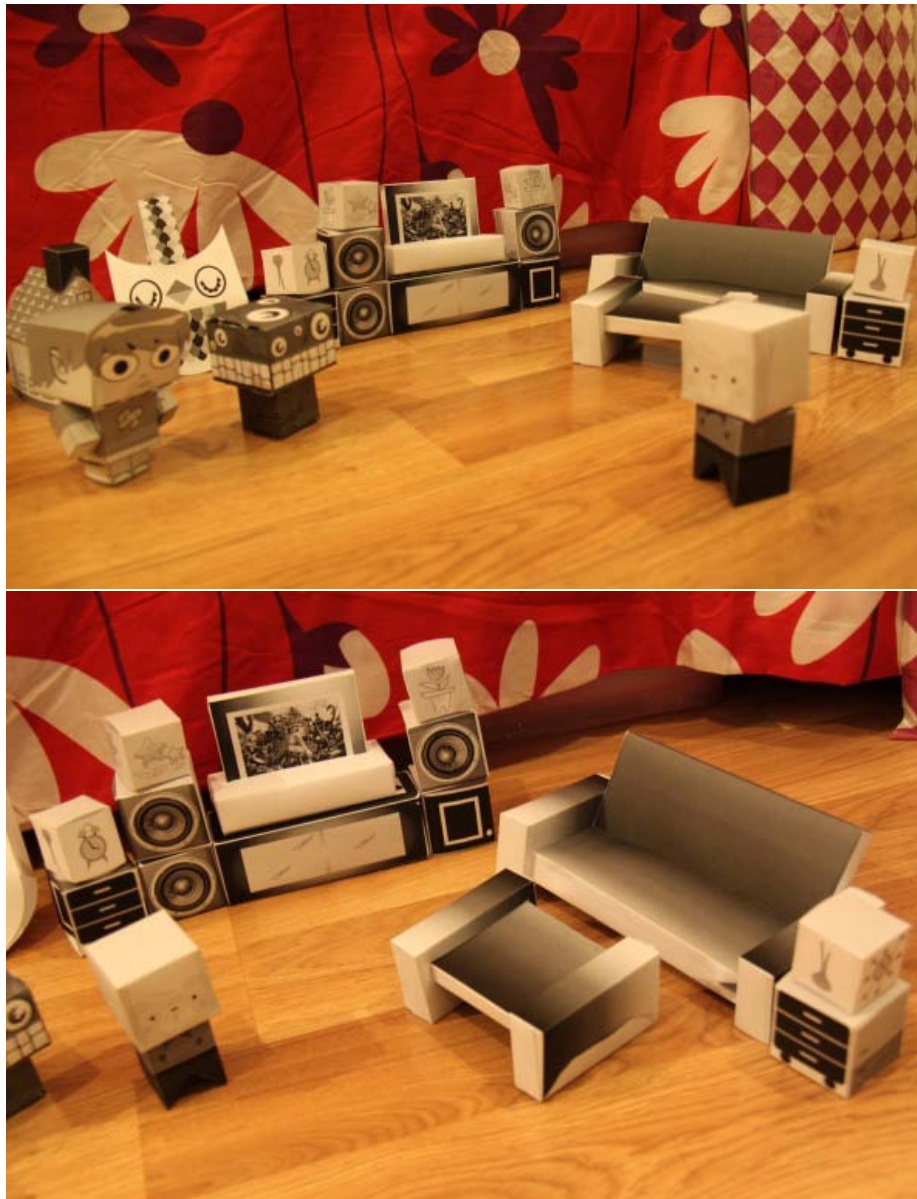


Figure 30. Experimentation 12. Zhang, Y. (2010).



To combine the idea of pattern transformation, assembly, and recomposition, I do an experiment of home environment, which allows the audience to assemble the pieces of paper folding, and to recompose them into different subject identities, such as a sofa and a table. There are also some cubes with different patterns on each surface; the audience is allowed to recompose the cubes and build up new identities as speakers or characters.

Findings and potentials:

- The problem is, the **patterns** set the **limitations** of the creative experience.
- The finding is, '**free will**' is a substance of creating.
- The potential is to maybe remove these patterns, and leave the cubes blank.
- What am I looking at exactly? The creative experience or the imitation and creativity?

15. The idea of Blank cubes observation

This developed as the most important stage in my project. To solve the problem of the limitations by the patterns, I removed the patterns on the cubes and left them blank. I then tried to provide different sizes and forms and to extend the forms to a cube and a triangle. Children allow folding up the basic forms and sharing the forms play at their free will.

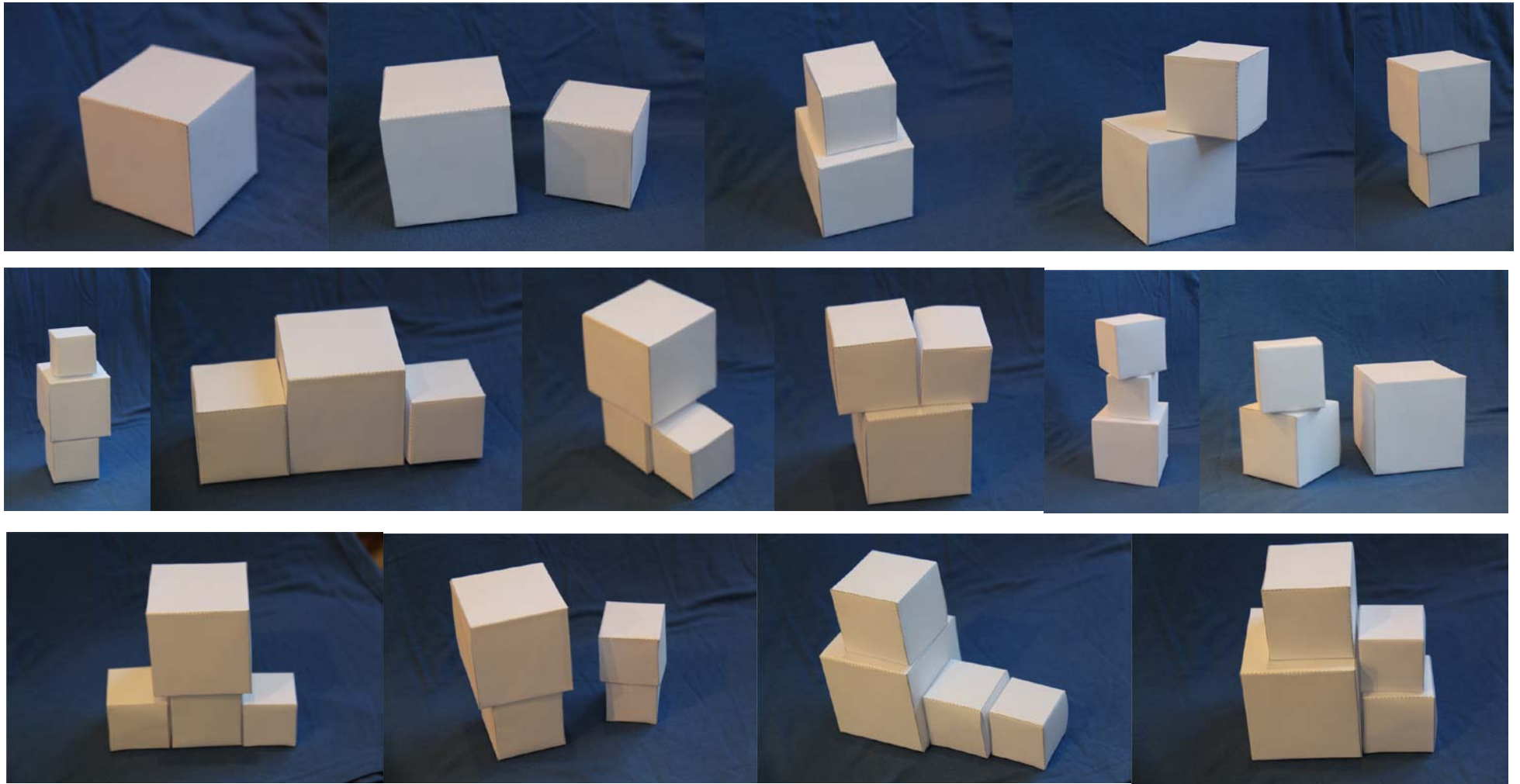


Figure 31. Experimentation 13. Zhang, Y. (2010).

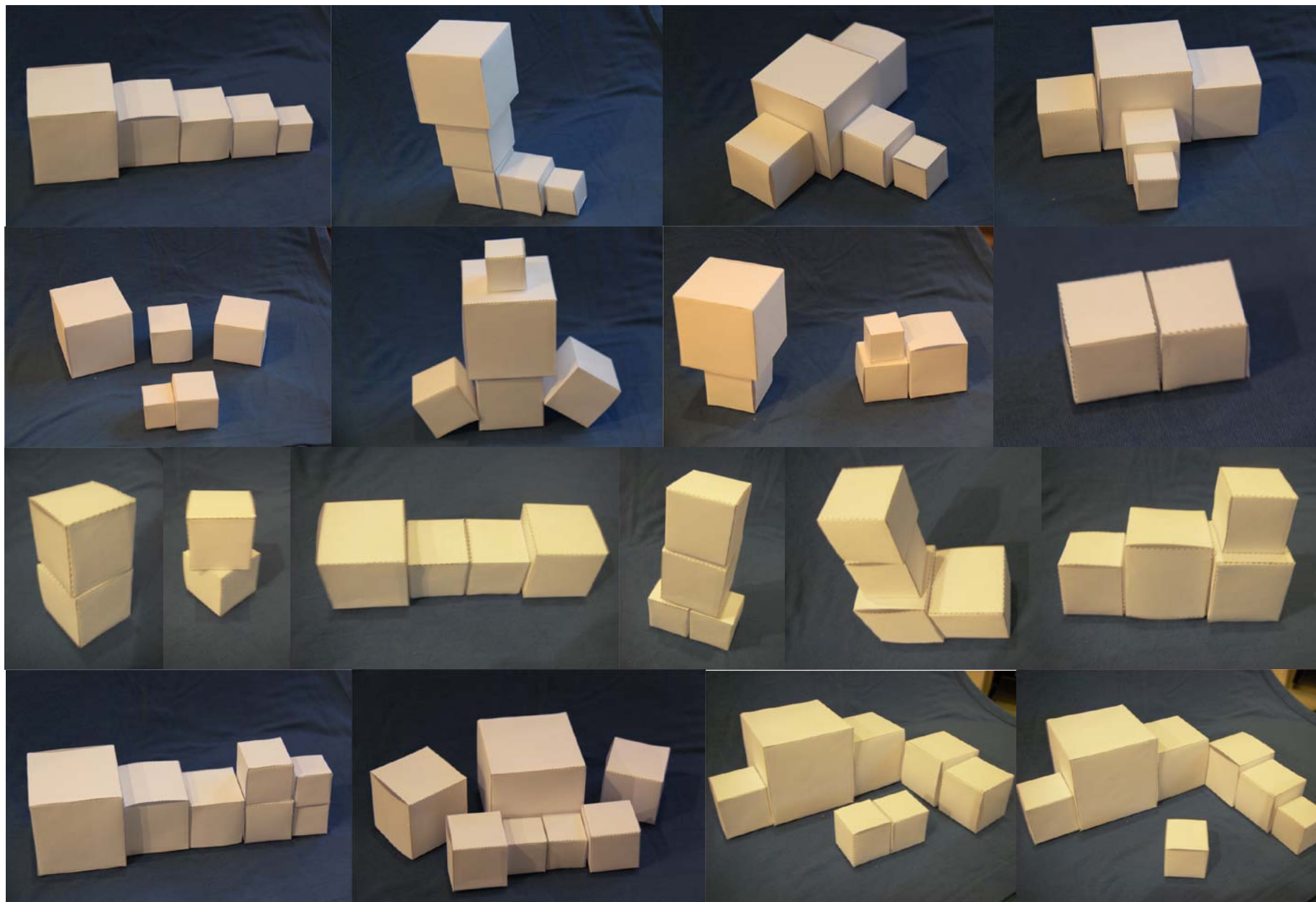


Figure 32. Experimentation 13. Zhang, Y. (2010).

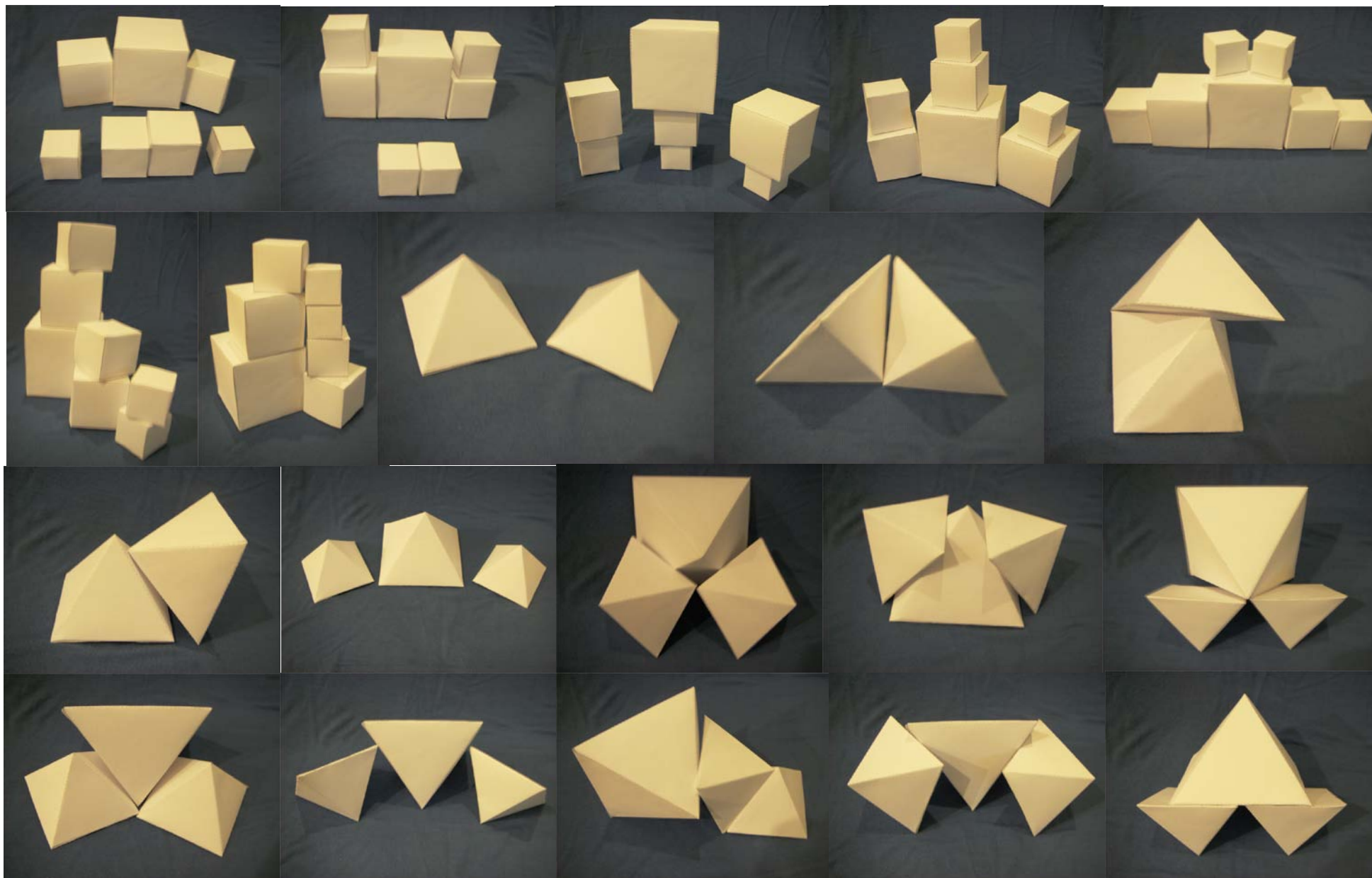


Figure 33. Experimentation 13. Zhang, Y. (2010).

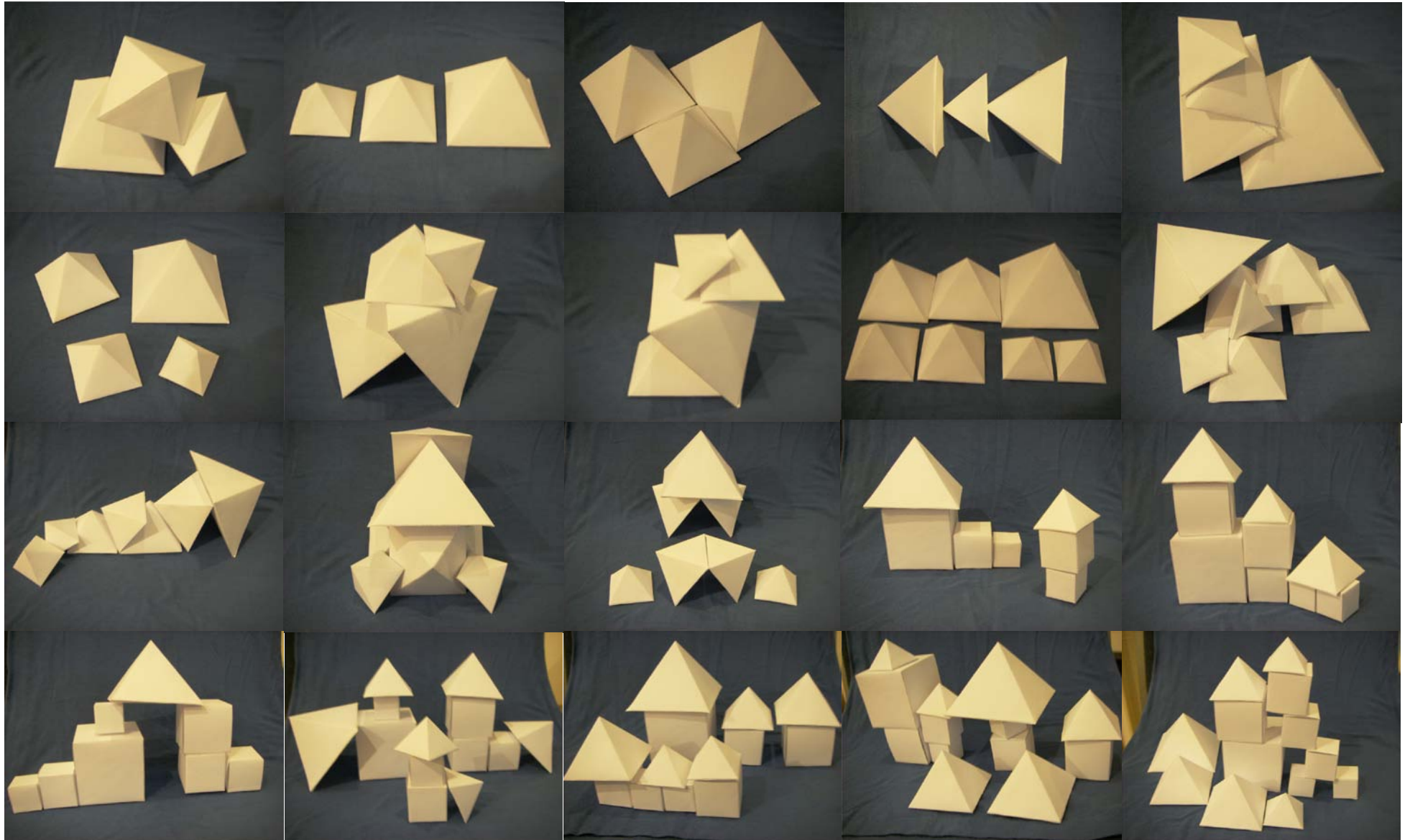


Figure 34. Experimentation 13. Zhang, Y. (2010).

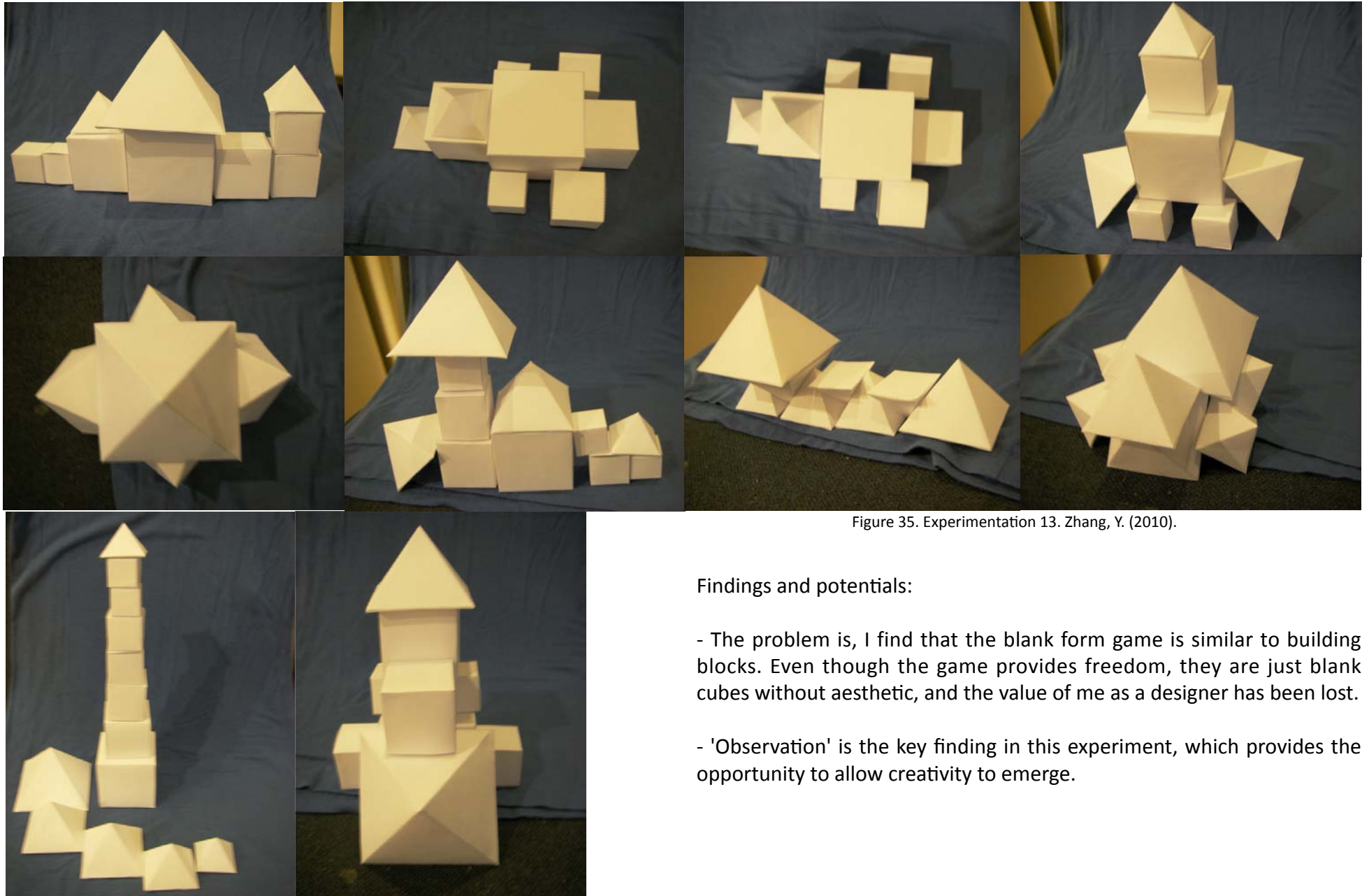


Figure 35. Experimentation 13. Zhang, Y. (2010).

Findings and potentials:

- The problem is, I find that the blank form game is similar to building blocks. Even though the game provides freedom, they are just blank cubes without aesthetic, and the value of me as a designer has been lost.
- 'Observation' is the key finding in this experiment, which provides the opportunity to allow creativity to emerge.

Relocating the concept of the project

This is a very hard stage in my research, I reviewed the past works and realized that I missed the most important part in my research, and I had already **lost the core of the research**. After reviewing and considering previous practical and theoretical research, I repositioned my location away from the conceptual idea of a paper folding system for children, and towards the core of my research, which is to **seek the balance between imitation and creativity**.

Paper folding is an action of imitating, and the process absolutely limits children's creativity. I intend to break up the paper folding guideline and to investigate a new system to improve children's creativity. For example, I gave myself two blank sheets of paper, I used one piece of paper to fold up a subject identity such as a house, by following the guideline step by step, and the final outcome is a house. It is a process of imitating, and also a process of absolute limitation. I used the other sheet of paper to fold up whatever I wanted without a guideline; the final outcomes could have been diverse, and had the risk of just creasing the paper so that it was suitable on to throw away. This is a process of creating, and also a process of exactly freedom. Therefore, the core of my research is to explore the balance of imitating and creating, and the major method is to employ paper folding to express the core and, maybe, to apply the core to the area of children's education or to other areas as well.

In the past, I located my project in the children's education area first; in doing this I limited the project a lot and lost the core. After this stage, my research went deeper and had a clearer direction.

7. The diagram of imitation and creativity

16. The diagram of the balance between imitation and creativity

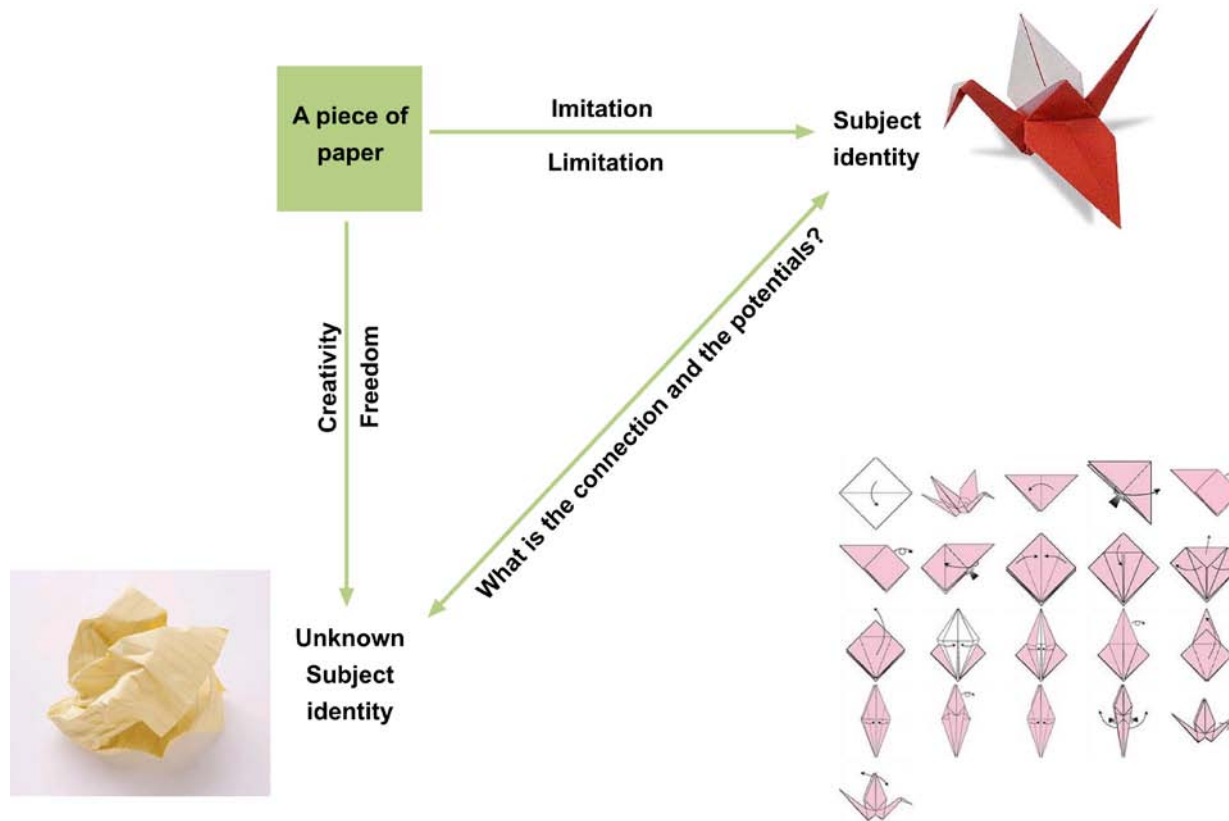


Figure 36. Experimentation 14. Zhang, Y. (2010).

To clarify my research core, I developed this diagram to seek what imitation and creativity mean in this project. I found that **imitation is to passively receive information** by just following the paper folding guidelines to fold up the subject identity, which is also a limitation process. On the other hand, creativity is an **initiative to create information** by folding up an unknown subject identity without any paper folding guidelines. Therefore, I am asking, what is the connection between the imitated subject identity and the created subject identity? Is it the balance?

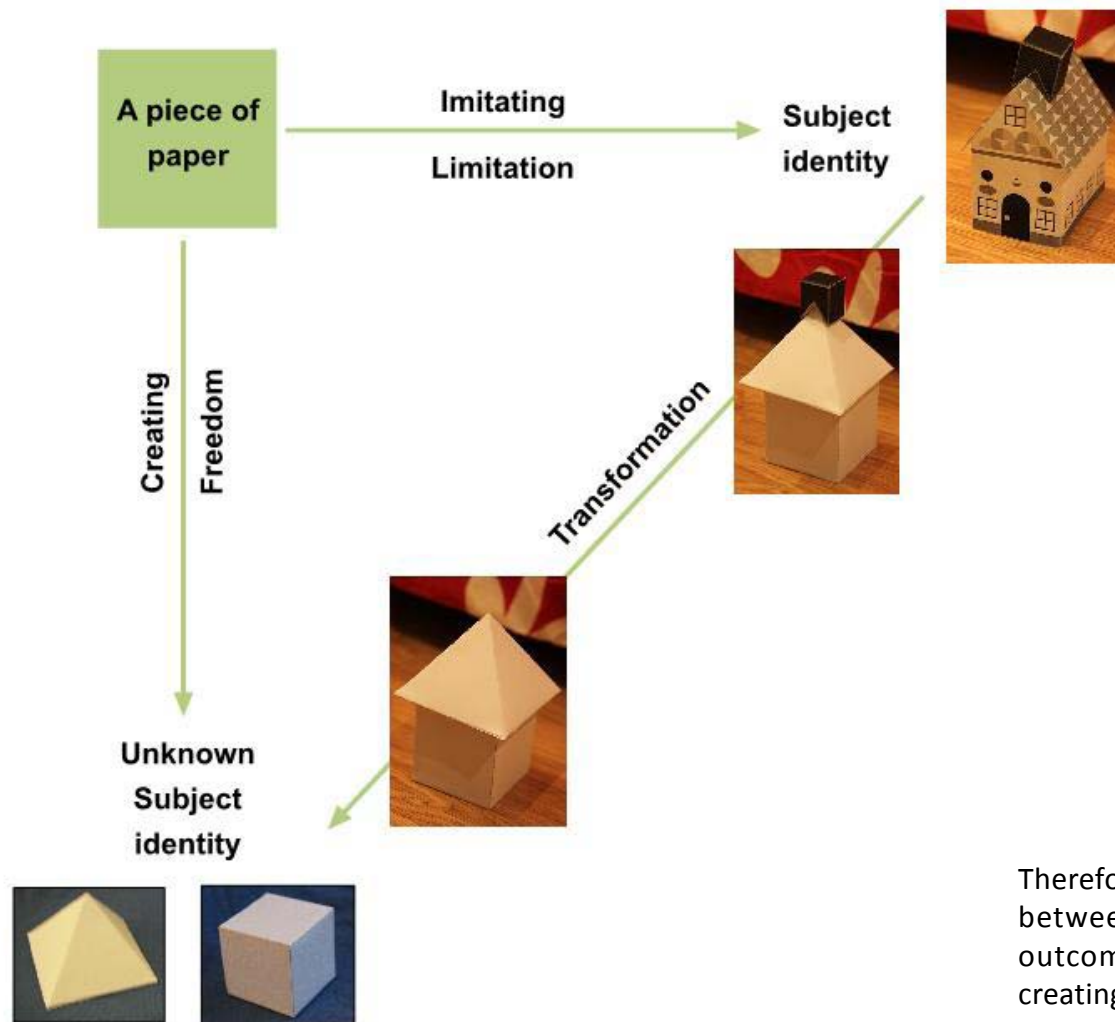


Figure 37. Experimentation 15. Zhang, Y. (2010).

Therefore, I developed another diagram to explore the connection between imitating and creating. At this stage, I focused on the outcome of creating and imitating. From imitating a subject to creating a subject, is a **process of transformation**. For example, the imitation of a subject is a house, while the creation of a subject is a cube. The connection between these subjects can be understood as a process of transformation; the imitated subject of a house, through the first transformation, can be understood as a house without decoration from basic forms. The second transformation makes the house from the forms of a triangle and a square. The last transformation results in the created subject of a cube.

17. Picasso's 'the fundamentals of abstract mathematics'

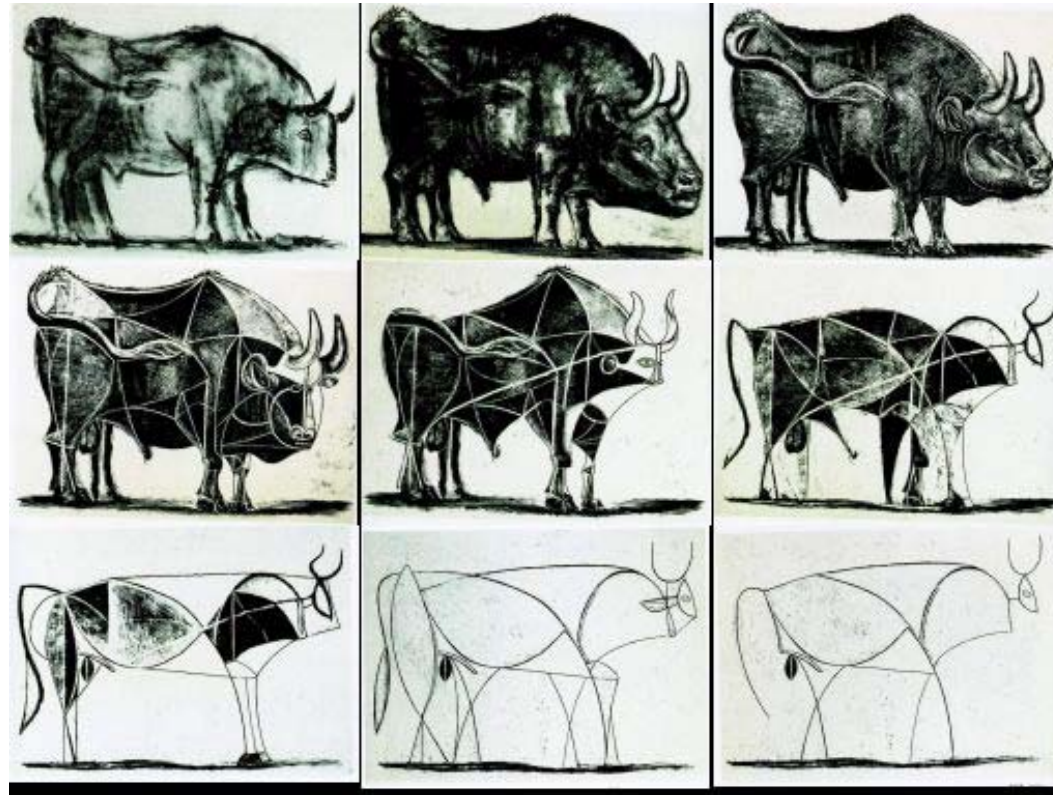


Figure 38. Picasso, P. Fundamentals of abstract mathematics. (1945).

The transformation process can be explained by referring to Picasso's 'the fundamentals of abstract mathematics'. Picasso created "Bull" at the end of 1945. These lithographs present how to develop an artwork from the academic to the abstract. The key investigation is finding the "spirit" of the bull. Following Picasso's theory, I found that even though the bull in the last lithograph just has a few lines, at least we can see that it is a bull. If continuing the abstract process, the end of the lithograph maybe just shows one line, or a circle, therefore, it is not a bull anymore. It means, the last lithograph is the balance which is the extreme position of the exiting subject.

Findings and potentials:

- The connection between imitating and creating can be understood as a transformation process, and the balance is the extreme position of the imitating subject. However, this theory is based on the creating subject being a cube. In fact, the creating subject can be anything which is unknown.

8. The idea of triangle observation

18. The idea of triangle observation

To focus on the creating process, I allowed myself the total freedom of not following any folding guidelines. I simply folded blank paper, aiming to develop a range of subject identities by composing them together.

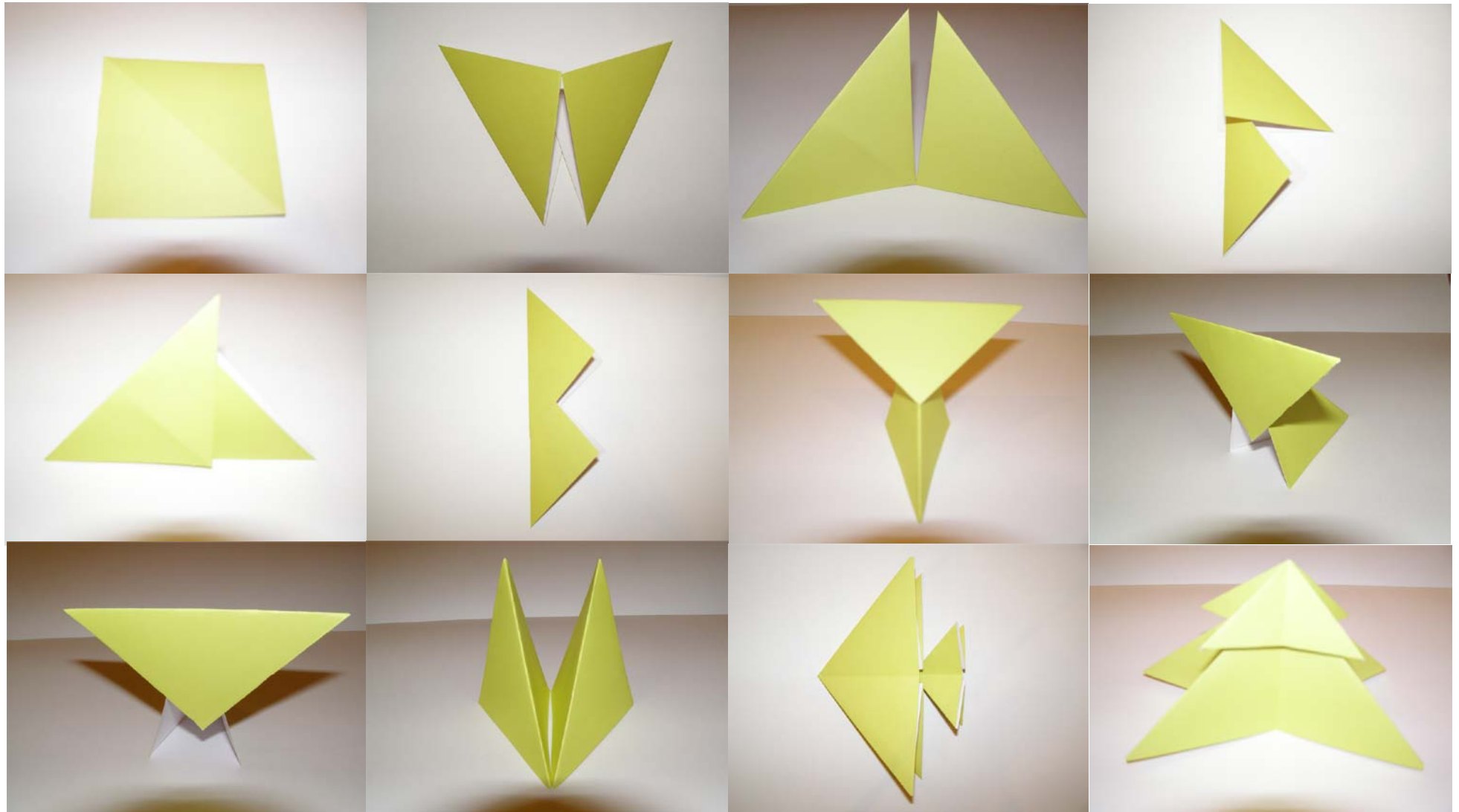


Figure 39. Experimentation 16. Zhang, Y. (2010).

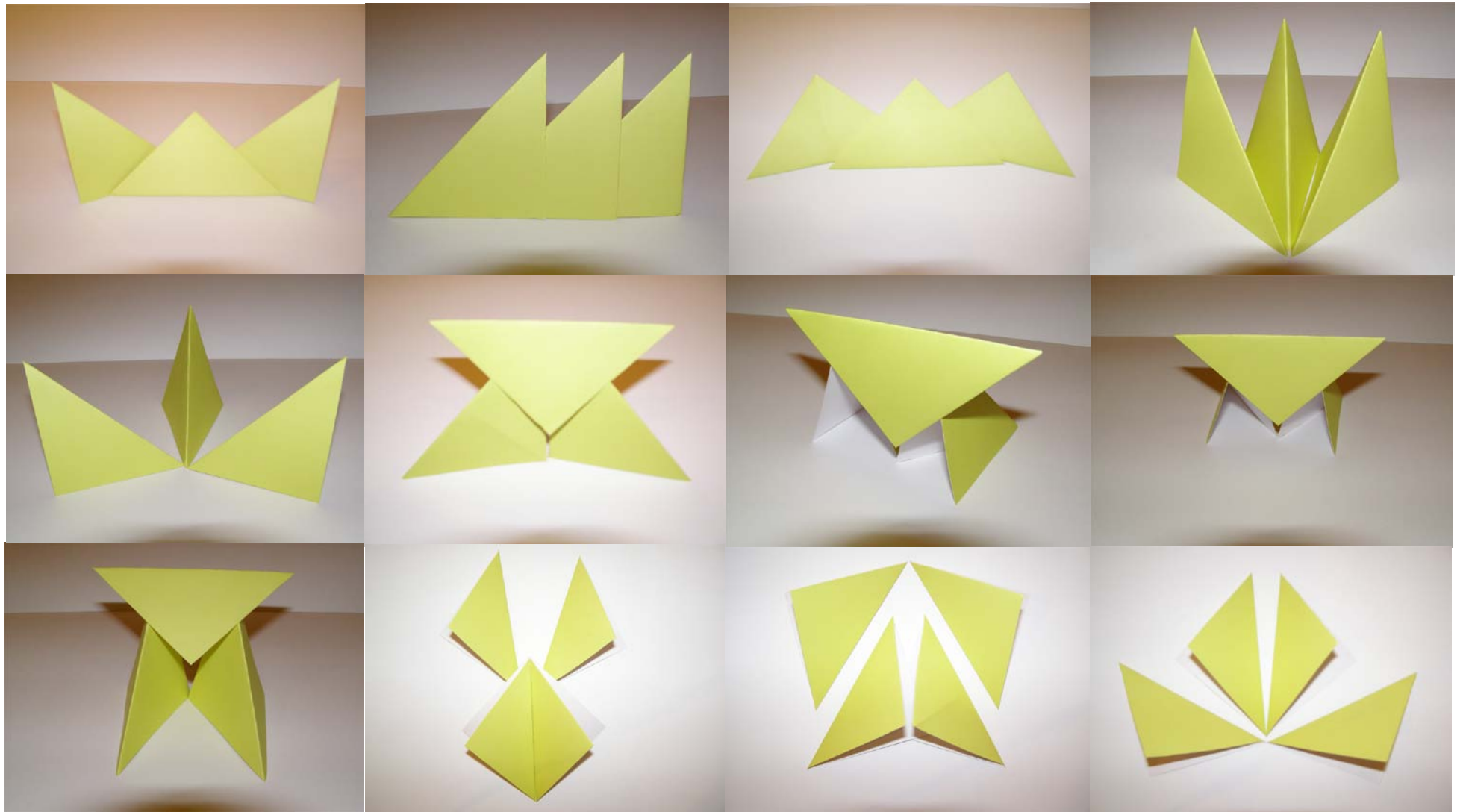


Figure 40. Experimentation 16. Zhang, Y. (2010).



Figure 41. Experimentation 16. Zhang, Y. (2010).

Then, I started to fold a triangle and observed it from different perspectives; each perspective allowed the potential for a new subject identity to emerge.

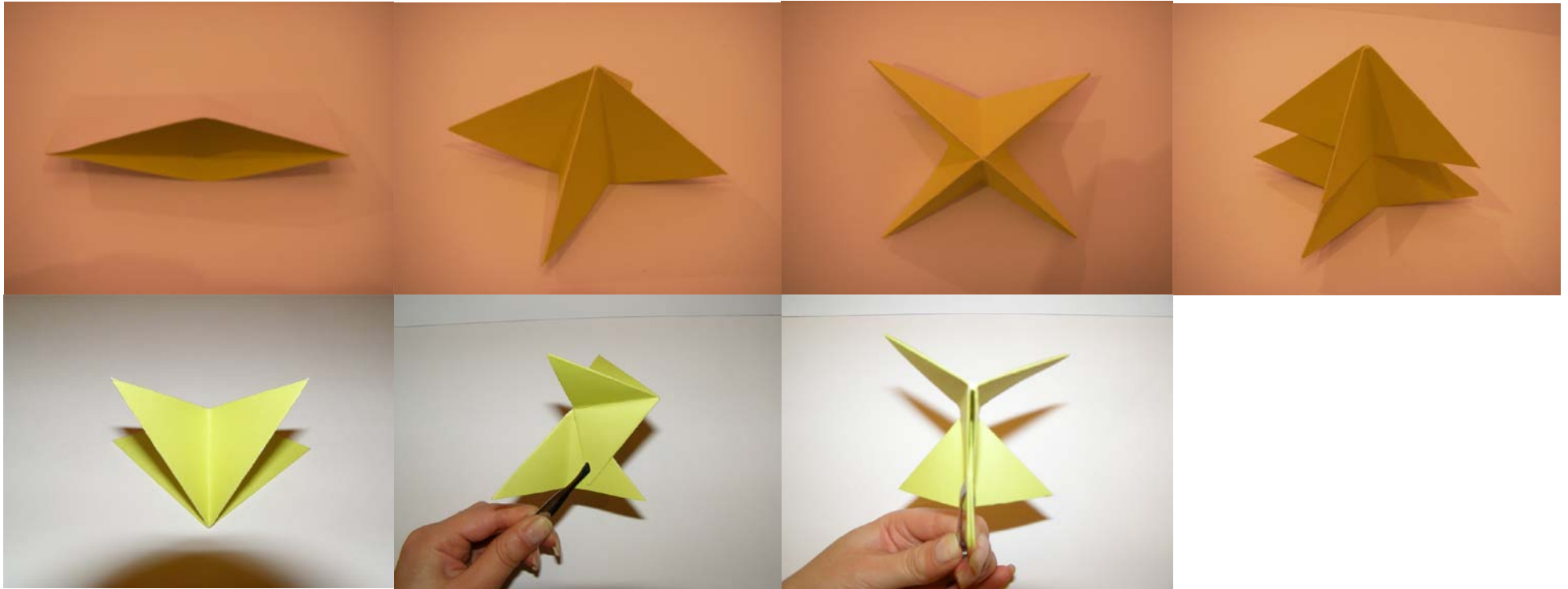


Figure 42. Experimentation 16. Zhang, Y. (2010).

Findings and potentials:

- The problem is, I found myself being restrained from moving further because of my lack of knowledge of **advanced paper folding techniques**. This **limited** my ability to carry on with further creative transformations of the subject identities that I had perceived.
- The potential is, to imitate more paper folding guidelines to learn basic and advanced folding techniques, which realised that imitation maybe the **observational learning processes** and allowing for **freedom** of creativity.

19. The narration of triangle subject identities

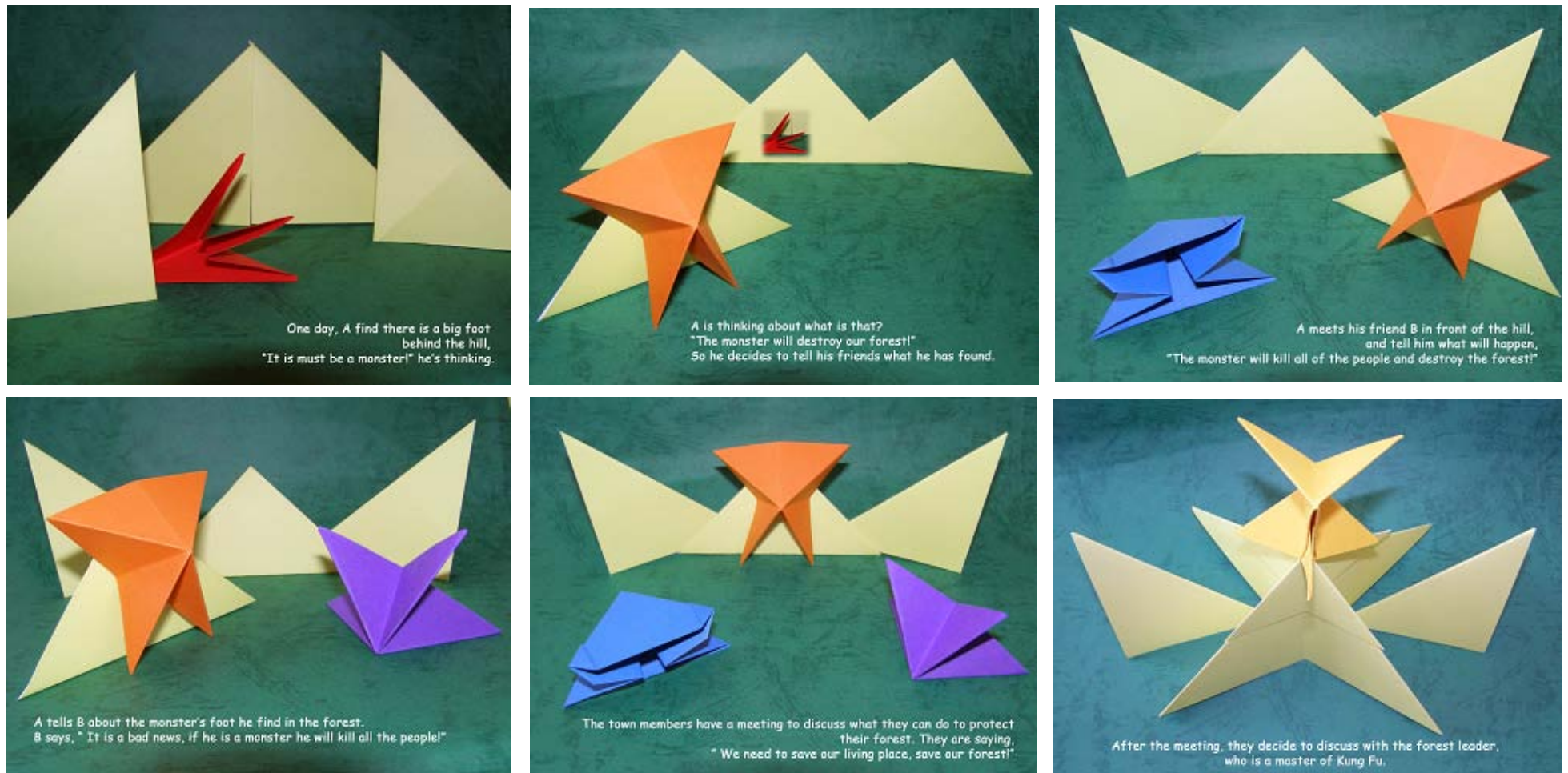


Figure 43. Experimentation 17. Zhang, Y. (2009).

I intended to create a narration by using the triangle observation subject identities. For example, some of the triangles represented the trees and mountains, while some represented the characters in the narration. Therefore, allowing freedom in the paper folding practice, and observation, are important strategies to encourage creativity to emerge.

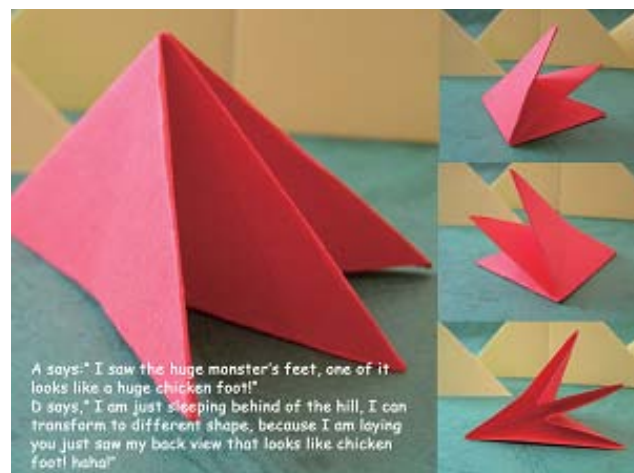
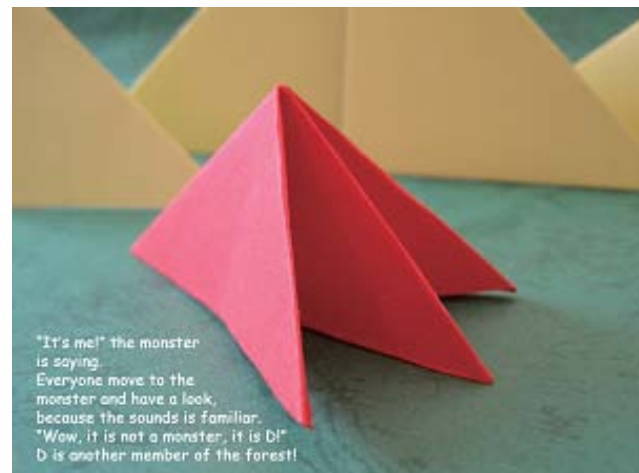


Figure 44. Experimentation 17. Zhang, Y. (2009).

9. Deconstruction and reconstruction in narration

20. Deconstruction and reconstruction in narration

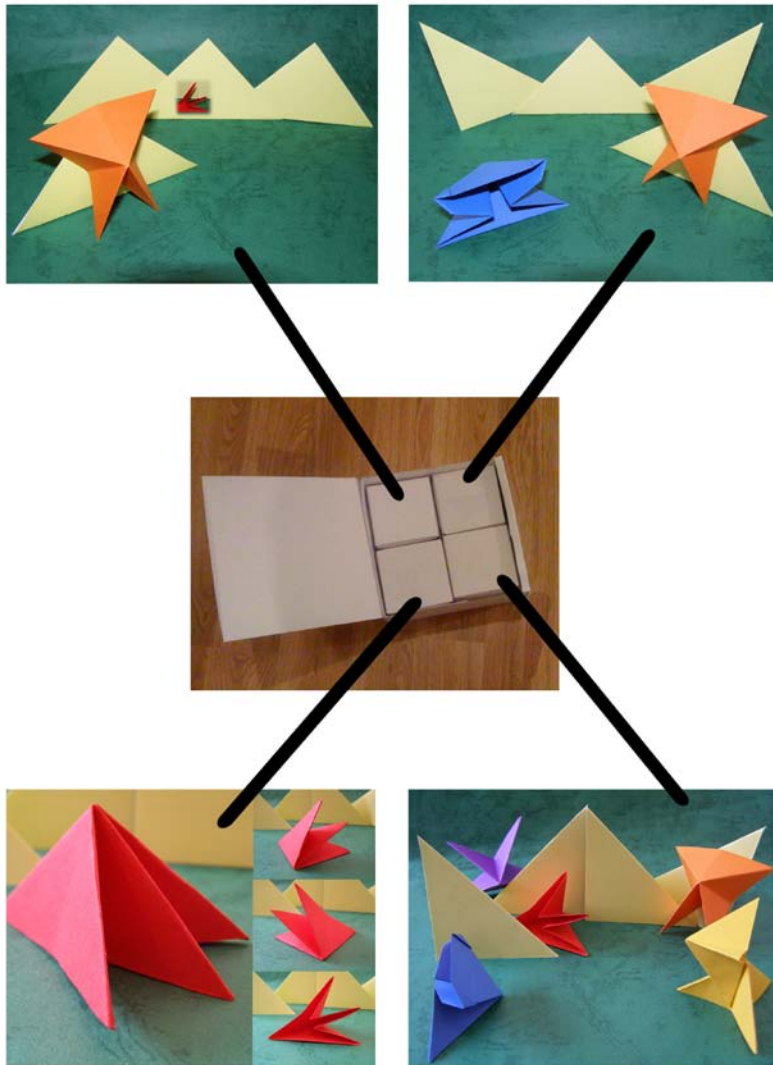
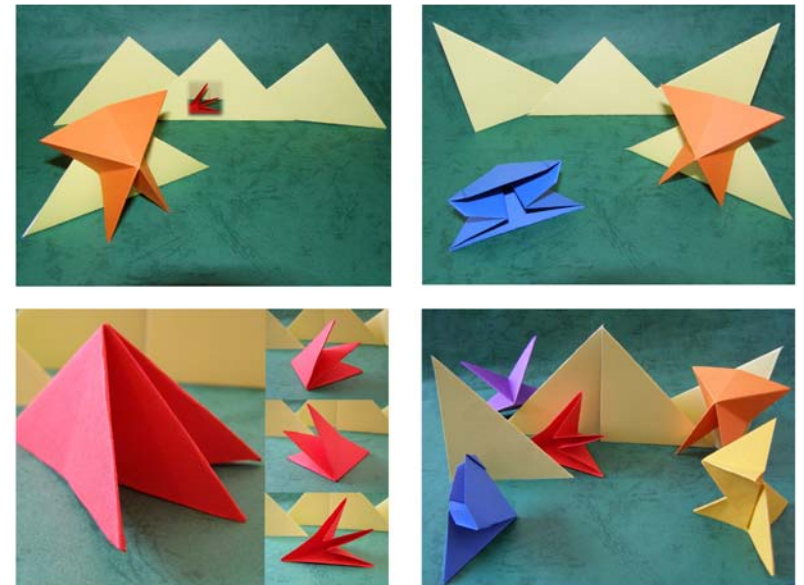


Figure 45. Experimentation 18. Zhang, Y. (2010).

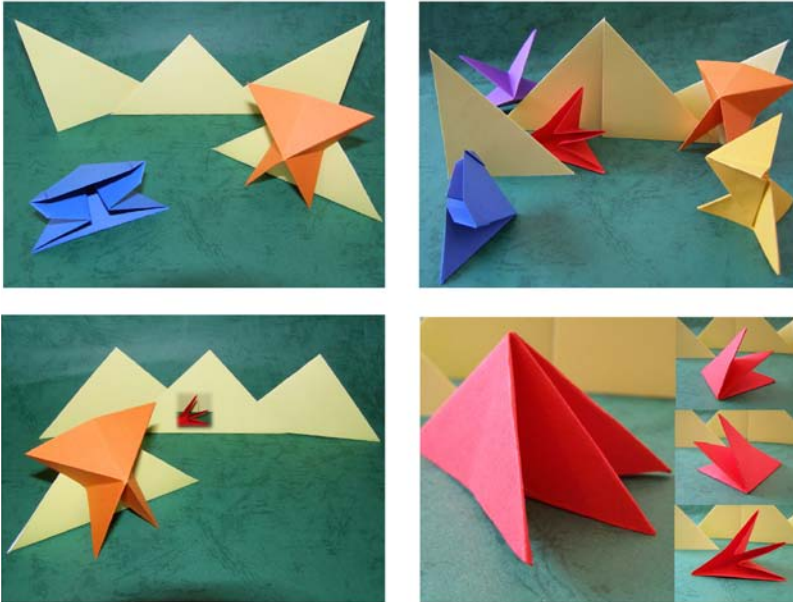
In this experiment, I applied random orders in the narration, aiming to explore whether deconstruction and reconstruction could provide the possibility of encouraging creativity to emerge.

I divided a story into four story fragments and allowed the audience to randomly choose, so the audience could reconstruct the fragments in their order and tell the story with their own discourses to approve that they use their creativity.

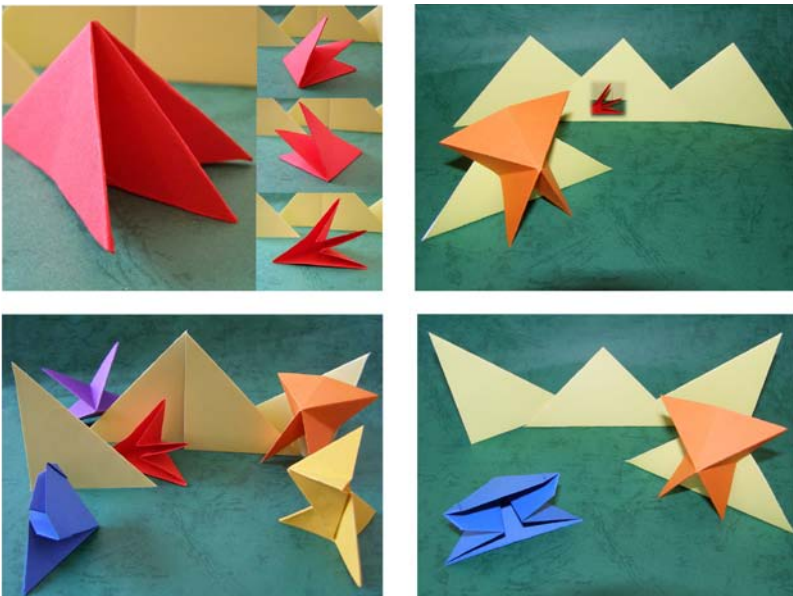
Narration 1



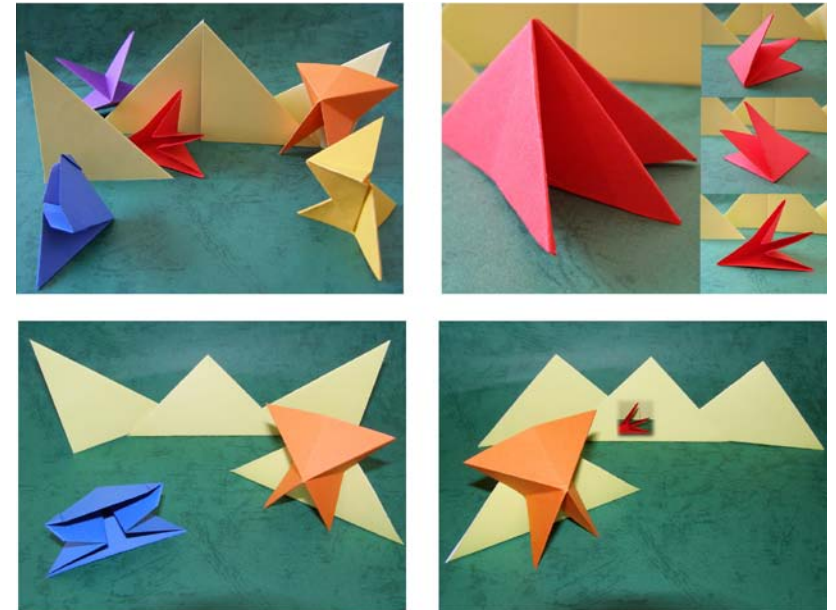
Narration 2



Narration 3



Narration 4



Findings and potentials:

- The finding is, **deconstruction and reconstruction** are the methods that encourage creativity to emerge.
- The problem is, the narration area **goes too far**, which is out of my research area.
- The potential is, to apply deconstruction and reconstruction to the **paper folding guidelines**.

**10. Deconstruction and reconstruction in the paper folding guideline
and create a new subject identity**

21. Deconstruction and reconstruction in the paper folding guidelines

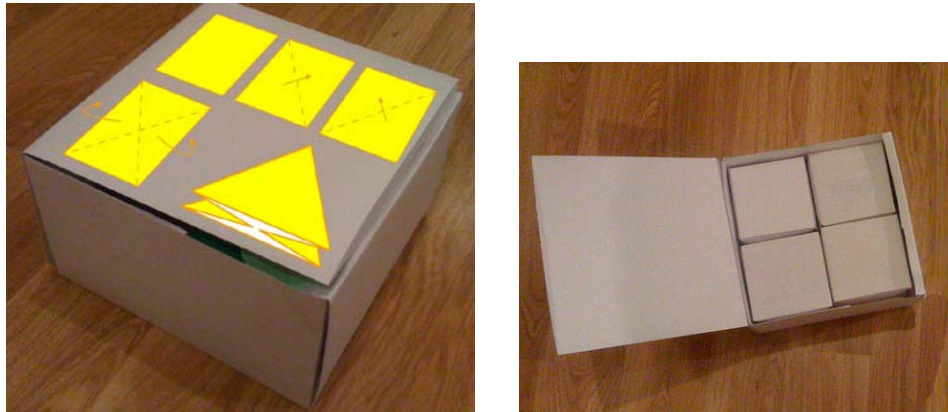


Figure 46. Experimentation 19. Zhang, Y. (2010).

Based on the new research question of whether the paper folding can provide the possibility to encourage creativity to emerge, I applied random order in the paper folding guideline. In this experiment, the folder needed to imitate several folding steps by following the paper folding guideline, and then open the box and reconstruct the next step. Here, the folder is allowed to randomly choose the next step to fold. Therefore, the identity subject, after folding, will be diverse.

Findings and potentials:

- The finding is, deconstruction can break up the traditional paper folding guidelines.
- **Random choices** can provide diverse outcomes.

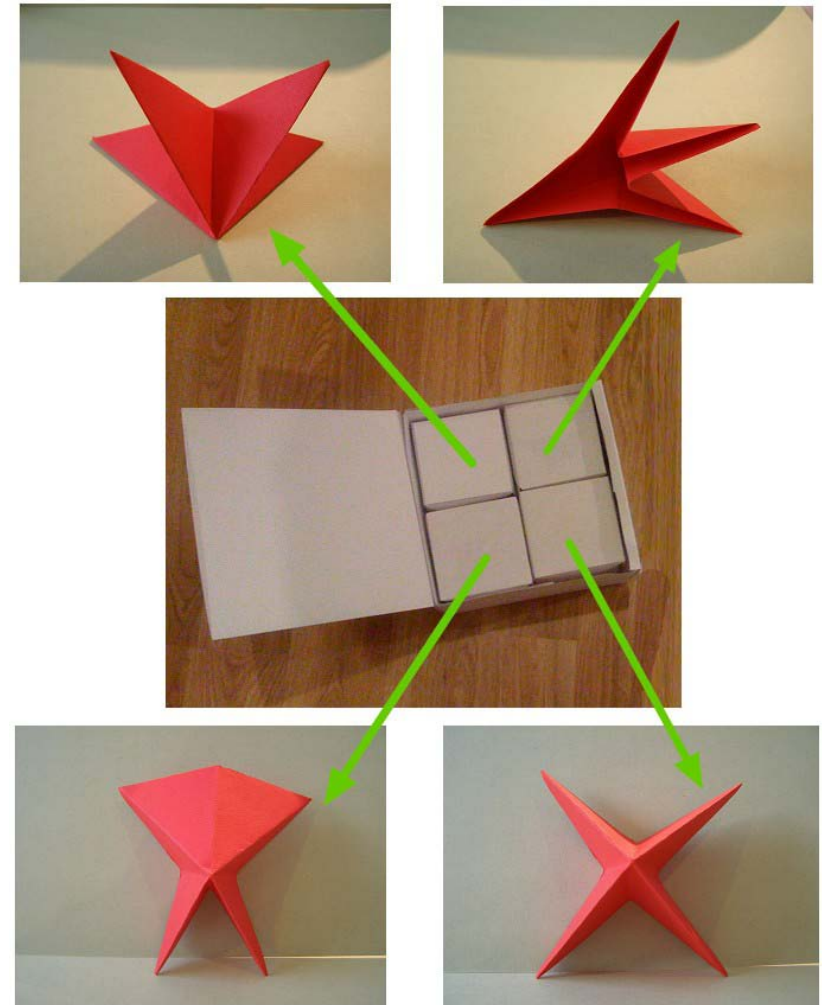


Figure 47. Experimentation 19. Zhang, Y. (2010).

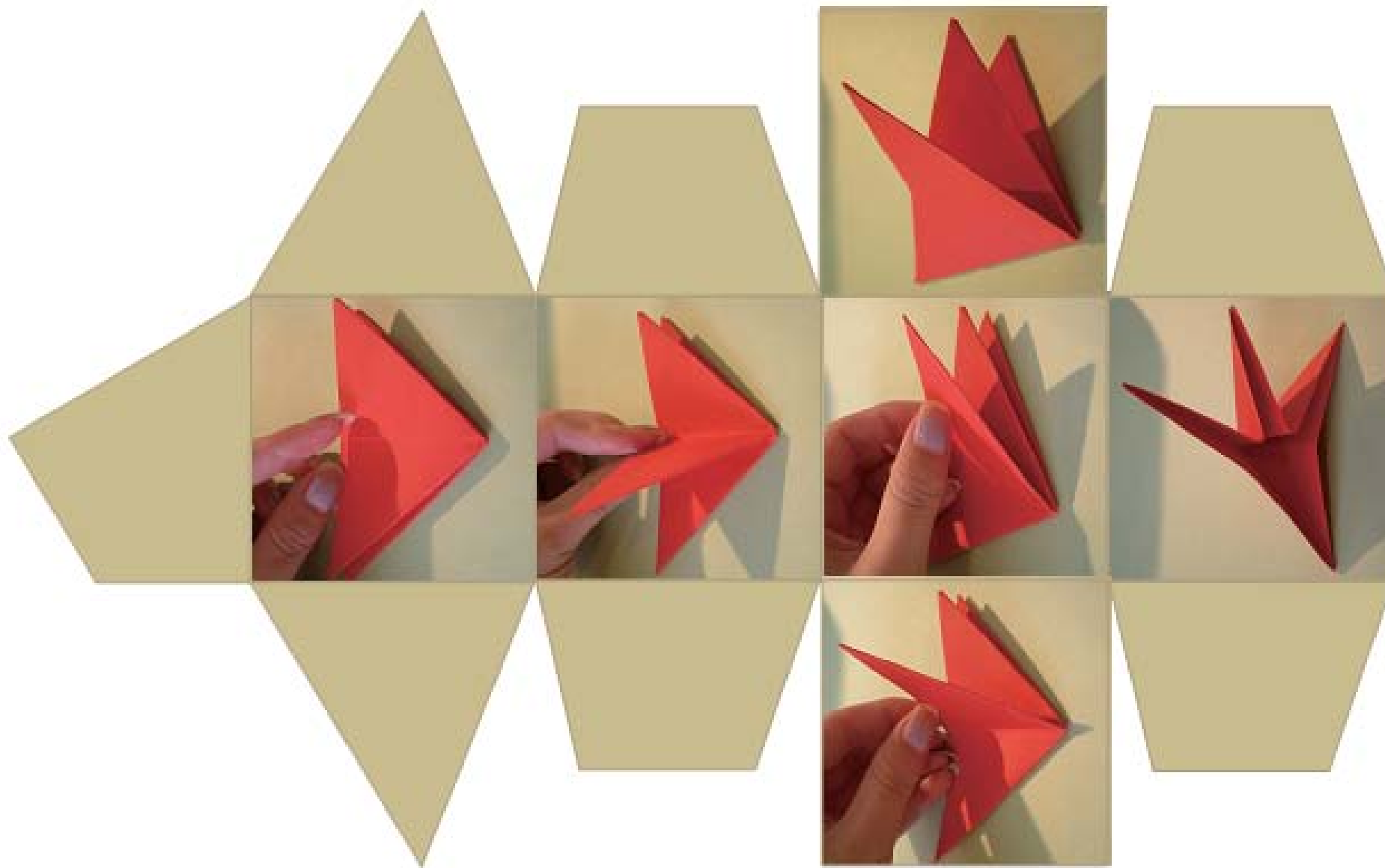


Figure 48. Experimentation 19. Zhang, Y. (2010).

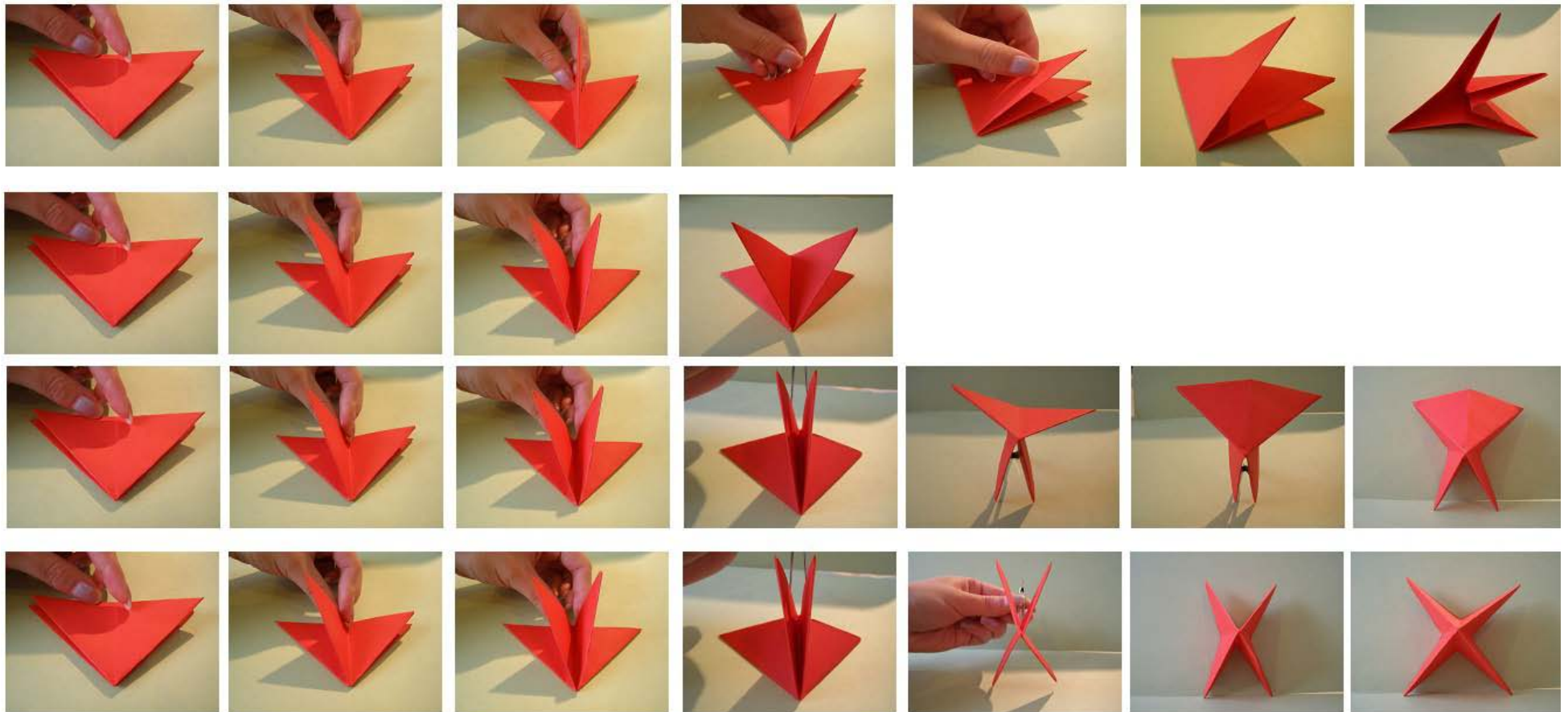
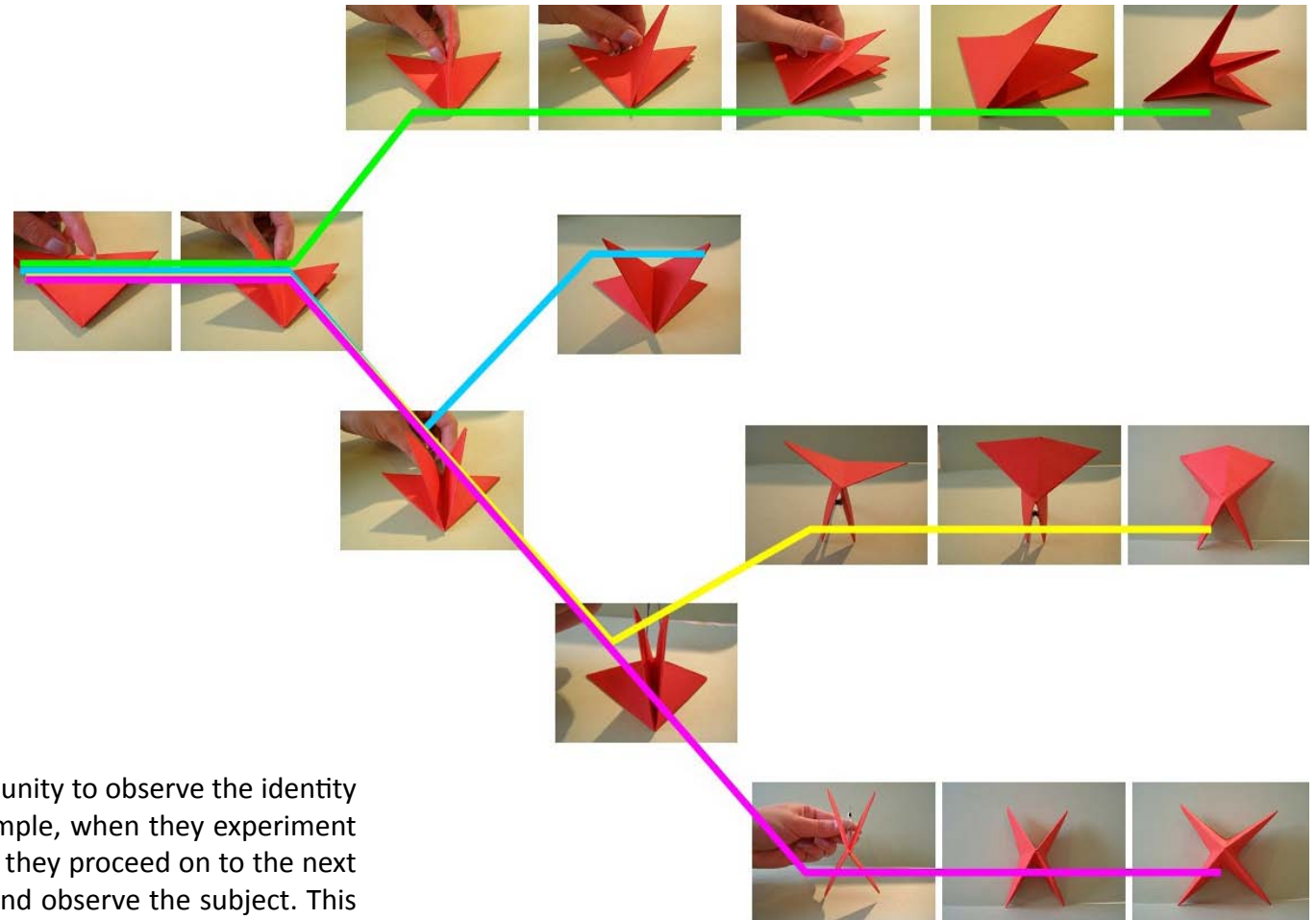


Figure 49. Experimentation 19. Zhang, Y. (2010).

Findings and potentials:

- **Providing options** in the paper folding guidelines is a potential research direction.

22. Provide options in the paper folding guidelines



Providing options gives the folder the opportunity to observe the identity subject from different perspectives. For example, when they experiment with the paper folding at some steps, before they proceed on to the next step, they get the opportunity to interpret and observe the subject. This provides the possibility of encouraging their creativity to emerge from the way of observing from different perspectives, which I will experiment with in future research.

Findings and potentials:

- The potential is to explore the connections between different paper folding guidelines.

Figure 50. Experimentation 20. Zhang, Y. (2010).

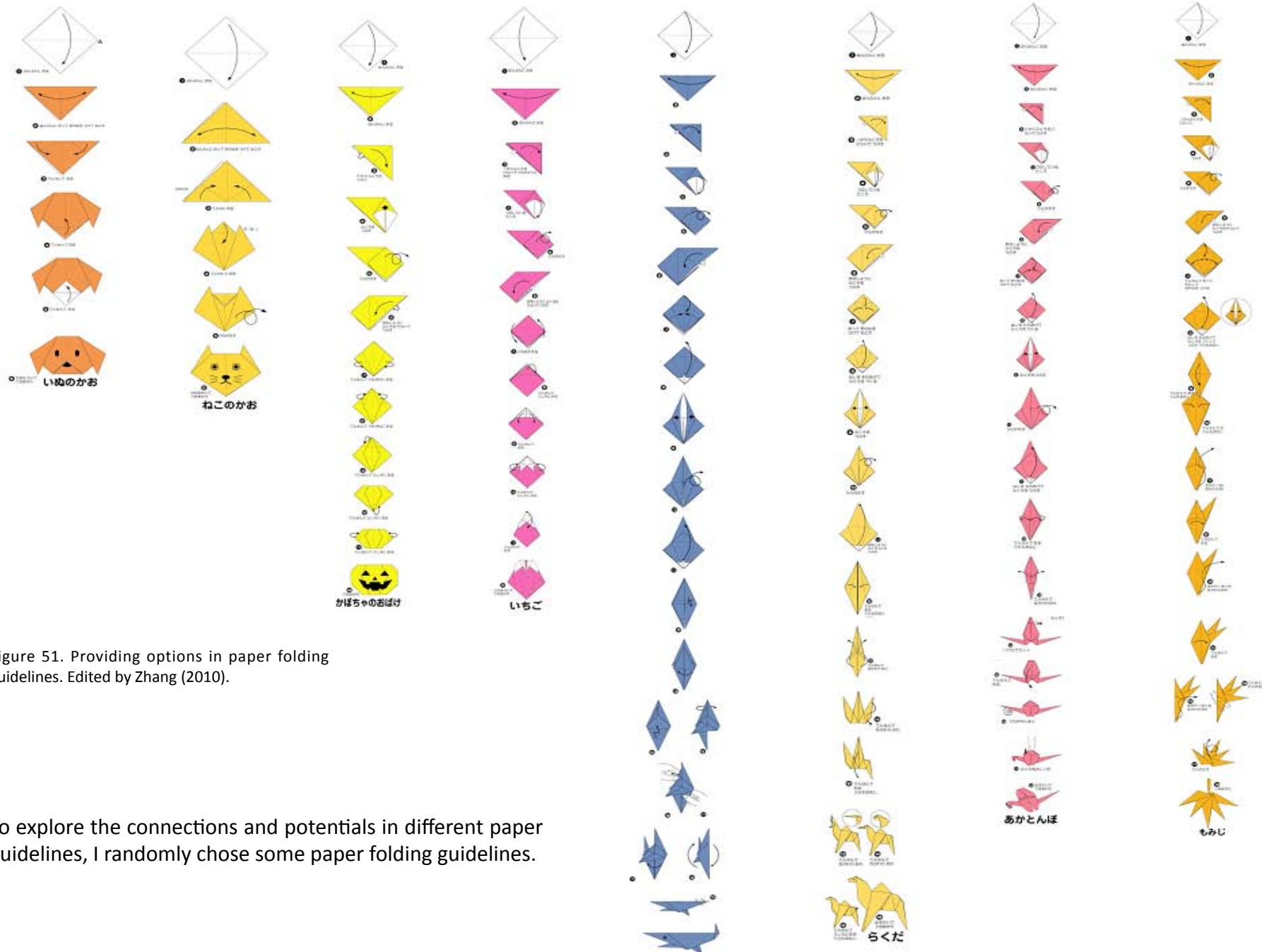


Figure 51. Providing options in paper folding guidelines. Edited by Zhang (2010).

To explore the connections and potentials in different paper folding guidelines, I randomly chose some paper folding guidelines.

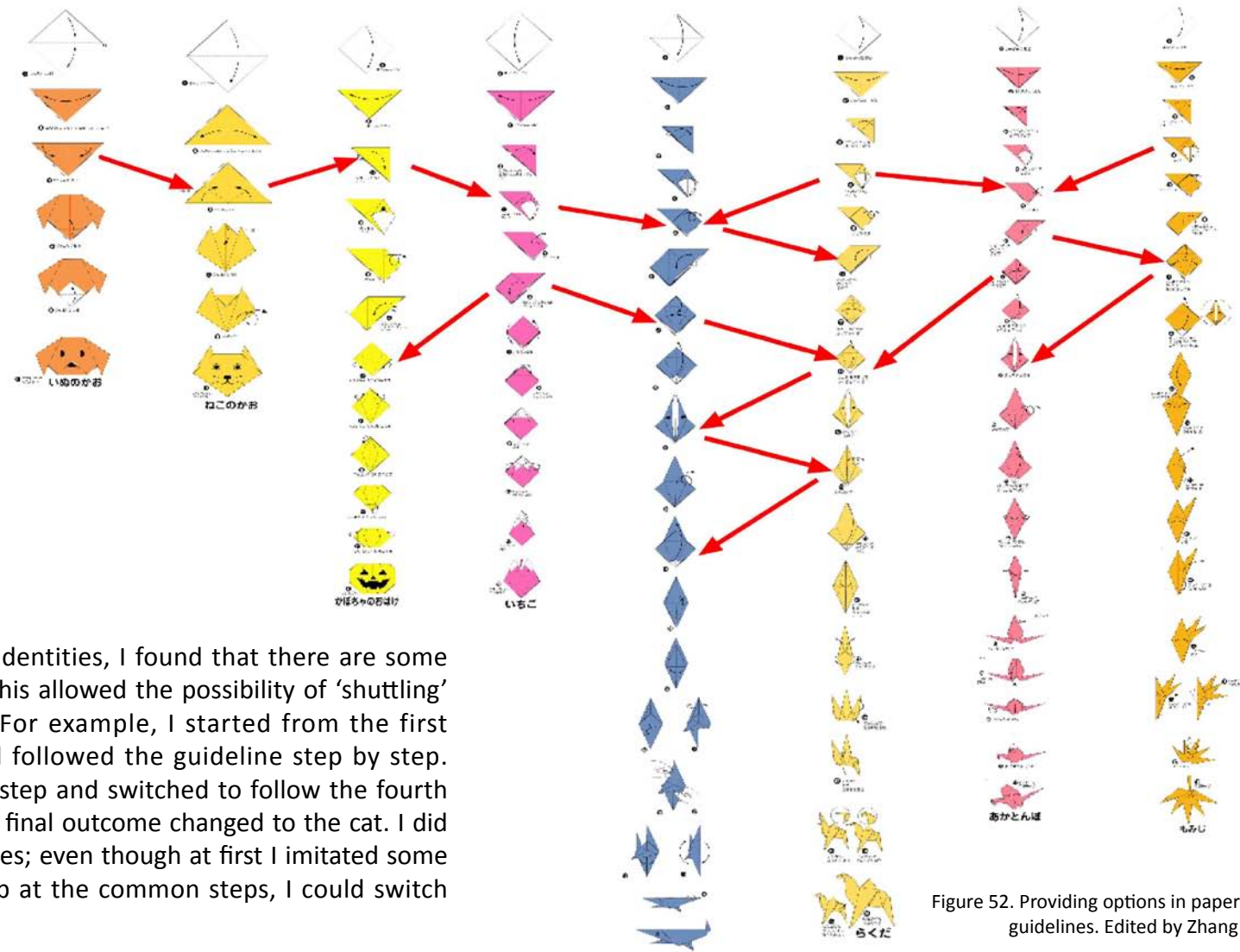
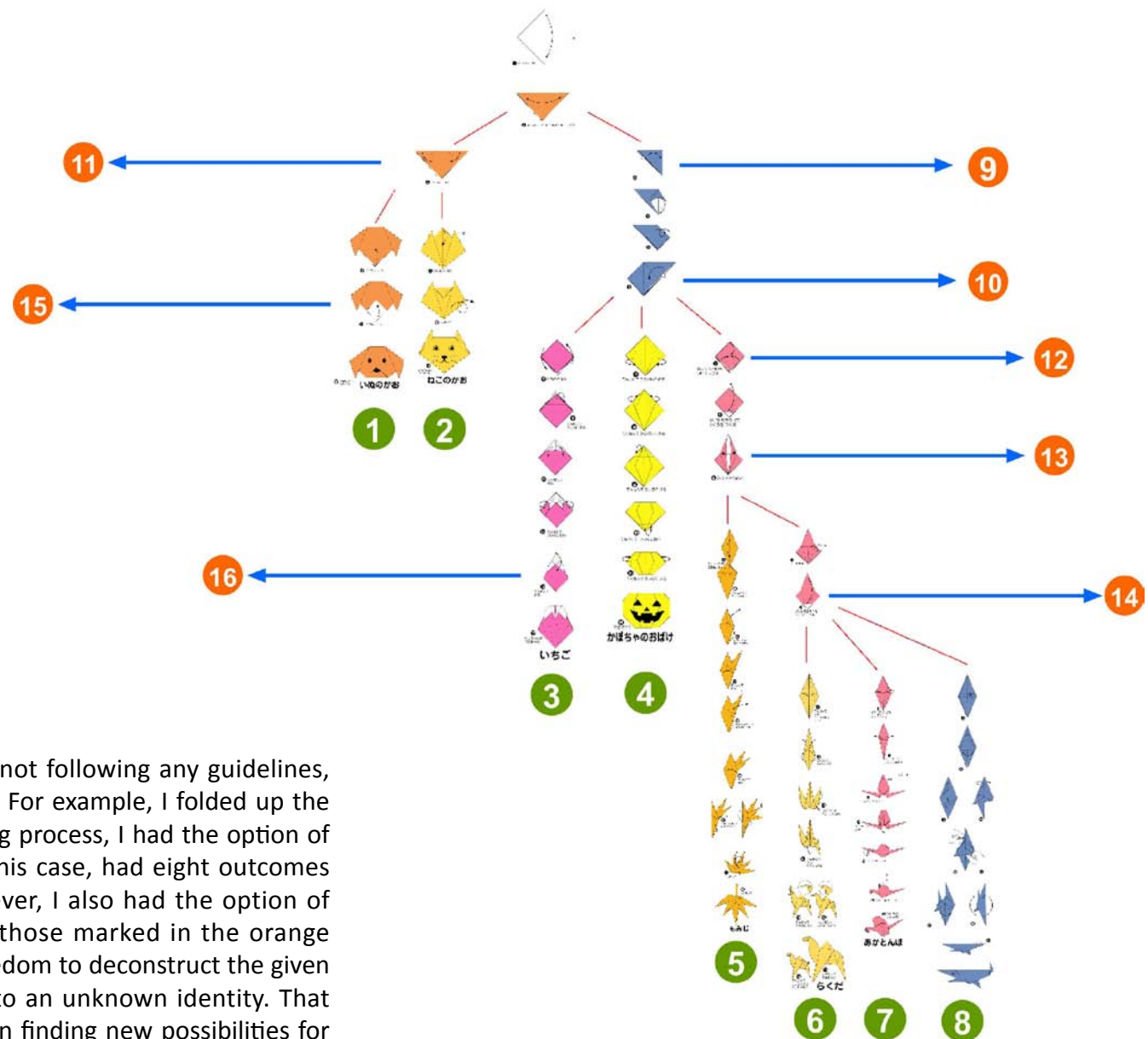


Figure 52. Providing options in paper folding guidelines. Edited by Zhang (2010).

After I folded up these subject identities, I found that there are some **common steps** between them. This allowed the possibility of ‘shuttling’ between different guidelines. For example, I started from the first guideline to fold up a dog, and followed the guideline step by step. However, I stopped at the third step and switched to follow the fourth step of the cat guideline and the final outcome changed to the cat. I did the same with the other guidelines; even though at first I imitated some steps, if I allowed myself to stop at the common steps, I could switch between these guidelines.

Findings and potentials:

- If options are provided in paper folding guidelines, and the common steps are captured, the outcome is not limited to any subject identity anymore.
- The problem is, the folder only has the offered options and there is no creative resolution from the individual folder.



At this stage I experimented further with not following any guidelines, after following some initial common steps. For example, I folded up the crane following the guideline; in this folding process, I had the option of switching to another outcome which, in this case, had eight outcomes in total, marked in green numbers. However, I also had the option of creating new subject identities, such as those marked in the orange numbers shown. That means, I had the freedom to deconstruct the given guidelines and transform the outcome into an unknown identity. That said, the folder has to proactively engage in finding new possibilities for the transformation of identity to happen.

Figure 53. Providing options in paper folding guidelines. Edited by Zhang (2010).

22. Diagram of imitation and creativity

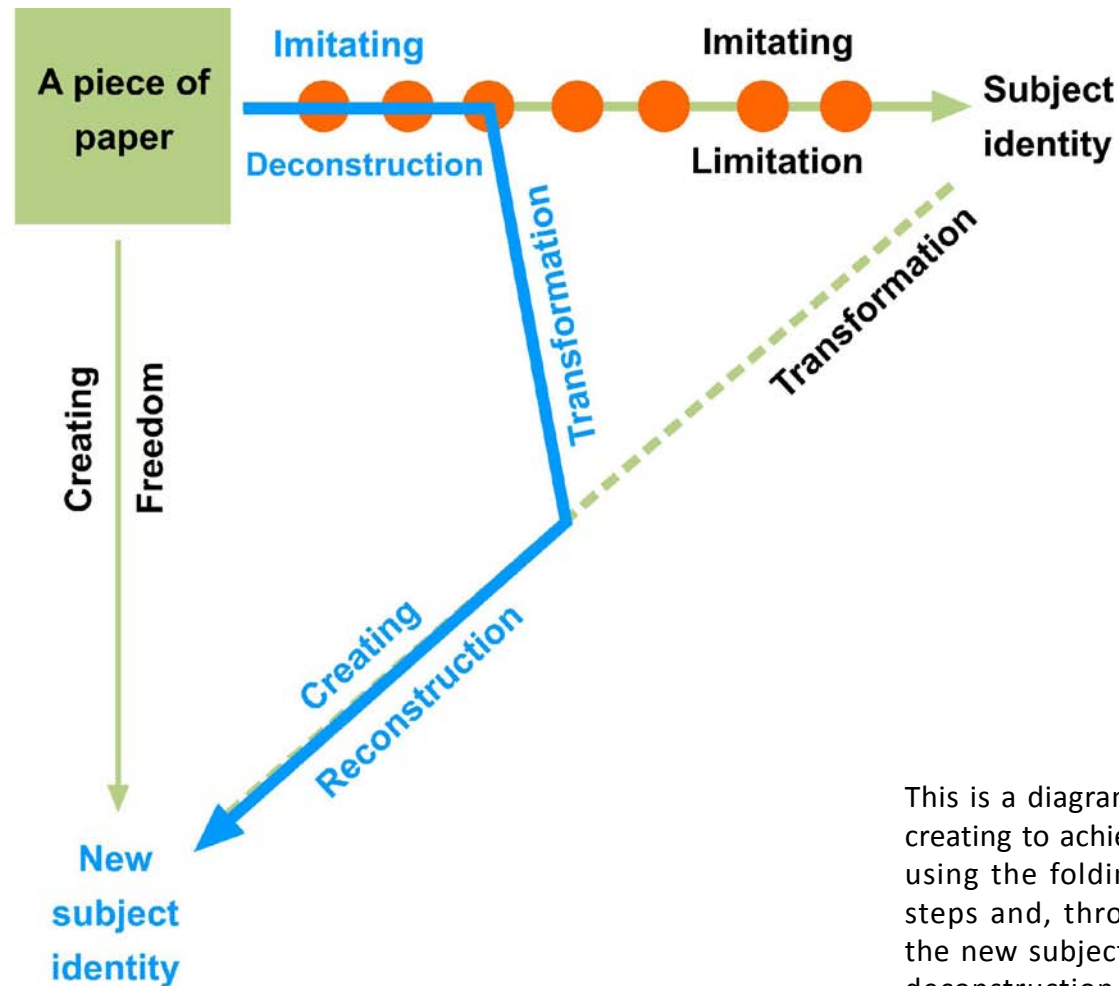


Figure 54. The diagram of imitation and creativity. Zhang, Y. (2010).

This is a diagram I developed to explore the process of imitating and creating to achieve a new subject identity. Folding up a piece of paper using the folding guideline for imitation, stopping at the common steps and, through a transformation process, I was able to create the new subject identities. Stopping at the common steps allows for deconstruction of the original paper folding guideline. The creative challenge lies in the **reconstruction** of the new guideline to achieve the **new subject identities**. For example, I started to fold a crane following the guideline, stopped at the third step, deconstructed the crane guideline and transformed it to fold up a plane; therefore the final outcome transforms from a crane to a plane or other abstract forms.

23. Create a new subject identity

In this experiment, I tried to create a new subject identity of fish by imitating the rabbit paper folding guideline. I imitated a few steps of the rabbit, and then stopped at the eighth step. At this step, I allowed myself the freedom to **deconstruct the original guideline**, and then started to create the new subject identity of fish.

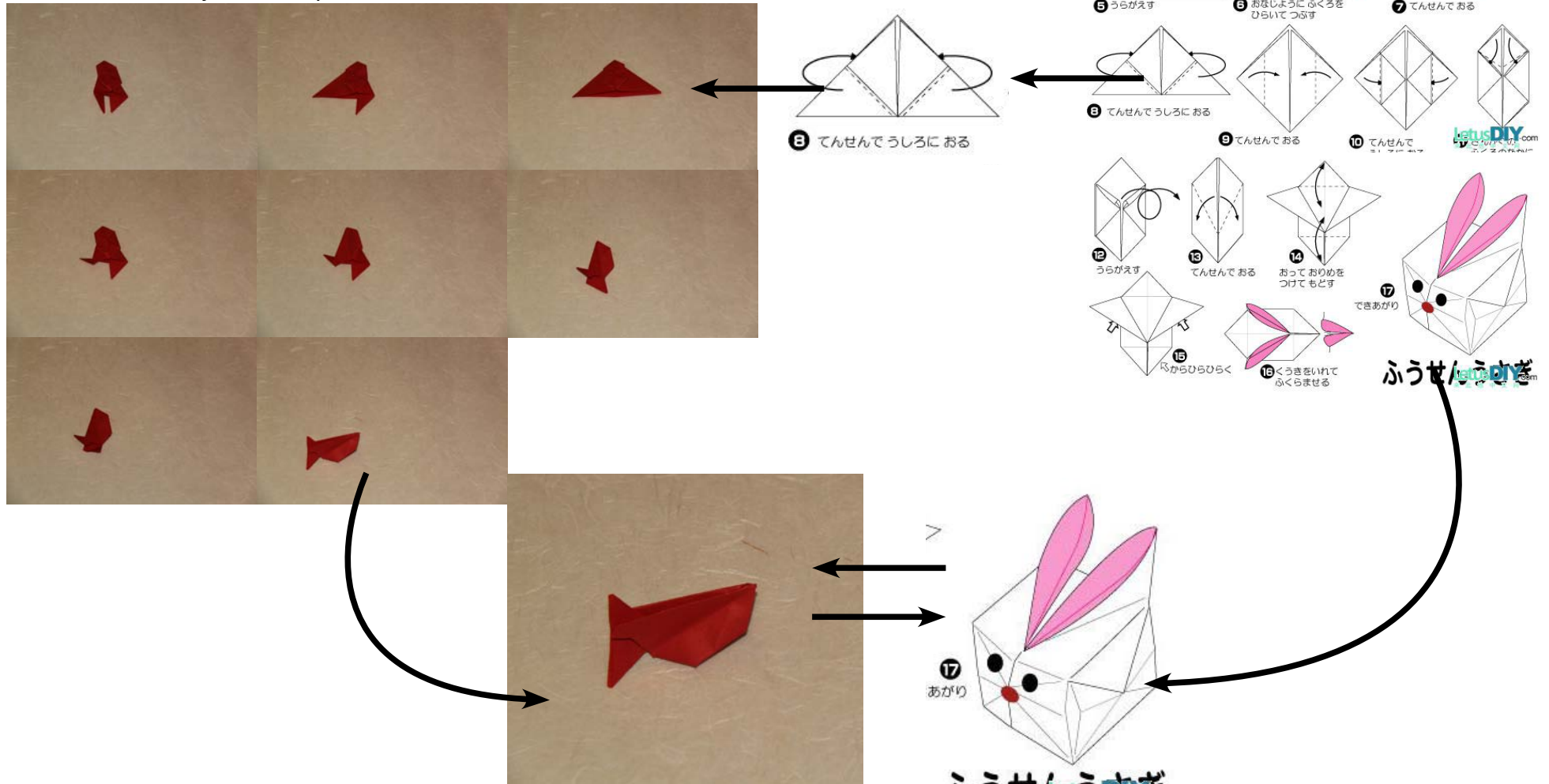


Figure 55. Experimentation 21. Zhang, Y. (2010).

**11. Folding experience of creating a new subject identity
(stop motion)**

24. Folding experience of creating a new subject identity (stop motion)

The main focus in this project was to develop new approaches through the folding experience. Expressing the folding experience was crucial to justify my thoughts. I chose stop animation as the method of expression in that it shows the step by step process of paper folding clearly. I have divided the animation into two sequential parts, which are **imitating and creating**.

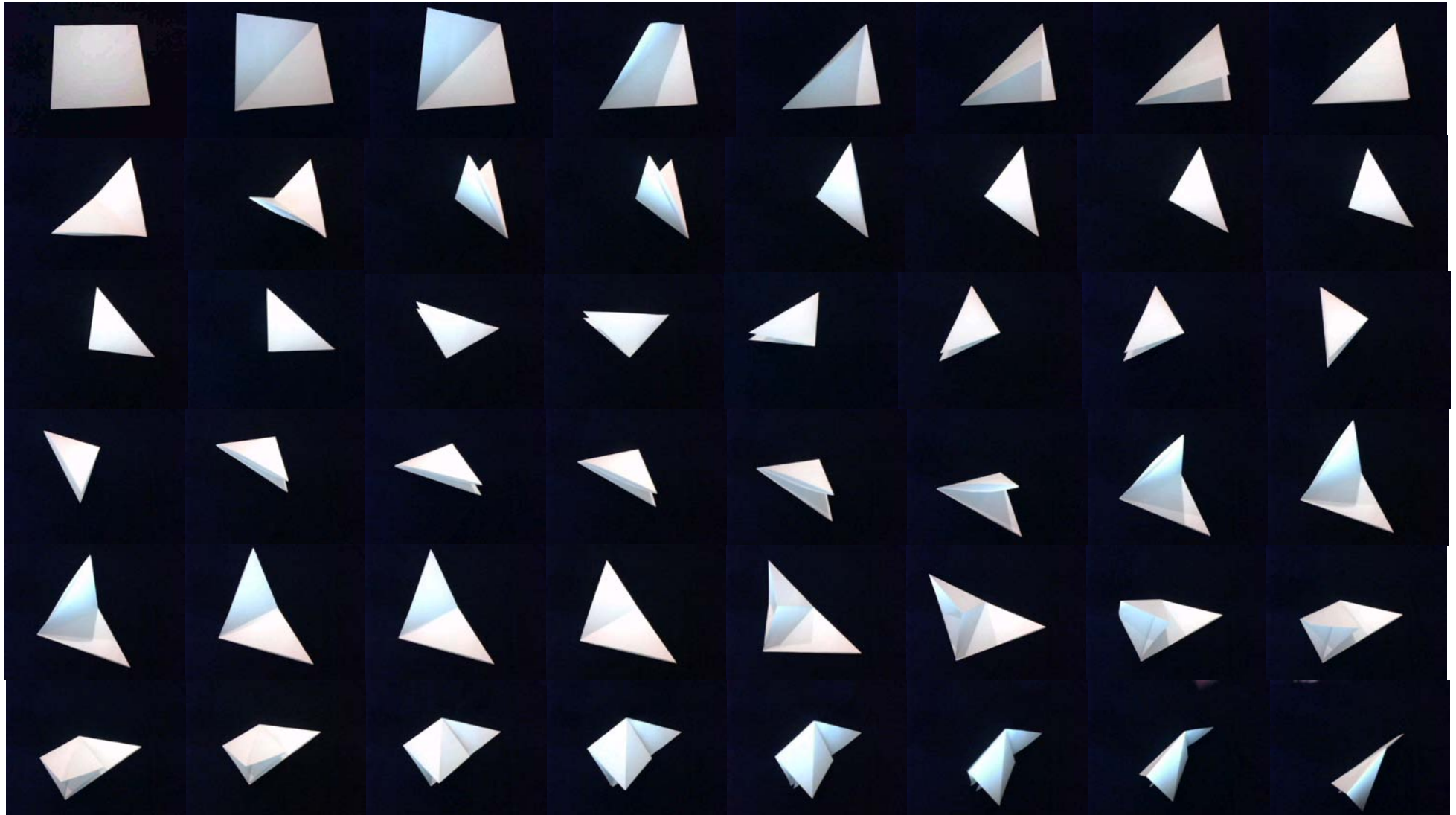


Figure 56. Experimentation 22. Zhang, Y. (2010).

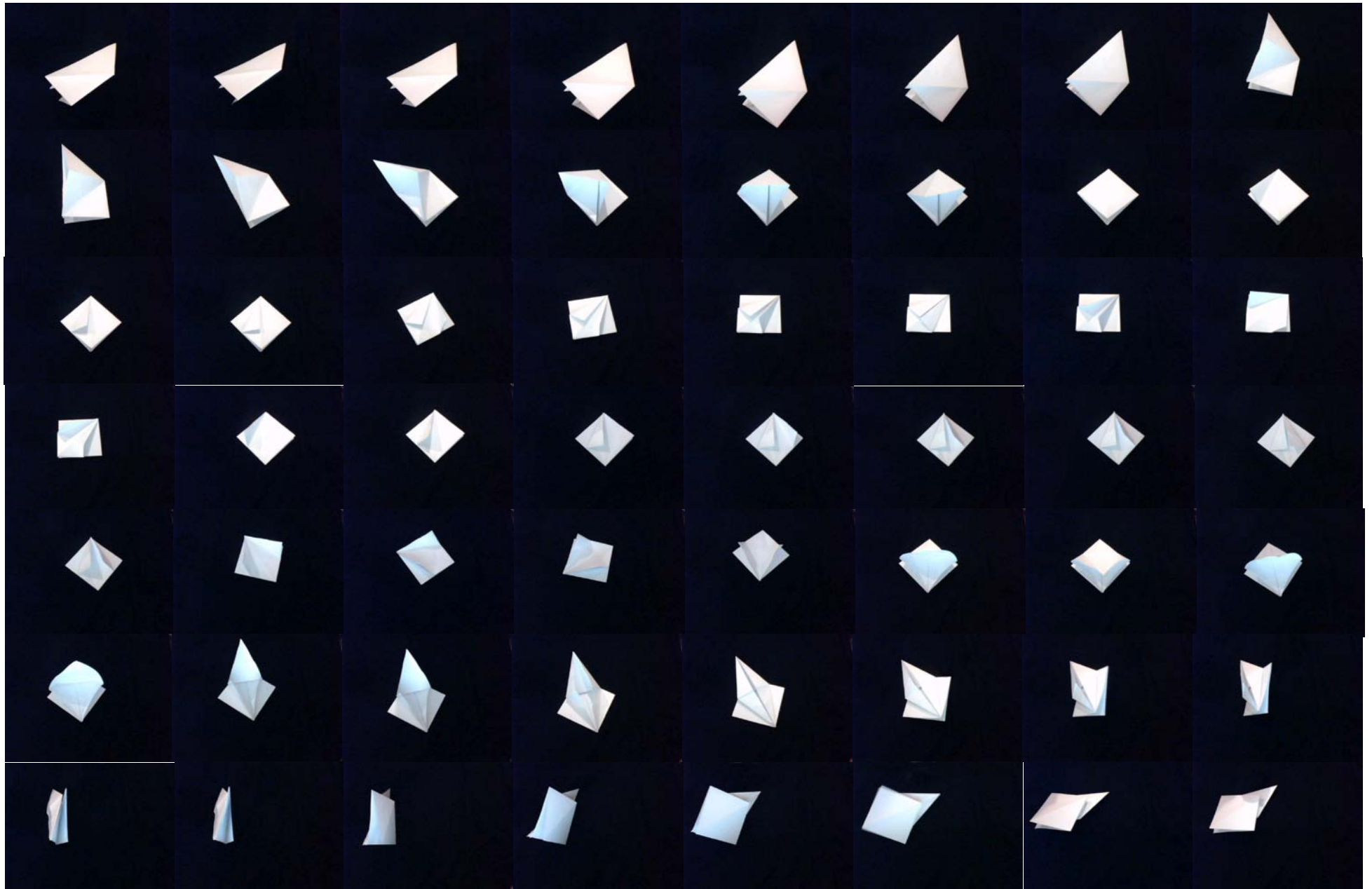


Figure 57. Experimentation 22. Zhang, Y. (2010).

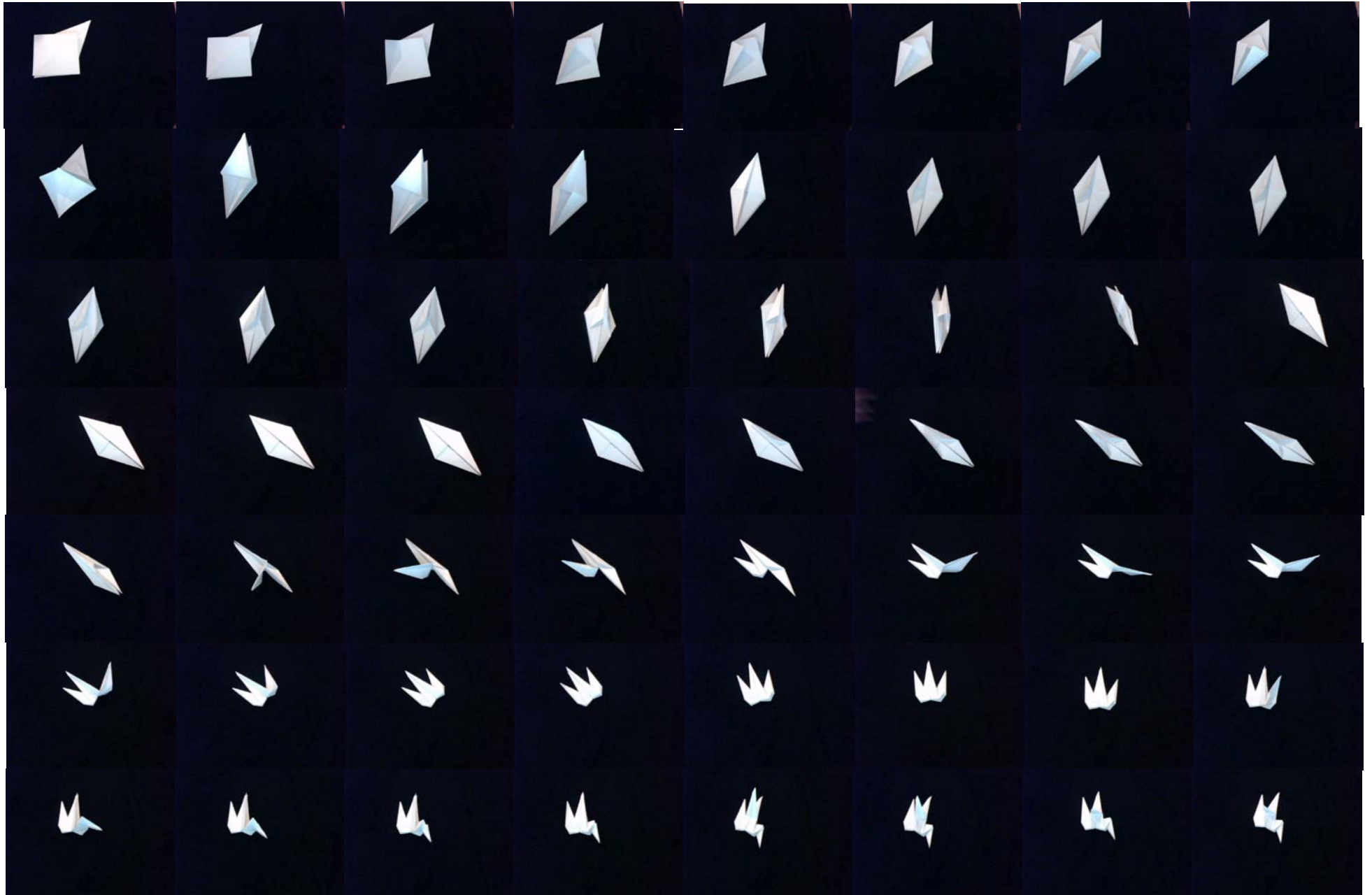


Figure 58. Experimentation 22. Zhang, Y. (2010).



Figure 59. Experimentation 22. Zhang, Y. (2010).

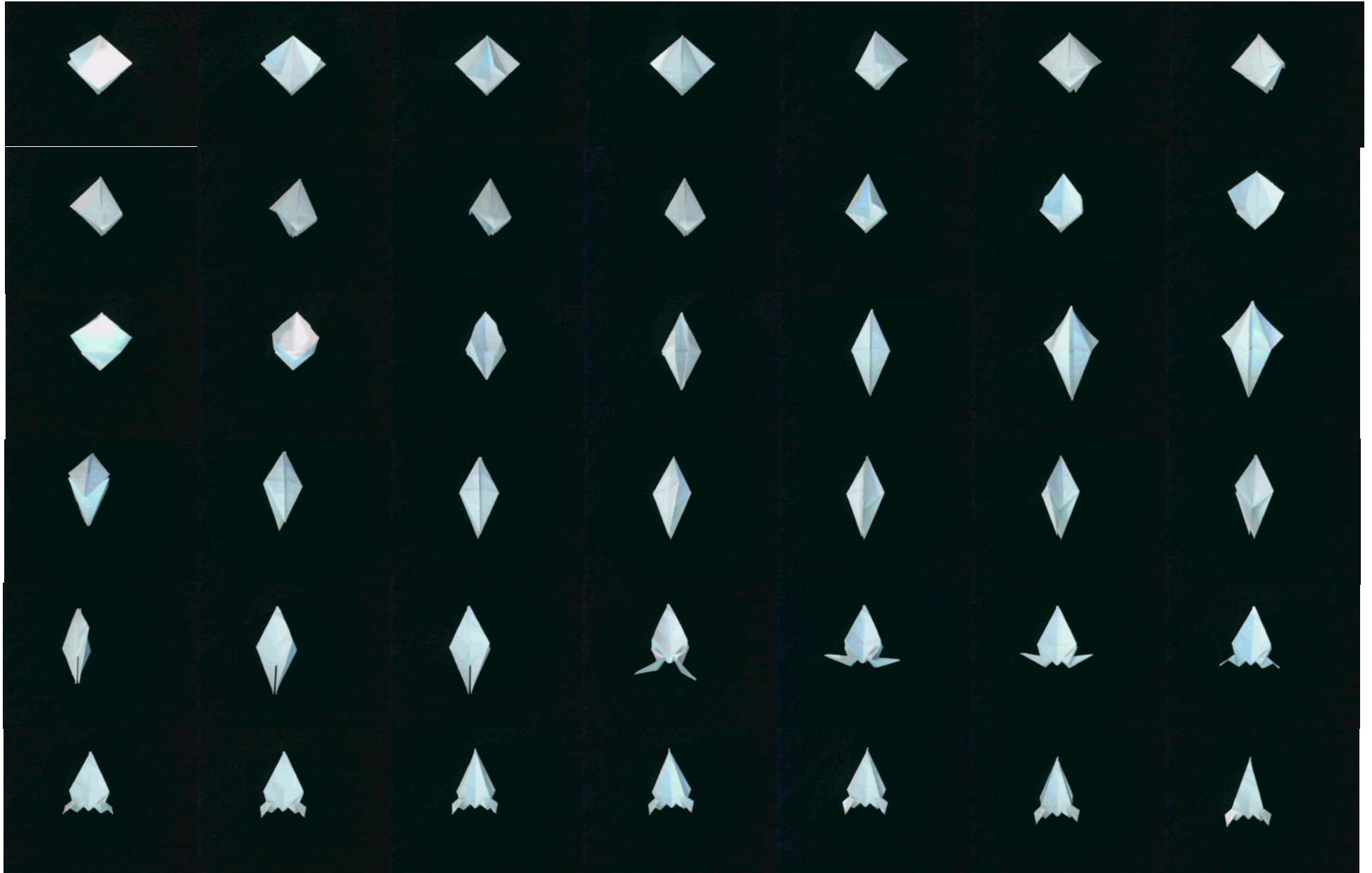


Figure 60. Experimentation 22. Zhang, Y. (2010).

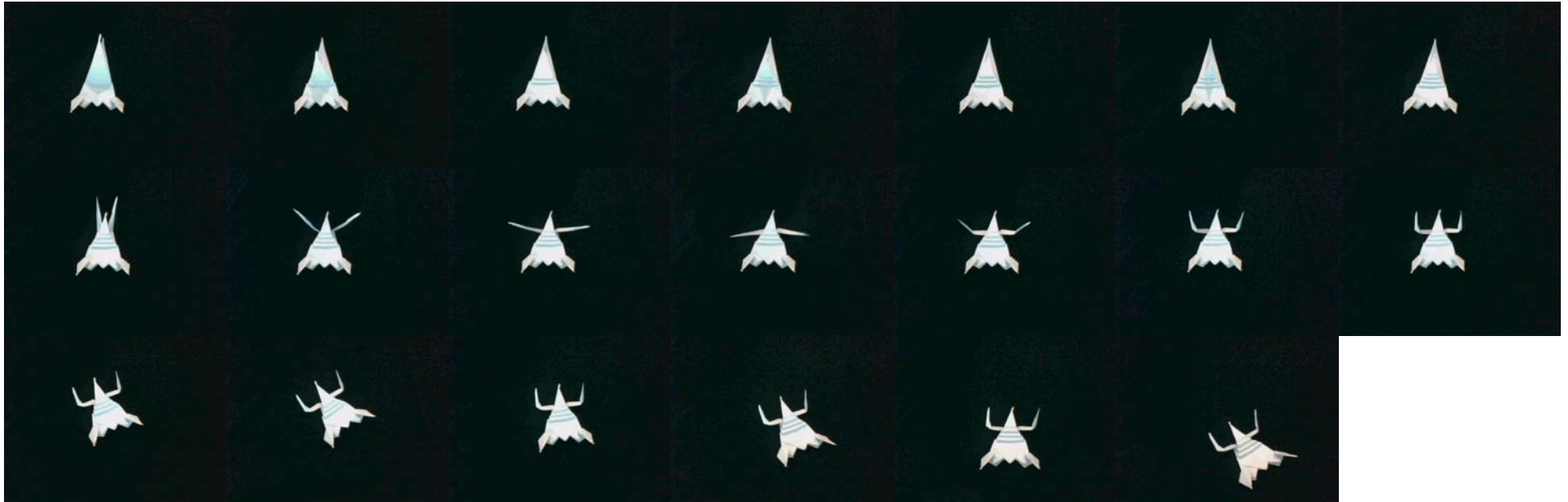


Figure 61. Experimentation 22. Zhang, Y. (2010).

The stop motion was created by shooting the photos frame by frame, and then linking them together to export the animation. In this experiment, I started to imitate the traditional paper folding guideline of a camel. After several steps I started to create my own form of subject identity; in this case, a scorpion. Qi's theory of '**between likeness and unlikeness**' is considered in this experimentation; I suggest that the developed visual form of a scorpion is less significant than the spiritual form.

The problem I found in this experiment is the background color; in order to achieve a good stop motion I decided to try different background and lighting effects.

Matt card background

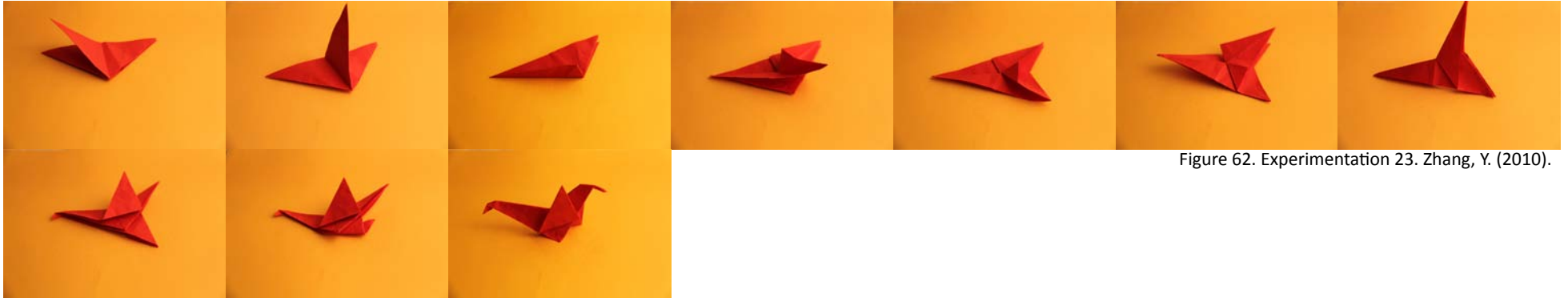


Figure 62. Experimentation 23. Zhang, Y. (2010).

Green screen background

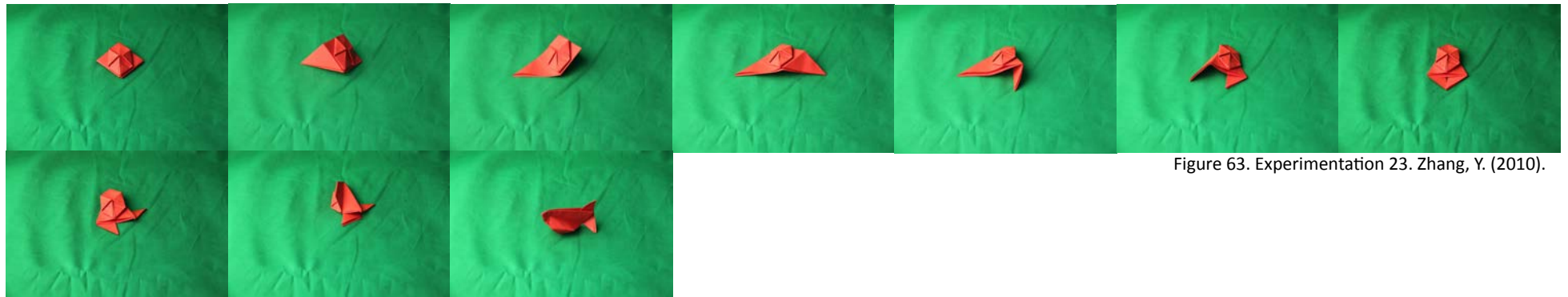


Figure 63. Experimentation 23. Zhang, Y. (2010).

Chinese traditional Xuzhi background

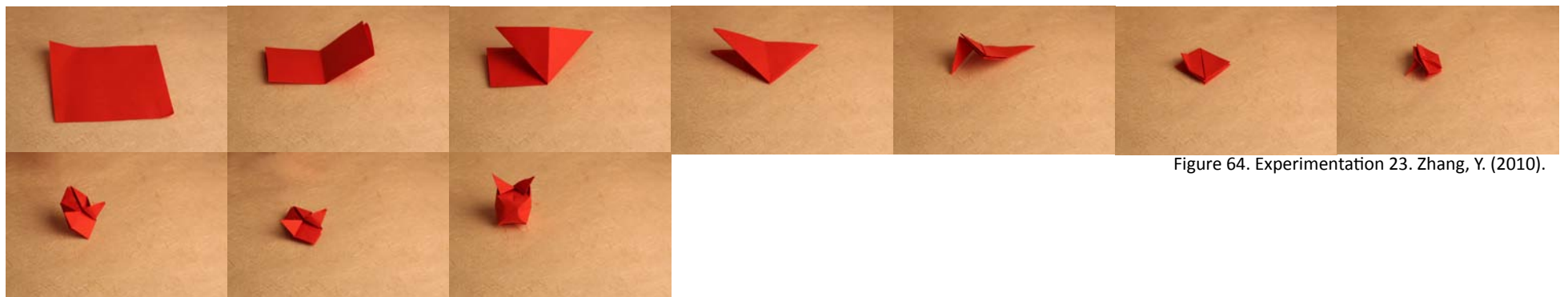
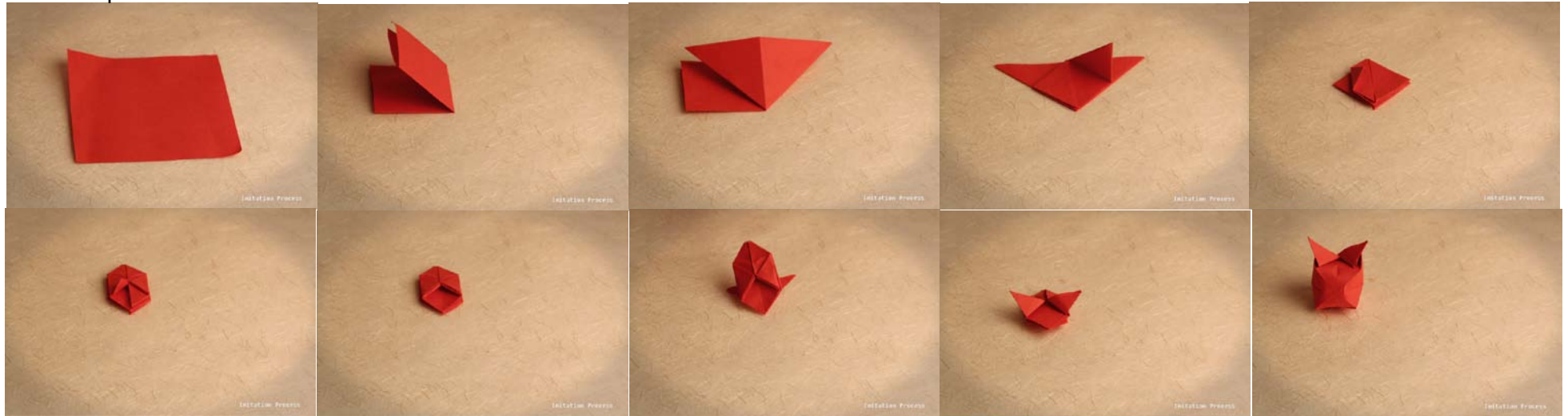


Figure 64. Experimentation 23. Zhang, Y. (2010).

These are the stills of the stop motion experiment. I edited the text 'imitation process', 'go back to the common step' and 'creating process' in the stop animation. The aim was to inform the audience that I had an imitation process first, which imitated how to fold up a rabbit following the paper folding guideline. Then the motion went back to the common step and stopped; starting from this common step, I created a new subject identity of fish.

Imitation process



Go back to the common step



Creating process



Figure 65. Experimentation 24. Zhang, Y. (2010).

These are also the stills of the stop motion experiment. I found that the problem of the last experiment was the text of 'imitation process', 'go back to the common step' and 'creating process', which told the audience the imitation and creating process. In this experiment, I removed the text, and tried to use stop motion to tell the audience to imitate the rabbit paper folding guideline first, and then go back to the common step, and to start to create the subject identity of fish. Therefore, I **applied ink painting**, which started to appear around the folding subject when the **common step** emerged in the imitation process, and applied another ink painting in the creating process. The problem was the ink painting is too **stand out** too much, which would make the audience focus on the ink painting rather than on the paper folding subject.

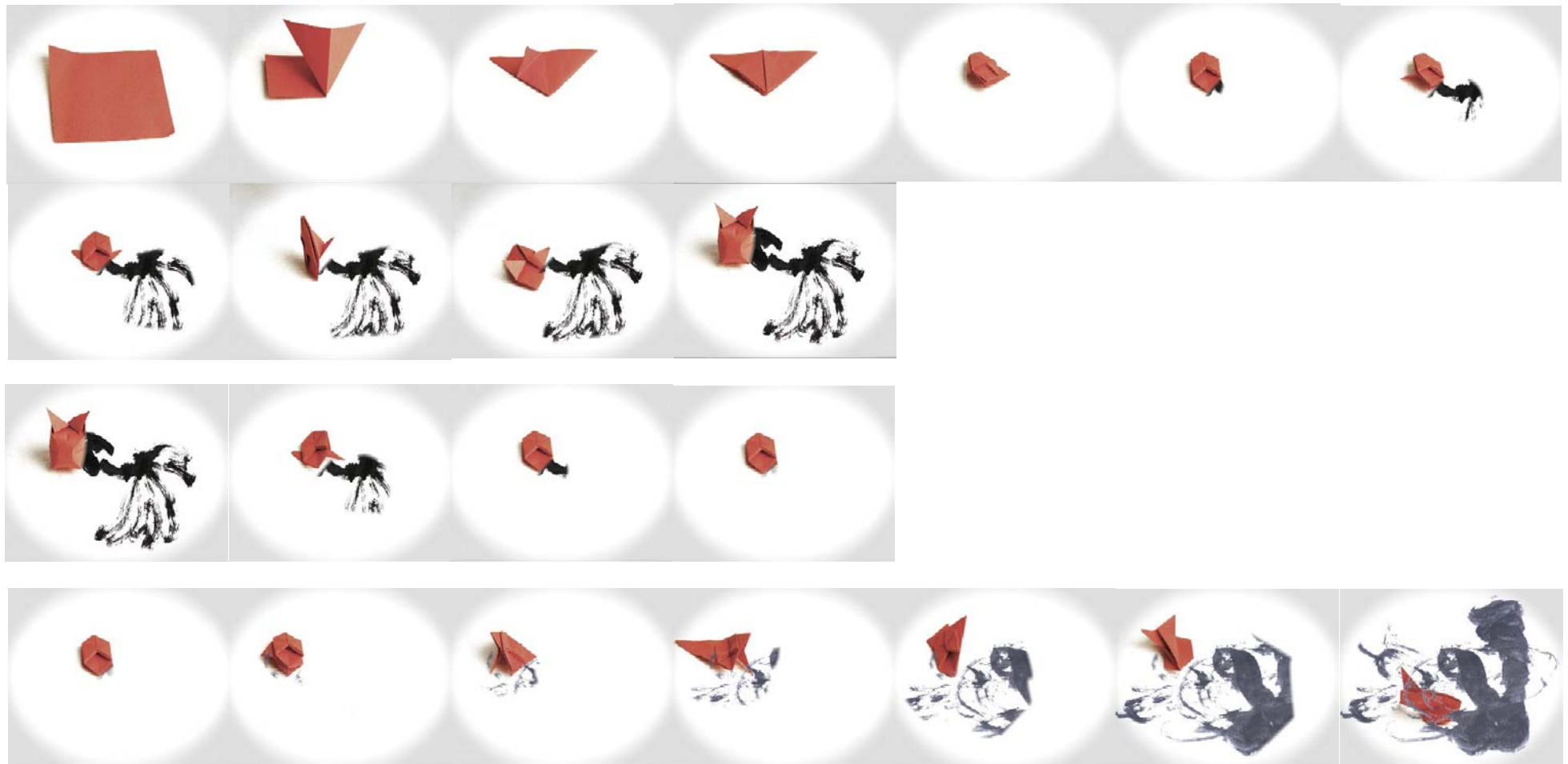


Figure 66. Experimentation 25. Zhang, Y. (2010).

These are also the stills of the stop motion experiment. I found that the problem of the last experiment was the ink painting is too stand out too much, which would make the audience focus on the ink painting rather than on the paper folding subject. Therefore, in this experiment, I removed the ink painting, and tried to use stop motion to tell the audience **provide options** in paper folding guidelines. Imitating the rabbit paper guideline first, then at the common steps provide options, which start the creating process of new subject identities, such as bird and fish.

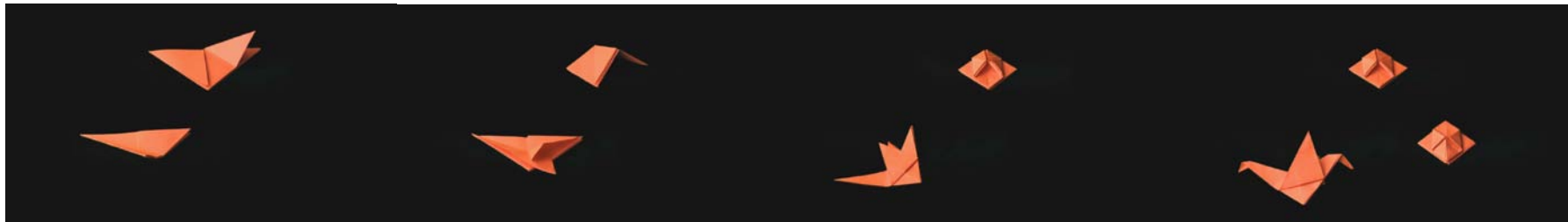


Figure 67. Experimentation 25. Zhang, Y. (2010).

12. Create a new art approach
The fusion of paper folding and ink painting

25. Create a new art approach: photography of a new subject identity

Creating a new art approach to paper folding is the focus of this project. To explore the potential of a new art approach, I experimented with the fusion of paper folding and Chinese ink painting to broaden the creative scope of traditional paper folding art.

First, I shot the photos of the new subject identity, and then I applied the new subject identity to develop a Chinese ink painting, by using the contemporary design software of Photoshop. The structure of this work imitated the traditional ink painting structure, to express a contemporary art approach.

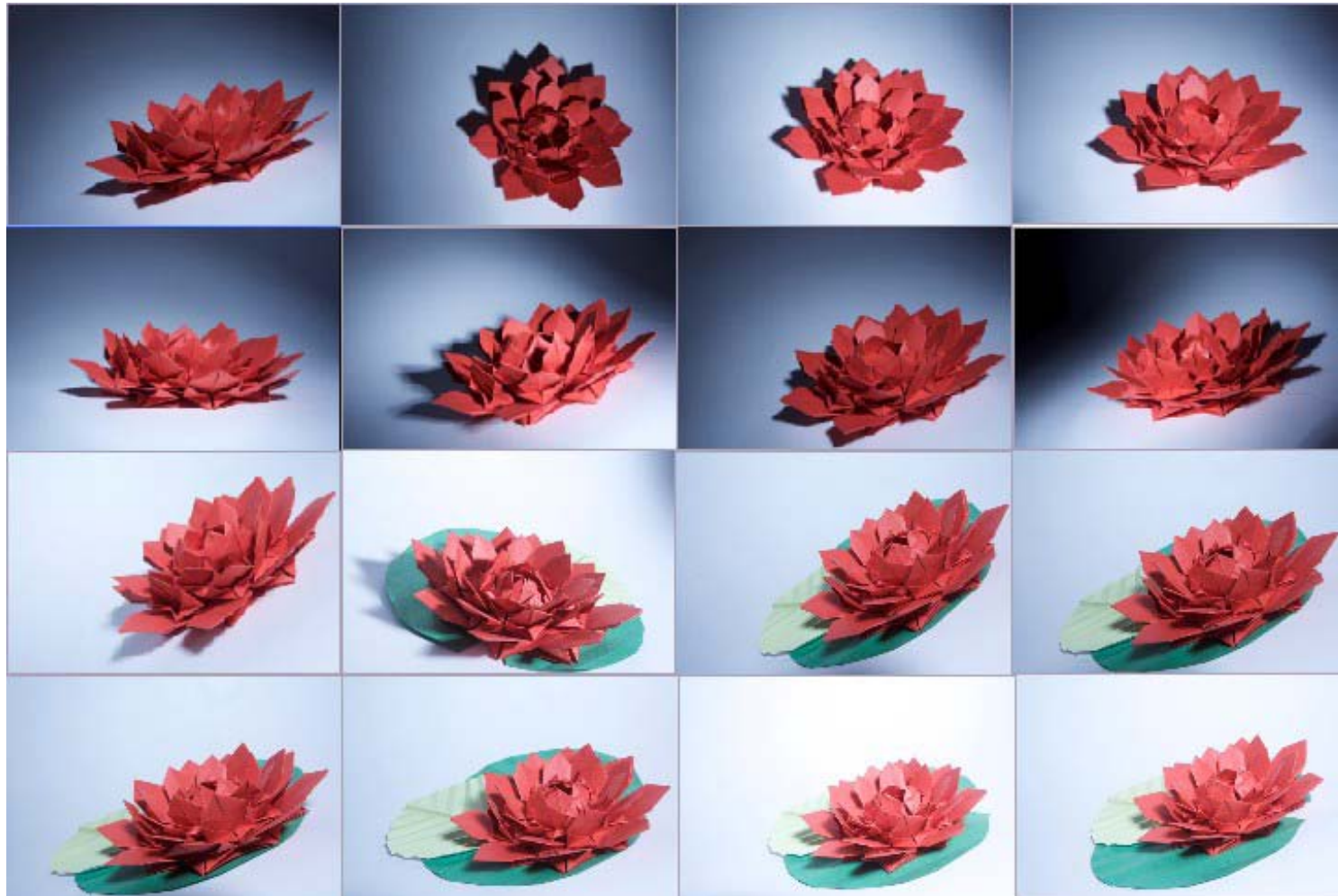


Figure 68. Experimentation 26. Zhang, Y. (2010).



Figure 69. Experimentation 26. Zhang, Y. (2010).



Figure 70. Experimentation 26. Zhang, Y. (2010).



Figure 71. Experimentation 26. Zhang, Y. (2010).



Figure 72. Experimentation 26. Zhang, Y. (2010).



Figure 73. Experimentation 26. Zhang, Y. (2010).



Figure 74. Experimentation 26. Zhang, Y. (2010).



Figure 75. Experimentation 26. Zhang, Y. (2010).

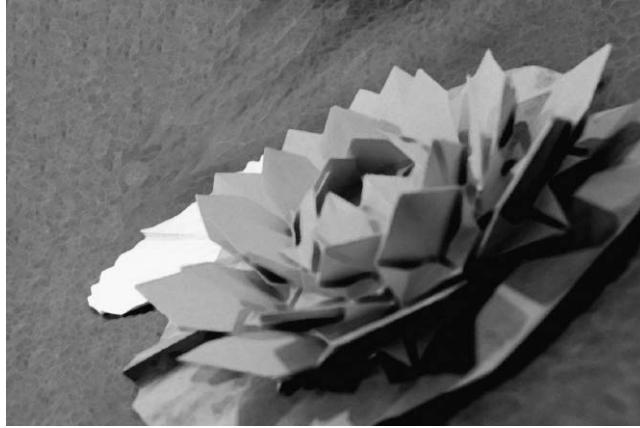


Figure 76. Experimentation 26. Zhang, Y. (2010).

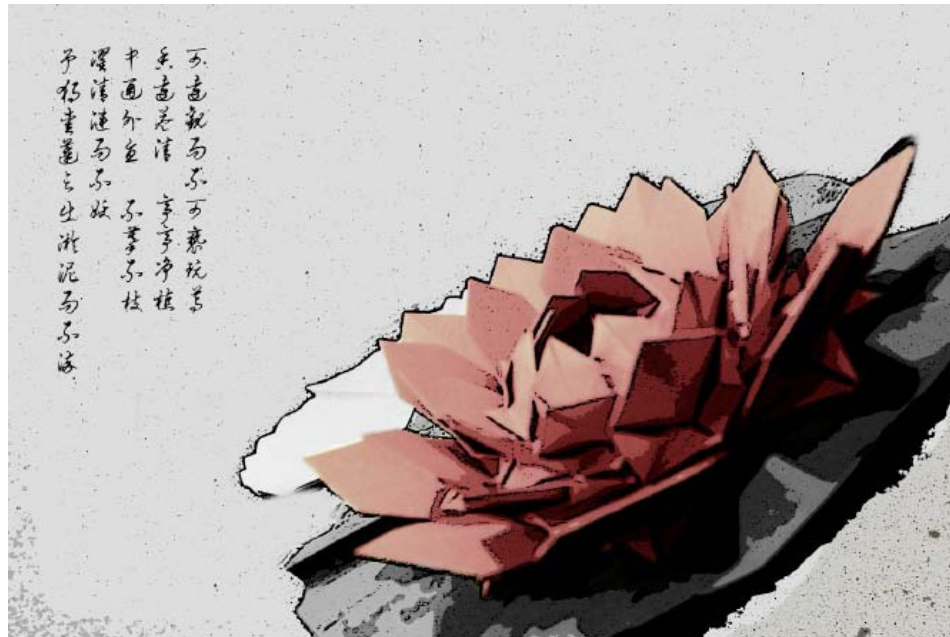
26. Fusion of paper folding and ink painting by Photoshop



The chosen photo of lotus



The Photoshop images



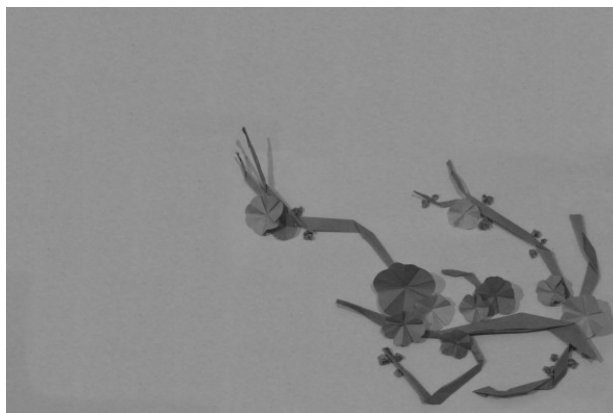
The fusion of ink painting and paper folding



Figure 77. Experimentation 27. Zhang, Y. (2010).



The selected photo of plum blossom



The Photoshop images



The fusion of ink painting and paper folding

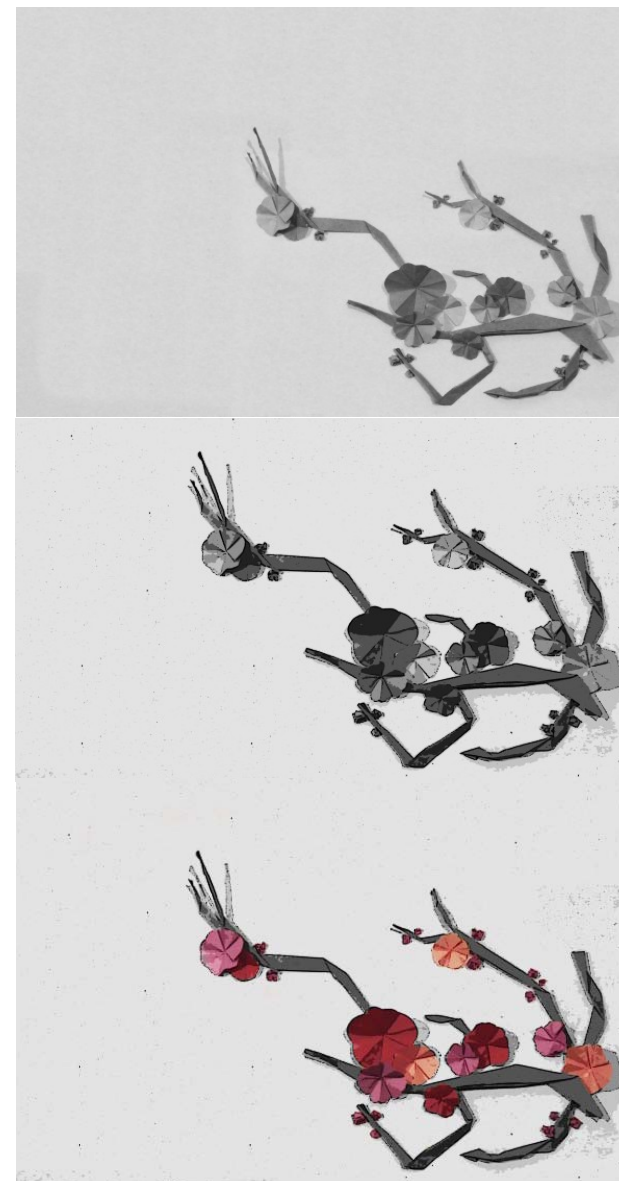


Figure 78. Experimentation 27. Zhang, Y. (2010).

27. Ink painting style (between likeness and unlikeness)



Figure 79. The development of the fusion of ink painting and paper folding. Zhang, Y. (2010).



Figure 80. Experimentation 28. Zhang, Y. (2010).

I found that the fusion image should keep the paper folding forms; if the image is made to **look totally like the ink painting**, that loses the value of the new subject identity. The problem is, why not just draw one? Therefore, the potential is to keep the form of the subject identity, applying Qi's theory of 'between likeness and unlikeness' to explore the image between 'like' the ink painting and 'unlike' the paper folding.

28. Recomposition in Photoshop

Here, the aim was to develop a new composition by using the contemporary design software of Photoshop. To imitate the ink painting structure, Photoshop can be used to recompose the structure of the image, aiming to achieve the fusion of paper folding and ink painting.



Figure 81. Experimentation 29. Zhang, Y. (2010).



Figure 82. Experimentation 29. Zhang, Y. (2010).

29. Choosing the final images for fusing with ink painting



Figure 83. The selected photo of plum blossom. Zhang, Y. (2010).



Figure 84. The selected photo of orchid. Zhang, Y. (2010).



Figure 85. The selected photo of bamboo. Zhang, Y. (2010).



Figure 86. The selected photo of chrysanthemum. Zhang, Y. (2010).

30. Fusing paper folding and ink painting using software of Photoshop



Figure 87. Experimentation 30. Zhang, Y. (2010).



Figure 88. Experimentation 30. Zhang, Y. (2010).



Figure 89. Experimentation 30. Zhang, Y. (2010).



Figure 90. Experimentation 30. Zhang, Y. (2010).

In this experiment, I found that the artwork is **totally looking like a painting**, and the ink painting cannot emerge at this stage. The potential is to keep the original paper folding photography as part of the ink painting.



Figure 91. Experimentation 31. Zhang, Y. (2010).



Figure 92. Experimentation 31. Zhang, Y. (2010).



Figure 93. Experimentation 31. Zhang, Y. (2010).



Figure 94. Experimentation 31. Zhang, Y. (2010).

In this experiment, I decided that the result is much better than the previous one. The ink painting part is done in Photoshop; the potential is to draw the ink painting myself, and fuse the paper folding photography and the ink painting background.

31. Brush ink paint the background



Figure 95. Experimentation 32. Zhang, Y. (2010).

First, I used ink to paint the backgrounds; for example, some of them show the movement of the water, which can be fused with the new subject identity lotus.



Figure 96. Experimentation 32. Zhang, Y. (2010).



Figure 97. Experimentation 32. Zhang, Y. (2010).

32. Photography of ink painting and paper folding



Figure 98. Experimentation 33. Zhang, Y. (2010).

To take photos by fuse the paper folding into ink painting.

The potential is to use Photoshop to fuse the paper folding images and the ink painting background, to make the ink painting cross over the paper folding image, leaving some of the ink painting texture on the edge of the paper folding subject identity.

33. Fusion of the ink painting background and the photography of paper folding



The selected photo of lotus



The Photoshop images



The fusion of paper folding and ink painting



Figure 99. Experimentation 34. Zhang, Y. (2010).



Ink painting



The selected photo



The Photoshop images



Ink painting



The selected photo



The Photoshop images



Ink painting



The selected photo



The Photoshop images



Ink painting



The selected photo

Using the ink painting to represent the background **as surroundings**, some of them **represent** the lakes of the lotus, or the mountains behind the bamboos. The aim is **providing movement** for the paper folding subject identities.

13. Creating the final works

Chinese painters had favored painting bamboo and flowering plum in ink monochrome. Bamboo, plum, orchid, and chrysanthemum had over the centuries acquired a rich range of associated meanings, largely from poetry. In Song and especially Yuan times, scholar painters began to systematically exploit these possibilities for conveying meaning through their pictures.

In the Chinese tradition, the plum, orchid, chrysanthemum, and bamboo are popularly known as the "Four Gentlemen," and the four Chinese "noble plants" for each is said to embody the noble qualities of the ideal Confucian gentleman-scholar.

Plum, because it blooms in winter and has delicate pure blossoms, stands for both the purity of the scholar as well as beauty amid harsh conditions. Bamboo, because it is flexible and can withstand storms without breaking, is a symbol of survival in adversity. Plum and bamboo taken together evoke the Confucian virtue of maintaining one's integrity even in the most adverse conditions. Orchids, ever since Qu Yuan in the Warring States Period, had been associated with the virtues of the high-principled man. The orchid is fragile, modest, but its fragrance penetrates into hidden places. The chrysanthemum has been the focus of Oriental adulation for centuries. In China, the chrysanthemum's association with autumn stems from its tendency to bloom in the fall. Consequently, the ancient Chinese chose the Chrysanthemum ("ju hua") as their Flower for October.

"Ode to the Lotus Flower", which states that the lotus is clean even when growing in a muddy pond; it is so pure, delicate and bright, connotating the personality of straight, proper and honest.

"The joy of fish", Zhuang said: "You are not fish, how would you possibly understand the joy of fish?" Between worries and woes, happiness and joy, how to choose a tomorrow of one's own? (ICIBA, 2007)

34. Creating the final works

Ink painting



The selected photo



Figure 100. Experimentation 35. Zhang, Y. (2010).



Details of the fusion of paper folding and ink painting



Figure 101. Experimentation 35. Zhang, Y. (2010).

Ink painting



The selected photo



Figure 102. Experimentation 35. Zhang, Y. (2010).

Ink painting



The selected photo



Figure 104. Experimentation 35. Zhang, Y. (2010).



Details of the fusion of paper folding and ink painting

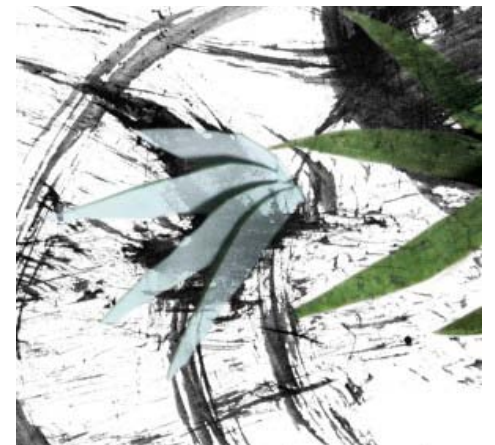


Figure 105. Experimentation 35. Zhang, Y. (2010).

Ink painting



The selected photo



Figure 106. Experimentation 35. Zhang, Y. (2010).



Details of the fusion of paper folding and ink painting

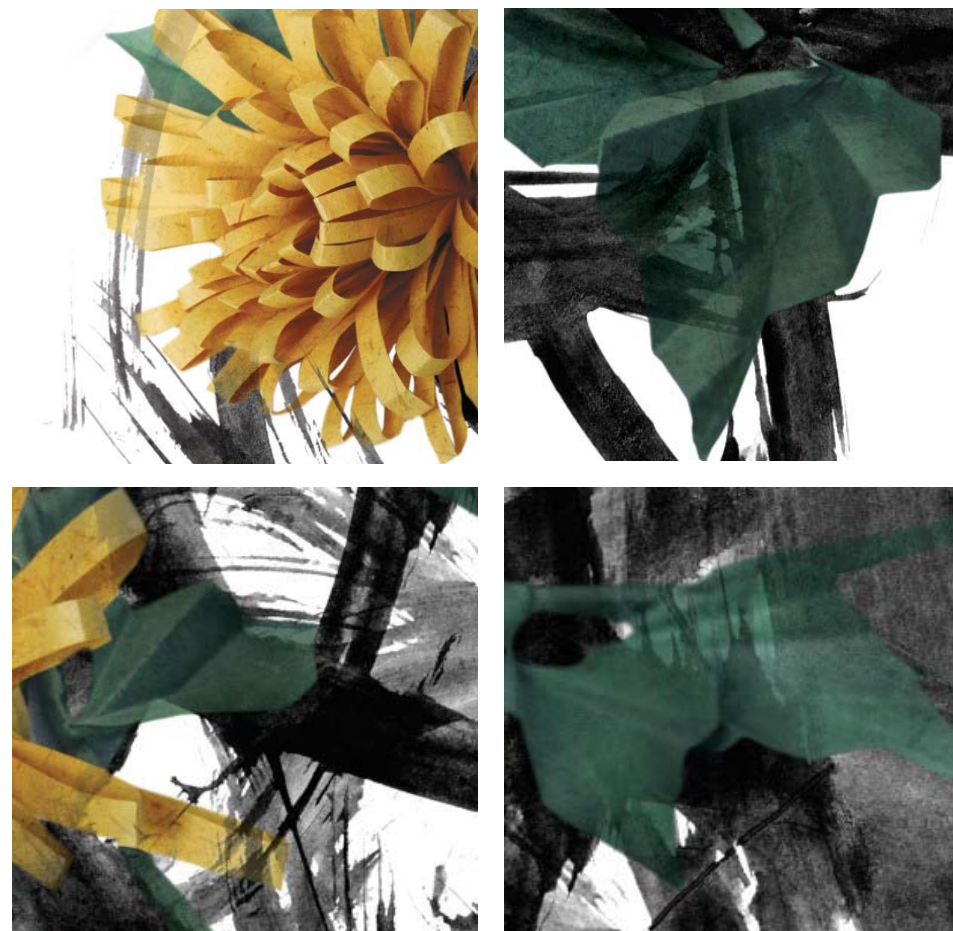


Figure 107. Experimentation 35. Zhang, Y. (2010).



Ink painting



The selected photo

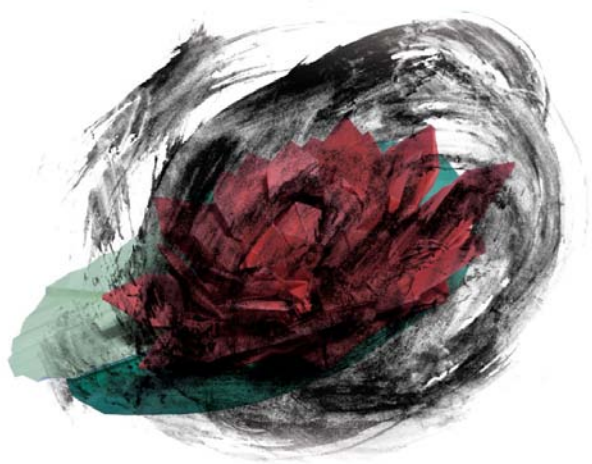


Figure 108. Experimentation 35. Zhang, Y. (2010).



Figure 109. Experimentation 35. Zhang, Y. (2010).



Ink painting



The selected photo



Figure 110. Experimentation 35. Zhang, Y. (2010).

Details of the fusion of paper folding and ink painting



Figure 111. Experimentation 35. Zhang, Y. (2010).

14. The selected works



Figure 112. The plum blossom. Zhang, Y. (2010).



Figure 113. The orchid. Zhang, Y. (2010).



Figure 114. The bamboo. Zhang, Y. (2010).



Figure 115. The chrysanthemum. Zhang, Y. (2010).

畫蓮泥

予好畫蓮之生淤泥而不染、濯清漣而不妖、中通外直、不蔓不枝、
香遠益清、亭亭淨植、可遠觀而不可褻玩焉。
——周敦頤



Figure 116. Ode to the Lotus Flower. Zhang, Y. (2010).

莊子
魚生於水，魚之樂也。魚而不知魚之樂也。
莊子
魚之樂也，魚之樂也。魚而不知魚之樂也。
莊子
魚之樂也，魚之樂也。魚而不知魚之樂也。
莊子
魚之樂也，魚之樂也。魚而不知魚之樂也。



115

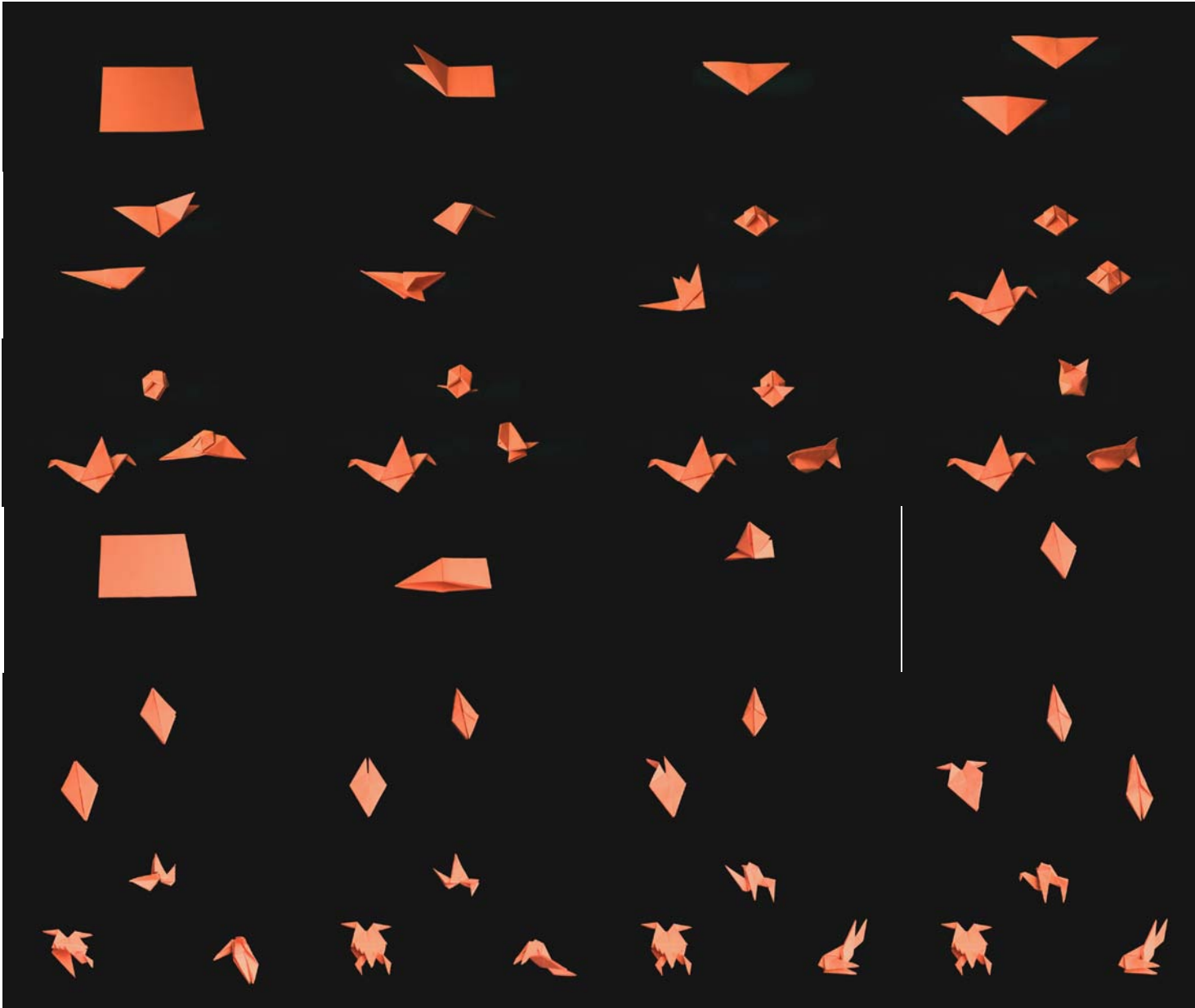


Figure 118. The image stills from the stop motion. Zhang, Y. (2010).

Image Acknowledgements

- Figure 1. Paper folding guideline. Edited by Zhang (2009).
Figure 2. Paper folding guideline. Edited by Zhang (2009).
Figure 3. Experimentation 1. Zhang, Y. (2009).
Figure 4. Victoria and Albert Museum brochure. Johnson Banks. (n.d.).
Figure 5. Paper folding guideline. Edited by Zhang (2009).
Figure 6. Hailey Meyer. Liechty/Meryer Family. (n.d.).
Figure 7. Experimentation 2. Zhang, Y. (2009).
Figure 8. Wikipedia. Matryoshka doll. (2009).
Figure 9. Experimentation 3. Zhang, Y. (2009).
Figure 10. Experimentation 3. Zhang, Y. (2009).
Figure 11. Shigeru Ban. Toilet Paper. (n.d.).
Figure 12. Naoto Fukasawa. CD Player. (n.d.).
Figure 13. Experimentation 4. Zhang, Y. (2009).
Figure 14. The diagram of paper folding system. Zhang, Y. (2009).
Figure 15. Experimentation 5. Zhang, Y. (2009).
Figure 16. Experimentation 6. Zhang, Y. (2009).
Figure 17. Experimentation 6. Zhang, Y. (2009).
Figure 18. The updated diagram of paper folding system. Zhang, Y. (2009).
Figure 19. Folding guideline 1. Zhang, Y. (2009).
Figure 20. Folding guideline 2. Zhang, Y. (2009).
Figure 21. The container. Zhang, Y. (2009).
Figure 22. The circumstance. Zhang, Y. (2009).
Figure 23. Experimentation 8. Zhang, Y. (2009).
Figure 24. Experimentation 8. Zhang, Y. (2009).
Figure 25. Ashley Buerkett. Mario World Board Game. (n.d.)
Figure 26. B.I.O. Form us with love. (n.d.).
Figure 27. Experimentation 10. Zhang, Y. (2009).
Figure 28. Experimentation 11. Zhang, Y. (2009).
Figure 29. Experimentation 11. Zhang, Y. (2009).
Figure 30. Experimentation 12. Zhang, Y. (2010).
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