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The Plight of Chinese Birds

- Exploring eco-critical visual expressions of endangered Chinese birds

Master in Design at Massey University, Wellington, New Zealand

Ruiqi Feng 24/07/2023

Thesis declaration

The plight of Chinese Birds - Exploring eco-critical visual expressions of endangered Chinese birds

A thesis presented in partial fulfillment of the requirements for a Master in Design at Massey University, Wellington, New Zealand

Ruiqi Feng
24/07/2023

Table of contents

Abstract

Acknowledgments

Chapter 1. Introduction

- 1.1 Project Background
- 1.2 Research Aim and Graphic Form
- 1.3 Overview of Exegesis

Chapter 2. Context Review

- 2.1 Species and Habitat
- 2.2 Eco-education and Graphic Narrative
- 2.3 Sequential Art, Abstract Sequential Art, and Polyptychs
- 2.4 New Digital Media Comics: Webtoons
- 2.5 Metaphors in Comics
- 2.6 Design Precedents

Chapter 3. Method, and Design Synthesis

- 3.1 Research Approach and Strategy
- 3.2 Analysis of Design Work Process
- 3.3 Design Outcomes

Chapter 4. Conclusion

- 4.1 Contribution and Future Work

Bibliography

List of Images

Abstract

While there is an abundant diversity of bird species in China, many species are considered threatened and three of them are regionally extinct. This issue presents an opportunity to educate younger generations about anthropogenic impacts on endangered birds, for instance, pollution, and deforestation to raise eco-awareness. This research from the perspective of an illustrator aims to explore ecocritical visual expressions of endangered Chinese birds to elicit empathetic responses among Chinese teenagers.

The design work focuses on six endangered birds in China as case studies to explore methods of visually representing ecological issues affecting birds in a series of illustrations. Different forms of illustration were explored for this project, to ascertain the most feasible method to stimulate youths' awareness of ecological issues. Through an iterative design process, a webtoon through digital media employing ecological metaphor was considered the most accessible art form for the audience. However, the final visual work is presented in a format compatible with both digital media and traditional print for other applications.

Keywords: *Ecological awareness, endangered Chinese birds, habitat loss, webtoon*

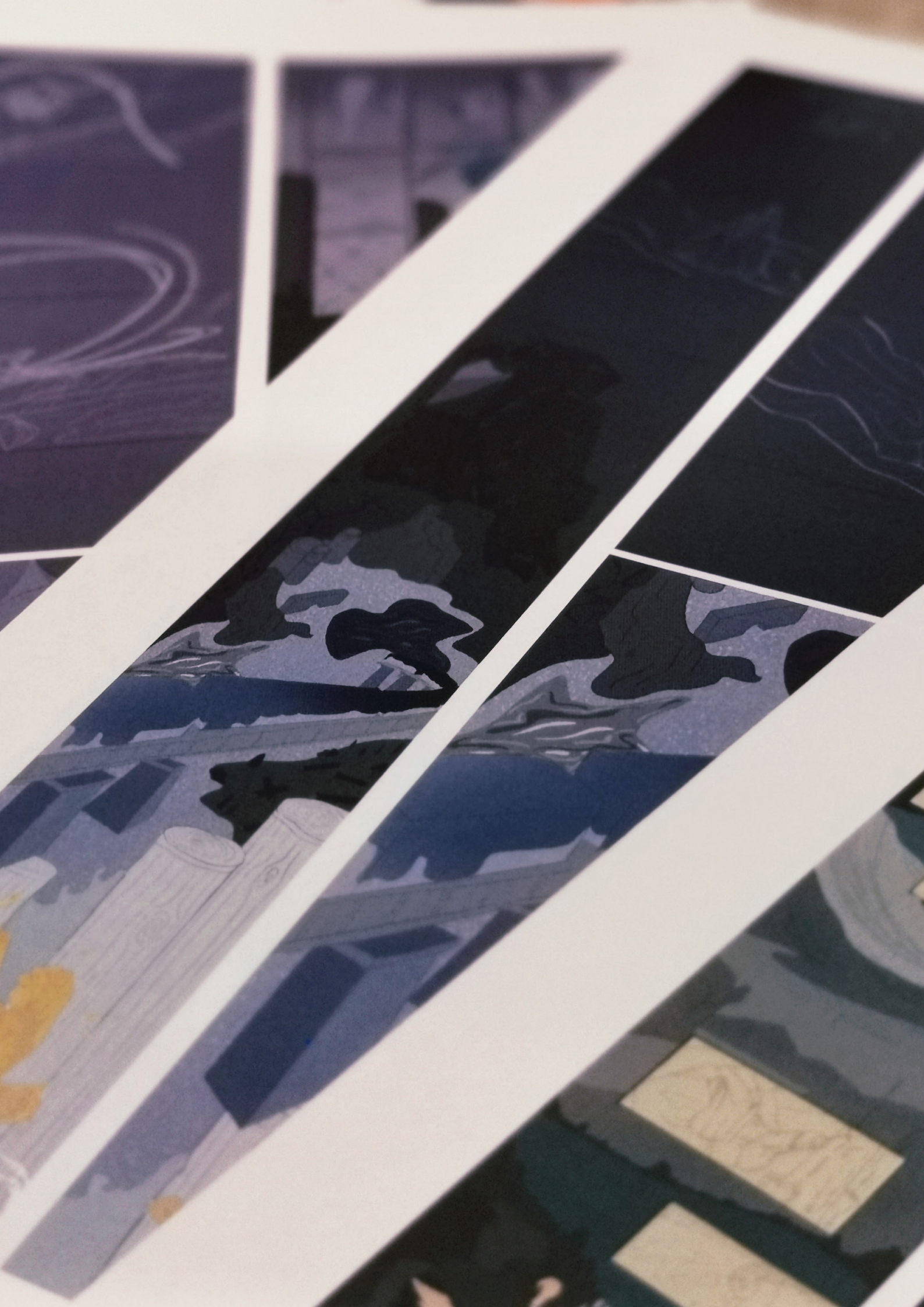


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Chapter 1. Introduction

1.1 Project Background

“Why is it that bird calls, which I could clearly hear in abundance from my window as a child, are rarely heard anymore?”

This personal question has made me feel concerned about bird populations in China for a long time and is the reason I chose the issue of bird conservation as my research topic. I believe this is a very common problem in China, and one of the contributing factors stems from increased urbanization. When I first came to New Zealand, I was intrigued and surprised by the variety of beautiful birds that appeared around the house, as this was almost impossible or absent in China. I discovered the disheartening reality that even the birds I used to see outside my window as a child were now becoming extremely rare in cities with too many tall buildings.

When I started thinking about the topic of rare Chinese birds, two disparate words came to my mind: abundant and plight. The concepts of abundance and plight stem from the cultural background with which I grew up. During my education experiences in China, which informed my personal perspective, one of the things I often heard was that China is a vast country with a wealth of species and a large land mass. However, the specific biological information and habitat status of wildlife are rarely mentioned or described to teenagers. In other words, young people often hear one-sided information and are blindly positive about ecological diversity and health.

On reflecting further, I realized that I couldn't name the endangered species or the specific causes behind their decline. I felt this personal experience reflects to some extent the lack of eco-awareness of other young people in China. I, therefore, started this project by reviewing the literature on bird habitats and impacts to help raise understanding and empathy through a design process.

1.2 Research Aim and Graphic Form

This project explores a form of graphic narrative to express the plight of the bird, conservation, and ecological awareness to young people in China. I initially started with the eco-illustrated storybook as a graphic strategy, but as my research progressed, my understanding of graphic narrative forms expanded. During the early design development phase, to express a critical approach to eco-awareness and the situation of bird habitat loss in China, the portrayal of habitats in my work leaned more towards fantasy and an independent narrative eco-story. This aimed to create an anti- utopian ecological story to engage empathy, however, it lacked connection to the Chinese youth as an audience.

Through further research I became aware of the limitations of the traditional print book in terms of its appeal to youth. This project then moved on to look more closely at the reading preferences of young people in China, exploring traditional comics and their derivative; that is, the new media comics platform - Webtoon. Webtoon is a new form of media comic and sequential art distribution, which is widely accepted by young people in Asia, particularly in China, Japan, and Korea (Jin 193).

When browsing the largest online comic platform in China, Quick Look Comics, currently the most popular among Chinese youth, I found that according to the popularity and ranking of the site's works, the main popular comic genres are original comics by comic artists or comics adapted from online romance novels. There are also suspenseful sci-fi stories based on traditional Chinese culture, as well as popular Japanese serial manga such as Blade of Demise and One Punch Man, which are licensed and ranked very highly. On the contrary, I could barely find a webtoon on this site that discussed social issues or topics that involved human reflection on ecology. This is a phenomenon, as said by Tabernero (1), that within the realm of popular media, the potential of comics as substantial reservoirs of historical and socio-cultural knowledge for critical examination has been frequently disregarded or marginalized. Therefore, the latter design process in this project focused on Webtoons, as a graphic form to convey the concepts of bird conservation and promote ecological awareness to youth.

The context review introduces a discussion of endangered bird species in China, which was an important source of information on the rare birds chosen as my research cases. Literary sources highlight discussion of species and habitat loss issues which mostly

focus on the impact of human activities on birds in this project. These reviews provide scientific support of elements extracted for the subsequent artwork.

The concept of the eco-graphic storybook and comics is discussed in subsequent sections of the context review; this includes the relevance of eco-education and graphic narrative, in addition to an analysis of how abstract sequential art and polyptychs, which are derived from the category of graphics, affect the narrative in this project. The *Narratology of Comic Art* by Mikkonen as well as McCloud's theory of metaphor in comics provides the graphic theoretical support for claiming associations between my artwork and the narrative in comics. Subsequent reflection of the context review and precedents leads to iterative design process and synthesis in the final chapters.

Chapter 2. Context Review

Addressing the Plight of Chinese Birds

At present, the conservation of bird diversity in China faces serious challenges due to the over-exploitation of resources, habitat loss and fragmentation, environmental pollution, and particularly anthropogenic impacts (Zhang 569). The bird populations chosen as the case studies for this project, as well as their habits for living, living regions' preference, and natural and man-made damage to their habitats are introduced in this chapter.

Without attractive and effective visual guidance, conveying eco-criticism and the ecological functions of specific endangered bird populations to young people is a challenge. To address this a discussion of narrative in animal-related graphics is made in this chapter, as well as a comparison of the appeal and characteristics of traditional Asian comics and the new media comics: Webtoon. Following this is a review of the visual format definition from modern comics research, the language of visual elements, and the importance of metaphor, which is used extensively in the project.

Artist precedents are also discussed; Swedish illustrator Linnea Sterte's comics of a secret world, Rosaire Appel's abstract comics with unique narrative, Shane Pickett (1957-2010) famous for his polyptych with complex visual metaphors, Cody Coltharp's horizontal scroll illustrations, and Chinese illustrator Yoon Liu's webtoon on rural

women's devotion and self-awareness. These precedents in process are highly relevant and influential in my design developments to achieve aims of effective communication.

2.1 Species and Habitat

In this section, six rare Chinese bird species are analyzed, including their biological information, habitat loss and population status, geographical distribution, and the main natural and anthropogenic factors that they suffer from. The scientific names of the six rare bird species are below:

- Sichuan Hill-partridge
- Cabot's tragopan
- Blue-crowned Laughingthrush
- Hainan Peacock-Pheasant
- Reeves's pheasant
- Nonggang babbler

2.11 Biological Information and Geographical Distribution

Sichuan Hill-partridge (see Fig. 1) is one of the distinctive rare endemic birds in China, and it has been predicted that the species will be extinct within forty years due to the gradual logging of its habitat (King 216). Its habitat is mainly located in the mountains of southwestern Sichuan Province. The Sichuan-hill partridge prefers to live around the broadleaf forest regions with larger tree canopy cover (Zhao 626). The bird prefers primary and older forests and secondary broadleaf forests compared to forest conversion (clearing of natural forests to use the land for another purpose, for instance, agricultural) by human beings (Dai 187).

The Cabot's tragopan (see Fig. 2) inhabits dense mountain forests between 700 and 1300 meters in the southeastern part of China (Young et al. 121) and is an endemic endangered pheasant species in China. It is estimated that this population has fewer than 10,000 mature individuals overall and is declining at a rate of greater than 10 percent per decade, with the population severely fragmented according to records analysis (Deng and Zhang 26). Winter can also be an extremely challenging period for this bird, as temperatures drop below freezing in most areas where they live and the ground is covered in snow. Therefore, research into winter habitat conservation strategies is necessary for their protection (Young et al. 121). Fruits and leaves from *Daphniphyllum* *Macropodium* are the important sources of food on which they rely for survival (Y. Zhang 105).

Blue-crowned Laughingthrush (see Fig. 3) is extremely endangered as it retains its only habitat in the central Chinese city of Wuyuan in Jiangxi Province, with its wild population declining to a precarious 240 individuals (Li 171). The Blue-crowned Laughingthrush breeds and nests mainly in patches of primeval forest and old-growth trees near villages, which means they like to live near humans. However, the degradation of the original forest and increasing human activity has led to the status of this species as highly vulnerable to extinction. “They feed in the crown layer and trunks of trees, shrubs under the trees or at the forest edge, grassland, tea gardens, vegetable fields, shrubs along riverbanks, and scattered trees at the breeding sites” (Liu et al. 10).

There is a lack of information on the ecological species history of the Hainan Peacock-Pheasant (see Fig. 4), a bird that lives mainly in the tropical forests of Hainan Province, China, and only in the mountainous areas of the broad-leaved evergreen forests of central and south-western Hainan (Liang and Zhang 111). From the 1950s to present, the population has declined significantly due to habitat loss and illegal hunting, and today’s surveys show that their populations are therefore very small and fragmented (Jiang 34).

Zhou et al. determine the distribution and population status of Reeves’s pheasant (see Fig. 5) in China was once widespread in central China, however compared to data recorded in the 1990s, half the population has disappeared in the central region and is most likely continuing to decline (532). The mixed conifer-broadleaf forests as breeding sites and habitats are the main living preference of this bird species (Xu et al. 319).

Upon researching endangered birds in the area, documentation of the Nonggang babbler (see Fig. 6) was the scarcest. Nonggang babbler was first found in 2004 by Zhou Fang and Jiang Aiwu in the southwest Guangxi province, China. However they describe the bird’s principal habitat as the Karst seasonal rainforest which is situated in the northern Nonggang, Guangxi province (Fang, Jiang 423). Fang and Jiang also express that the Nonggang babbler is often found walking on rocks and rarely in trees or flying. Interestingly, it can only fly a short distance when shocked by surrounding creatures or noise. Their food sources are mainly insects and arthropod predators (423).



(Fig. 1. Sichuan Hill-partridge, eBird, 2020)



(Fig. 2. Cabot's Tragopan, eBird, 2017)



(Fig. 3. Blue-crowned Laughingthrush, eBird)



(Fig. 4. Hainan Peacock-Pheasant, CAATS, 2021)



(Fig. 5. Reeves's pheasant, eBird, 2023)



(Fig. 6. Nonggang babbler, eBird)

2.12 Habitat Loss, Fragmentation and Human Impact

There are strong links between habitat loss issues and the decline of endangered bird populations (Deng 31). On reviewing the bird literature, the habitats of all six of the above species had suffered varying degrees of damage. Zhang et al. expressed that habitat degradation and loss due to deforestation and replacement of economic forestry and wetland reclamation were the key dangers to birds (575). Highly influential is habitat fragmentation, which appeared in the literature as the main issue facing the six birds. As Franklin et al. explain, habitat fragmentation is the destruction and conversion of large ecological areas into discontinuous habitats and the conversion of vegetation from one type to another due to human activities such as land clearing, reclamation, and logging (20). Therefore, in the artwork I subsequently developed, the use of habitat elements was very important, and I tried to convey the cause and effect of habitat fragmentation to the viewer from a visual perspective.

The analysis of the threat factors for threatened birds in Zhang’s assessment suggests that the current endangerment of birds in China is mainly caused by varied human activities (575). The impacts of human activities on these birds are not independent. Using the habitat fragmentation from deforestation as an example, it is a common threat to most birds in that it is responsible for habitat loss and population decline. Furthermore, to take another example, it is not the case that Reeves’s pheasant is the only bird that is being trafficked to be used as a craft causing population decline, but rather that illegal poaching is one of the main factors in it becoming endangered. In this design-led project I aim to extract representative factors for these six bird species based on the literature review and translate these impacts as metaphors into a visual product. A table (see Fig. 7) is shown below summarizing the main anthropogenic hazards to the six bird cases based on the bird literature reviewed.

Sichuan hill-partridge	Cabot's tragopan	Blue-crowned Laughingthrush	Hainan Peacock-Pheasant	Reeves's pheasant	Nonggang babbler
<ul style="list-style-type: none"> • Tourism Development • Pollution • Deforestation 	<ul style="list-style-type: none"> • Deforestation • Construction of railways • Industrial Development 	<ul style="list-style-type: none"> • Over-cultivation of agriculture • Human settlements too close to birds 	<ul style="list-style-type: none"> • Cultivation of tropical cash crops such as rubber, coffee and tea • Exploitation of timber • Deforestation 	<ul style="list-style-type: none"> • Feather products • Illegal hunting and trade • As a component of some Chinese medicines 	<ul style="list-style-type: none"> • Industrial Development • Light Pollution • Deforestation

(Fig. 7. Table of six birds’ anthropogenic impacts concluded by Ruiqi Feng, 2023)

These are only six endangered birds I have identified but as Wang et al. identify, 146 species are considered threatened, and three of them are regionally extinct according to the officially released China Biodiversity Red List in 2015 (782). Less attention has been paid to these species as well as the habitat research, and conservation strategies await future efforts (Bo et al. 357). This highlights that more design solutions should be considered to address the birds' problem.

This grim and pessimistic state of birds led me to consider the possibility of combining graphic narrative visual art forms with ecological awareness for young Chinese teenagers. I have positioned this design research for this audience because if conservation and sustainability are explicitly and implicitly represented as childhood values, then, young audiences will perceive them as cultural norms (118). Smith and Williams highlight that, internationally, classes in environmental education currently concentrate on scientific analysis and policy, not cultural change (3), and I strongly agree that while the former is important for ecological education, there also needs to be a shift in the understanding and empathy in education of the status of species and habitat loss. With this point in mind, I began to investigate the role of graphic narrative in eco-education as well as raising eco-awareness.

2.2 Eco-education and Graphic Narrative

“Interestingly, although nature is included less in recent books, when present, it is less likely to be portrayed negatively. Just as images of nature have declined, so have the images of animals. The likelihood of a wild animal playing a role in a story, as opposed to simply being included in a picture, did not change significantly” (155).

This quote by William et al. highlights the critical ecological thinking we need from graphic books or everyday communication, and a lack of eco-criticism in some graphic books currently. According to op de Beeck, the question arises as to how graphic books can critically communicate ecological content and perspectives; eco- graphic books can shape our attitudes toward living wild habitats and geographical regions. In this regard eco-graphic books that contain positive environmental imagery might suggest a distancing strategy which means some of the wildlife that was common around us a few years ago is gradually being forced to move away due to habitat loss. This situation has the potential to create a deeper empathy (123). Erya and Pustaka suggested that reading can be used to further develop environmental knowledge and even critical thinking skills as well, but is not limited to reading material from textbooks, as students

can also gain knowledge from webtoons, fiction, magazines, and a wide range of other reading materials (54).

My research explored the theory surrounding my art field in graphic communication as an illustrator. In the initial stages when I was searching for different graphic forms, I tried to find a connection combining bird imagery and human thought for the purpose of building eco-criticism. While not vying too much into the realm of anthropomorphism – giving the bird human characteristics to create a link between the reader and the character – I created the bird as the main character in my ecological graphic storybook, which I will further explain in Chapter 3. From this point of view, Chaney (130) articulated “as species propinquity replaces social norms of anatomical and emotional similarity, the shadow of death looms above each of the animal deployments studied here”. This statement is a useful outlining of what I wanted to convey to my audience in the initial work. I hoped that quiet empathy and a sense of nostalgia and solastalgia from bird habitat loss would be the main themes of this ecological storybook and respond to the vision of initial eco-critical strategy, implanting human consciousness into the body of the bird main character and seeing the world through the bird’s eyes.

2.3 Sequential Art, Abstract Sequential Art, and Polyptychs

In Manning’s article, *Understanding Comics: The Invisible Art*, he reflects on McCloud’s point that comics are a deliberate sequential form of pictorial presentation designed to convey a message and/or create an aesthetic response in the viewer (67). McCloud suggested “As professional communicators, our business is to guide readers along in the realm of ideas” (69).

Sequential art is one of the key methods in the field of comics. and has been used to deliver information on a variety of topics to help audiences understand difficult or complex ideas, just as Toby Morris’s view suggested that graphic was effective and informative as a communication method when he talked about his cartoon about the virus, he also believed that graphics have layers of communication to convey the sense to the viewer (Beatson).

The concept of “abstract sequential art” is a genre that has been growing in recent years. As artist Tabulo Kym expressed “Abstract sequential art refers to a number of sequentially juxtaposed abstract images that focus on form and technique, which may elicit from the viewer an aesthetic response, a notional sense of narrative and/

or a possible theme” (30). Concurring with my design research, I was looking for a composition of images with the constraints of in-comic text frames and sequential graphics. Abstract sequential art contains a degree of disorder and this cognitive suggestion is the approach I wanted to experiment with. Tabulo concludes in her article that abstract sequential art may stimulate the viewer’s conceptual sense of the narrative or the possible themes that may emerge (40).

The polyptych, as a graphic form, provided some direction and inspiration for me to think about what form to choose in response to ecological and environmental themes in the initial and middle periods of my project.

“The Traditional Polyptychs is a complex structure with a multifaceted history that continues to be shaped to the present day” (Garnet 958). Some artists attempt to iterate traditional polyptychs by simplifying the physical frame and structure or reducing the continuity of sequential outcomes with some interesting strong image suggestions or color stimulation. As Tabulo found, abstract polyptychs can be used in abstract comics to achieve a continuous visual effect (38). McCloud used the word polyptych to describe the continuous background that is divided into frames, it is a method to present the time passing in comics theory. As Tabulo explained she still cannot find a specific definition of modern polyptychs (35). From this point of view, I was trying to insert the polyptychs in my experiment in my early storybook narrative tests, using digital frames instead of physical ones based on the polyptych’s sequential definition.

2.4 New Digital Media Comics: Webtoons

Webtoon is a new media art form that has become very popular in Asian countries, especially in China, Japan, and Korea, this kind of new media culture dissemination method has the possibility as a source of transmedia storytelling (Jin, 200). As an internet-based comic, webtoon has its unique advantages and features, for instance being quick and easy to read, and therefore, very popular among Chinese youth (Zhang 150). However, there is currently less analysis and discussion on this new media field and phenomenon, and I have mainly analyzed articles from China and South Korea in this section.

In terms of features of visual expression, Zhang analyses that webtoons have a top-to-bottom continuity that gives rise to a unique narrative format, with more flexibility and a greater emphasis on movement rather than comics (151). Figure 8 shows a long-scrolled webtoon created by a Chinese illustrator, Aman. The story of the friendship

between two birds from the north and the south was posted on Chinese social media, Sina Weibo in 2018 and became a huge hit at that time with over 100,000 online interactions. There are many webtoons in China in the same long scrolled form as this one, which is a popular webtoon format for young Chinese. It is worth noting that in some webtoons the transformation of images does not rely on frames, on the contrary, the number of frames in webtoons is smaller than in traditional comics. Batinić discusses Scott McCloud’s concept of “infinite canvas” in his article and holds the point of view that the infinite canvas is supported by modern digital technology with endless possibilities. Offering comic artists a wide range of options, infinite canvas could be a new media for the artist to create potentially new visual products (81). For instance, Živadinović applied this concept in his comics in a dynamic way (the story can be panned to the left or right depending on the mouse movement and a succession of new story elements appear.) to create an engaging story (see Fig. 9).



(Fig.8. Screenshot of long scrolled webtoon: Birds from North and South by Aman, 2018)



(Fig.9. Screenshot of the dynamic story: Hobo Lobo of Hamelin by Stevan Zivadinovic, 2011)

between two birds from the north and the south was posted on Chinese social media, Sina Weibo in 2018 and became a huge hit at that time with over 100,000 online interactions. There are many webtoons in China in the same long scrolled form as this one, which is a popular webtoon format for young Chinese. It is worth noting that in some webtoons the transformation of images does not rely on frames, on the contrary, the number of frames in webtoons is smaller than in traditional comics. Batinić discusses Scott McCloud's concept of "infinite canvas" in his article and holds the point of view that the infinite canvas is supported by modern digital technology with endless possibilities. Offering comics artists a wide range of options, infinite canvas could be a new media for the artist to create potentially new visual products (81). For instance, Živadinović applied this concept in his comics in a dynamic way (the story can be panned to the left or right depending on the mouse movement and a succession of new story elements appear.) to create an engaging story.

2.5 Metaphor in Comics

Tasić and Stamenković discuss forms of metaphor in comics divided into image-dominant metaphors, text-dominant metaphors, and complementary metaphors. In my project, I focused on the term "image-dominant metaphors in comics". McCloud explains the definition of picture-specific: image-based metaphors are usually metaphors that are communicated through visual channels; it is a metaphor that conveys a meaning or concept through images, graphics, or visual elements, and the goal of the visual metaphor is to convey the author's or artist's intent to the viewers; this visual channel can more directly stimulate the viewer's emotions, understanding and imagination (119). I was inspired by this comic concept in the latter stages of the project and made extensive use of visual metaphor elements associated with endangered birds in the artwork tests process, in response to promoting eco-awareness to stimulate the viewer's imagination and emotions. Figure 10 is a good example of how image-dominant metaphors work, showing a man's daily life like a machine, a wind-up on his rickety back (Tasić and Stamenković 119). Toby Morris has produced work for the New Zealand Government's Ministry of the Environment on topics including health (e.g. health and safety campaigns during the covid period), climate change, and he strongly believes that using illustrations or visual metaphors to explain things helps to explain things in a way that can be understood by everyone, whether it's a new interest or a new way of perceiving things, visual metaphor has a lot of potential (Beatson). And in the following section of the artists' precedents analysis, it would be explained more further on exploring and explaining artists' use of metaphorical elements in artworks which

provided inspiration and motivation for my later work.



(Fig.10. A Person Is Machine from City of Glass: The Graphic Novel by Paul Auster, Paul Karasik and David Mazzucchelli, 2004)

2.6 Design Precedents

This section aims to analyze artist precedents that inspire me in the way of elements-metaphor use in graphics, narrative in graphics, and the different forms and reading flows of comics. Through their work, I can explore their unique approaches, techniques, and ideas that have shaped my later design work.

Linnea Sterte's Comics with Narrative and Metaphor

This is the debut comic book, *Stages of Rot*, drawn by Swedish illustrator Linnea Sterte (see Fig. 11). The narrative is powerful, visionary, fluid, rich, and full of charm. The dying whale is so lifelike around its body it is astonishing. Animals, insects, and ancient people scramble to find its remains, making their home in its bones and wrestling with the millennia-long process of decay. This is a comic book about death and rebirth that uses creatures as elements and metaphors to tell a story of the cycle of life in an imaginative universe where water and air seem to be one, where fish fly and birds swim. As Pratt says, comics encompass both literary and pictorial narrative elements, making it

a unique hybrid art form that incorporates narrative techniques associated with literature and other forms of visual storytelling (107). I felt a strong sense of narrative in her work. This is a work with a clear intention and was a great inspiration for me to identify the most important themes in my work: eco-criticism and birds' habitat loss.

The stages of rot drawn can be seen as a metaphor reflecting on the real world we live; it makes us recognize ourselves in its contours. Reading this book is a process of reflection on human perceptions of ecology and even the existence of the world while making readers feel in awe of life. Toby Morris suggested that “in taking an illustration-led or visual metaphor to explain things, I feel like there’s heaps of potential there” (Beatson), and I agree with this point of view. Metaphorical elements are used extensively in this work to stimulate thought and empathy with the theme of anthro-bio-zoological speculative fantasy.

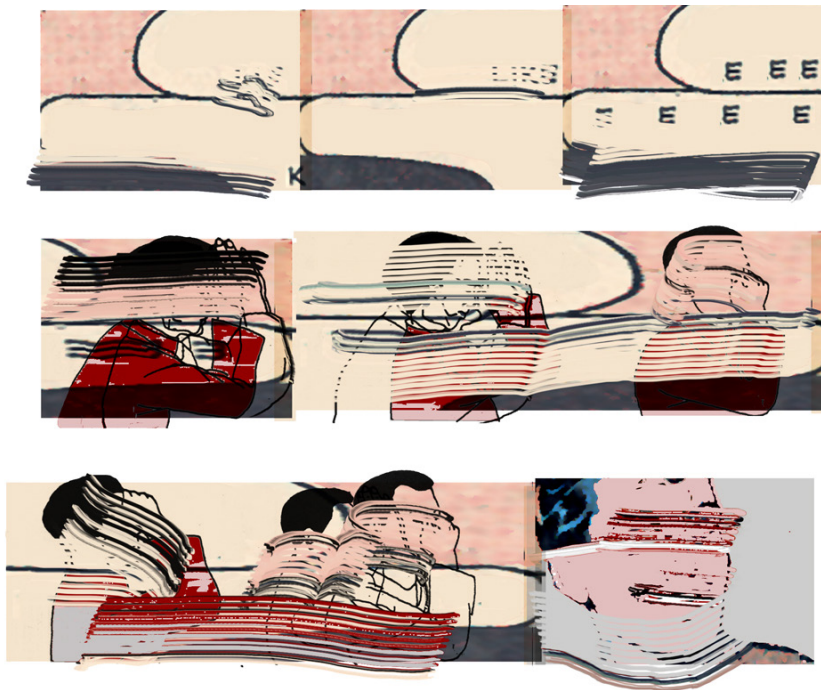


(Fig.11. Screenshot of Stages of Rot by Linnea Stelter, 2018)

Rosaire Appel's Abstract Comics with Abstract Sequential Art

Abstract sequential art in comics is a new growing comic art genre. Although this form of comics was not the visual tool, I eventually adopted it in final design work, as it provided a certain degree of novelty in thinking about the subsequent development of my artwork through its unique perspective on artistic expression. Rosaire Appel's works are basically sequential images without a representational narrative, however, through these explorations, a keen sensitivity emerges towards the delicate interplay between language, sound, and image, blurring the boundaries that separate them.

It makes me begin to think about how I can translate bird elements into graphic language when I reviewed birds' strict living situation, as well as how to convey my upset and sadness of birds' situation to the viewers. Rosaire Appel's graphic (see Fig. 12) is more like asemic writing and follows conventions of abstract sequential art. A man's face with unnamable distortion and visual ambience with converting text narratives to different image information is effective. Due to these principles, there is no text frame in my webtoon, I hope it to be a completely visually emotional and informative output.



(Fig.12. Screenshot of your face by Rosaire Appel, 2018)

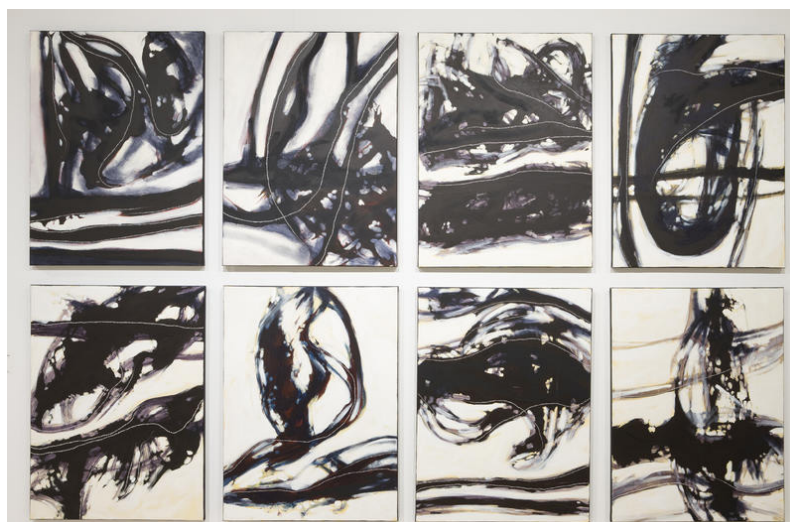
Shane Pickett's Metaphor in Artwork

Shane Pickett (1957-2010) a painter from Western Australia, creates work famous for its complex metaphors to present emotional feeling and narrative to the viewer. The piece (see Fig. 13) above is his representative artwork: *Three Faces of the Sun*. In the depicted artwork, a profound symbolic representation is developed featuring delicate beams of light penetrating the white abyss. These luminous elements serve to convey the concept of life's genesis, as they break through the timeless realm, named as the terrestrial domain by mankind. This visual interpretation captures a pivotal moment, wherein the entirety of existence materializes from the void, prompting Pickett to construct a contemplative exploration concerning the fundamental nature of existence itself.

Consequently, the observer becomes immersed in a state of suspension, transfixed between the realms of being and non-being, thereby perpetually poised upon the threshold of existence, evoking a sense of perpetual anticipation and enigma. His later artwork: *Calling for Rain* (2007) (see Fig. 14) shows a strong frame format reflecting the concept of polyptychs which I have mentioned above. It presents and implies a theme with lines as metaphors, it is like writing a narrative strategy in comic form (Tabulo 37).



(Fig. 13. *Three Faces of the Sun*, Museum & Art Gallery of the Northern Territory by Shane Pickett, 1986)



(Fig. 14. *Abstract Polyptych: Calling for Rain*, the Art Gallery of Western Australia by Shane Pickett, 2007)

Cody Coltharp's Horizontally Scrolled Illustration with Applied Elements.

Cody Coltharp's *The Pale* (see Fig. 15) exudes strength in expression used in this artwork. Batinic discusses horizontal scrolling within the browsing interface, and the division of pages or chapters onto distinct web pages (84). This narrative, centered around a doctor's efforts to aid a young girl in overcoming her nocturnal anxieties, unfolds seamlessly on a solitary webpage through a continuous horizontal scrolling strip.

Traditional panel boundaries are absent here, and instead, Cody Coltharp employs different elements within the story to demarcate discrete situations; in this work this is achieved by utilizing various objects within the narrative, such as a lamp post and trees or other vertical lines, which function as surrogate gutters, dividing the strip and delineating distinct areas of action. Notably, the comic lacks well-defined contour lines, with brush strokes appearing diluted and blurred (84). I consider this work to have played a large influence on the final form of my project, as well as providing a clear visual interpretation of long-scrolled webtoons in my artwork.



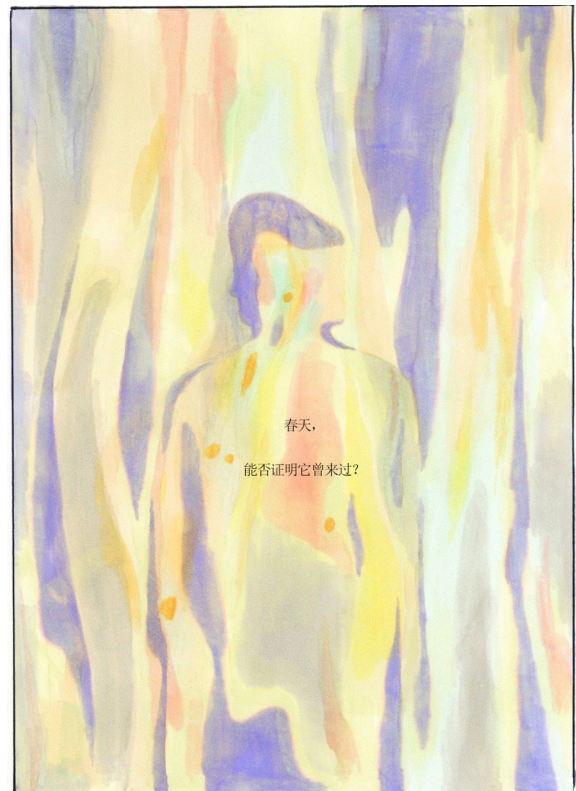
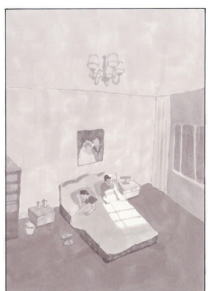
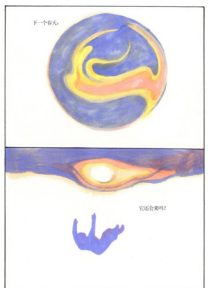
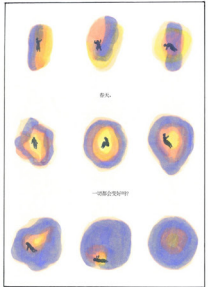
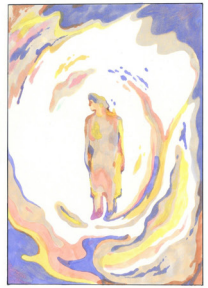
(Fig. 15. Horizontally scrolled illustration of the blurred gutter : *The Pale* by Cody Coltharp)

Yoon Liu's Webtoons with Metaphor

Yoon Liu's webtoon *The Next Spring* is a good representation of the long-scrolled webtoon format which is popular in China. It is in vertical format, and my final work is inspired by this type of webtoon reading flow. As shown on the left (see Fig. 16), the first representative feature that can be seen is that the use of a long canvas, allowing the viewers to drop down the image for a distinct viewing experience.

This eighteen-page long-scrolled webtoon posted on the web talks about the situation of rural women in China. This is the last page of the webtoon series as a narrative depiction and summary of a rural woman's self-perception and living conditions. The artist raises the question: what will this heroine's life eventually lead to? The webtoon extensively depicts the characteristics of the rural Chinese landscape, as well as the rural residents and scenes of their daily life in the remote and backward mountainous areas and offers critical and thoughtful content on the status of women in current Chinese society.

It is a useful precedent for my project in using metaphor, for instance, the author used metaphor elements such as messy fires and psychedelic colors to suggest that the situation of women is perhaps under a challenged status quo, and it also shows a dedication serving family. It is also possible to see their struggle and self-redemption. I find the webtoon is very informative in its narrative expression, as well as its use of metaphorical elements.



(Fig. 16. The Next Spring by Yoon Liu's, 2021)

Chapter 3. Method and Design Synthesis

The project design iterations and development phase are informed by the research within the context review, endangered bird case studies, and self-reflection on art techniques.

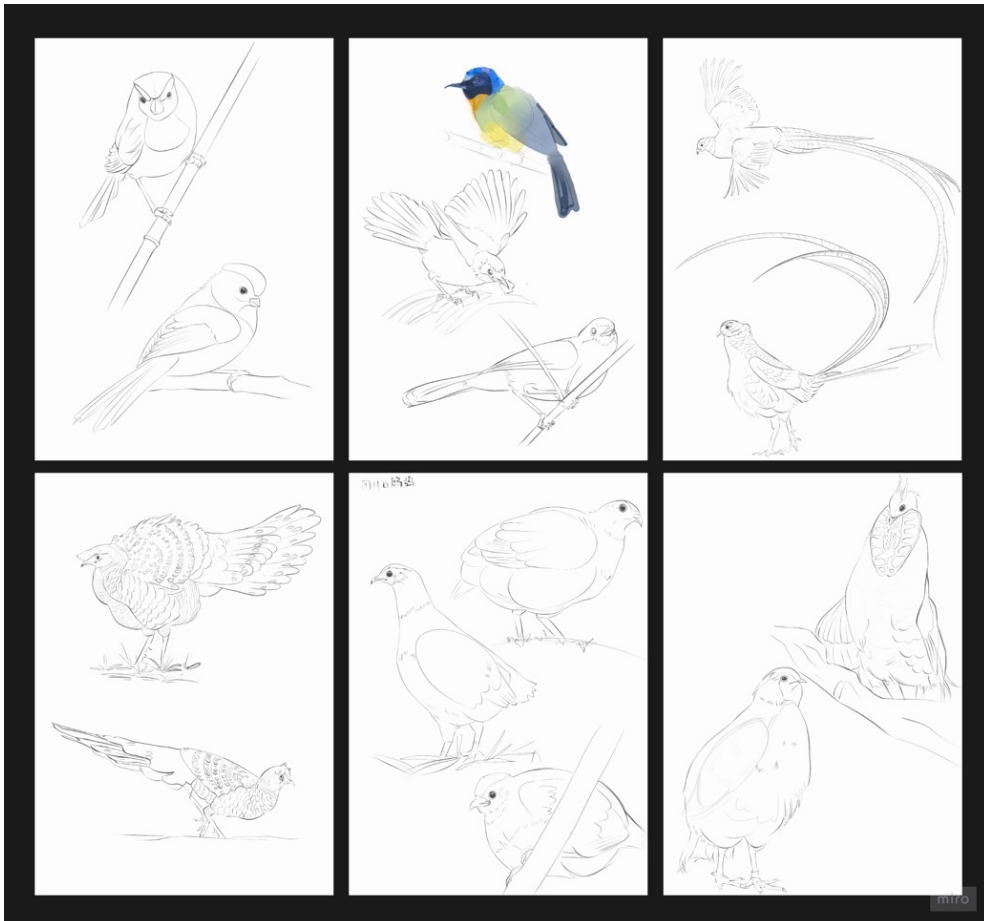
3.1 Research Approach, and Strategy

Within the context review, I discuss sequential art theory due to my initial idea of creating a whole-page ecological storybook. At the beginning of the research, my vision was to develop an anti-utopian eco-critical illustrated story featuring the blue laughing kingfisher: a storytelling strategy based on the protagonist falling asleep, disembodied and attached to the body of the blue laughing kingfisher to see the world through the eyes of the bird. The proposed story was to take an unexpected turn, breaking the human prayer for ecological perfection, giving a glimpse of some of China's endangered birds. Although there was merit in these ideas, there was much reconsideration needed to suit a young teenage audience in story and visual format.

The most relevant graphic format for the aims of this project became the webtoon, a popular form of new media for comics currently produced through the internet. The explanation of the comic from Zhao had influenced me in that comics are composed of words, images, and symbols. The comic is a visual language, and the essence of which is a communication medium (227). As Cho et al discussed, comics, webtoons, and graphic novels can give audiences the chance to informally learn about social issues (44). The choice of webtoon as the form for my final work attempts to empathize with the plight of birds as a new way of transmitting existing visual strategies with the target audience about bird habitats. In addition, physical ecological print posters, banners, and science brochures can be developed, to add to what we can see in our daily life.

Initial Making Process in Research

My first attempt at the whole project started with drawing the ecological appearance of the six rare birds (see Fig. 17) which I have already reviewed in Chapter 2. Here, and in the subsequent illustrations I used a digital tablet as the main tool for producing the drawings. This step enabled me to familiarize myself with the general appearance of the birds' feather growth patterns, feather color patterns, and their physical characteristics, such as the size of their wings, leg bones, and muscles, as well as the shape of each bird's beak, which is also differed markedly according to my observations. I then conceived an eco-story in the form of a whole-page printed storybook.

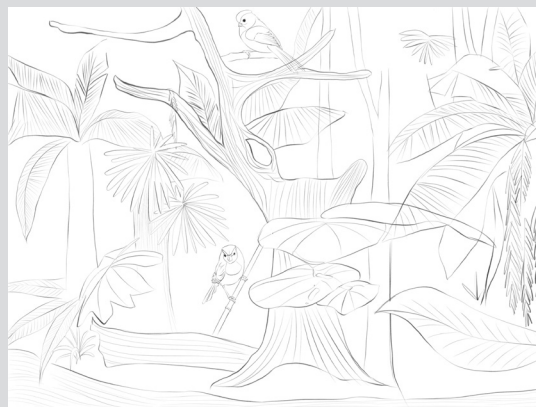
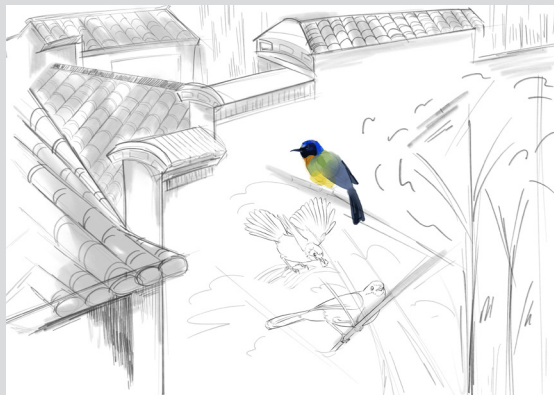


(Fig. 17. Screenshot of six birds sketches by Ruiqi Feng, 2022)

Chapter 1



Chapter 2

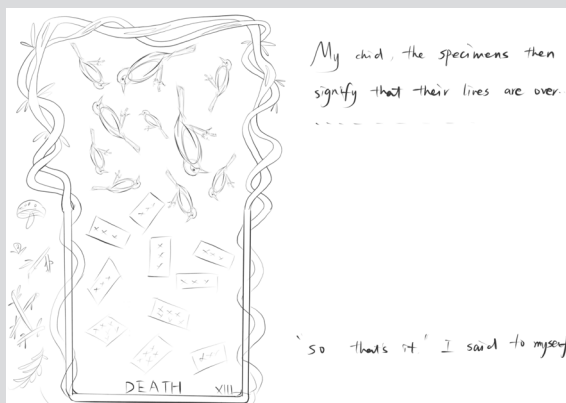


(Fig. 18. Screenshot of eco-critical comic's storyboard by Ruiqi)

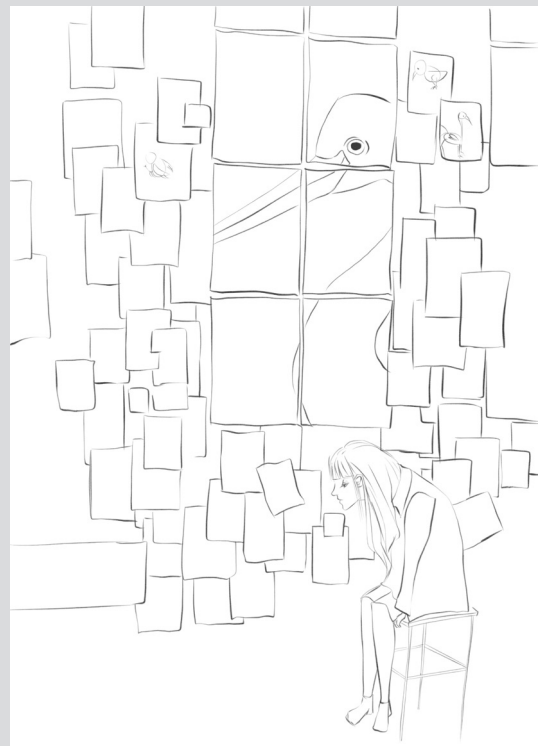
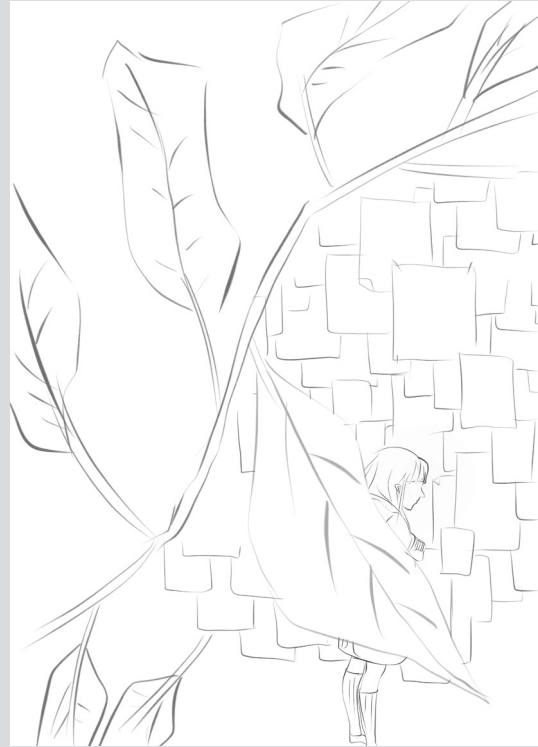
As shown (see Fig. 18), my initial storyboard is an eco-critical comic with a dystopian twist, for which I was inspired by Stefano Cardoselli's eco-anti-utopian black-and-white graphic novel. Producing eco-comics should primarily focus on the imaginative construction and conceptualization of a novel world. This approach entails moving beyond mere narrative retellings of existing real-world events and prioritizing the generation of original narratives that delve into the intricate analysis of the targeted ecological system (Rinella and Epifani 17). By adopting this perspective, eco comics can serve as potent vehicles for cultivating ecological awareness and promoting a deeper understanding of environmental issues.

I divided the eco-story into four chapters: it begins with the Blue-crowned Laughingthrush as the protagonist of a travel dream in which he meets five other friends who are also cherished birds. The second chapter focuses on their different habitat preferences, such as coniferous forests, broadleaf forests, tropical rainforest areas, and rocky regions.

Chapter 3



Chapter 4



(Fig. 19. Screenshot of eco-critical comic's storyboard by Ruiqi

In the third chapter (see Fig. 19), the Blue- crowned Laughingthrush realizes that it is in a dream world and the dream begins to collapse. Finally in Chapter 4, the real protagonist, a little girl, wakes up from the dream in which she could see beautiful birds and habitats which have, in reality, disappeared. All she has left are her paintings of birds in her hands and on the wall, a metaphor for her bird-loving characterization. The seemingly perfect state of the habitat at the beginning of the story is an illusion, where the protagonist sees the natural environment destroyed by humans through the eye of the birds. However in the visual representation, I imagined real habitats, vegetation in response to what the whole story is trying to convey, that the environment is being destroyed and that humans cannot live under a false peace.

In terms of color to guide the reader's emotions (see Fig. 20 and 21), I analyzed the use of real colors or fantastical colors. In my initial color attempts, the artwork was dominated by highly saturated reds and dark contrasting colors, as red was depressing, fantastical, disorienting, and tense, contrasting colors were used to create greater visual impact.

The emotional feeling of red and black illustrations can be complex. Red is often seen as a vibrant and passionate color, while black is seen as a powerful and sturdy color. When combined, they can create an experience that is full of tension and power. Red and black illustrations are often used in design to convey strong emotions and messages, such as tension, excitement, or danger. The use of red can raise feelings of excitement or urgency, while the use of black can add a sense of weight or authority. The combination of these two colors can create a striking visual impact that can capture the viewer's attention and evoke a strong emotional response. However, the emotional impact of red and black illustrations can also be influenced by the context in which they are used, as well as the cultural associations that people have with these colors. For example, red and black may be associated with different emotions in different cultures, and the use of these colors may have different connotations depending on the context. Ultimately, the emotional impact of red and black illustrations will depend on a variety of factors, including the specific use of color, composition, and content.



(Fig. 20. Color testing of the eco-story book in emotional red and black by Ruiqi Feng, 2022)



(Fig. 21. Color testing of the eco-story book in emotional red and black by Ruiqi Feng, 2022)

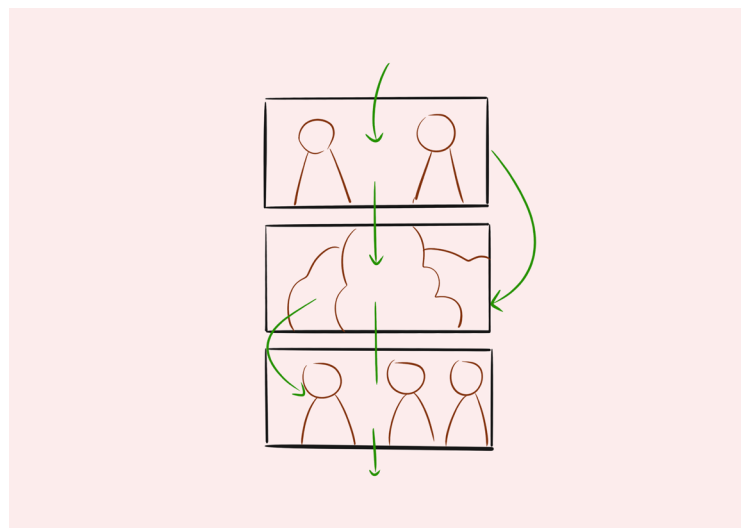
Key Critical Reflection Point

In the middle of the project, I realized that my initial visual expression form was not clear. It was problematic to reach the goal of making the viewer empathize with the birds' situations, and the structure and content of the story deviated from my original theme of eco-awareness. I needed to clarify and simplify my story and return to the theme around eco-awareness. The new strategy started with webtoon pictures as I decided the previous story is no longer applicable to show the theme.

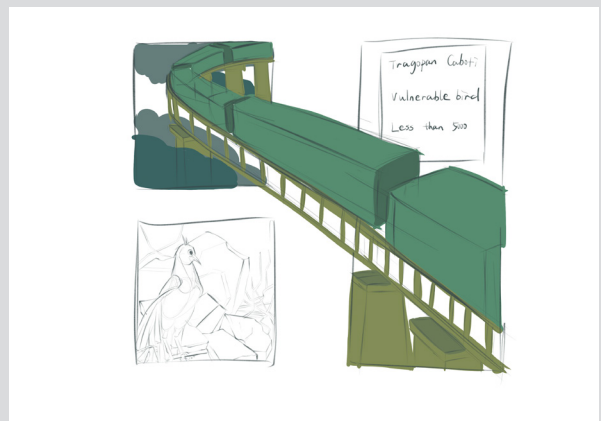
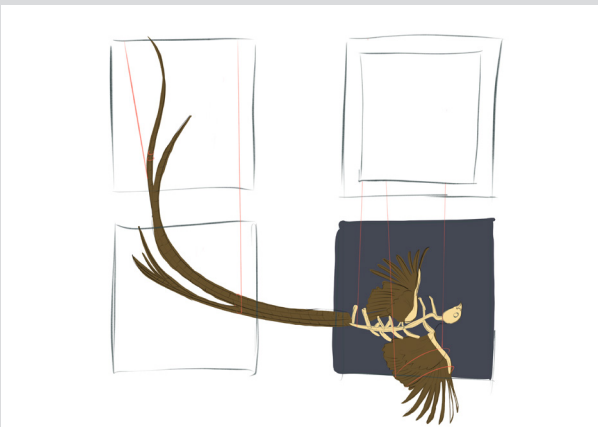
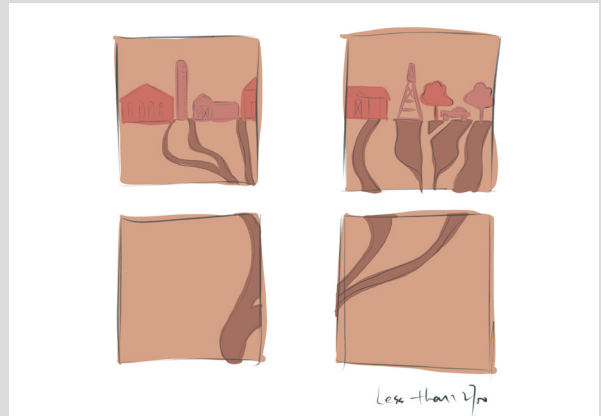
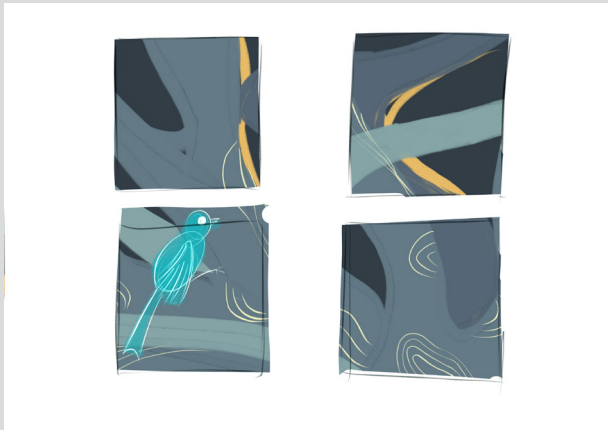
On reviewing current eco-awareness visual works in China, I found that there are not many in the form of webtoons and very few that can be used as artist precedent for the same type of work. In Chapter 2, I highlighted the importance and appeal of webtoons in the Chinese youth population, and considering my audience, I decided to experiment with a series of eco-awareness works using webtoons as a visual vehicle. In my later design research, I conducted experiments on the long-scrolled format of digital webtoons for effectiveness in expressing the phenomenon of eco-criticism.

In the newly generated webtoons, I directly show the gradual destruction of different bird habitats. For example, if a bird has been severely affected by deforestation, this bird is chosen to be the protagonist and the entirety of the webtoon story will revolve around the theme of deforestation and the chosen bird. My story strategy currently envisages that the protagonist will move from perfect elegance all the way down from the top of the picture, with the environment gradually deteriorating from grace, the bird gradually weakening, and finally, at the bottom of the webtoon, the reader will see, to their dismay, the bird's ruined home, its feathers no longer glorious and its body scrawny and frail. The key point of the story is the sense of contrast and fallout between the beginning and the end. Later, there are themes such as poaching and urbanization, each featuring one selected endangered bird, and each depicting different types of damage to the bird. The result is six long vertical webtoons that can be flipped on an electronic device. Readers will be able to recognize one endangered bird from each webtoon and empathize with the plight it faces.

In the first phase of storytelling content design through webtoons, I was inspired by Cesario and Nisi's experiment which is called "Engaging Teenage Visitors in Museums with Story-Based and Game-Based Strategies". They bring up the concept of the "Linear Approach" in the story-creating phase (5). Although this is a project related to the interaction of museum entities, this is still an artistic strategy associated with trying to uncover the visual approach that guides the teenagers' visual direction. The focus of this concept is on sequential access in the project, thus enabling visitors to follow a sequence to uncover secrets in the story. According to the article from Zhang, it can be found that Chinese webtoon tend to be flipped in order from top to bottom (see Fig. 22), and this is a graphic form that is popular among Chinese youth to read quickly (150). Most experiments and development of my graphic attempts have been carried out with this visual guidance concept of reading flow. It can be seen in my later project, the content of the webtoon is viewed in a top-to-bottom order with a clear continuity of graphics, while I reduce the presence of subtitles and text frames. I tried to develop a way of embedding information about the status of bird habitats situation into the images by continuously switching between colors, elements, and positions of the illustrated content, to convey the purpose of informal youth ecological awareness content (see Fig. 23).



(Fig. 22. Screenshot of showing the reading flow of a webtoon by Ruiqi Feng, 2023)



(Fig. 23. Screenshot of showing the reading flow of a eco-webtoon testing by Ruiqi Feng, 2022.)

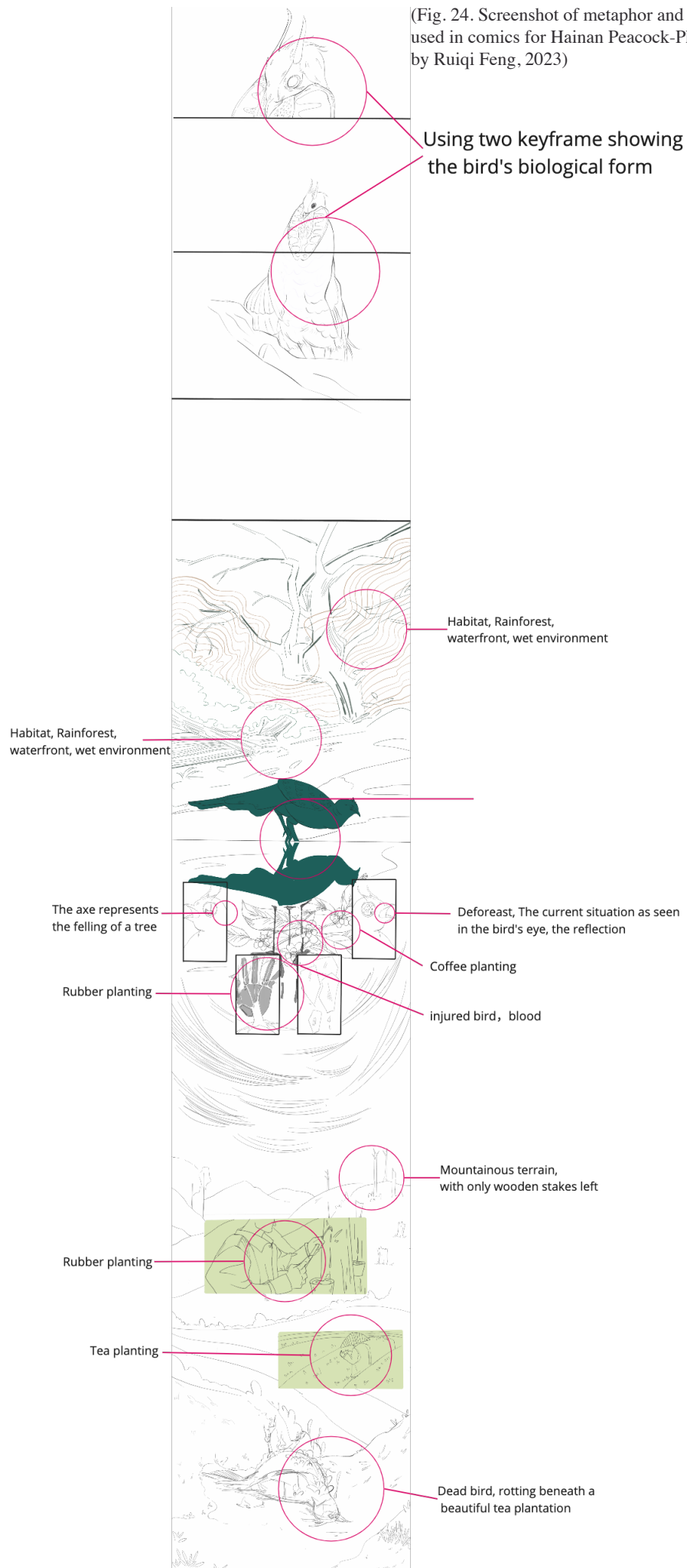
3.2 Analysis of Design Work Process

Metaphor Elements Analysis

As I analyzed earlier, I explored the webtoon as the format of scrolling the pages from top to bottom. In fact, the narrative of the six images does not follow one whole narrative story but rather an individual story strategy for each bird. This compresses the life of the bird through a continuous downward transition of images into a pessimistic ending that begins with a perfect natural environment, which then flies through habitat fragmentation, human factors of destruction, and eventually turns to extinction. I believe that this thematic structure conveys the plight of the birds more clearly to the reader than the original story content.

Based on the previous review of habitat conditions and the anthropogenic destruction of birds, I explain the meaning of each metaphor in turn, from top to bottom, as shown in the following figures

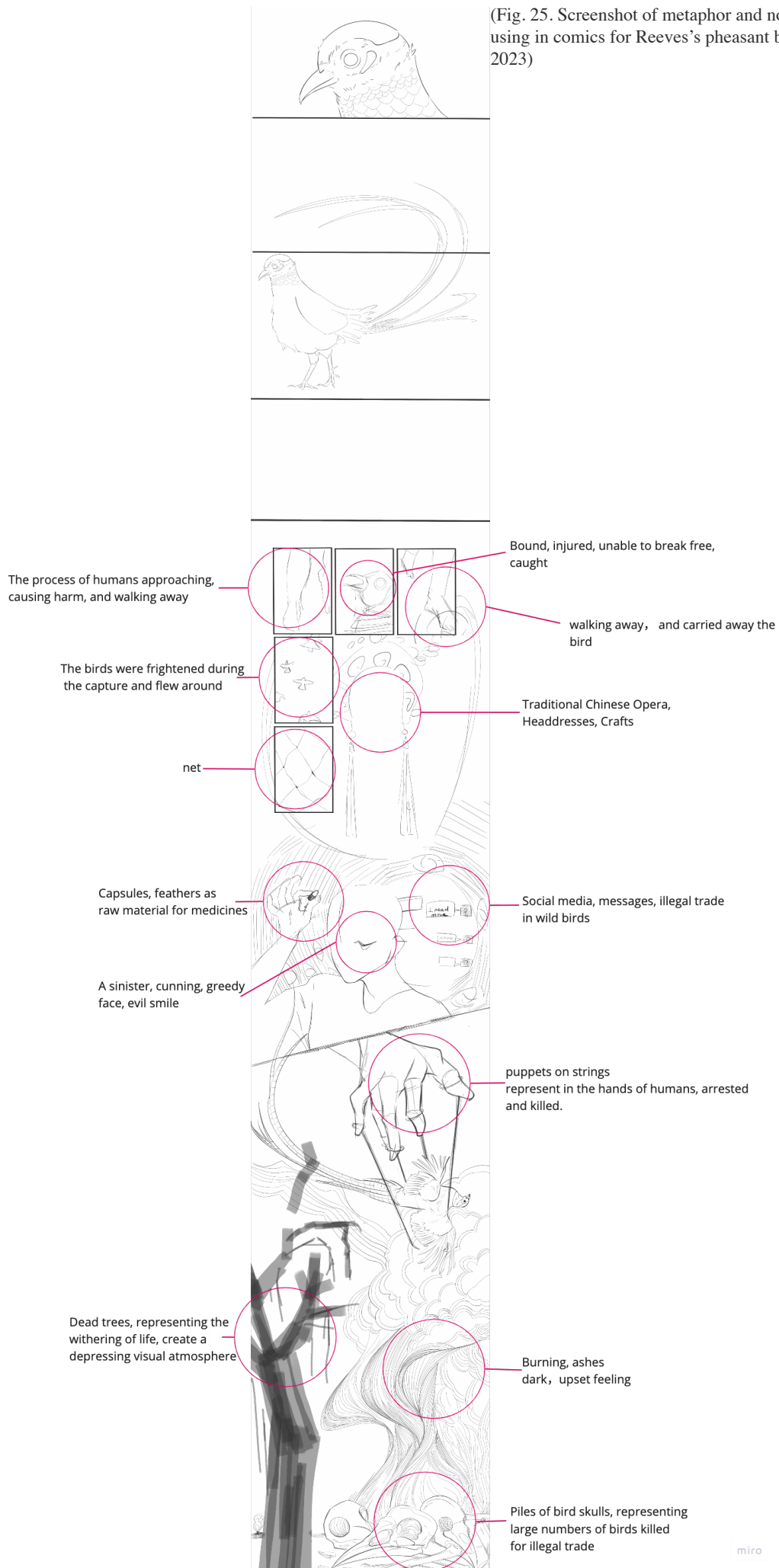
(Fig. 24. Screenshot of metaphor and nonverbal elements used in comics for Hainan Peacock-Pheasant wbbtoon by Ruiqi Feng, 2023)



Webtoon for Hainan Peacock-Pheasant

I first use two frames to show the ecological appearance of the Hainan Peacock-Pheasant, giving the viewer a clear idea of which bird the webtoon is based around. According to the previous summary, Hainan Peacock-Pheasant mainly inhabits the tropical rainforest areas of Hainan province. Therefore, I start with a visual representation of the tropical rainforest environment (see Fig. 24) with a high vegetation cover and rich water quality, the landscape is a product of a humid environment. The dead branches of trees falling into the rainforest stream in the left corner are another metaphor for the rainforest environment. Moving on, I divide the image by the surface of the water, a visual shift from a beautiful ecology to a habitat loss. I want to show above the surface of the water the unspoiled primeval forest, where the birds used to live. When the Hainan Peacock-Pheasant is standing on the surface of the water and looking down, what it sees is the reality. Looking down the page, here I use four boxes, each of which has a different content inside. Looking from left to right, in the first frame the bird's face is painfully frightened, with its mouth wide open perhaps howling loudly. You can see the reflection of an axe in her eyes, which suggests that she is seeing humans cutting down the trees in her habitat. Next to this box is a withered tree pole with the shadow of a human hand looming behind it, a comment on human deforestation. To the right, there is broken glass in the frame, this is a metaphor to show that the problem of habitat fragmentation is occurring and seriously endangering the Hainan Peacock-Pheasant's habitat conditions. In the frame on the far right, I have given a brief overview of the present state of deforestation, as a number of stakes on the hillside can be seen representing the destruction of forest and vegetation. The four frames are then followed by a depiction of the shape of the coffee bean, as Hainan province is the largest producer of coffee beans in China. The establishment of coffee plantations being one of the major causes of the destruction of Hainan's tropical rainforests. When zoomed in, you can observe the element of flowing blood to the border as a metaphor for the cruel fact that the deforestation is causing Peacock-Pheasant's death. Then scrolling down further, large areas of devastated forests are seen, deepening the imagery of deforestation. I also illustrate tea plantations and rubber planting in two frames, as the degradation of the forest from tea cultivation is also a serious issue.

(Fig. 25. Screenshot of metaphor and nonverbal elements using in comics for Reeves's pheasant by Ruiqi Feng, 2023)



The process of humans approaching, causing harm, and walking away

The birds were frightened during the capture and flew around

net

Capsules, feathers as raw material for medicines

A sinister, cunning, greedy face, evil smile

Dead trees, representing the withering of life, create a depressing visual atmosphere

Bound, injured, unable to break free, caught

walking away, and carried away the bird

Traditional Chinese Opera, Headdresses, Crafts

Social media, messages, illegal trade in wild birds

puppets on strings represent in the hands of humans, arrested and killed.

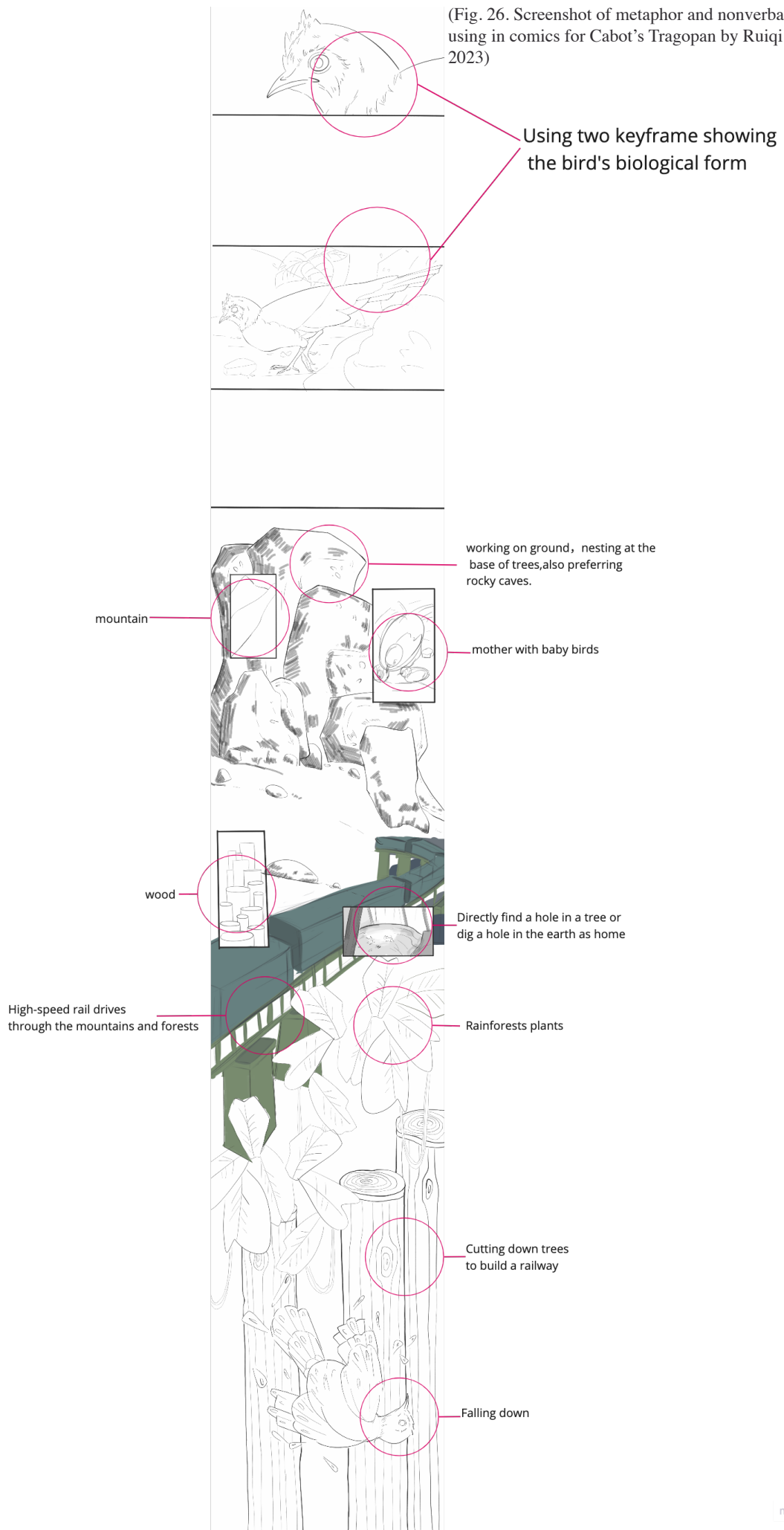
Burning, ashes dark, upset feeling

Piles of bird skulls, representing large numbers of birds killed for illegal trade

Webtoon for Reeves's pheasant

For this webtoon (see Fig. 25), I have also used a frame as an abstract fragmented visual interpretation of continuous human behavior. Some interpretations have been made in the previous section for abstract sequential art and will not be repeated here as this piece will show a deconstruction of the passing of time and sequential narrative; it means that the two frames represent the arrival and departure of humans. In the middle of them is a Reeves's pheasant in the frame, bleeding from the corners of its mouth and staring blankly at the sky while being bound by humans restricting its freedom. The two frames below, the upper containing a Reeves's pheasant flying in various directions, are a reflection of the behavior of the birds when they are frightened when humans come to their habitat and all tranquility is shattered, as they begin to flee their original home. The hunting net below is a metaphor for human hunting behavior, as one of the primary causes of victimization of this bird is poaching and illegal trade. Behind the five frames is a traditional Chinese opera costume, and you can see that the hat is decorated by the obvious two very long feathers, which are the tail feathers of the Reeves's pheasant. The production of traditional crafts is one of the reasons why it is hunted in large numbers in the wild. Immediately after that, I drew a section with swirling lines as a background, and you can see that in these arcs I added elements of a mobile phone chat app to represent that the poachers are making an illegal transaction. In front of the background is a human holding a pill with a sinister and evil grin on his face. The intention of drawing the pill comes from the reliance on the use of the Reeves's pheasant for the preparation of certain traditional Chinese medicines. Throughout this small part of the illustration, I was trying to show the damage that human greed has done to them. A human hand with a tow rope attached to its fingers, holds a Reeves's pheasant in bondage. For this metaphor, I was inspired by string puppets, and I envisioned humans doing as much harm to them as they wanted. However, when I communicated to viewers from different cultures, the feedback I received was that the puppet mainly represented an act of control, meaning that this part would feel like a human was coercing the bird into doing something against its will. So in subsequent iterations, I changed the element of the tow rope to a birdcage to represent human oppression, which more accurately and clearly represents the Reeves's pheasant's plight. At the bottom, you can see that I used dead wood in the foreground as a metaphor for deforestation, while below the bones of the bird burning in flames and the smoke billowing upwards in the air represents that everything is worsening. I would like to express that their plight continues and what humans are doing to them is far from over.

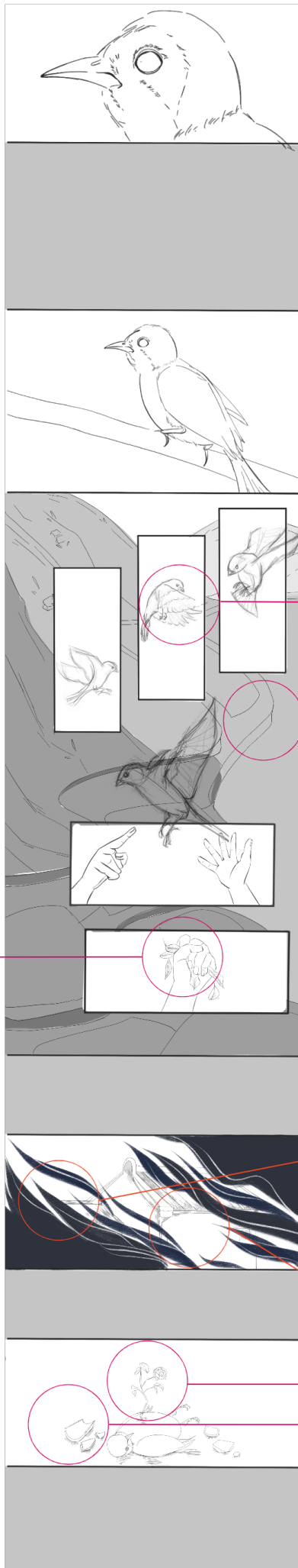
(Fig. 26. Screenshot of metaphor and nonverbal elements using in comics for Cabot's Tragopan by Ruiqi Feng, 2023)



Webtoon for Cabot's Tragopan

For this webtoon (see Fig. 26), below the two frames of the ecological appearance of the Cabot's Tragopan, I have used the metaphor of rocks to represent the anthropogenic alteration of the habitat loss of the Cabot's Tragopan, which originally grew in mixed evergreen broadleaf and coniferous forests with lush vegetation. However, due to human destruction of the forest, the vegetation has thinned out and the bare ground gradually exposed. In the frame on the left-hand corner, I have drawn the mountainous terrain as the Cabot's Tragopan is also a mountain-inhabiting bird species. The frame in the right corner is in an emotional expression tool to present a mother bird nurturing her baby bird. I used this frame to elicit empathy in the viewer. Afterward, scroll down and you will see that I have drawn a high-speed train, because the railway system is very well developed in China, such as high-speed trains, subways, and light railways. They are interspersed into cities and mountainous areas, which is one of the most important means of transport for people to travel in their daily lives. The massive construction of railways is one of the major reasons for the decline of this bird population. Above the train on the left is a frame of wood to become a metaphor for deforestation in Cabot's Tragopan habitat. Next is a frame to describe the habitat to show the birds living preference; they like to directly dig a hole on the ground as their shelter. Beneath the railway is a visual representation of a broadleaf forest, which is also a depiction of Cabot's Tragopan habitat features. Finally scroll down the bottom, and there is a representation of the death process of the Cabot's Tragopan, its feathers scattered in the air is a metaphor for the loss of life. At the same time, behind it is a re-creation of the deforestation by humans, which is a combination of images that represents the actions of humans that ultimately lead to the Cabot's Tragopan's death. In the final outcomes, only the frame in the upper left corner remains because it makes the graphic layout more clear and clean. The content highlights the harm caused by the development of high-speed rail and industry.

(Fig. 27. Screenshot of metaphor and nonverbal elements using in comics for Blue-crowned Laughingthrush by Ruiqi Feng, 2023)



bird's flying path

Rice cultivation, terraces

Humans are too close to birds causing their death

The black mist, the original view of the area, is beautiful with its mist, and the dark black houses are a symbol of the destruction of the environment

This is an architectural style unique to this region

Flower from wuyuan

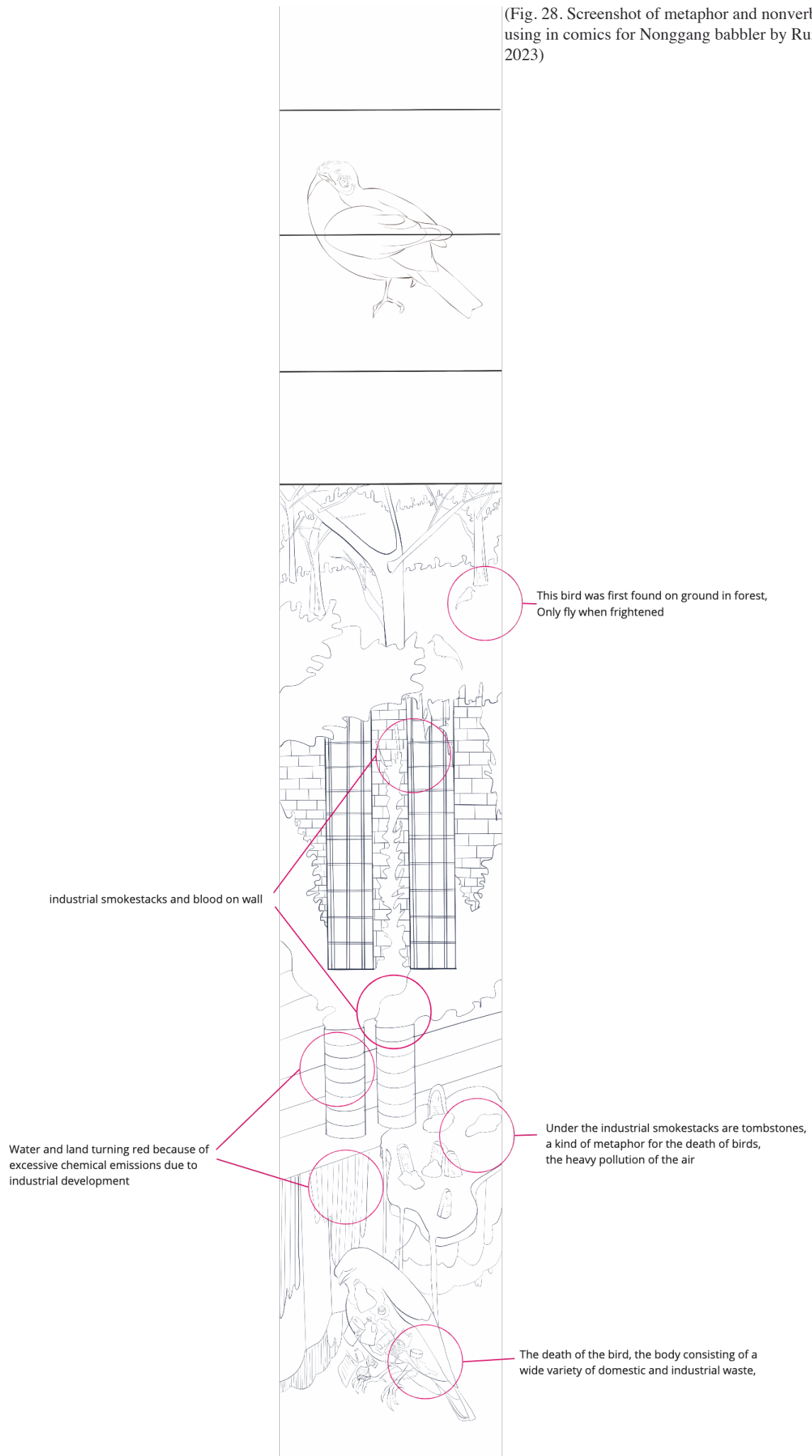
Tile from wuyuan

Webtoon for Blue-Crowned Laughingthrush

The Blue-crowned Laughingthrush (see Fig. 27), was the first instance where I began to experiment with webtoons, and my research on webtoon forms and content was still in its early stages. I used well-defined contour lines and frames to split the comics into connected split-screen frames, unlike the other scrolling webcomics I analyzed earlier these had less well-defined contour lines and frames. However, in the subsequent iteration section, I have unified this webtoon with the rest of the webtoons' style and reduced the use of dividing boxes.

I have condensed this story into five frames. Firstly, looking at the three boxes above from left to right, this is the flight path of this Blue-crowned Laughingthrush, which then turns and flies downwards into the environment of the human. These three frames are a visual representation of the bird's preference to live in the vegetation around the human habitat, and the fact that humans approach their nests due to their curiosity about this beautiful bird, eventually causing them to be forced out of their habitat and causing their population decline. In the two frames below, this bird comes close because it is friendly to humans, however, the bird's feathers can be seen clutched in the hands of humans which is a metaphor for their death caused by human activities. In the background is a depiction of the Wuyuan countryside landscape, as Wuyuan is the only habitat for Blue-crowned Laughingthrush. I have drawn their representative landform: the terrace, which is a type of farmland, this leads down to the dark smoke enveloping the village, as the villages are often surrounded by white mist which is a characteristic representation of the area. However, here I used dark mist to create a depressing atmosphere, which represents a change in content and emotion that is pessimistic. At the bottom is a dead Blue-crowned Laughingthrush with a flower from its habitat growing on its chest, and it is a metaphor for remembering a vanished habitat from the bird's point of view. Finally, beside the bird are broken tiles as the architectural feature near its habitat is a type of old Chinese house with a tiled roof.

(Fig. 28. Screenshot of metaphor and nonverbal elements using in comics for Nonggang babbler by Ruiqi Feng, 2023)

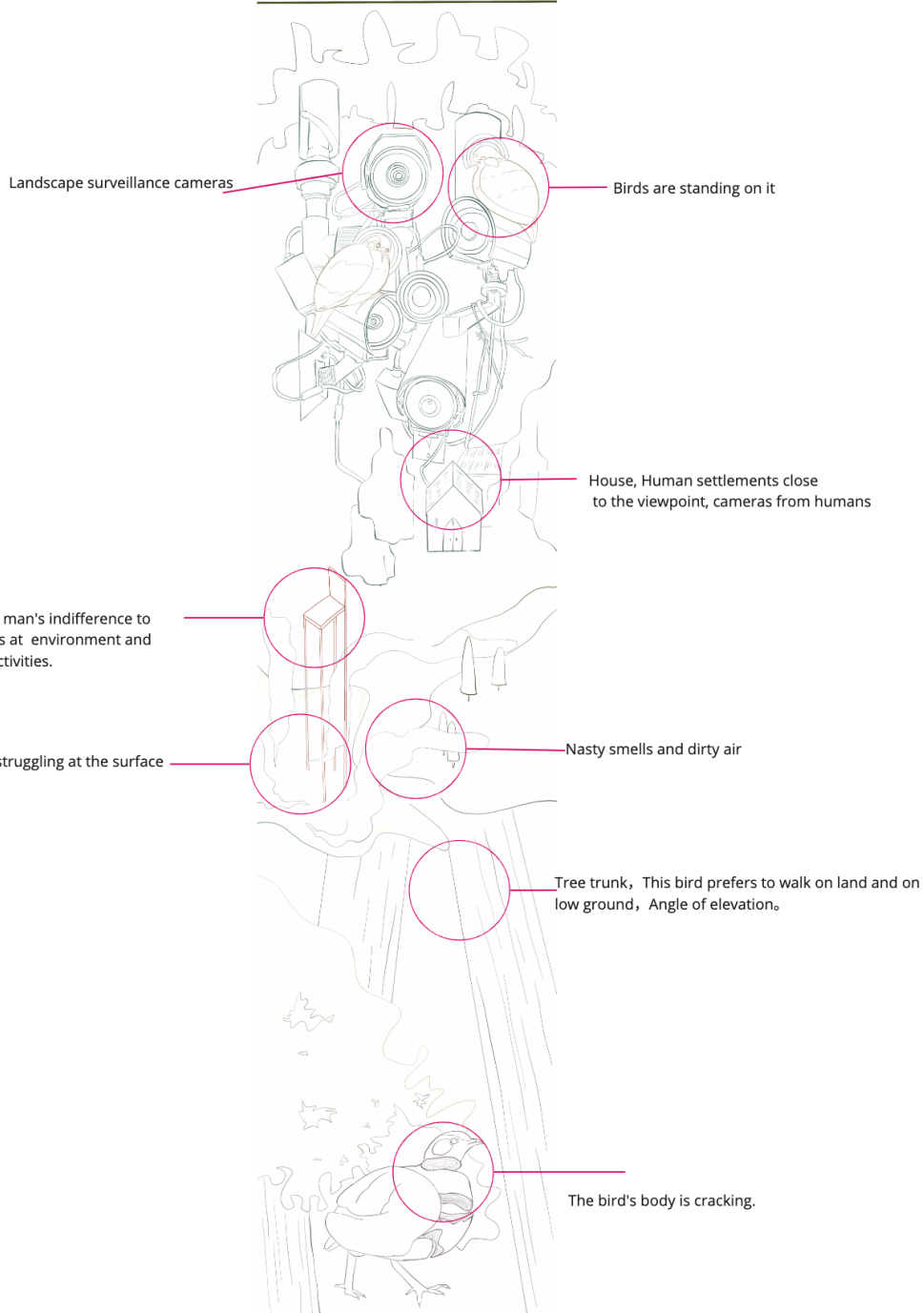
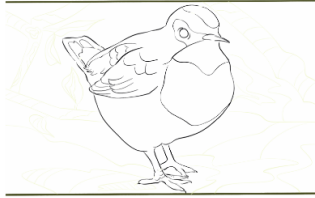


Webtoon for Nonggang babbler

Figure 28 depicts the plight of the Nonggang babbler. In this webtoon, I wanted to focus on pollution and the negative impact of industrial development on the Babbler's habitat. Firstly, in the top frame, this bird is shown living mainly in the forest and spending a lot of time on the ground and flying short distances only when frightened. Then you can notice a wall with a window and a light on as the bird is affected by light pollution. On the wall are graphics that can be seen as both blood and industrial waste. The blood is a metaphor for the large number of birds that die each year from flying into the facades of buildings due to light pollution. Also, industrial waste is connected to the chimney below.

The image then is seamlessly transformed into the land that is being polluted by industrial effluent. I have also drawn gravestones beneath the chimneys, which represent the large number of birds that are dying as a result of environmental pollution. Finally in the bottom is a dead bird with its body full of a wide variety of domestic and industrial waste, a metaphor for environmental damage caused by humans which causes birds to die. In the final product I was inspired by the land and water that had turned red due to excessive chemical elements and I removed the graphic of the vegetation under the chimney, as I felt it was inappropriate to depict a beautiful, vegetated environment in this context.

(Fig. 29. Screenshot of metaphor and nonverbal elements using in comics for Sichuan Hill-partridge by Ruiqi Feng, 2023)

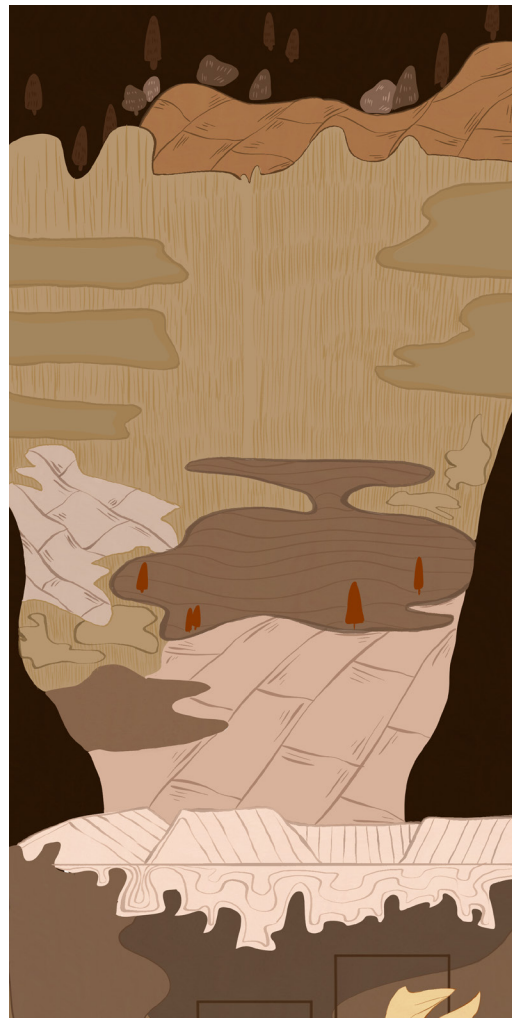
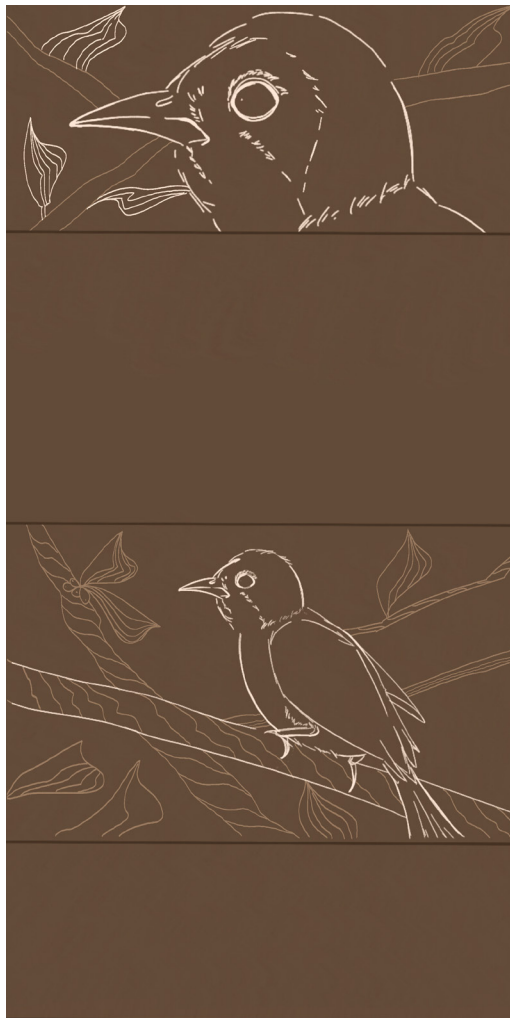
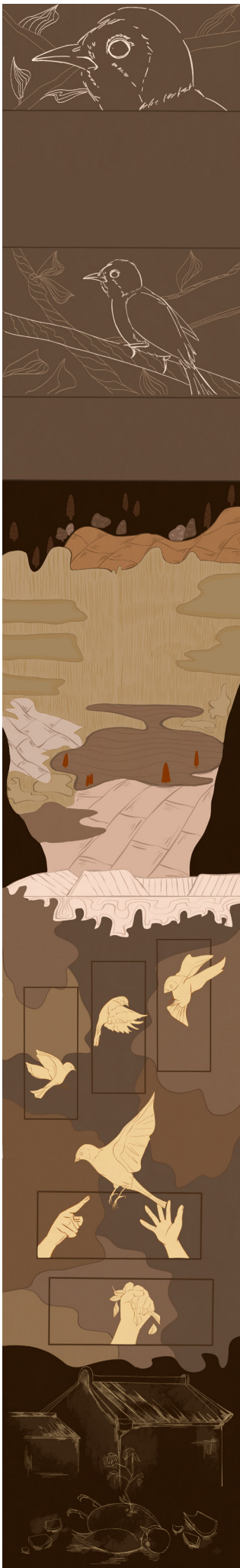


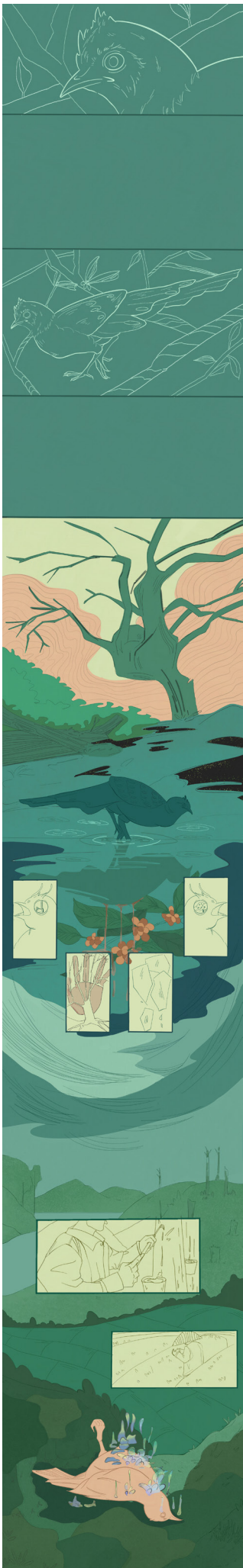
Webtoon for Sichuan Hill-partridge

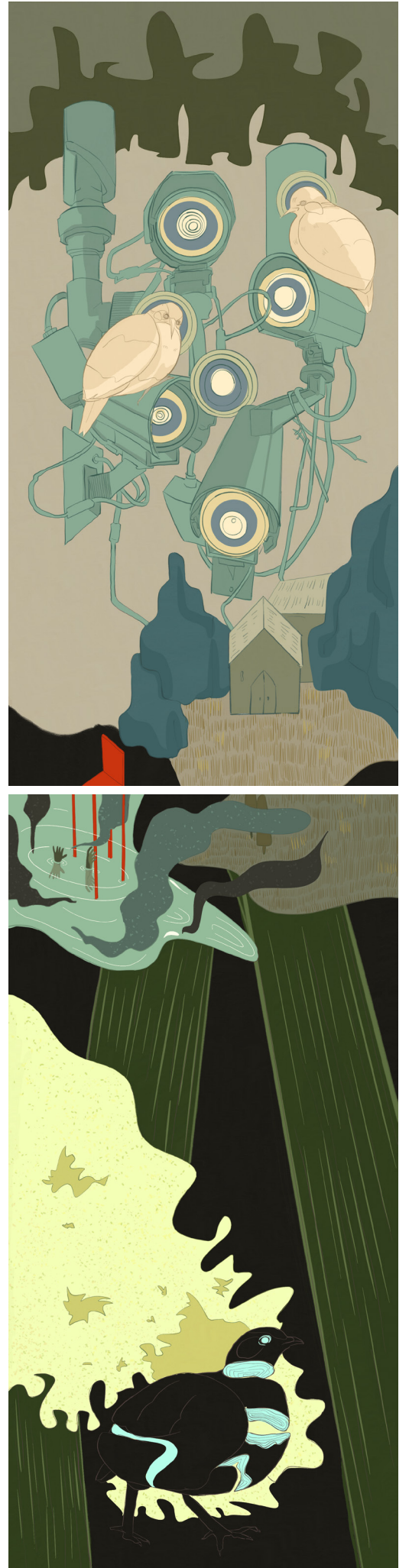
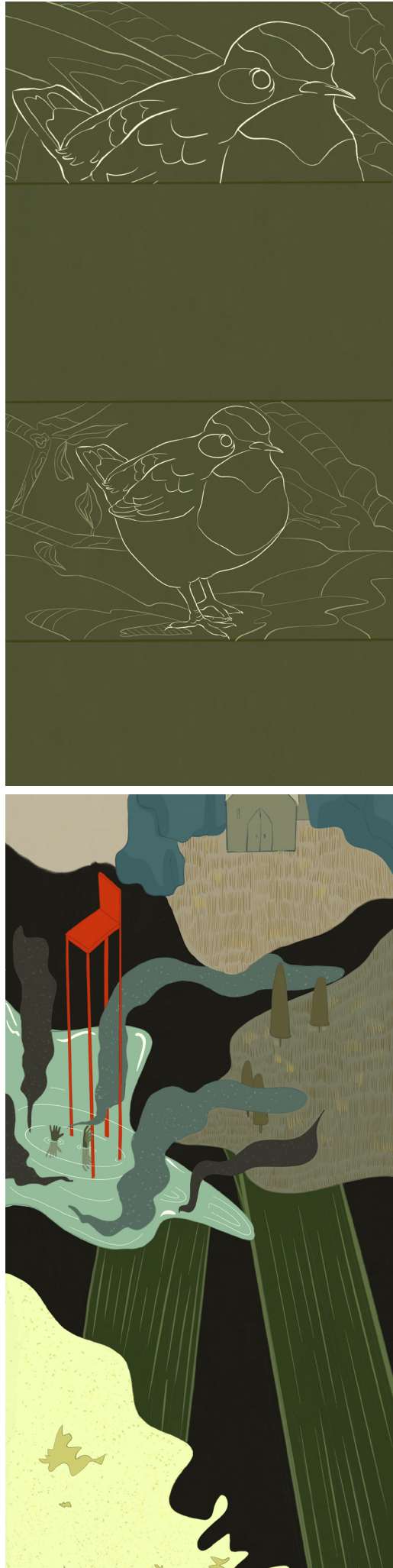
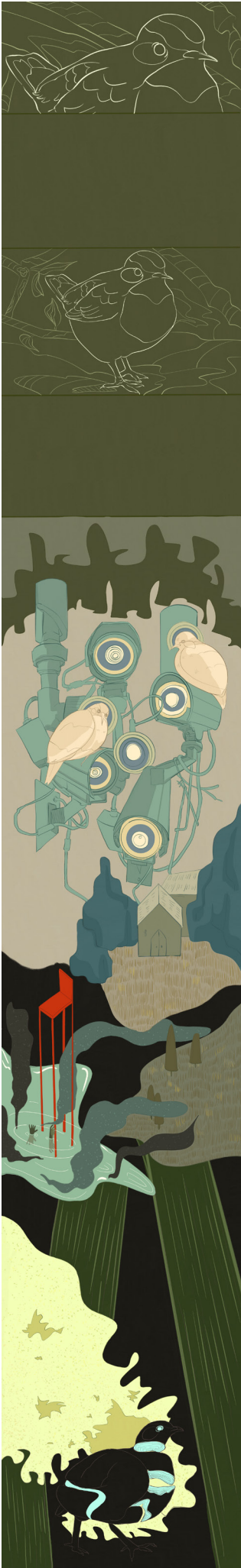
The Figure 29 depiction is for the Sichuan Hill-partridge. When I reviewed literature of this bird's habitat conditions, the most influential inspiration to me is that the Sichuan Hill-partridge mostly lives in the rainforest in Yunnan province, China, an area which is being challenged by tourism development. I started by describing the status of Sichuan Hill-partridge when habitats were transformed into human tourist attractions. On the top part are landscape surveillance cameras as I was imagining what would happen when habitat loss occurs. I wanted to display to viewers that birds have to stand on camera because the trees they relied on were replaced by utility poles because of habitat fragmentation and tourism development. Below the camera graphic is a house connected by wires, which is a metaphor for the damage coming from humans.

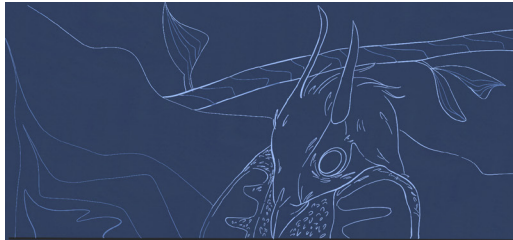
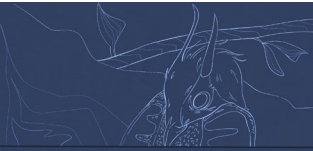
Then in the middle part is a highchair on the left. This is a metaphor for man's indifference to environmental pollution as you can find that under the chair there is dirty water. I wanted to convey that humans stare at the environment and birds are affected by human activity but do nothing about it. In the water pollution part are hands struggling at the surface. While it may appear that water pollution is destroying birds' habitats, I would like to express that it is actually not only the creatures but also the future generations of humans who will suffer from the effects of pollution. On the right are nasty smells and dirty air coming from water pollution. I drew tree trunks below the water pollution part. This bird prefers to walk on land and on low ground, therefore, the tree is presented from an elevated viewpoint. Finally, at the bottom of the canvas, the Sichuan hill-partridge's body is cracking, and this is a metaphor that the bird has received an injury from pollution.

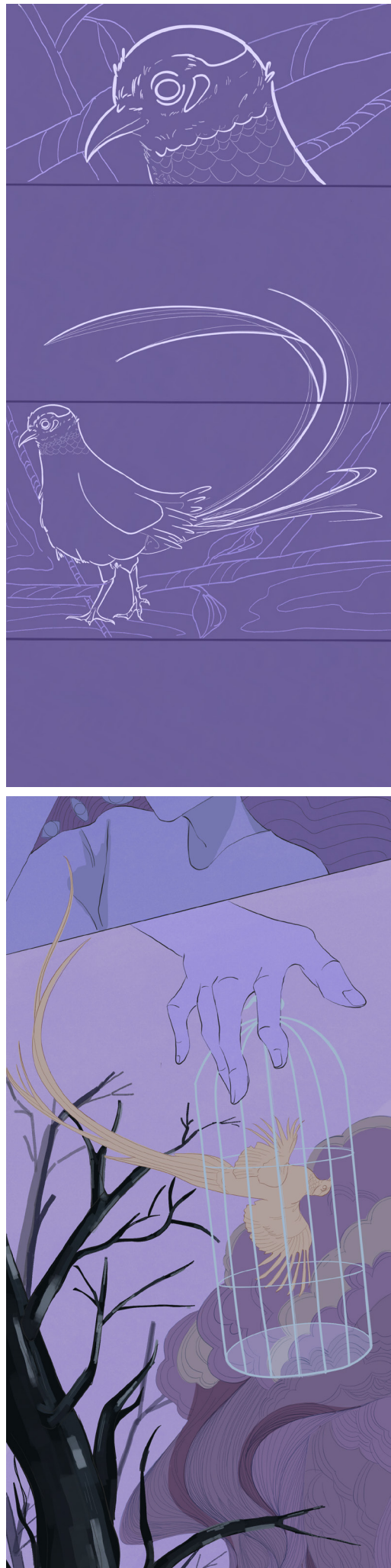
Design outcomes

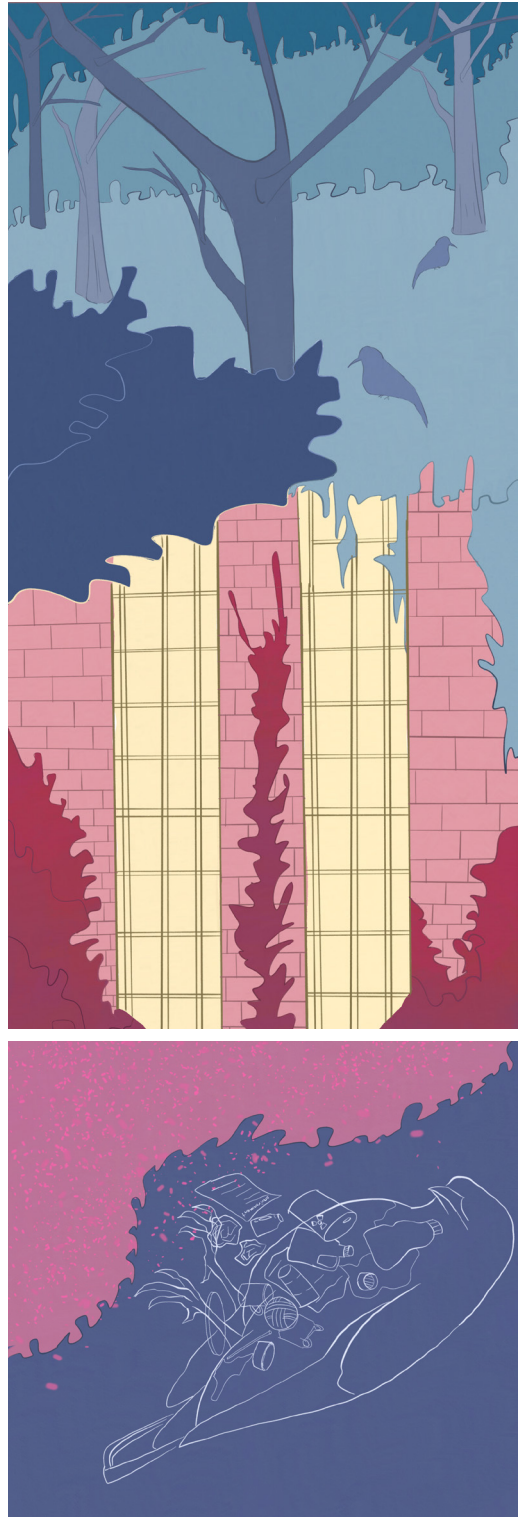












Chapter 4. Conclusion

This project explores graphic formats with aims of engaging and raising eco-awareness among young teenagers. With increasing environmental concerns, there is a growing need for sustainable design practices in the field of bird conservation. Webtoon, as the mainstream reading media for Chinese youth, provides a graphic media for developing artworks on the theme of ecological conservation.

Upon careful self-reflection of my initial personal responses and practice, I came to the realization that the focal point of my project revolved around “eco-awareness among Chinese teenagers”. This pivotal concept compelled me to consider the preferences of my target audience and delve into the environmental challenges of endangered birds in China. The review of literature, encompassing a survey of rare bird conservation and habitat loss issues, and a discussion of narrative graphic form, discerns notable gaps within current Chinese teenagers’ eco-awareness education as well as opportunities for the new media-webtoon/eco-graphic narrative to address these gaps. I explored the role of metaphor in comics related to ecological themes so as to achieve an engaging response for young people. This design project experimented with the use of metaphor elements associated with the endangered birds’ cases, and in reflection see the potential in my work as a key method, enhancing the depth and effectiveness of my research.

This project, rooted in practical application, has presented numerous challenges and provided a transformative opportunity for my growth as a bird conservation campaigner and a graphic artist. Through engaging with design practice and reading, I have been able to expand my skills and expertise, honing my abilities in advocating for bird conservation and refining my artistic talents in the graphic field. This project allows me to acquire valuable knowledge and experience within these interconnected disciplines, at the same time, it awakened my interest and motivation in the field of eco-awareness.

In terms of design challenges, this is, essentially, in the frame division and layout of the canvas. I need to think about how to make the webtoon reading flow smoothly and clearly. Selection and use of metaphor, and how to make the whole webtoon graphic content fit the topic, were all challenges throughout this project. Nevertheless, it is gratifying to ascertain that the ultimate outcome has made notable strides in main concerns, with aims of yielding a favorable impact on the overarching theme of endangered bird conservation.

4.1 Contribution and Future Work

The webtoons for birds are based on the Red List of Chinese Birds, six species of birds that are in dire need of public attention and protection and whose plights are mainly caused by human activity. I want to express the damage that humans have done to birds to resonate with teenagers and other groups in society. This design research has the potential to become a call to action in future development. The six webtoons are just the beginning of ecological graphic designs. I hope more and more endangered birds can be saved through these design strategies.

In future developments, the webtoon format could be expanded with multidisciplinary skills, i.e., the content of the graphic could be associated with the audio of birds and the natural environment when being read. In addition, this could be combined with animation or video, which could enhance the webtoon and play an important role in promoting public awareness of endangered birds. The eco-awareness webtoon also could be posted on animal conservation websites or printed as posters, in reaching the goal of call for action among the public to protect the birds and the environment

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List of Images

Figure 1

Vincent Wang. Photo of Sichuan Hill-partridge. *eBird*, 2020. <https://ebird.org/species/sicpar1>

Figure 2

Chun Fai Lo. Photo of Cabot's Tragopan. *eBird*, 2017. <https://ebird.org/species/cabtra1>

Figure 3

Chun Fai Lo. Photo of Cabot's Tragopan. *eBird*. <https://ebird.org/species/cabtra1>

Figure 4

Photo of Hainan Peacock-Pheasant, *CAATS*, 2017. <https://www.catas.cn/contents/15/157872.html>

Figure 5

David Beadle. Photo of Reeves's pheasant, *eBird*, 2017. <https://ebird.org/species/reephe1>

Figure 6

Gary Nunn. Photo of Reeves's pheasant, *eBird*. <https://ebird.org/species/nonbab1>

Figure 8

Aman. Long scrolled webtoon: Birds from North and South by Aman, 2018. Reprinted under permission of less than 10% of graphic novel was reprinted according to Copyright Act 1994. <https://weibo.com/5347613156/4308527889833606>

Figure 9

Stevan Zivadinovic. The dynamic story: Hobo Lobo of Hamelin, 2011. <http://hobolobo.net/>

Figure 10

Paul Auster, et al. City of Glass: The Graphic Novel, 2004. Reprinted under permission of less than 10% of graphic novel was reprinted according to Copyright Act 1994.

Figure 11

Linnea Stelter. The comic: Stages of Rot, 2018. Reprinted under permission of less than 10% of graphic novel was reprinted according to Copyright Act 1994.

Figure 12

Rosaire Appel. Your face, 2018. Reprinted under permission of less than 10% of graphic novel was reprinted according to Copyright Act 1994.

Figure 13

Shane Pickett. Three Faces of the Sun, Museum & Art Gallery of the Northern Territory, 1986. <https://www.magnt.net.au/>

Figure 14

Shane Pickett. Abstract Polyptych: Calling for Rain, the Art Gallery of Western Australia, 2007. <https://collection.artgallery.wa.gov.au/objects/18123/calling-for-rain-the-wanyarang-suite>

Figure 15

Cody Coltharp. The Pale. <https://www.imageandnarrative.be/index.php/imagenarrative/article/view/1384>

Figure 16

Yoon Liu. The Next Spring, 2021. Reprinted under permission of less than 10% of graphic novel was reprinted according to Copyright Act 1994. <https://weibo.com/1869689843/4643702771811341>