Original paper

How an age-old photo of little chicks can awaken our conscience for biodiversity conservation and nature protection

Quan-Hoang Vuong, Minh-Hoang Nguyen

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Abstract. *When discovering artifacts from ancient periods, humans often experience a deep and ineffable emotion. While studying the kingfisher as a symbolic representation of nature to restore the nature-human connection, we accidentally unearthed a valuable antique artifact in the journal: a picture of kingfisher taken nearly a century ago. The artifact was displayed in "Life History of the Amazon Kingfisher," written by Alexander Skutch and published by The Condor (1957). Inspired by the picture, we wrote this paper*

to discuss the humanistic value of nature-related science, art, painting, and literature for humanities in the age of climate and biodiversity loss crisis.

> Kingfisher knows he is quite handsome, so he often admires himself in the reflection of the pond. […] However, due to his rather eccentric personality, Kingfisher rarely communicates.
>
> In "Fragile Pride"; *Wild Wise Weird* (2024)

Sometimes, humans experience a profound and indescribable emotion when they unearth artifacts from ancient times. Scientific disciplines like paleontology and archaeology reflect our curiosity and desire to understand the natural world's past and evolutionary history. Physics also invests significant effort in exploring the origin and evolution of the universe. In social life, the study field of humanities also has journals about art history, such as the *Art History* or *Journal of Art History*. Through our shared thoughts and efforts to restore the humanities for the cause of ecological and biological conservation, we have discovered a picture of kingfishers taken nearly a century ago by A. F. Skutch in *The Condor* (Skutch, 1957). Obtaining such a vivid, genuine, and emotionally evocative image was no easy task because, for the photo to be taken, it requires the preservation capability of the scientific publication system, the skills of the photographer, the existence of the camera at the time, and most importantly, the occurrence of the precious moment in nature. This image has the power to stir the thoughts and awaken the conscience of the viewer, emphasizing the importance of a vibrant environment (see Figure 1).

1. "Naive little chicks in the kindergarten"

Unearthing this seemingly buried image, obscured by the passage of time and overshadowed by numerous contemporary interests, was not obvious and straightforward. First, this search was a continuation of our long-standing interest before, during, and after our article on connecting humanities to the ecological conservation mission through the image of kingfishers appearing in *Pacific Conservation Biology* (Vuong & Nguyen, 2023). The author (QHV) has had a deep connection with nature, especially birds since he was at a very young age. Such a connection has turned nature into a valuable source of inspiration and contemplation for his scientific activities. His social commentary book was even

written with a Kingfisher as the protagonist character (Vuong, 2024). Due to this special interest, he often feels attracted to information related to kingfishers, whether it is scientific studies, literature, arts, paintings, photos, or lived experiences (Nguyen, 2024). It was this urge that led him to wander through the vast sea of information on the Internet, where he came across the remarkable image hidden in a study written in 1957 by A. F. Skutch. This is a prime example of serendipity—a conditional process shaped by one's mindset and environment, which allows for the detection and capitalization of unexpected information's values (Vuong, 2022). In other words, if Skutch's study had not been well-preserved and circulated through the Internet, and if the author had not had an interest or passion for kingfishers, this serendipitous discovery would never have occurred.

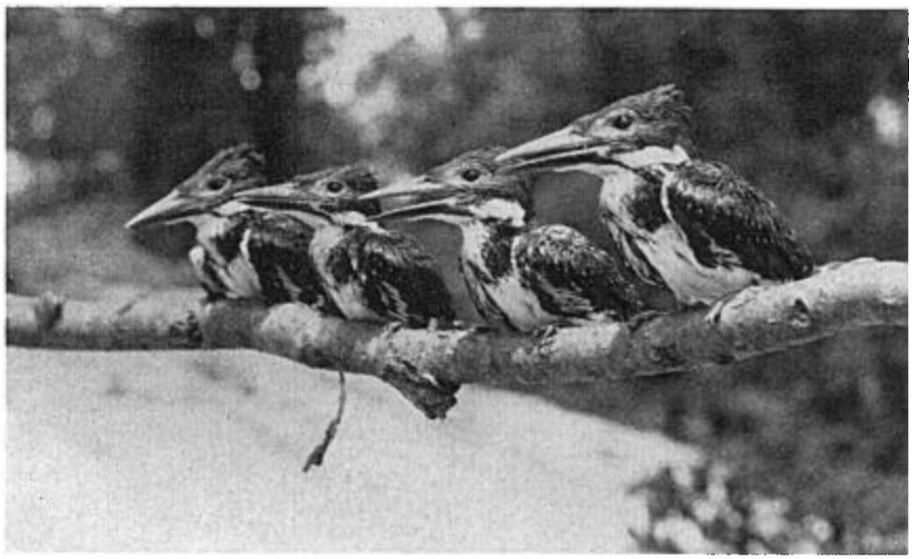

Fig. 3. Nestling Amazon Kingfishers, 18 days old; near Tela, Honduras, May 24, 1930.

Figure 1. "Naive little chicks in the kindergarten," from Skutch (*The Condor*, 1957).

Upon careful examination of the photograph, the image's name, as mentioned earlier in the caption of Figure 1, almost immediately comes to mind without the need for any linguistic refinement. The title of this 1930 photograph reflects a few details that can evoke emotions. First and foremost, one can easily recognize the innocence of the Amazon kingfisher chicks. At 18 days old, the world is

entirely new and curious to them. Their eager expressions are reminiscent of children eagerly awaiting birthday cake from their family. It can be assumed that the birthday cake for these chicks is much simpler: food. At this age (18 days), they are not yet capable of hunting for food on their own. Finally, the term "kindergarten" emerges from the way the four kingfishers are lined up neatly on the branch. All four exhibit a very "uniform" appearance, but it is entirely natural, reflecting a form of social interaction that is very "non-kingfisher" characteristic (The reason for saying "non-kingfisher" will be clarified later.)

This image, along with a couple of other images in A. F. Skutch's 13-page article published almost a century ago, transcends mere biological life cycle descriptions or descriptions of kingfisher characteristics in adulthood. Although scientific information about kingfishers is crucial for enhancing our understanding of the species and developing effective conservation strategies, its monotonous language—laden with technical terms, jargon, and assumptions—does little to foster meaningful connections or inspire imagination in people's minds, either towards the species specifically or the natural world in general (Vuong & Nguyen, 2024a, 2024b). Instead, the images prompt profound reflections on the value of humanity in the battle for habitat conservation and the quest to reconnect people with the natural world harmoniously and co-existentially. This is particularly significant as human activities directly impact the loss of wild natural habitats, greenhouse gas emissions cause temperature fluctuations and disturb wildlife's long-standing growth conditions, and destructive exploitation of nature still occurs at an alarming rate (Armstrong McKay et al., 2022; Cooke et al., 2023). Species sensitive to environmental changes, such as the kingfisher, face an elevated risk of extinction due to temperature fluctuations and alternations in growth conditions, particularly among critically endangered species (Barik et al., 2022; Shifa et al., 2023; Tyler & Younger, 2022).

2. The quest for humanistic values for the cause of biodiversity and nature protection

Limiting the impacts of "anthropogenic stressors" remains challenging despite increasing awareness of its urgency among scientists and the general population. One reason is the difficulty of translating thoughts and awareness into practical action due to the persistent anthropocentrism among the public (Vuong & Nguyen, 2024a). The anthropocentric perspective positions humans as the central entity on the planet, viewing nature merely as "nothing more than matter-in-motion" without inherent values (Oelschlaeger, 1991). This mindset leads

many to see humanity as superior to the natural world, prioritizing human needs and desires over the preservation of nature and environmental sustainability (Harding, 2019). Influenced by such beliefs, some even go so far as to deny the reality of climate change and the crisis of biodiversity loss (Almiron & Marta, 2019; Harding, 2019; Lees et al., 2020).

However, there is an observation to be made. If someone has been moved by the beauty of nature and has come to appreciate the value and beauty of life in the natural world, they are more likely to have sown the seeds of humanistic values that align with the quest to seek solutions to protect nature and preserve biodiversity.

It can be stated as follows: The earlier children are exposed to and appreciate the value and beauty of life in the natural world, the more opportunities they have to develop their own humanistic values. They may develop a value system incorporating those values and aesthetics as they grow into adults. The presence of nature in their retinas and the subsequent memories of a child will later create connections, recollections, and reminders of the value of the environment and ecology regularly (Reason & Gillespie, 2023). This is the ideal starting point for the quest for humanistic values for the purpose of nature conservation and biodiversity preservation (Paulsen et al., 2022; Spannring, 2017).

Now, let's return to what is referred to as the "non-kingfisher" characteristic of the image above. Kingfishers are generally known for being solitary, essentially shy, and characterized by their still, focused, perching behavior (Eliot et al., 2009; Reason & Gillespie, 2023; Renila et al., 2020; Vilches et al., 2013). Kingfishers are typically only seen as not solitary when breeding or caring for their young chicks (Morgan & Glue, 1977; Reyer, 1980). In their adult lives, they dive down to catch fish incredibly quickly, earning them the playful "royal titles" in *Wild Wise Weird* (Vuong, 2024), and their proportion of "meditation" time increases. However, the image above presents a "group activity" appearance. When viewing the image, the author himself (QHV) immediately traveled back in time to when he lined up at a kindergarten in Hanoi, waiting for his turn to receive lunch, around the mid-1970s. During this time, Vietnam had just ended the war against the United States, and while bombings had ceased, food was still in short supply.

3. Essential elements in restoring the missing bond

Art, painting, and literature. For a long time, kingfishers have appeared in various works of art and literature, even in sculptures in ancient Egyptian nobility tombs or mosaic paintings from the Greco-Roman civilization (El Menyawy, 2020; Eliot

et al., 2009; Tammisto, 1985). If we consider A. F. Skutch's photograph in *The Condor* from 1957 as an antique artifact, then the connection to contemporary art, literature, and expression brings a fresh perspective to the era with a new flow of information. This has helped both authors like us receive sharing and approval from discerning readers, including editors and reviewers, as the image of kingfishers was introduced as a symbolic representation of nature (Barik et al., 2022; Vuong & Nguyen, 2023). Below is a watercolor painting of a kingfisher, seemingly coincidentally representing the Amazon kingfisher featured in Skutch's photograph (see Figure 2).

Bringing education closer to nature. High-value and long-lasting memory-preserving qualities in the image, especially after nearly a century, will permeate efforts in science communication through thought-provoking questions such as: What if this image can never be encountered again because this kingfisher species has completely disappeared, a victim of habitat loss? Such a question can also be linked to the history of human-animal relations, like the 19th-century hunt of the great auk (*Pinguinis impennis*) in the North Atlantic by British naturalists Alfred Newton and John Wolley that enlightened humankind about the existence of human-caused extinction (Pálsson, 2024). From this point, we could even delve deeper into the economic aspect of wildlife conservation by asking whether young children would prefer to spend vast money maintaining museums that preserve the remnants of extinct species and millions of dollars hoping to one day revive them or invest in conservation funds to ensure that they can continue to interact with these species and use their beauty to enrich their own imaginations (Vuong & Nguyen, 2023).

Moreover, if the photograph is shown to young children, they are likely to notice the feather tuft on the kingfisher's head. The tufts on these four chicks appear to be untidy hair even though kingfishers are exceedingly meticulous about cleaning and preening their feathers. Or conversely, it may be compared to the gelled hair of some "playboys," who spend a lot of money on their impressive hairstyles. Either way, children will find it intriguing. In any case, education becomes more natural and humane. Aren't education researchers striving to bring children closer to the natural environment? Whether or not children like it depends largely on the attractiveness of the information presented to them (see Figure 3).

AI and "serendipity." AI is a revolution, and the emergence of ChatGPT has heated up the information race. The research community is also anticipating the new role of generative AI and potentially Artificial General Intelligence (AGI) in the fight against climate change and ecosystem destruction. With the ability to create new information combinations from mountains of old information, AI

Figure 2. "Kingfisher appalled by violence": Watercolor by Bui Quang Khiem. ©2017 Quan-Hoang Vuong.

also greatly supports the harnessing of serendipity's power, a form of information processing capability that drives changes in perception and action stemming from (and having the characteristics of) demands for survival skills (Vuong et al., 2023), such as how AI is assisting drug development research (Paul et al., 2021). Similarly, in the fight against climate change and ecosystem destruction, if the power of AI is utilized appropriately and wisely, it will provide people, especially the young generations who are often referred to as "digital natives," with well-organized, concise, and overall trustworthy information that helps expand and deepen their understanding and connections with these environmental topics. Through increasing levels of interactions with AI trained by valid information prioritizing the inherent values of nature, people will be cognitively and affectively scaffolded to acculturate toward new humanistic values that focus on ecosystem protection and biodiversity conservation, like the eco-surplus culture (Vuong & Nguyen, 2024a). Simultaneously, the utilization of AI to build an eco-surplus culture will also help deal with environmental apathy, such as "who cares" attitudes (Vuong & Ho, 2024).

Figure 3. "A child holding a kingfisher by his left hand": Retrieved from El Menyawy (2020) under CC-BY-4.0. A scene from the tomb chapel of Wattkhethor, wife of Merruka (one of the most powerful officials during the Sixth Dynasty of Egypt) and daughter of King Teti (the first king of the Sixth Dynasty of Egypt). The Sixth Dynasty is considered the last dynasty of the Old Kingdom of Egypt, spanning 2305-2152 BC.

In general, the image of Skutch, with not only its scientific but also humanistic values, has given us an answer to the question of how much expense is justifiable for science. When science awakens humanistic values and conscience for life, the

image is priceless, even when the cost of capturing it is negligible (Vuong, 2018). Furthermore, the value of publications lies in their ability to preserve, share, and expand new understanding of history and historical artifacts, making them invaluable. Value and innovation emerge from the interactions of information (Vuong & Nguyen, 2023). The information (e.g., knowledge, arts, paintings, literature) preserved through scientific publications is generally reliable and useful, often representing the distilled essence of a historical period. If this information were lost to the passage of time, the likelihood of reproducing it would be very low, almost equal to zero, and thus, so would its relevant values and innovations. And if such values and innovations have the potential to help humanity navigate and overcome the current planetary crises, the loss will be immeasurable.

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Authors

Quan-Hoang Vuong
hoang.vuongquan@phenikaa-uni.edu.vn
Phenikaa University, Hanoi, Viet Nam

Minh-Hoang Nguyen *(corresponding author)*,
hoang.nguyenminh@phenikaa-uni.edu.vn
Phenikaa University, Hanoi, Viet Nam

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