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Forest conservation strategies: Integrating ghost fear as a social conditioning mechanism

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Abstract: The fear of ghosts is a common thing that can be managed as a social condition that turns out to have an impact on the continuity of forest maintenance. Applying a qualitative approach supported by in-depth interview methods, observation, and literature study. This research does not attempt to prove the existence of ghosts or discuss the psychological conditions of people who fear ghosts. The main finding of this research is the reality of the reproduction of stories and experiences of fear of ghosts, as well as the implementation of traditions or rituals related to community activities in the forest. Stories of fear of ghosts with various forms and versions of naming not only enrich the cultural life of the community but also encourage social conditioning in the form of togetherness to agree on the fear of ghosts as a means of creating a social system in order to carry out activities in the forest. The social system is identified in the form of pamali traditions or things that should not be done in the forest, balian rituals to eliminate or treat ghost disturbances, and besoyong rituals to utilize forest products, which then have an impact on the awareness to respect the continuity of these rituals and tradition. So, even though the fear of ghosts can be overcome psychologically and disappear quickly, the reality of respect for the social system related to the forest can still survive. In addition, ghost stories' reproduction continues to be rolled out and adapted to the times. In turn, ghosts and forest rituals continue to be conditioned into a social system that has implications for forest conservation.

Keywords: forest conservation; fear of ghosts; social conditioning; rituals

1. Introduction

East Kalimantan is one of the regions in Indonesia where forests are protected. Efforts to preserve the environment are a concern of the East Kalimantan Government by implementing a priority program to rehabilitate forests and critical land (Ramadhany, 2023). The Indonesian government also encourages active community participation in sustainable forest use and maintenance through social forestry programs (Rahayu et al., 2024). Even the development of the Capital City of the Archipelago Indonesia (The new capital of Indonesia—IKN) carries the concept of a forest city with sustainable forest recovery and restoration programs (Ibrahim et al., 2023; Yusnikusumah et al., 2024). Even so, deforestation in Kalimantan is still an ongoing threat and requires the participation of all communities to overcome it (Lukman et al., 2021; Viedra et al., 2023). Community participation in maintaining the forest is then closely related to the philosophy of perspective of local communities

towards nature; the philosophy of local communities, among others, is translated into the practice of local wisdom or traditions related to the fear of local ghosts.

The emotional relationship between humans and forests has been narrated in many studies, especially related to the experiences of Indigenous peoples who are more familiar with forests in their daily lives (Colfer et al., 2001; Skår, 2010). Some people's relationship with forests is related to economic or productive aspects, such as the use of forests as garden land and the use of forest products for trading. At the same time, others are historical, social, and cultural and continue to evolve in line with sustainable development (Ritter et al., 2013). Therefore, forest management advocacy is not only related to the physical aspects of the forest but also includes ecological values and economic, cultural, emotional, aesthetic, and social functions (Hägström, 2019; Halla et al., 2023). The same applies to handling forest advocacy, which not only relies on the support of government programs but also needs to involve the widest possible community participation. Peluso explores the complex governance dynamics in the control and use of forest resources in Java, emphasizing how power relations are multidimensional and non-hierarchical (Peluso, 2023). This shows that state powers cannot always intervene in communities to submit to forest improvement projects according to the will of laws and regulations created by the urban center (Scott, 2020). In line with this, Agrawal and Gibson show how important community involvement is in natural resource conservation efforts. Agrawal and Gibson also show power dynamics in the context of forest-urban relations, emphasizing the diverse nature of power and its influence on forest use and governance (Agrawal et al., 1999).

Traditional communities have a cultural relationship with the forest that is strengthened by the presence of spirits or ghosts in the forest. One common situation in traditional societies is that they still believe in the existence of ghosts and are afraid of them. People with similar characteristics often experience a fear of ghosts. They see moving objects, apparitions, strange noises, malfunctioning equipment, and unexplained percussion. Something strange is called a ghost (Lange et al., 2020). However, these anomalies characterize each occurrence and show similarities that can be called syndromes when taken together. According to Houran and Lythe, the fear of ghosts is a psychological issue, where the higher a person's stress level, the more likely they are to experience fear of ghosts (Houran et al., 2001; Laythe et al., 2022).

While previous studies have shown this fear of ghosts to be a psychology-related syndrome, this article does not focus on that. Specifically, it reveals how the fear of ghosts triggers a social system that can serve as a mechanism to prevent destructive forest behavior. This article highlights how community participation in maintaining forests through social conditioning is related to the fear of ghosts. Understanding how local communities utilize ghost beliefs to keep forests sustainable is important. For example, in Ronsard's Hymns (1555–1556), fear of ghosts is used as a tool to create attachment and a sense of humor among readers, suggesting that it can be manipulated to achieve certain social goals (Roullière, 2022). Several other studies have shown that ghosts or ghost stories can be used for ritual settings (Caputo et al., 2021) and environmental stewardship (Dagnall et al., 2020; Houran et al., 2022). In addition, research by Bauer (1976) revealed that the fear of ghosts and other imaginary creatures suggests a strong element of social conditioning in shaping and controlling such fears (Goldstein et al., 2007). People in local communities believe that forests are inhabited

by various types of ghosts, creating fear and encouraging them not to damage or deforest trees indiscriminately. For example, in some communities in Indonesia, traditional beliefs state that forests are home to ancestral spirits and ghosts that maintain the balance of nature. The reason for this fear is reinforced by hereditary stories and traditional rituals that aim to honor and maintain a harmonious relationship with these spirits (Bell, 1997). Other reasons for fear are also based on personal experiences of encounters with supernatural beings (Van Eyghen, 2023). By exploring how fear of ghosts influences forest conservation behavior, we can appreciate the role of traditional beliefs in environmental conservation and find innovative ways to support forest sustainability through social conditioning. This research can serve as a basis for developing conservation programs that utilize local cultural elements so that communities can be more engaged and motivated to protect their forests.

This article argues that traditions are not created solely as artifacts for a specific purpose. Traditions are created through the performance of actors with identifiable settings from various paths and with multifunctional purposes. Thus, the tradition of storytelling of local people's experiences with ghosts is not done for the sole purpose of making people psychologically afraid for a long time. In fact, storytelling can then function as entertainment, which is the ultimate meaning of the treatment of the fear of ghosts. In addition, ghost fear stories are also an accompaniment to perpetuate a tradition or ritual as well as a form of caution in managing forests and the environment. Therefore, this paper explains how local beliefs about ghosts are narrated in such a way that they can be utilized as an effective and sustainable conservation strategy for forests. Ultimately, ghost narratives can ensure that forests remain protected from the threat of destructive exploitation.

2. Theoretical frameworks

Forest conservation refers to a range of policies, programs, and practices that aim to conserve and protect forest ecosystems to maintain their ecological, social, and economic functions. According to Börner et al. (2020), effective forest conservation policies and programs involve initiatives that positively impact forest surface and require quantitative impact assessments to measure their effectiveness. Garrett et al. (2021) highlight that food supply chain policies have significant implications for forest conservation and rural livelihoods and emphasize the importance of systematic reviews to evaluate these outcomes. West et al. (2023) emphasize the need for action to ensure that carbon offsets from forest conservation contribute effectively to climate change mitigation, indicating that voluntary avoided deforestation projects should be checked for performance against a deforestation baseline. Furthermore, Sinthumule et al. (2020) discuss the role of traditional ecological knowledge in forest conservation, illustrating how indigenous practices can be instrumental in protecting sacred forests (Nguyen et al., 2024).

In an anthropological context, indigenous practices in the existence of transcendent or supernatural entities such as ghosts or spirits are a universal phenomenon in various cultures, often associated with animism and ancestor worship, where ghosts are considered to have a negative influence that can affect human lives. Ritual practices, such as feeding or drinking to spirits (as seen in the Chinese Ghost

Festival or All Souls' Day in the West) or attempts to prevent the spirits from returning to this world, represent attempts to control or assuage fears of the presence of spirits that may be malignant (Stepanchuk et al., 1991). In another area of consideration, a modern view that combines science and metaphysics suggests that a mixture of human consciousness and the energy of place also influences paranormal experiences. Scientific research has shown that the magnetic properties of a place are related to the experiences of the people or individuals there (Goldstein et al., 2007), regardless of whether magnetic fields actually influence paranormal experiences or are simply the result of subjective interpretation (Narmashiri et al., 2024). This indicates that such phenomena are not only external events but also the result of internal processes in human consciousness that psychological conditions, emotions, and other subjective factors can influence (McCorristine, 2010).

Social conditioning is a sociological process in which individuals in a society are trained to respond in ways generally approved by society and peer groups within society. This concept is more powerful than socialization, which is the process of inheriting norms, habits, and ideologies. Social conditioning works by rewarding acceptable behavior and punishing unacceptable thoughts and actions. The process also involves learning and adopting a particular culture or society's values, norms, and behaviors, shaping how individuals think, feel, desire, and react to various situations (Liss, 2019).

In the context of Social Conditioning, a person's perceptions and behaviors are shaped by the influence of the social environment, including the fear of ghosts. According to this theory, this fear can be influenced by the way stories of the supernatural are presented in popular culture, such as Hollywood movies. Research shows that these fears are often conditioned by the way supernatural stories are presented in mass media. For example, horror movies such as "The Exorcist," "Poltergeist" and "The Ring" tend to reinforce fear with high dramatization and threatening imagery, in contrast to oral traditions, which may be more simplistic (Bourke, 2007; Furedi, 2018). This demonstrates how mass media play an important role in shaping and reinforcing collective perceptions of paranormal phenomena, creating continuities and discontinuities in cultural conditions that influence individuals' emotional responses to things perceived as supernatural.

3. Materials and methods

This research focuses on local ghost stories and traditions in Paser, East Kalimantan, as the material object and unit of analysis. These ghost stories and rituals were chosen because they are an integral part of the local people's beliefs and culture, providing a deep insight into the collective perception of ghosts and forests in the region.

This study uses qualitative methods with descriptive data presentation. Informants were selected purposively based on their understanding and knowledge of the study (Sullivan-Bolyai et al., 2021). There were 22 informants interviewed in-depth, including five forest guards or kuncen, five traditional leaders, five environmental activists, five community members/traditional/ritual practitioners, and two shamans/ritual practitioners. To deepen the study, data was collected through

observation, in-depth interviews, and literature study. Observations were made in several forest locations and large trees that are considered haunted by the local community. For example, the observation of a large tree that blocks the construction of a highway or office building planned in the forest is due to the community's belief in supernatural beings who are believed to guard the area, not giving permission. As a result, to date, there has yet to be any development in the area.

The criteria for the informants interviewed in this study included: (1) individuals who have seen and experienced events related to ghosts in the forest and trees; (2) those who assist and defend local communities in protecting the environment and forest conservation; (3) those who have experience in dealing with ghosts such as people who have experienced illness, lost their way, and trance due to the actions of supernatural beings; and (4) community members who live in forest areas that are considered haunted. The observations were conducted in the Suharto hill forest in Balikpapan, an old tree inhabited by snake ghosts, Gunung Kemendur Forest, Sungai Wain Protection Forest, and Teluk Adang Nature Reserve Forest in Paser. A literature study was conducted to strengthen the findings of field data by referring to books and articles published in journals.

Data were presented in the form of interview transcripts, and descriptions were presented contextually and interpretatively through critical narratives. This process also served as a verification and triangulation stage for the data selected for analysis. The data that has been described is then processed in an analysis related to the theme of this study. Meanwhile, data analysis was conducted in two stages. The first stage was carried out simultaneously with the recording of field data, while the second stage was carried out after the completion of data collection. The data analysis process follows the model developed by Creswell, which begins with reducing data through the process of sorting data (coding) based on research themes, then the next step is to conclude from the results of the data analysis (Creswell, 2021).

4. Results and discussion

4.1. The forest and local ghost stories

In the belief of the Paser people, the spirits that inhabit the forest are not all called ghosts. Forest dwellers, often called forest guards, are believed to be the abode of ancestral spirits. These spirits have levels that can be categorized by type, form, and function. Spirits that are considered to be of a good type with a beautiful form usually function as helpers, and because of their goodness, they are usually referred to as gods. Spirits that are considered to be of a bad type with a bad shape usually function as bullies and their appearance is frightening to humans, so these are usually called ghosts. According to Paser tradition, good ancestral spirits are referred to as Sengiang.

Sengiang is believed to be the chief or highest of all ancestral ghosts (domesticated ghosts). It can change its form, such as humans or animals. The symbol of this ghost is white, which is one of the colors sacred to the Paserese. Sengiang is considered a god because, according to Paserese belief, all living things, such as humans, animals, trees, and all living things in the vicinity, have sengiang. The function of Sengiang is believed to be the companion of all living things. Sengiang controls all elements (air, water, sky, and earth). His character is described as

masculine. Besides sengiang, there are also spirits called Nayu, Bongai, and Tondoi. The term Nayu is symbolized by the color red. The way it communicates with humans is through lightning. The thunderous sound of lightning indicates that he is angry with humans who do taboos or taboo actions. He can also change form as a human or animal. He controls the air. During the dry season, people pray to Nayu to bring down rain. Her character is described as masculine. Nayu's power is in the air, unlike Bongai, whose power is above ground. Bongai, or Longai, is a spirit that rules the earth and is symbolized by the color black. He can also change form. His character is described as masculine. He rules the land. The spirit called Tondoi is identified with the color yellow. Tondoi's character tends to be feminine. She controls water, springs, oceans, and rivers (Interview, RDH, Balikpapan, 2024).

In addition to the good Sengiang spirits, there are also evil spirits in the beliefs of the Paser people, which are an integral part of a rich and complex belief system. In the forest, which is considered the abode of spirits, various types of spirits have different roles and characteristics. The spirits that usually disturb humans can be categorized into types and forms of frightening ghosts.

The ghosts that plague humans are called Uwok. This ghost is classified into several types: 1) Uwok, a type of Genderuwo, is black, tall, curly, hairy on its body, and with big red eyes. His genes are categorized as bad or evil, with behavior that is often ignorant or often disturbs and kidnaps human children. 2) Uwok Kelikiting Kidi looks like a man or a kind of Uwok but has a smaller stature. 3) Bansi, resembling a woman, is usually the incarnation of a woman who died from pregnancy or childbirth. Bansi is identical to the sound of a baby girl crying. It targets men, kidnaps them, and even kills them. When targeting its prey, it will throw its baby to trick and bite its potential prey by taking a certain leaf and putting it on its genitals, then throwing it to its potential prey. The leaf is then transformed into a baby. Bansi appears in the forest and will appear and disturb humans when he is pressed by human actions, such as committing immoral acts in the forest, cutting down trees carelessly, entering the forest without permission, and urinating carelessly on trees. 4) Dayang, described as a beautiful woman, often laughs loudly, has long fingernails, and likes to disturb men. When she disturbs men, she grabs their genitals and eats them (Interview, YSD, Balikpapan, 2024).

All types of Uwok do not help humans but become human disturbances, so they can generally be called ghosts. As for ancestral spirits or gods, they help humans and also "reprimand" humans if they are considered to have made mistakes or violated taboos. Uwok ghost sightings in contemporary times are usually equated with more popular ghost names in Indonesia. Traditionally, ghost sightings are identified as local types of ghosts if seen by immigrant communities or the younger generation, who are not familiar with the local name of the ghost. Then, the ghost encountered will be associated with the more popular name in their memory.

Many types of ghosts are often told to disturb the community both in the forest and around urban housing. Ghosts that often appear are Kuyang, Parakang, crown-headed snakes, white apes, and goats. These ghosts sometimes appear or inhabit large trees, old wells, uninhabited houses, certain roads, and bridges. There are several mystical incidents related to these ghosts that I experienced myself, some of which I

heard directly from people who experienced encounters with the ghosts I talked about (Interview, AMS, Balikpapan, 2024).

The findings of this study describe the characteristics and categories of local ghosts based on the beliefs of the Paser people of East Kalimantan, revealing various types of ghostly disturbances that often cause fear. There are several types of ghosts identified, ranging from those whose presence is only felt by humans with no visible physical form to those that appear in the form of human light. These ghosts may be present in the form of faint moving or shimmering lights, often perceived as apparitions. In addition, local ghosts can produce eerie sounds, a distinctive female voice, or an indistinct voice like that of an older man or baby, adding an element of fear and mystery. The facial characteristics of local ghosts also vary, from frighteningly ugly faces with distorted features to charming but unnaturally beautiful faces to faces that change according to what the individual sees. This diversity creates deep feelings of discomfort and fear for people who believe in and experience these supernatural phenomena.

4.2. Experience the fear of ghosts in the forest

Fear of ghosts is a common phenomenon in many cultures, including the Paser community in East Kalimantan. This section will describe the different forms of fear experienced by people when they witness or directly feel the presence of ghosts. These descriptions include the personal experiences of individuals who feel threatened by the presence of spirits, either physically visible or imagined. This fear can take many forms that are not categorized as psychological illnesses, such as phobia or hysteria. So, the fear here is a common fear that can be felt spontaneously by the community in general.

When the houses in Paser village were still part of the vast forest, or before it was turned into palm oil plantations. One day, a neighbor reprimanded me; why did you make a crowd in the middle of the night last night? Neighbors had trouble sleeping because she heard the sounds of people chatting and occasionally the screams of children running around. It was the sound of feet stomping on wooden planks, which is usually heard all the way to the neighbor's house. I was surprised and almost could not believe it, but other neighbors said the same thing. I assured them, however, that my family and I were not at home last night. I visited my parents' house in the next village because my mother was sick (Interview, ANT, Balikpapan, 2024).

This story illustrates the fear experienced by the people of Paser, not only of the presence of ghosts as evil entities but also of the strange and disturbing situations they cause. Mysterious noises such as a crowd in the middle of the night, the sound of children playing, and the pounding of feet on wooden boards that are heard by neighbors, even when the owner of the house is not present, show a more complex form of fear. These phenomena reflect uncertainty and apprehension of events that some elaborate explanation can explain.

When the forest in our village was cleared to make way for a palm plantation, many strange events caused fear in the community. Large, heavy equipment, such as excavators, disappeared into the ground without a trace. The chainsaw cut down trees and could not be uprooted despite being pulled down by human power or excavators.

Although this incident was clearly frightening, the project that had to continue was circumvented by performing a ritual to make peace with the forest dwellers. So that strange circumstances can be avoided after the ritual (Interview, NIM, PPU, 2024).

In a technical context, the community's fear of deforestation projects for oil palm plantations is reflected in strange events such as mysterious disappearances of heavy equipment and difficulties in tearing down trees with human labor or excavators. These phenomena give rise to feelings of uncertainty that can influence technical decisions and project risk management and mobilize ritual efforts to cope with unusual circumstances. The rituals reflect non-technical strategies to calm people's fears and maintain harmony between the project and its environment.

4.3. Traditions and rituals related to ghosts and forests

Community experiences related to the fear of various types of ghosts believed to inhabit the forest gave birth to a natural protection mechanism against forest exploitation. The fear of ghosts is managed into a social condition that creates procedures for the community in carrying out activities related to the forest. These procedures are built into a social system in the form of traditions or rituals to establish good relations with forest dwellers.

The Paser community has several traditions related to the forest, such as the tradition of calling pamali, which is a kind of prohibition that, if carried out, will cause danger. Such as the pamali to mention timang (tiger), payau (deer), telaus (rabbit), bawi (pig), and burok (monkey). Mentioning the names of these animals will disturb spirits, so a person may fall ill or even die. The meaning of this prohibition is the prohibition to disturb animals in the forest (Interview, SDI, Balikpapan, 2024).

So, the tradition of pamali, or prohibition of disturbing animals in the forest, is a reflection of people's fear of the disturbance of ghosts in the forest. Although then the pamali is continued when the fear has disappeared, or the fear that is feared no longer occurs. In addition to the pamali tradition related to animals in the forest, there are also rituals related to trees.

Every large, old tree in the forest has become a rule not to be cut down because it is believed to have a guardian who should not be disturbed. If at any time the tree must be cut down due to necessity or force majeure, then a balian ritual must first be performed, which is a kind of ritual performed to ask permission from the inhabitants of the tree to move to another place. After the ritual is successful and the person who wants to cut it down gets a sign of permission, then the tree can be cut down (Interview, SRS, Balikpapan, 2024).

Furthermore, the following data provides further insights into how local spiritual and cultural aspects play a role in managing challenges arising from communities' experiences in implementing forest-based projects.

As an environmental activist, my team and I often enter forests for plant and animal inventories for sustainable forest life. One time, I accompanied a research team tasked with recording the various species of frogs in a remote part of the Borneo Forest. Prior to the activity, the team had received advice from local elders to avoid catching frogs or any animal that looked strange or different from the norm. However, during the inventory, this advice was ignored. Our team leader caught a purple frog with a

head that resembled a crown. The frog and various other frog species were tranquilized to be taken to the laboratory for research. As a result of this violation, the team leader, on the way home, suddenly became ill and had to be carried home on a stretcher. Although he was diagnosed with malaria, the illness left him in a coma, and he spent months under the care of doctors at home and abroad without success. A village elder told a team member that the chief had to return a frog with certain characteristics in order to restore his health. The process of returning the frog had to be done through a Balian ritual at a special time, as requested by the ritual organizer. After the ritual is performed, the chief recovers, and strangely, when he is in a coma, the chief is visited by the frog he caught, and it appears that the frog can speak as if asking for accountability (Interview, ALF, Balikpapan, 2024).

The data presented shows how local beliefs and phenomena that cannot be explained easily can influence research activities in the forest. As an environmental activist, despite the well-intentioned goal of plant and animal inventories for forest preservation, disobeying the advice of local elders regarding strange creatures resulted in serious consequences. The capture of a purple frog with a crown-like head, albeit for research purposes, caused a mysterious illness in the research team leader that led to a coma. A diagnosis of malaria did not fully explain the condition, and recovery only came after a Balian ritual based on local beliefs. The team leader's experience of seeing a talking frog while in a coma reinforced the importance of respecting local traditions and advice in forest-related activities. This emphasizes that local cultural beliefs are very important in maintaining forest sustainability, and therefore, the global community must learn to respect the forest environment and the communities that share it.

This data again shows that rituals are performed to honor the ghosts that inhabit the tree to be cut down. The Balian ritual only serves to persuade the ghosts not to disturb humans. Rituals are also performed for treatment and village cleansing. In the Balian ritual, there are also readings called Besoyong.

Besoyong can be found as part of the balian ritual, and can also be a separate ritual in the form of chanting mantras for a specific purpose. For example, besoyong is performed in order to clear the forest for agriculture. Besoyong is performed to ask permission from the forest dwellers not to disturb human activities that expect sustenance from the forest (Interview, ILH, Balikpapan, 2024).

Like the balian ritual, the implementation of besoyong also appears to be related to the belief that there are ghosts in the forest area that also need to be kept comfortable so as not to disturb each other. The besoyong ritual is not only related to the forest but is also often performed at the time of starting farming in the rice fields and during the clean village tradition.

The pamali tradition and the balian and besoyong rituals show a close relationship between the belief in ghosts as one forest entity that is not just scary. The fear of ghosts is used as a social conditioning mechanism that has the effect of preventing the forest from being destroyed. The mechanism of the human relationship with the forest, which was initially driven by the presence of ghosts, is then regulated in social life in the form of traditions and rituals that no longer have to wait for fear to be carried out. So even though the fear of ghosts is temporary and may not occur for all community

members. However, the mechanism of relating to the forest has already become traditions and rituals that roll from generation to generation.

5. Discussion

Based on people's experience of the reality of the fear of ghosts, the following can be seen: how a forest can survive and avoid damage due to a particular project. Awareness of the existence of other creatures that inhabit the forest is not just done to cause shameful fear. Rather, it is a fear that is common and socially agreed upon or conditioned under conditions of respect for ancestral spirits, avoidance of the adverse consequences of destroying ghosts, and respect for the customary rituals of local communities.

Respect for forest dwellers, whether ancestral spirits, deities, or evil spirits called ghosts, is an important element in local people's beliefs. Such reverence was the result of real-life experiences of Paser communities when their forests were converted into palm oil plantations, where heavy equipment disappeared without a trace and trees could not be cut down despite maximum effort, suggesting that supernatural forces were protecting the forests. This phenomenon shows how traditional beliefs and mystical stories can serve as an effective protection mechanism (Cavendish, 2023), safeguarding forests from destruction. The same phenomenon is still evident in Balikpapan's Bukit Suharto protected forest area. Suharto Forest is protected legally and through mystical stories of fear. The community believes that the forest is guarded by supernatural beings who can prevent people with evil intentions of destroying the forest from doing so out of fear. This fear of supernatural entities becomes part of the collective consciousness of communities that respect and maintain forests, making it a form of protection that is not only physical but also spiritual and social.

Avoiding the adverse consequences of forest-destroying behavior involves a deep understanding of local communities' experiences and collective consciousness. Communities often utilize traditional beliefs and mystical stories as tools to preserve their environment (Maru et al., 2020). For example, in the case of deforestation projects for oil palm plantations, communities witness strange phenomena such as heavy equipment disappearing without a trace and trees that cannot be cut down despite maximum effort. These events are seen as warnings from the supernatural creatures that inhabit the forest. However, to truly fight the destruction, the community should codify itself by refusing to perform Balian rituals that aim to restore things to their original state, such as bringing back a sunken excavator or uprooting a tree that is difficult to cut down. Thus, the rejection of these rituals can be a strong statement against forest destruction activities, showing that the community chooses to respect and protect the forest more proactively and sustainably. This is in line with the belief not to disturb supernatural beings including ghosts in the forest, because disturbance of these supernatural beings can have an impact on the peace of people's lives. The anger of supernatural beings is believed to bring disaster or calamity. This is also reinforced by Wijaya's (2012) study on Derrida-Levinas' concept of spectral justice, which indicates that people's relationships with supernatural entities can affect their behavior towards the environment.

Honoring ancestral messages by maintaining forest-related rituals can reflect the depth of local communities' collective consciousness and spiritual experience. These rituals, such as Balian rituals, symbolize respect for ancestors and forest-dwelling supernatural beings and serve as mechanisms for environmental conservation. The belief that ancestral spirits and ghosts guard the forest from destruction encourages people to act carefully and respect nature (Adeniyi, 2021). Reinforcing the fear of ghosts through the reproduction of mystical stories is an effective form of social conditioning, serving as continuous learning for every community member. By constantly hearing and telling mystical stories, communities build and maintain social norms that emphasize the importance of respecting forests and avoiding destructive behavior. These stories become educational tools that ensure future generations understand and respect local rules that contribute to sustainable forest conservation.

6. Conclusion

The term ghost in the beliefs of the Paser people in East Kalimantan refers to the spirits that inhabit the forest. These spirits, categorized as benevolent ancestral spirits or evil ghosts, play an important role in the cultural practices and perceptions of the community. The main benevolent spirit, Sengiang, is seen as a protector and guide, symbolizing harmony with nature. In contrast, various evil spirits, collectively known as Uwok, are believed to cause disturbances and embody fears that help regulate human behavior, especially in forest conservation. The presence of these spirits and associated folklore fosters respect and caution towards the forest, which influences daily practices and broader environmental management. Personal anecdotes and mystical occurrences, such as unexplained noises and the mysterious disappearance of heavy equipment, underscore the deep-rooted fear and reverence for the spirits, thus reinforcing the need for rituals to maintain balance and appease these supernatural entities. This complex belief system illustrates how spiritual and cultural dimensions are intertwined with environmental conservation, highlighting the importance of respecting local traditions in sustainable forest management.

The insights from this analysis provide a new understanding of the role of traditional beliefs and mystical stories in environmental conservation. The existence and reproduction of ghost stories and the performance of rituals such as Balian provide a new dimension to forest conservation efforts that have not been explored much before. Social conditioning theory supports that through the repetition of mystical stories and rituals, communities can internalize conservation norms. This suggests that cultural and spiritual aspects can interact with modern conservation strategies to achieve environmental sustainability goals. A forest conservation theory that is not solely law-based also supports this view, as legal approaches are often insufficient without strong local cultural support.

The results of this study have limitations, however, especially in generalizing the findings to a variety of other cultural and geographical contexts. This study is limited to a particular region with specific beliefs and practices, so further research needs to be conducted in other regions with different traditional beliefs. In addition, further research could explore more deeply how integration between traditional beliefs and scientific approaches can be developed for more holistic and effective conservation

strategies. Proposing new research directions that combine anthropology, ecology, and environmental science perspectives could provide deeper insights into how cultural beliefs can support nature conservation efforts.

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