

Traditional Ecological Knowledge in Indigenous Hunting Body Cultural Research as an Emerging Collaborative Self-Governing Approach for Green Ethical Cultural Advocacy as “Protected Belief Status”

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Abstract

The gaps in the literature and the nonexistence of restrictions from present-day legislation are the bane of Traditional Ecological Knowledge (TEK) in hunting cultural practice. This research explores and engages qualitative research by applying visual and dictated information on hunting body culture transformation for indigenous ecological knowledge. Ethical and greening advocacy an emerging collaborative framework for hunting activities through the eyes and experience of the aboriginal people of Taiwan was used to explore the relationships between TEK and self-governing management to grasp and experience the meaning of Hunting Body Culture (HBC). Twelve activities of Taiwan's Gaga aboriginal hunting behaviors from longitudinal research from 2012 to 2024 were observed by reading hunting photo-voice information and interviewing fourteen aboriginal hunters. The findings include the utilization of Green Ethical Cultural Advocacy (GECA) to reflect the study's outcomes on social norms, hunting harvest patterns, hunting ritual events, forming of hunting groups, the choice of hunting tools, game selection differences, personalized attributes like solitude; and generic tolerance for indigenous cultural heritage as a *Protected belief* transforming toward a *legislative Protected Status*. Future research should triangulate positivist/interpretive and mixed approaches to navigate the ethical justice pattern for TEK and the use of digital technology to administer greening ethical cultural advocacy in hunting. The implications of the research to theory and practice were specified, as we proposed four distinctive principles for green hunting.

Plain language summary

Traditional ecological knowledge in indigenous hunting body cultural research

This study engaged a qualitative research approach by applying visual and dictated information to explore hunting body culture transformation for indigenous ecological knowledge. Twelve activities of Taiwan's Gaga aboriginal hunting behaviors from longitudinal research from 2012 to 2024 were observed by reading hunting photo-voice information and interviewing fourteen aboriginal hunters. This research's findings include using of green cultural ethical advocacy to

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reflect the study's outcomes on social norms, hunting harvest patterns, hunting ritual events, forming of hunting groups, the choice of hunting tools, game selection differences, personalized attributes like solitude; and generic tolerance for indigenous cultural heritage as a protected belief.

Keywords

aboriginal/indigenous, hunting, hunting body culture, green ethical cultural advocacy, self-governing management, traditional ecological knowledge, Taiwan

Introduction and Background to the Study

Since 2005 the ancient tradition of using packs of dogs to chase and kill foxes and to some extent other wild animals has been prohibited in the United Kingdom and over 80% of the British public approved the law on fox hunting to stay prohibited (Nierenberg, 2024). However, a pro-hunting lobbying group is pushing a proposal to outline animal hunting as a “protected belief” and wants a “Protected Status” that should revoke the discriminating law based on animal welfare conditions. They argued that “*hunting itself is not illegal in England, shooting of deers, rabbits, duck, and some other animals is allowed during hunting seasons with permission from the landowner and a gun license ... and we've been doing this for millennia ... hunting is literally of our cultural heritage*” (Equality Act, 2010, c.15). Using the British Equality Act that protects people from discrimination against age, race, sexuality or religion, among other things to classify a pro-hunting stance as a protected belief as their position.

The United Kingdom Public General Acts of 2010, Chapter 1, Section 10 describes belief as any religious or philosophical belief and a reference to belief includes a reference to lack of belief (Equality Act, 2010, c.15). However, UK Public General Acts Section 10, (3a, b) defined Protected characteristics of belief to include an individual's particular protected attributes about the individual's belief or religion, or individuals who share protected characteristics which are of the same religion or belief (Equality Act, 2010, c.15). The protected belief characteristics could be linked to the contemporary legal conflict in Taiwan concerning hunting rights, indigenous self-governance, ecological advocacy, and the cultural significance of hunting.

This scenario has emphasized the concerns for a profound consideration of the cultural importance of hunting and its significance for ecologically infused traditional knowledge of endangered species. Tama Talum a Bunun hunter in Taiwan was convicted of killing protected species and sentenced to 3 years and 6 months in jail (S. E. Simon, 2022). Using the Control of Guns, Ammunition and Knives Act and the Wildlife Conservation Act of the Republic of China, (Taiwan) 113-01-03, Amended on the 2024-01-03 (Charlton et al.,

2017; Laws & Regulations Database of the Republic of China (Taiwan), 2024), Talum's lack of using a hand-made rifle as required by the law was termed illegal.

However, by March 2024 after 11 years the verdict was reversed by the Supreme Court from the Taitung District Court's earlier ruling (Shan, 2024). This landmark ruling will assist the indigenous people to practice their traditional ecological knowledge of hunting without apprehension of subverting the Control of Guns, Ammunition, and Knives Act and the Wildlife Conservation Act of the Republic of China, (Taiwan) regulations. The onus is left for government agencies and lawmakers to fix hunting regulations (Shan, 2024). The connection between ecological privileges including environmental protections and indigenous hunting rights has remained a sensitive and delicate issue from several examples globally.

The concept of aboriginal/indigenous people is defined and alleged to be generally food uncertain as witnessed in Aotearoa, New Zealand, and Australia (The Conversation, 2021). Before the colonial era, the indigenous people's “diets were abundantly diverse and seasonal” (The Conversation, 2021), the value of Aboriginal hunting could involve the survival of the indigenous peoples (Parsons et al., 2021; Ulian et al., 2020). Aboriginal/Indigenous people are not to be adopted with a patronizing or idealized approach that depicts them as venerated custodians of nature reserves and cultural advocacy (Washington et al., 2024). This view could be incomprehensible to the complexities inherent to the socio-economic situations that may make them more susceptible to resource mishandling.

The Aboriginal/Indigenous hunting will be used in this article simultaneously, as it has been inadequate and restricted by legislation as verified by Andes natives of Peru, First Nations of Canada, and Queensland in Australia (Colbourne et al., 2024; Heath & Barnwell, 2023; Laidlaw, 2023). Thus, this limitation is perceived as a form of ecological injustice (Parsons et al., 2021). Moreover, it can be attributed to the protected belief exemplified by UK laws. Thus, constraints on traditional hunting practices could be restraining aboriginal access to food security and diminishing their cultural fear of hunting (Parsons et al., 2021; Ulian et al., 2020) which

could be viewed in terms of human rights violation, including their protected characteristics of belief.

Aboriginal cultural rituals such as reciprocity of relationship between humans and non-humans are recorded. For example, sharing reciprocity between humans and primates in Brazil among the Awa-Guaja indigenous (Hernando et al., 2011). Studies have indicated waning in TEK hunting techniques among aboriginal groups such as the Philippines' Manobo (Ibanez, 2014). The gaps inherently disclosed the loss of hunting rituals due to changes in agricultural practices, and how to preserve their hunting cultural identity. Tai (2020) revealed Taiwan's indigenous hunting culture is battling insufficient integration of the food system into the current conservation practices due to the existence of distinctive ecological interactions.

Environmentalists also have argued that indigenous people are branded as "forest destroyers" (Forsyth & Walker, 2008), whereas, conservation decolorizers proponents argued that conservation scientists and organizations are the main drivers of ecological degradation (Dawson & Longo, 2023). Observations indicate that both perspectives did not consider the arrays of impacts corporate power relished by the affluent persons' and prompted by the state effect on the poor as the root of the discrepancies (Washington et al., 2024) for Indigenous people preserving their ecosystem. Ignoring this problem will be disastrous for the conservation and protection of indigenous peoples' ecosystems including hunting and cultural degradation.

This research paper aims to contribute a deeper understanding of the cultural features of hunting activities in traditional ecological knowledge from Taiwan's aboriginal peoples' viewpoint, and their relationship to self-governance using green ethical advocacy in protecting their belief characteristics. This research seeks to explore the innovation for interdisciplinary approaches that involve ecology, anthropology, and policy studies involving ethical greening advocacy for enhanced comprehension of the gradations of indigenous hunting practices and their connection to conservation.

Literature Review

Brief Historical Patterns of Hunting and Traditional Ecological Knowledge

Traditional Ecological Knowledge has been inherent in many indigenous societies for centuries and hunting is a central aspect of their cultural identity. Hunting is described as the highest and most honorable rapport our ancestors had with nonhuman animals and the natural world (Howell, 2018). It is our ancient and most long-term relationship with nature which was the most dominant profession of our ancestors (Hughes, 2007). The

relationship dialogue of hunting is ingrained in two premises, one indicating hunting is the "idea of a relationship between hunter and prey and its enduring historical significance" to humans (Howell, 2018, p. 755). However, the other premise is that those who hate hunting view it as an illustration of abuse by humans toward other animal species. Howell (2018) asserted that for hunting historians, both standpoints do not give clarity, and neither assists in defining historical hunting because of the contentious issues on hunting.

The historical specification of hunting involves establishing its significance of providing food, further supplies of needs, sport, profitable revenue, and social and cultural affability (Howell, 2018, p. 757), thus, hunting *belongs to nature rather than history*. Observations that hunting is a complex notion that predates humanity and dictates the depiction of human escape from nature (Eugene, 2020). Hunting conferred humans momentous and irrevocable consequences that entrust humans into a "cultural animal within a path-dependency that makes humans biological prisoners of cultural advances" (Ardrey & Genesis, 2007, p. 51). The historical patterns of hunting could be connected with the new struggles in the UK law on "Protected belief characterization," that can be linked toward cultivating green ethics advocacy for "value of life," as justice for nature (Washington et al., 2024).

The intrinsic value for nature (Brockington et al., 2012) should address the instrumentation to use resources, forming protected areas on aboriginal lands, and discouraging intrusion by extractive organizations. Sze et al. (2022) indicated that some aboriginal/indigenous people through the collaboration of NGOs, gained legal land titles through the Indigenous Protected and Conserved Areas (IPCAs).

The historical arrival of the Han Chinese about 200 years ago in Taiwan signaled the arrival of the gun and an alternative to bow hunting (Li, 2019). While hunting became easier, the ecological balance changed and overhunting became more real and a threat to the ecosystem. After the period of Japanese rule by the late 1940s, the Han Chinese restricted the distribution of guns as a means to consolidate power and avoid aboriginal uprisings (Li, 2007). After the half-compulsory confiscation of guns, the introduction of rubber, wooden guns, bamboo guns, and other hunting tools that were based on rubber became prevalent. This kind of hunting gun is similar to modern underwater spear guns (Li, 2007). These tools used elastic cords to create stored energy that propelled the arrows and spears for both hunting and fishing. Models of protectionism such as fencing and fines have been observed to be inadequate and untenable (Brockington, 2002) even incarcerating is unsustainable. Thus, the change concentration by Washington et al.

(2024) should be directed toward the key political players and economic structures that repress ethically both humans and non-humans equally.

Indigenous Self-Governance Management and Procedures of Designing Transformative Spaces for Traditional Ecological Knowledge and Green Ethical Advocacy

Applying Indigenous/Aboriginal self-governing management toward a more diverse socio-ecological ethical justice realization offers us the heading for recognizing the aboriginal worldviews and sovereignty (Parsons et al., 2021; Ulian et al., 2020). Thus, it is entrenched in ethical justice-focused governance management and decision-making (Luskin, 2023). Reservations were made that most researchers emphasized that aboriginal involvements within management and controls were tailored within the framework of unbalanced decision-making processes (Luskin, 2023; Parsons et al., 2021) connecting the formation and process of the reserved areas. Moreover, a joint report in 2021 from the International Work Group for Indigenous Affairs (IWGIA) and the International Labor Organization distinguished the significance of Aboriginal peoples being responsible for the safeguarding of at least 80% of the planet's biodiversity and 22% of the planet's surface (Brondízio et al., 2021). The knowledge systems of aboriginal/indigenous peoples' lands and biodiversity have proven to be a catalyst in protecting the world's primates from extinction (Estrada et al., 2022).

In designing transformative spaces for sustainability in socio-ecological systems are aligned to sociopolitical, sociocultural, economic, and technological changes (Pereira et al., 2018) by forming safe enough collaborative processes. Hunting is part of the "cultural heritagization process" and a foundation of Aboriginal/Indigenous identity based on tradition and place (Fang et al., 2016; Freitas, 2022). The designing processes of sustainability transformation enable actors/stakeholders to experiment within the new outline of mental models, ideas, and practices that could assist the modification of socio-ecological systems on better-needed conduits. Pereira et al. (2018) recommended that these pathways necessitate engaging within varied perspectives that recognize indigenous/aboriginal peoples' values and knowledge systems that are embedded in rich and distinctive identifications of their environments and cultures, such as hunting. Hunting is part of indigenous culture and livelihoods, and is possibly part of biodiversity and surface or conservation protection, as it is regarded as a human right and ecological justice nuance (Parsons et al., 2021; Ulian et al., 2020). Further, it must be secured because of its role in the survival and advancement of aboriginal/

indigenous culture and traditional heritage and skills promotion.

Ecological integrity and targeting of specific species for hunting need to be integrated within the traditional environmental knowledge (TEK) into contemporary wildlife management practices to guarantee sustainable outcomes. Trophy hunting if accurately managed can deliver substantial economic benefits and back anti-poaching and other wildlife management as affirmed by the International Union for Conservation of Nature (Ghasemi, 2021; Lindsey et al., 2007). However, observations indicated the contrary to this stance of the IUCN (Ghasemi, 2021). Remarks indicated exceeding of quotas on specific species to be hunted, poor governance, and absence of transparency that undermine conservation goals (Lindsey et al., 2007). The tainted controversies about various perspectives of hunting and its adverse effects on sustainable wildlife conservation, call for transformative design on ecological ethical justice infusing with traditional environmental knowledge. It could be accessed through the conceptualization of the hunting body culture.

Conceptualizing the Hunting Body Culture Literature

Hunting behavior is a style of living that is shaped by social norms and values through space and time. The symbolism extended to hunting ranges from a people's prowess as warriors to economic production. Marx (1974, pp. 797–798) thought that humans use their bodies as a power to affect nature itself. To get accustomed to nature, through the energy of arms, legs, head, and hands to act. Humans can change the external world and nature simultaneously through their actions. Feld (1982) found that the local aboriginals in Papua New Guinea use their sensory experiences of smell and hearing to live in the rainforest.

Elias (1976) suggested the concept of a civilized body, emphasizing that during the changing process of history, the human body was socialized, rationalized, and personalized gradually. With the development of consciousness, the civilized body knew how to "control," but not how to reflect. This opinion recognizes the gaps inherent in co-reliance and co-existence for humans to advance flexibility and dynamism within an environmental collaboration the PIE and ECP models propose (Miah et al., 2019). P. T. Nwachukwu et al. (2017) attested to the PIE collaboration with ECP for conservation consciousness, Shilling (2012) thought that the study of Elias (1976) provided a foundation of history for the development of the body.

It pointed out that the principal axis of study can be placed with the evolution of time or the difference that society made. Shilling said: "... [that] social processes

entered into human evolution, and remain vitally important in affecting the health, well-being, and life chances of people born into the 21st century (Shilling, 2012, Preface, p. xi).” Through the above narration, the structure of the hunting body culture provides a theoretical perspective that the body is involved in a struggling process over ideas between a material body and a civilized body. The body refers not only to the material body at the physical or biological levels but also to the signs and social bodies that are part of the socialization process and should be ethically justified.

The Changing Nature of Indigenous Hunting Body Culture Management and Approaches

The Aboriginal Hunting Body Culture (HBC) involves human cultural diversity and biodiversity that are embedded and require self-reflection documented within interactions (Bishop et al., 2021; Gosse, 2023). It requires an understanding of what is economically and culturally significant and vital bearing in mind aboriginal/indigenous peoples’ subsistence hunting and harvesting means (Bishop et al., 2021). It entails the relationships between management philosophy, humanity hypothesis, organization culture, organization construction, the change and development of the organization, and cross-cultural management questions. Traditional aboriginal hunting areas is the crossroads for cultural diversity and biodiversity, a place that is in highly nervous relationships (Bishop et al., 2021; Gosse, 2023). P. T. T. Nwachukwu and Mazibuko (2019) utilized strength-based interview procedures in their analysis of the eco-justice ethical approach to understanding living conditions, while P. T. Nwachukwu et al. (2017) revealed conservation relationships within the social development practice which endorsed the “Person-In-Environment” (PIE) model.

Proactive environmental strategies that cater to TEK advocating ethical justice would be derived from using new thoughtful developing patterns of current technologies (Kuo et al., 2022; P. T. T. Nwachukwu, 2019). Studies by S. Simon (2013) and Lemaitre (2021) establish that the aboriginal/indigenous people of Taiwan are expected to achieve control of their hunting management by instituting co-management boards with national parks and other state institutions on their traditional lands. Shih and Tsai (2021) stated the significance of the diversity of indigenous knowledge on the ethical perspective of “indigeneity.” and the matters of wildlife management that indigenous hunting and cultural practices faced in Taiwan’s Indigenous knowledge and colonial settler studies. These studies were critical of settler colonial/Western patterns of rationality that the reality

bemoans its more complex and different aspects of aboriginal/indigenous knowledge to conservation and hunting conflict mechanisms.

Theoretical Framework of the Research Study

Instrumentalism and Mechanisms’ Underpinning in Hunting Body Culture Management

Descartes’ “instrumental rationality” and Newton’s “mechanism” represent the quantitative concepts that modernism admires (Sanderson, 2006); they used reductionist process understanding and management tools that describe mechanization (Louth, 2011). They adopted key performance as a management evaluation tool to reduce discourse performance (Louth, 2011). The instrumentalism and mechanism underpinning hunting body culture could be ascertained with the green ethically infused advocacy to foster key performance as a management evaluation tool to make sustainable wildlife management ethically infused. The understanding and rationally pre-cised ethical advocacy contribute to the ecological balance perspectives, in which Descartes’ instrumentalism suggests that scientific theories are apparatuses for envisaging phenomena rather than illuminating the truths of the ecosystem. It also alignment with Newton’s mechanistic perspective which emphasizes a rational empirical understanding of nature. Thus, informed, ethical considerations to hunting and hunting body culture management should be considered.

Postmodernism’s Views of Hunting Body Culture Management

Post-modernism takes the point of view of pluralism; and lets the people start to learn and respect the existence of each other’s differences. Post-modernism opposes the emphasis on knowledge objectiveness and the prevalence of knowledge. Scholars have recommended that the appearance of a distinguishing emphasis on culture generally is a part of the broader “postmodern” culture (Alexander, 2000; Maciag, 2015). The post-modernism management scholars try to restore the nature of humans and to break the objective truth that modernism tries hard to pursue. Since the human in a modernist societal structure is not “a real human,” but an alienated attachment under the strict societal structure. Existing is the right of right-holders and not “a real human” (Alexander, 2000; Maciag, 2015).

However, what post-modernism is focused on is the mutual main body concept that “managers” and “people be managed,” even if they don’t have such titles, call

each other “partners” (Drucker, 1959/2011, p. 46). It has purpose, and organization, but is owned by risks. Drucker (1959/2011) said: “Innovation can best be defined as man’s attempt to create order, in his mind and the universe around him, by taking risk and creating risk” (p. 46). Peters and Waterman (1982) thought that post-modernism management thinking should go back to basics and focus on innovation. This can be deduced by cultural heritage reality that could be linked to green cultural advocacy and the socio-ecological systems.

Peters and Austin (1985, p. 265) used symbolic marks like “attention,” “symbols,” and “drama” to overturn modernism management thoroughly. However, there is a contradiction in post-modernism management. The difference between post-modernism management and modernism management is the management objects. The objects of modern management are “people be managed,” but the objects of post-modernism management are the knowledge workers (researchers, or people who are writing papers like “us”) or decision-makers (Peters & Austin, 1985, p. 265). Researchers/decision-makers cannot be completely controlled because once ordered they are no longer able to make independent decisions. Given the changing nature of post-modernism management, we will examine HBC from the social construction theory’s point of view.

Social Construction Theory Perspectives on Hunting Body Culture Management

Shilling (2012) indicated that the researchers of social construction theory put too much emphasis on the collaborative meaning of the image of society. He argued that “[bodies] are not ‘socially constructed’ but are assembled through the holding together of a series of material, physical and informational connections” (Shilling, 2012, p. 97). While Mauss (1979) narrated that Aboriginals in Australia dictate a set of event lyrics and oral rites, and use body skills, and basic body physical energy to arrest prey (Fournier, 2005). His analysis indicated aboriginal hunting is a mixture of hunting, physical, witchcraft, and religious behaviors. The subjectivity of the aboriginal hunting culture is a symbol of identity recognition, which is different from the stereotype. Hunting is not only a way of living but also a way of passing down traditional ecological knowledge. Therefore, learning the hunting body culture at aboriginal hunting and ritual events through “the insiders” is a key issue in this study, green ethical culture advocacy (GECA) could instigate other insightful opinions on hunting conflict management from the insiders’ perspectives.

Green Cultural Advocacy Viewpoints on Hunting Body Culture Management

The insider phenomenon used for this study could be expected actions of an unbiased hunting conflict management incorporating “green cultural advocacy action” predictable in the scope that the natural world is interlinked with the human culture preservation that could enhance the management of hunting conflict. T. P. T. Nwachukwu (2020) detailed that green cultural advocacy intertwined with ethical political and environmental activism that precludes political ecological justice. Hammer and Pivo argued that fostering green culture activism implies an operational approach that embraces the foreseeing of the “clients’ system and considerable ethical sustainability practices” apparatus in extenuating the perilous psychosocial problems, that clients come across and their understandings within the environment. These concerns alongside other stakeholders and management staff involvement are critical to green culture advocacy, when ethics enhancement is included will sprout the green ethical cultural advocacy (GECA) principle. The objective regulation should be based on the element of conditionality of explicit hunting conflict management requiring an unswerving cause-and-effect scenario for a crucial effect on the environment harmony. However, the cause and effect, of linkages between hunting skills amid cultural actions and the welfare of the nature reserve of the environment must be ethically tailored toward compliance with the existing hunting regulations and laws (both existing and amended).

The Study Methodology

Scholars have narrated evidence-based validity that is derived from the comprehensive methodology and methods that are prudently adapted (Carter et al., 2021). It is ethically comprehensive and a socially engaged background is significantly used in this study through the qualitative research methodology of two studies. However, utilizing big data within this approach takes various dimensions of possible challenges, dangers, and numerous ethical encounters (Carter et al., 2021; P. T. T. Nwachukwu, 2019).

In Study 1, the researchers recorded the voice of the participants and in Study 2 we took the images of the hunting body culture from participants. The researchers observed 12 activities of hunting behaviors in Taiwan, taking 320 photographs, and interviewed 14 aboriginal hunters from 2012 to 2024. The culturally specific ethics had been followed in the research process outlined by Te Awakotuku (1991). We explored the process of using “cultural construction” with our partners. Our partners preferred to use conversation, interpretation, and inspection to re-construct local experiences and facts.

The justification for employing this method is that cultural hunting for aboriginal/indigenous people is guided by the ethic of mutual respect dignifying the participants and creating variable safety for all involved in the research program. This viewpoint was supported by Fang et al. (2016); and Song et al. (2021, 2022); the social world and the offering of the apparatuses for study emanates from the perspectives of study participants' experiences.

These are the pretext from research members "experience of working and observing hunting events of the Gaya hunting group of the Tayal aboriginal/indigenous people of Taiwan." From 2012 to 2013, "we have been engaging in tribe activities, we bring our children to hunt with us in the mountains, and we recall the tribe relics of Taiwanese aboriginals in the mountains."... "During this time, we observe and record the knowledge of the interaction between hunters and nature, thus, we share living and hunting experiences in the mountains and also share information about the culture of boy hunting." During the activity process, the researchers agreed to the objects of observation and took notes by recording voices photos, and abstracts from the field records.

From 2012 to 2014, the researchers performed in-depth interviews with 14 Taiwanese aboriginal hunters and seniors, held field interactions, and collected first-hand empirical data. We experienced discussion, engagement, exchanged thoughts, infection, and joint construction of meaning as reflected in the works of Mishler (1991, pp. 52–65). The researchers planned in-depth face-to-face semi-structured interview outlines that were utilized by researchers such as Emery (2010) on hunting knowledge, habits, life experiences of body culture, the way of passing down information, and present situation of management. Given that in our studies the primary researchers were some Han Chinese, White, and Colorful Peoples, the strategy was recommended that we should be "closely connected to, or a part of, Aboriginal communities as designated in the work of Song et al. (2021, 2022), and invite individuals to participate" (Hoerber, 2010). The researchers used open-ended questions and allowed the participators/interviewees the option of not responding to the questions if they chose. The justification for using this approach is to adhere to the mutual respect and desired dignity of participators, also it enables to foster of beneficence and non-maleficence fidelity and responsibility, thus promoting the integrity of our study.

From 2015 to 2024, this study inspected multiple information sources, including the Aboriginal files. In addition to the published literature, the researchers collected 340 pieces of photo-voice/photo elicitation as indicated by a previous study by Mills and Hoerber (2013). The researchers made use of digital information,

government public information, field writing, and works of Taiwanese aboriginal authors as encouraged by the research patterns of Song et al. (2021, 2022). Thus, the researchers used fact observation accompanied by video devices to do file recording, focus study topics to explore the nature of the questions that were selected, and advanced seeking for the information that was closest to the facts. Lastly, we used a study structure to design the conceptual results for demonstrating the cultural context of the hunting body culture.

Findings of the Study

After the collection of the necessary data, the researchers detected that the hunting behaviors and ritual events of the Taiwan aboriginals are a mixture of "altruism" and "negotiation" that are elements of the social norms of the culture. This concept was surveyed by Adair et al. (2010) who declared that the terms should be accorded with alterity (otherness) and negotiating inclusion (togetherness) to manage ethno-cultural and racial diversity.

The Forming of Hunting Groups

The traditional areas of the Taiwanese aboriginal people are divided into three categories: mountains; arable lands; and waters. According to their traditional land use patterns, the tribes can be further divided by croplands, hunting grounds, and fisheries. Every tribe has its own specific and separate land-use space. They usually use natural features such as ridgelines and mountain passes as their boundaries. The hunting range is divided into a tribe's neighboring area or an area deep in the mountains. Hunting teams of two help overcome difficulties like struggling with prey or getting help if there is an accident. The description of the land use patterns for the indigenous tribes in Taiwan could be linked to this study's proposal to utilize green ethical cultural advocacy (GECA) that absorbs awareness of environmental justice articulation, demarcation, and implementation within their boundaries on ridgelines and mountain passages (Tables 1–3).

The Choice of Hunting Tools

The Aboriginals take more primitive hunting tools, which has a less pronounced effect on the animals and natural resources in the hunting areas. Despite the impact of other anthropogenic activities on the hunting ground natural resources, the impact of traditional aboriginal forms of hunting minimizes temporary and permanent impacts. In recent years, hunting tools, utensils, and techniques have become better constructed and more effective. The transition has been witnessed from the most

Table 1. Formation of hunting groups based on traditional ecological knowledge (TEK).

Source	TEK: Formation of hunting groups
Interviewee C14427	<i>"It depends! There may be two to three, even four groups of people. They used to stay for several days when they went to the mountain for hunting, and they slept there for days! The number of people involved in a group should be at least two people; it can be as many as six to ten, not certain."</i>
Interviewee S13827	<i>"I mainly go mountain hunting with my father, sometimes I go alone, and I seldom form hunting groups with others." "about twenty to thirty people are hunting in my tribe now, however, the true traditional hunters are few now. The hunting ways or skills our ancestors have set for us i.e., "to follow the tradition" is what we're doing now. Only very few traditional hunters guide hunters' virtue, obey sharing systems, respect the elders, and venerate the spirits. These days, I go hunting alone most of the time."</i>

Note. Authors' report.

Table 2. Outcomes of Hunting Group Foundations and Social Organization.

Source	TEK: Outcomes of Hunting Groups Foundation
Interviewee W14427	<i>"I used to go mountain hunting with my cousins, or we come together with some people and form a group of hunters. We delegate each member of the group on their chores and responsibilities, if there are many people around, we then divide ourselves and hunt separately and make appointments when and where to meet. But now I will go with my good neighbor." "The formation of hunting groups was formed by family co-worship groups. In the past, the tribes were smaller and hunting groups were formed by males who wanted to hunt, they had to find proper hunting partners who understood the terrain of the hunt and hunting skills. In each of the hunting groups, it is the most talented, courageous, and astute member that understands the terrain that leads the hunting party." "the mental state of each group of hunters is taken into consideration and is compact during the hunting process. Before hunting, the leader convenes with the members of the hunting party and performs an event that reconciles the people and things that were argued over in the past. Hence, the leader may get people who have argued with each other deliberately and use this chance to let them reconcile."</i>

Note. Authors' report.

Table 3. Traditional ecological knowledge reflections on hunting harvests.

Source	TEK hunting harvest
Interviewee W14427	<i>"The contribution of events is not necessarily limited to the hunting harvest." "Young men/women in the tribes usually have other jobs to maintain their living; therefore, the interaction between people is not as close as it was in the past. They often seek partners by themselves. The big hunting events to celebrate harvest are less common currently in our society."</i>

Note. Authors' report.

primitive bows and arrows and spears to elastic wooden guns and steel shotguns. The result has been an increased threat to nature.

Moreover, the selection of games differs currently from that in the past because of protecting certain species of animals native to Taiwan. In the past, hunters would shoot a variety of animals including birds, flying squirrels, and goats with specific arrows (i.e., trident arrows for birds), whereas today, the larger game is selected at the expense of smaller targets. Modern equipment allows hunters to select prey from much longer distances. The

material for traditional bows is elastic and tough plants like *Lagerstroemia subcostata* and bamboo are preferred, while the strings are made with the tendons of larger prey. The involvement of instruments for hunting that are sustainably sourced locally is crucial for implementing green ethical culture advocacy (GECA; Table 4).

To be a good bow hunter not only requires a good design and manufacture of the equipment but also the strength and training to draw the bow and an understanding of the flight patterns of the arrows in the context of the environmental setting (i.e., open and windy

Table 4. Hunting techniques and green cultural ethical practices.

Source	TEK technique for hunting tools and green cultural ethical practice
Interviewee WI4427	<i>“In the past, our people used to burn bushes, most times the Formosan Reeve’s muntjac would be stationed around to make sure the fire wouldn’t spread much and cause devastation to the nature reserve. But in the past, they used to go hunting by the day. Now, hunting is easier, when you hear the sounds of the animal, you just identify the type of animal from the sound they make and the direction of its location. When you’re nearer to the location of the sound, you just use a headlamp to look around. When the light flashes into their eyes, their eyes would reflect around the light. At night, often when their eyes are shone by the light, they would stay in that location, but some animals may run away. It depends on the ancestral spirits.”</i>

Note. Authors’ report.

Table 5. Indigenous knowledge and traditional hunting tools.

Source	Traditional body culture knowledge: Hunting tools
Interviewee KI4614	<i>“Our senior citizens said that the Japanese deployed different excuses to take our guns. They used compulsory confiscation, so we invented bamboo guns, some of our guns were made of wood. The killing range of the wooden guns was about 10 meters, it didn’t carry much of a threat to the animals, and as such kills only smaller prey. The Tayal tribe has mastered how to utilize the wooden gun effectively. Before the Japanese colonization of Taiwan, we used iron to make knives. We also use iron to produce hunting guns by ourselves. As for bamboo guns that can only shoot for ten meters, we have to find tree holes of flying squirrels. And we have to trick the prey to come out of their holes. We had to scratch the tree trunks with objects, then they would stick their heads out. But you can’t scratch the tree trunk too loudly, or once they are frightened, they fly away quickly.”</i>

Note. Authors’ report.

vs. closed forest). Today, the design of the equipment compensates a great deal for some of the early tools that the Aboriginal/Indigenous people used. However, despite the inferior quality of the equipment, the early aboriginal people understood the mechanics and physics of arrow flight and how to shoot arrows under a variety of environmental conditions much better than their descendants (Table 5).

Understanding your prey and how your prey’s routines, habits, and behavior might perceive your presence in the environment makes it much easier to capture. Hunting skills that today are lost to most field scientists. Practical ecological approaches enable the usage of innovative considerate patterns of conserving animal species, checking the demands for wildlife hunting that should absorb cultural practices that GECA promotes.

The Hunting Ritual Events

Traditionally, before Taiwanese aboriginals go hunting, they hold a ritual event (Fang et al., 2016). Take the Tayal tribe for example, it is an important tradition to inform *Utux* (familial spirit) sincerely before engaging in activities in the mountains (Song et al., 2021, 2022). Some think that *Utux* is an ancestral spirit because hunting has deep meaning for the Tayal. Hence, the Tayal believe that

when the excellent hunters died, their spirits would still guard in the places where they were most familiar, including the hunting areas that they used most when they were alive. Some think that the familial spirit of the mountains controls all things in the mountains. Though the meaning of *Utux* varies with people, it is generally a reverence for the unknown power of all the animals and plants in the mountains. Around the mountain entrance, hunters make a circle and use smoke and wine to converse with the ancestral spirit (Tables 6 and 7).

The taboos before hunting have different meanings and situations in different areas. Throughout the interview, this study found that the ways and methods of the mountain entering ritual events differ in space and time, owing to the different tribes and the habits that elderly custodians of the tribe’s hunting culture passed down (Table 8).

The Dealing Ways of Hunting Harvest

Hunting activities group oriented often and whoever hunts the animals must all obey the “sharing formula,” which is the most important social form. However, the distribution of prey and rituals of different tribes are not all the same. Prey obtained in the shallow mountain near another tribe must be shared with members of that tribe.

Table 6. Aboriginal rituals for hunting based on traditional ecological knowledge.

Source	Traditional ecological knowledge on aboriginal rituals
L14319	<i>"There is always a ritual event whenever we go hunting in the mountain. The ritual event is meant for our safety and for securing a good game. Just like ordinary people burn incense for protection." We bring cigarettes and use rice wine to converse with spirits in the mountains. There are always spirits in the deep mountains and that is common, hence, we ask our ancestral spirits to give us good luck and we do not want to encounter bad spirits in the mountains. There are always blessings when we go through the rituals before going to hunt." You are not expected to joke or use profanity when you are in the mountains."</i>

Note. Authors' report.

Table 7. Rituals and the *Utux* belief system in Indigenous hunting practices.

Source	Indigenous knowledge on rituals and <i>Utux</i> belief
Interviewee S13827	<i>"We find a familiar place and make a ritual event before hunting. It is important. It tells the <i>Utux</i> in the mountains, we are going to tread on the land you used to be and enter the hunting areas of our ancestors. Pray for those watching over us and bless the process smoothly and safely, we don't want the elderly, the weak, the morbid, and we should not encounter any broken legs. There was a time when my friends didn't do the ritual event before going to hunt, and they got nothing all night. There was a time I heard that one hunter didn't do the ritual event but he was still proud of himself since he got prey. However, when he was dealing with the prey, the fire became bigger, and then the prey burnt. Though it was shameful, the punishment was slighter."</i>

Note. Authors' report.

Table 8. Habitat consciousness and ritual variations across regions.

Source	Habitat consciousness
Interviewee W1427	<i>"I usually ignite a cigarette and toast, use mother language to communicate to the ancestor spirit: Please bless our hunting to be safe, we don't want to encounter anything bad. Please bring us prey. Most time, my wife at Nanou of Ilan, Taiwan, became assimilated with the Amis, they just dance!" (Researcher: "Dance for the ancestral spirit?") ... "Yes, it is part of the contribution of the worship. The ritual events for hunting differ from place. Some also bring salt and rice to the ancestral spirit."</i>

Note. Authors' report.

If it is hunted in the deep mountain hunting areas, then the prey can be distributed by the level of effort each hunter exhibited. The hunter who expends the greatest effort gets the more important parts like the head or thighs. People who train hounds can also get more, while the rest is distributed by other members of the hunting groups (Tables 9 and 10).

Utux is the image of God, ghost, ancestral spirit, soul, and so on in the Tayal language. In the hunting process, the way that the Gaga (social norms) share spirit experience can be explained: "Hunting" is only an identity of media, it contacts "nature," "ancestral spirit," and "tribes" (Song et al., 2021). The hunter must be assigned and trusted by the ancestral spirit; hence, he would also be respected and supported by his tribe's people. The belief that the ancestral spirits would take care of him

forever and then he could demonstrate his lofty and kind character (Table 11).

In the Taiwanese' Gaya aboriginal hunting culture of the Tayal people, there is a post-modern thought of self-management and its benefit should stimulate green cultural advocacy that transmutes conservation. The self-management thoughts make an individual become a miniature of social culture in post-modernism. The "Individual" and "society" are concepts that merge and contrast with one another. Contrasting with a clear divide between public and private in Western society, the Tayal society believes that the individual has fluidity and capacity. It is a social norm that is called Gaga. However, the basic Gaya hunting spirit between different tribes is mutual which creates one's social construct on greening ethical hunting (Table 12).

Table 9. Sharing formula concepts in indigenous hunting practices.

Source	Sharing formula concepts
Interviewee LI4329	<i>“Everybody must receive their fair shares together from the prey caught. Prey caught by traps depending on who set the traps must be shared with partners who assisted in setting the traps. We don’t dwell on how much effort we exert in setting the traps, When the prey is small, we eat together; when it is big, we bring some home.”</i>

Note. Authors’ report.

Table 10. Sharing concepts and cultural implications of indigenous practices.

Source	Sharing concepts and implication for indigenous culture
Interviewee YI4511	<i>“If we caught bountiful prey during hunting, we often pack them in little packages in the mountains. On our way down the mountains, we invite people to share some meat with us and rest, we don’t discriminate. If you are too stingy to share with share your bounty, Utux will punish you. You might not get anything the next time you go out hunting.”</i>

Note. Authors’ report.

Table 11. Differences between sharing and co-sharing in hunting culture.

Source	Difference between sharing and co-sharing
Interviewee S13827	<i>“The co-sharing system means that during the ritual events and marriage celebrations, the public would see how many millets you have, how much wine you brew, and how many games you have and take them out for celebration and share with them with your people. During the hunting expedition, as a group, we would share with our members first, and then we would bring home some games for our relatives, good friends even our in-laws. Co-sharing means all tribes take all they have; it is usually a big day in the tribe. Sharing means to obey the living gratitude of Gaga, that is the difference.”</i>

Note. Authors’ report.

Table 12. Internalized hunting skills and self-management through Gaya norms.

Source	Internalized hunting skills of aboriginal/indigenous people for self-management
Interviewee KI4614	<i>“Gaya is the words that ancestors left behind for future generations Children learn the behaviors and words of the elderly, such as things they will encounter when they are hunting. Thus, it is noted in their minds, that consciousness constructs a philosophical concept intangibly. Some have inborn generalized experiences of hunting which would be an exchange skill between their peers or in working with different tribes, but Gaya’s central idea will not change. Everybody knows this rule and this kind of norm will not change.”</i>

Note. Authors’ report.

Results, Recommendations, and Remarks

The Gaga system of hunting culture is the initial interaction that brings people back to nature. Even though modern society has changed gradually, the Tayal hunters still have the knowledge, beliefs, taboos, and norms about their traditions and basic recognition. From the constructing process of knowledge body management, we realize that humans alienate nature and our perception and insight continue to decrease with changes in

nature. Though deaths occur during hunting activities, under the traditional paradigm the hunter/people follow principles that maintain a sacred balance with nature. The Gaga system of hunting culture is more attuned to green ethical cultural advocacy (GECA) in the protection and conservation of animal species to be hunted and nature reserves. It greatly resonates with eco-justice and ecological patterns in the driven pragmatic redressing of the consciousness of sacred balance that is ingrained.

Implication for Theory

In post-modern society, hunting body culture for indigenous societies encompasses several managerial aspects such as in arts, sports, and social norms, and the rules of the management system are completely different from the past. Traditional ecological knowledge (TEK) became a “power discourse” (Nadasdy, 1999; Nygren, 1999). The inferred instrumentalism and mechanism theoretical perspectives within the hunting processes indicate that tribes recognize and realize the mixture of local knowledge and traditional beliefs. In the hunting culture ontology, the flesh is a carrier that emphasizes the human ontology, which recognizes traditional areas and finds the location of aboriginal culture. The deepest connotation of hunting culture is not emphasized on the comparison and competition of other cultural abilities, but the feeling of cooperation with close people. Thus, the experience of wandering in the mountains and looking for games assists in the merging with nature for the hunters reveals the social construct for the hunters, and builds rapport for the green ethical cultural advocacy (GECA) principle. They also adhere to the practices of kindness, virtuousness, and spirit of cooperation and co-share resources among the tribe society is built within the social construct theory.

The hunting management within post-modernism, social constructivism, and green ethical cultural advocacy (GECA) principle is a self-management system. It needs broad thinking, conversation, and problem-solving attuned to nature. By mediating the power-sharing relationship between countries and a single society community, it also views cooperation as the main point of self-management by self-governance (Asante et al., 2017). To maintain a sacred balance between humans and animals, people must be guided by the “spiritual norms” in the Aboriginal/indigenous belief centers and commit to “protected belief cause” in the Aboriginal/indigenous hunting self-management model according to social norm principles.

Recommendations for Practical Ethical Implications

From the point of view of policy managers, governments around the world face four common problems with Indigenous hunting:

- (a) disagreements of basic humanity;
- (b) disagreements about using natural resources;
- (c) different living standards; and
- (d) the impact that aboriginal culture, tourism, and recreation bring.

To protect the specialty of Aboriginal/indigenous living, culture, and tradition, and to enhance the welfare of Aboriginal people, we propose four principles:

- (a) respect differences;
- (b) practice justice and equality (Song et al., 2022);
- (c) prioritizing green ethical cultural advocacy;
- (d) promote self-government and encourage autonomy development.

Because aboriginal/indigenous traditional areas in Taiwan are relatively small-scale areas, it is easy to practice engagement partnerships. The process includes integration, adjustment, and mutual trust to build partnerships that should infuse green cultural ethical advocacy. In regions where a democratic political system is installed, the willingness of local groups to participate in partnerships is higher as Taiwan’s experience has shown. After building partnerships, we can raise the question of sustainable hunting and hunting body culture and a unified community-based conservation management plan (Tang & Tang, 2010) that is ethically infused. Our proposal for the four principles of respecting differences; practicing justice and equality, and advocating greening ethical culture resonates with the eco-justice concepts of social inclusion that the aboriginal tribes have exhibited in the study. The promotion of self-government and encouraging autonomic development are linked within the green cultural advocacy of consulting the *Utux* spirit before hunting and upholding all its tenets of ecological living for the species.

In the process of employing social norms to achieve aboriginal hunting self-management, the researchers first engaged in “community engagement planning” (Sasaki, 2015) from the perspective of an agent/agency for the development of an aboriginal hunting community. The decision-makers should assist the Aboriginal communities in developing such plans but should let the communities fine-tune and implement the plans. The effort needed to be collaborative, the most important resource is the relationships and partnerships that are built. More importantly, the original social model must be maintained. The traditional aboriginal ecological knowledge and social norms of the tribe must have a functional understanding of the natural resources first. This information forms the basis of the tribe’s “ecological understanding of the resources” from which the management principles and strategy of these natural resources are developed (Gadgil et al., 1993).

Aboriginal people understand changes in animal populations based on changes in the physical and ecological conditions in their hunting area, they can adjust hunting patterns and prey choices. This growth or withering of the wigs and grass signals if the local people are more aggressive and hunt the deer or if they should slow down in killing the deer. Tolerance has a value orientation concerning differences, as an abstraction cannot detent attitudes for specific out-groups, ideas, or

behaviors that permit the scrutiny of tolerance within and between societies (Hjerm et al., 2020). Thus, tolerance is a metric invariance across countries that is linked to convergent and discriminant validity (Hjerm et al., 2020).

Aboriginal peoples' appreciation of differences, cultural beliefs, etc. can facilitate the reduction of prejudice, as such, tolerance in the area management of the indigenous people is built on the knowledge and understanding of their resources. Solitude is another gem derived from the study's findings to be attuned to nature and the rituals before embarking on hunting were gleaned. Alterity (otherness) and negotiating inclusion (togetherness) to manage ethno-cultural and racial diversity, however as aboriginal/indigenous people. Forming safe-enough collaborative processes for stakeholders and actors who are fully invested in sustainability transformation can be achieved through experimenting with new ideas and practices that stimulate better mental models. These models like GECA when engaged with diverse perspectives, values, and knowledge systems that Aboriginal/Indigenous people possess of rich understandings of their cultures and ecosystem could assist the transfer of socioecological systems in better appropriate ways. In this study scenario of Taiwan, through the investigation of hunting and the indigenous knowledge and hunting conflict management have faced challenges from legal restrictions and conservation embedded in their customary laws. These customary laws on conservation and hunting should be brought to bear with contemporary laws in a synergy of complementing each other for sustainability through advocating the GECA approach in a co-management prism.

Remarks

Our remarks on the benefits, ethical issues, challenges, opportunities, and risks of using contemporary qualitative research approaches were discussed and adhered to. However, the content analysis must include the static substance culture in the tribe living, dynamic colloquial arts, and the elements of performing arts. Hence, we adopted a communication context of acoustic and visual which phenomenology uses, and added phenomenological elements of studying field reading, observation, listening, conversation, reflection, and introspection.

In summary, the acquittal of Bunun Hunter (Tama Talam) in the 2017 Supreme Court of Taiwan judgment as his traditional rights, as an Aboriginal/indigenous individual were upheld, indicates the contemporary recognition of the rights of Aboriginal/indigenous people's right to their cultural heritage, values and his usage of locally-made rifle specifies subsistence and cultural

purposes of green cultural ethical advocacy (GECA) which this study has linked to "Protected Belief and Status" for transformative spaces for Aboriginal/Indigenous territories. This buttresses the establishment of the Indigenous Peoples Basic Law in 2005, which identifies the rights of indigenous peoples to hunt for subsistence and cultural commitments on their customary terrains is apt.

Nevertheless, this law came into conflict with challenges in its implementation, as it encounters other laws that proscribe hunting in national parks or using certain procedures or armaments. However, the Indigenous Peoples Hunting Management Committee in 2019, which is a co-management establishment that intends to enable interchange and collaboration between aboriginal/indigenous hunters and state establishments on hunting issues collaborates with the acquittal and enables the quest for a "Protected Belief Status" for indigenous hunters/communities.

Study Limitations and Future Application to Practice

The main limitations of utilizing qualitative interpretivism are connected to constructivism and natural alignment to investigation of the subjective patterns of this methodology that are prone to bias by the researchers' interpretations of the events and primary data, subject to be congested by individual perspective, and cannot be generalized. Sigamoney (2020) described this pattern of qualitative interpretivism through a procedure of social constructionism and dialogue, as the subjective meaning is revealed by others. Marvasti and Treviño (2019) attested to the fact that subjective interpretive construction helps inform social problems rationality. However, the researchers tried to curtail this scenario by mainly utilizing participant observations, interviews, and aiding material (i.e., carbon copies, photographs, and recording files) to analyze the materials that formed the context of aboriginal hunting culture.

This research's findings and implications to practice inform that traditional ecological knowledge (TEK) within the indigenous hunting body culture should be linked to better collaborative self-governing management with the infusion of a green ethical cultural advocacy approach (GECA) for likely "Protected Belief Status." We cannot rule out the effect of global market forces on wildlife products, its effect on indigenous hunting practices needs further investigation. Its implications in applying GECA for future study, in the context of Taiwan's and other developing countries' indigenous communities could impend revered customary practices. Future research should triangulate more mixed and positivist/interpretive approaches to navigate the ethical justice

pattern for TEK and hunting, and the use of digital technology to administer GECA in hunting body culture.


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Data sharing not applicable to this article as no datasets were generated or analyzed during the current study.

References

- Adair, D., Taylor, T., & Darcy, S. (2010). Managing ethnocultural and 'racial' diversity in sport: Obstacles and opportunities. *Sport Management Review, 13*(4), 307–312.
- Alexander, E. R. (2000). Rationality revisited: Planning paradigms in a post-postmodernist perspective. *Journal of Planning Education and Research, 19*, 242–256.
- Ardrey, R., & Genesis, A. (2007). Men's predation and the natural order. In B. Luke (Ed.), *Brutal: Manhood and the exploitation of animals* (p. 51). University of Illinois Press.
- Asante, E. A., Ababio, S., & Boadu, K. B. (2017). The use of indigenous cultural practices by the Ashantis for the conservation of forests in Ghana. *Sage Open, 7*(1), Article 2158244016687611.
- Bishop, B., Owen, J., Fanning, L., & Wilson, L. (2021). *Addressing community concerns around increased vessel traffic in Nunavut: A review of policy mechanisms within regional, national, and international jurisdictions* (Marine Affairs Program Technical Report# 18). Dalhousie University.
- Brockington, D. (2002). *Fortress conservation: The preservation of the Mkomazi Game Reserve, Tanzania*. Indiana University Press.
- Brockington, D., Duffy, R., & Igoe, J. (2012). *Nature unbound: Conservation, capitalism and the future of protected areas*. Routledge.
- Brondízio, E. S., Aumeeruddy-Thomas, Y., Bates, P., Carino, J., Fernández-Llamazares, Á., Ferrari, M. F., Galvin, K., Reyes-García, V., McElwee, P., Molnár, Z., Samakov, A., & Shrestha, U. B. (2021). Locally based, regionally manifested, and globally relevant: Indigenous and local knowledge, values, and practices for nature. *Annual Review of Environment and Resources, 46*, 481–509.
- Carter, M., Shih, P., Williams, J., Degeling, C., & Mooney-Somers, J. (2021). Conducting qualitative research online: Challenges and solutions. *Patient, 14*, 711–718.
- Charlton, G. C., Gao, X., & Kuan, D. W. (2017). The law relating to hunting and gathering rights in the traditional territories of Taiwan's indigenous peoples. *Asia Pacific Law Review, 25*(2), 125–148.
- Colbourne, R., Peredo, A. M., & Henriques, I. (2024). Indigenous entrepreneurship? Setting the record straight. *Business History, 66*(2), 455–477.
- Dawson, A. & Longo, F. (Eds.). (2023). *Decolonize conservation: Global voices for indigenous self-determination, land, and a world in common*. Common Notions.
- Drucker, P. F. (2011). *Landmarks of tomorrow: A report on the new "post-modern" world*. Harper & Brothers. (Original work published 1959)
- Elias, N. (1976). *The civilizing process: Sociogenetic and psychogenetic investigations*. Wiley-Blackwell.
- Emery, P. (2010). Past, present, future major sport event management practice: The practitioner perspective. *Sport Management Review, 13*, 158–170.

- Equality Act. (2010). UK Public General Acts c.15, Part 2, Chapter 1, Section 10. <https://www.legislation.gov.uk/ukpga/2010/15/section/10>
- Estrada, A., Garber, P. A., Gouveia, S., Fernández-Llamazares, Á., Ascensão, F., Fuentes, A., Garnett, S. T., Shaffer, C., Bicca-Marques, J., Fa, J. E., Hockings, K., Shane, S., Johnson, S., Shepard, G. H., Shane, N., Golden, C. D., Cárdenas-Navarrete, A., Levey, D. R., Boonratana, R., ... Volampero, S. (2022). Global importance of indigenous peoples, their lands, and knowledge systems for saving the world's primates from extinction. *Science Advances*, 8(31), Article eabn2927.
- Eugene, J. (2020). Evolution: Mankind's biggest illusion. The regression of man through the camera of Kubrick. *Bharata Mata Journal of Multidisciplinary Studies*, 4(2), 79–85.
- Fang, W.-T., Hu, H.-W., & Lee, C.-S. (2016). Atayal's identification of sustainability: Traditional ecological knowledge and indigenous science of hunting culture. *Sustainability Science*, 11, 33–43.
- Feld, S. (1982). *Sound and sentiment: Birds, weeping, poetics, and song in Kaluli expression*. University of Pennsylvania Press.
- Forsyth, T., & Walker, A. (2008). *Forest guardians, forest destroyers: The politics of environmental knowledge in Northern Thailand*. University of Washington Press.
- Fournier, M. (2005). *Marcel Mauss: A biography*. Princeton University Press.
- Freitas, F. (2022). Hunters, rangers, cougars, and jaguars: Human and nonhuman territories at the Argentine-Brazilian border, 1960s-1990s. *História, Ciências, Saúde-Manguinhos*, 28, 59–79.
- Gadgil, M., Berkes, F., & Folke, C. (1993). Indigenous knowledge of biodiversity conservation. *Ambio*, 22, 151–156.
- Ghasemi, B. (2021). Trophy hunting and conservation: Do the major ethical theories converge in opposition to trophy hunting? *People and Nature*, 3(1), 77–87.
- Gosse, L. (2023). *Deconstructing Canada's colonial narrative: Creating space for indigenous narratives in Canadian heritage* [Doctoral dissertation, Thunder Bay, Lakehead University].
- Heath, J., & Barnwell, A. (2023). From the inside: Indigenous-settler reflections on the family uses of the Thomas Dick 'Birrpai' photographic collection 1910–1920. *Life Writing*, 20(1), 163–182.
- Hernando, A., Politis, G., Ruibal, A. G., & Coelho, E. B. (2011). Gender, power, and mobility among the Awá-Guajá (Maranhão, Brazil). *Journal of Anthropological Research*, 67(2), 189–211.
- Hjerm, M., Eger, M. A., Bohman, A., & Connolly, F. F. (2020). A new approach to the study of tolerance: Conceptualizing and measuring acceptance, respect, and appreciation of difference. *Social Indicators Research*, 147, 897–919. <https://doi.org/10.1007/s11205-019-02176-y>
- Hoeber, L. (2010). Experiences of volunteering in sport: Views from Aboriginal individuals. *Sport Management Review*, 13, 345–354.
- Howell, P. (2018). Hunting and animal-human history. In H. Kean & P. Howell (Eds.), *The Routledge companion to animal-human history* (pp. 446–473). Routledge.
- Hughes, J. D. (2007). Hunting in the ancient Mediterranean world. In L. Kalof (Ed.), *A cultural history of animals in antiquity* (pp. 47–70). Berg.
- Ibanez, J. C. (2014). *Knowledge integration and indigenous planning in the Philippines*. Charles Darwin University.
- Kuo, F. I., Fang, W. T., & LePage, B. A. (2022). Proactive environmental strategies in the hotel industry: Eco-innovation, green competitive advantage, and green core competence. *Journal of Sustainable Tourism*, 30(6), 1240–1261.
- Laidlaw, D. K. (2023). *Saturday Morning at the Law School January 14, 2023*. An update on consultation with Alberta's First Nations? University of Calgary.
- Laws & Regulations Database of the Republic of China (Taiwan). (2024). *Firearms, ammunition and knives regulations 113-01-03, The Ministry of the Interior*. <https://law.moj.gov.tw/LawClass/LawAll.aspx?pcode=D0080047>
- Lemaitre, A. (2021). Indigenous hunting and wildlife conservation: Tension between scientific and Indigenous knowledge and perceptions. *Conflict, Justice, Decolonization: Critical Studies of Inter-Asian Societies, 2021*, Article 2709.
- Li, X. (2007). *A history of the modern Chinese army*. University Press of Kentucky.
- Li, X. (2019). *The history of Taiwan*. Bloomsbury Publishing.
- Lindsey, P. A., Frank, L. G., Alexander, R., Mathieson, A., & Romañach, S. S. (2007). Trophy hunting and conservation in Africa: Problems and one potential solution. *Conservation Biology*, 21(3), 880–883.
- Louth, J., (2011). From Newton to Newtonianism: Reductionism and the development of the social sciences. *Emergence: Complexity and Organization*, 13, 63–83.
- Luskin, S. (2023). The highs and lows of serow (*Capricornis sumatraensis*): Multi-scale habitat associations inform large mammal conservation strategies in the face of synergistic threats of deforestation, hunting, and climate change. *Raffles Bulletin of Zoology*, 71, 400–416.
- Maciag, R. (2015). *Cultural heritage within postmodern reality*. Cambridge University Press.
- Marvasti, A. & Treviño, A. J. (Eds.). (2019). *Researching social problems*. Routledge.
- Marx, K. (1974). Letter to Ferdinand Lassalle. In B. E. Dukore (Ed.), *Dramatic theory and criticism* (pp. 797–798). Holt, Rinehart, and Winston.
- Mauss, M. (1979). *Body techniques. Sociology and psychology: Essays* (B. Brewster, Trans.; pp. 95–123). Routledge and K. Paul.
- Miah, M. R., Mustafa, M. S., Jayos, S., Ibrahim, N. H., Bujang, S., Saili, J., & Sayok, A. K. (2019). Towards stimulating tools for the advancement of environmental conservation through the promotion of psychological instruments. *Journal of Sustainable Development*, 12(4), 196–224.
- Mills, C., & Hoeber, L. (2013). Using photo-elicitation to examine artifacts in a sports club: Logistical considerations and strategies throughout the research process. *Qualitative Research in Sport, Exercise, and Health*, 5, 1–20.
- Mishler, E. G. (1991). *Research interviewing: Context and narrative*. Harvard University Press.
- Nadasdy, P. (1999). The politics of TEK: Power and the “integration” of knowledge. *Arctic Anthropology*, 36, 1–18.

- Nwachukwu, P. T., Akpagu, F. C., & Asuelime, L. E. (2017). Ecological social work: Reconnoitering socio-cultural and socio-political patterned ecological conservation awareness and benefits at the Big 5 False Bay Municipality. In L. E. Asuelime & A. E. Okem (Eds.), *The political economy of energy in sub-Saharan Africa* (pp. 47–67). Routledge.
- Nwachukwu, P. T. T. (2019). Identifying efficacy and difficulties in inclusion and non-inclusion of social justice educational advocacy on students' learning at rural schools. *Journal of Gender, Information and Development in Africa*, 8(1), 243–264.
- Nwachukwu, P. T. T., & Mazibuko, N. C. (2019). Integrating strength-based social work interview and eco-justice ethical approach in assessing living conditions for migrant women and families in Africa. *Journal of African Union Studies*, 8(3), 67–97.
- Nwachukwu, T. P. T. (2020). "Afro-eco-entrepreneurship" development in Africa: Utilizing green culture advocacy as a synthesis for political-ecological justice activism. In S. O. Oloruntoba & T. Falola (Eds.), *The Palgrave handbook of African political economy* (pp. 851–873). Springer.
- Nygren, A. (1999). Local knowledge in the environment-development discourse from dichotomies to situated knowledge. *Critical Anthropology*, 19, 267–288.
- Parsons, M., Taylor, L., & Crease, R. (2021). Indigenous environmental justice within marine ecosystems: A systematic review of the literature on indigenous peoples' involvement in marine governance and management. *Sustainability*, 13(8), Article 4217.
- Pereira, L. M., Karpouzoglou, T., Frantzeskaki, N., & Olsson, P. (2018). Designing transformative spaces for sustainability in social-ecological systems. *Ecology and Society*, 23(4), Article 32. <https://www.jstor.org/stable/26796848>
- Peters, T., & Austin, N. (1985). *A passion for excellence: The leadership difference*. Random House.
- Peters, T., & Waterman, R. H. (1982). *In search of excellence: Lessons from America's best-run companies*. Harper & Row.
- Sanderson, I. (2006). Complexity, 'practical rationality', and evidence-based policymaking. *Policy & Politics*, 34, 115–132.
- Sasaki, T. (2015). Revival of tradition in a Taiwanese aborigines' community using a community development process from a perspective of agent/agency. *International Journal of Social Science and Humanity*, 5, 566–571.
- Shan, S. (2024, March 15). Court reverses its ruling on Tama Talum gun use. *TAIPEI TIMES*, 2. <https://www.taipetimes.com/News/taiwan/archives/2024/03/15/2003814953>
- Shih, S.-M., & Tsai, L.-C. (2021). *Indigenous knowledge in Taiwan and beyond*. *Sinophone and Taiwan Studies* (STS, Vol. 1). Springer.
- Shilling, C. (2012). *The body and social theory* (3rd ed.). Sage.
- Sigamoney, R. F. (2020). *Exploring narratives of coping and resilience with socio-economic and emotional challenges in a group of Zimbabwean migrants: A qualitative study* [Doctoral dissertation, University of South Africa].
- Simon, S. (2013). Of boars and men: Indigenous knowledge and co-management in Taiwan. *Human Organization: Society for Applied Anthropology*, 72(3), 220–229.
- Simon, S. E. (2022). Hunting rights, justice, and reconciliation: Indigenous experiences in Taiwan and Canada. In S. E. Simon, J. Hsieh, & P. Kang (Eds.), *Indigenous reconciliation in contemporary Taiwan* (pp. 77–95). Routledge.
- Song, K.-S., LePage, B. A., & Fang, W.-T. (2021). Managing water and wetlands based on the Tayal's interpretation of *Utux* and *Gaga*. *Wetlands*, 41, Article 92. <https://doi.org/10.1007/s13157-021-01473-y>
- Song, K.-S., LePage, B. A., & Fang, W.-T. (2022). The conflict between environmental justice and culture. *AlterNative: An International Journal of Indigenous Peoples*, 19(1), 197–203.
- Sze, J. S., Childs, D. Z., Carrasco, L. R., & Edwards, D. P. (2022). Indigenous lands in protected areas have high forest integrity across the tropics. *Current Biology*, 32(22), 4949–4956.
- Tai, H. S. (2020). Resilience for whom? A case study of Taiwan indigenous people's struggle in the pursuit of social-ecological resilience. *Sustainability*, 12(18), Article 7472.
- Tang, C.-P., & Tang, S.-Y. (2010). Institutional adaptation and community-based conservation of natural resources: The cases of the Tao and Atayal in Taiwan. *Human Ecology*, 38, 101–111.
- Te Awakotuku, N. (1991). *He tikanga whakaaro*. Research ethics in the Maori community (A discussion paper). Ministry of Maori Affairs.
- The Conversation. (2021, October 22). *Restrictions on cultural hunting practices are limiting Indigenous people's access to food during the pandemic*. <https://theconversation.com/restrictions-on-cultural-hunting-practices-are-limiting-indigenous-peoples-access-to-food-during-the-pandemic-168267>
- Ulian, T., Diazgranados, M., Pironon, S., Padulosi, S., Liu, U., Davies, L., Howes, M.-J. R., Borrell, J. S., Ondo, I., Pérez-Escobar, O. A., Sharrock, S., Ryan, P., Hunter, D., Lee, M. A., Barstow, C., Łuczaj, L., Pieroni, A., Cámara-Leret, R., Noorani, A. ... Mattana, E. (2020). Unlocking plant resources to support food security and promote sustainable agriculture. *Plants, People, Planet*, 2(5), 421–445.
- Washington, H., Piccolo, J. J., Kopnina, H., & Simpson, F. O. L. (2024). Ecological and social justice should proceed hand-in-hand in conservation. *Biological Conservation*, 290, Article 110456.