

Volume 56 | Number 4 | 2023

# LEONARDO

THE MIT PRESS | \$18.00



# Mythical Mushrooms

## *Hybrid Perspectives on Transcendental Matters*

XIAOJING YAN

ABSTRACT

This paper focuses on the author's artistic practice. She has cultivated a series of evocative sculptural works out of *lingzhi* fungus by designing a controlled, human environment that, over time, gives way to an organic process. This hybrid bio-art experiment relies as much on science as it does on fate. *Lingzhi* holds cultural significance in Chinese culture and is called "the mushroom of immortality." Yan's works juxtapose Chinese mythology with contemporary culture to highlight environmental and social issues; her investigations with *lingzhi* mushrooms delve into the meaning of spirituality and metamorphosis and explore questions about being and becoming, art and nature, art and science, nature and existence.

*I am . . . a mushroom*

*On whom the dew of heaven drops now and then.*

JOHN FORD, *THE BROKEN HEART* (1633)

The fungus *lingzhi* (*reishi* in Japanese) is scientifically known as *Ganoderma* [1] (Fig. 1). The distinctive fan-shaped, varnished-looking red fungus is particularly beautiful, making the search for them a delightful experience, especially since this type of mushroom is rare in nature and only grows naturally on a small percentage of fallen, decaying trees. Beyond its notable appearance, *lingzhi* has also been used in traditional Chinese medicine for over 2,000 years, as reported in *Shennong Materia Medica*, a Chinese book on agriculture and medicinal plants, traditionally attributed to Shennong [2]. *Lingzhi* is thought to bring longevity and boost immune function [3].

Although it is not a hallucinogenic mushroom [4,5], sages and doctors believed it to possess mystical properties, and ancient Daoists regarded it as one of the elixirs that could help them achieve immortality. As a result, it has been dubbed "the mushroom of immortality" and is regarded as both a magical herb and a sign of good fortune and mystical power [6]. Since ancient times, there have been numerous mythical and literary instances of devotion to, worship of, and belief in *lingzhi*.

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Xiaoqing Yan (artist). Email: yan\_xiaoqing@msn.com.

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**Fig. 1.** *Lingzhi* mushroom at Algonquin Provincial Park, Ontario, Canada, 2016. © Xiaoqing Yan

Symbols of mushrooms discovered across the world show that they have played an essential part in preindustrial societies and that human identity is tied to nature. Each civilization's mythology includes otherworldly animals and miraculous plants that are significant for human beginnings and existence. *Lingzhi*'s spiritual richness inspired such tales. In Chinese and indigenous art, *lingzhi* reveals a remarkable link between human, natural, and spiritual realms.

When I see how technology provides us the illusion of control over nature, I am both terrified and captivated by the phenomenon. As part of my artistic process, growing and using *lingzhi* allows me to explore new sculptural materials and to speak to the rich history of human connections with nature. My *lingzhi* project investigates the meaning of spirituality and metamorphosis. My aim is that these works



help people connect with one another and deepen feelings of unity toward the natural world. This paper does not intend to undertake a mycological study but to explain how I was inspired to cultivate lingzhi for my sculptural works, the method I used, and why I believe it is important.

### THE LIFE OF NATURE AND ART

What I love the most about living in Canada is having a way of life that touches upon nature. I enjoy camping and hiking in wild settings, which was hard to do when I lived in big cities in China. In the fall, hiking in a forest to breathe in the scent of pine, with delight and awe I often see beautiful mushrooms magically appearing on the ground or on logs. I feel like Alice in Wonderland or Little Red Riding Hood seeking the mushrooms of fairytales.

One of my favorite books was a gift from a friend titled *The Woman Warrior: Memoirs of a Girlhood among Ghosts* by Maxine Hong Kingston. Kingston mixed memoir, myth, fantasy, and fact to reflect on her childhood, her mother and aunts' lives, and her awakening as a writer. As soon as I started reading, I saw myself there. As a child growing up in China, I was immersed in the folktales, myths, and legends of immortal and fantastical Buddhist and Daoist realms. Like Maxine, I did what most children would do: imagined myself surrounded by the immortals, as one of them, special and unique, armed with magical powers and profound insight. I translate these feelings and emotions into my artwork. My visual vernacular is an interconnected web of symbols that projects and reinforces themes of transience, longevity, rebirth, the illusion of the self, and reincarnation.

As one grows older, the loss of family members and friends is inevitable. Over time, I have become more interested in the materials and symbolism of longevity in Chinese culture. This has allowed me to develop an unusual relationship with life and death in which all the childhood stories about the lingzhi mushroom re-surge in my mind.

Throughout the ages the remarkable features of lingzhi have drawn the attention of people across the world. In 1781, William Curtis, a British botanist and entomologist, was wonderstruck by the mushroom. He illustrated lingzhi and called it a "handsome fungus . . . shining as if varnished" and "beautifully polished . . . I scarcely knew whether I had found a natural or an artificial production" [7].

The famous "Classic of Mountain and Sea" is a major source of Chinese mythology (476–221 B.C.E.) that contains a treasure trove of rare data and colorful fiction about the mythical figures, medicine, and indigenous peoples of the ancient world. One of its stories relates how Princess Yao Ji's soul clung to a lingzhi mushroom, turning it into a mushroom

of immortality [8]. Everyone in China knows the "Legend of the White Snake" [9], one of the Four Classic Folktales. In that story, White Snake achieved magical powers with thousands of years of practice. She transformed into a beautiful woman and married a human named Xu Xian. However, her violation of the boundary between human and nonhuman caused Xu Xian's death. Impressed by her sincerity and her perseverance in trying to save her husband, the Kunlun Immortal granted her the lingzhi to bring Xu Xian back to life. These are only a few of many similar stories. I grew up listening to these tales, and the magical lingzhi has always fascinated me.

Robert A. Blanchette, a plant pathologist at the University of Minnesota, wrote a paper about historical treasures encountered during a visit to the Forbidden City in Beijing [10]. His paper centered on the artifacts that used lingzhi as a motif or a material. He mentions two paintings (Fig. 2) depicting *luohan* or Arhats holding lingzhi. *Luohan* were thought to have achieved an advanced state of spiritual development and were revered as Buddhist protectors. Blanchette also discussed the collection of lingzhi mushrooms owned by the Qianlong emperor. There were many large lingzhi displayed in cabinets or on carved wooden stands, as how naturally occurring scholar's rocks are mounted onto carved wooden bases and served for contemplation and meditation. One of the mushrooms has a poem composed by the emperor and written on its surface in gold paint (Fig. 3).

Taoism played an essential role in promoting lingzhi for either medical purposes or spiritual associations. Taoism be-



**Fig. 2.** Two paintings of Luohans or disciples of Buddha holding lingzhi. These images were painted by Shodo-sho in 1851 and are depictions of the Luohans first made by Guan Xiu in 894. The originals were destroyed in 1850 and these were repainted in 1851. (© Walters Art Museum, Baltimore, William T. Henry Walters Collection / Licensed by Creative Commons Zero: No Rights Reserved)



**Fig. 3.** Jade Ruyi Sceptre, 1644–1912. Courtesy of ROM (Royal Ontario Museum), Toronto, Canada. ©ROM

believes human beings can achieve immortality by following specific regimes and taking certain magical herbs, such as the best panacea, lingzhi. It is said that if consuming lingzhi, one will never grow old or die [11].

Thus, the characteristics of good fortune and longevity associated with lingzhi became a unique component in Chinese culture. Throughout ancient China, lingzhi's symbolism has been immortalized and portrayed into a variety of art forms. But by the seventeenth century, lingzhi as an art motif was so popular that it eventually lost its earlier religious connotations, gradually becoming a motif of botanical elements. The curved lines on the top of the mushroom have been seminal in Chinese art and iconography and can be found in countless motifs and patterns. These motifs take the form of clouds and waves in traditional Chinese painting and drawing, textiles, crafts, and architectural design.

### LINGZHI IN ART AND CULTURE

Looking into the deep history that humans have with mushrooms, we can find many artifacts showing how cultures across the world revere mushrooms. This observation provides us a window into the reciprocal relationships with nature that have permeated every aspect of human life.

*Ruyi* is a Chinese curved decorative object often carved from jade. Its form resembles lingzhi with a long stem. In Chinese art, ruyi scepters are frequently shown as the adornments of Buddhist saints and Daoist *xian*. The word ruyi is a Chinese homophone for “as you wish or as you desire.” *Xian* generally refers to an “immortal” or “transcendent” being in

Chinese mythology and Taoist culture. A ruyi scepter would be given to signify good luck or congratulations on a special birthday or a big advancement (Fig. 4). Jade is the most valuable stone in China, having the same place as diamonds have in the Europe and North America. Jade symbolizes virtue and beauty and is regarded as an elixir, because it is believed to have the ability to balance one's qi (life force or energy) and promote overall well-being [12].

Lingzhi weren't worshiped only in East Asia. Historically, lingzhi have been associated with more magical and even supernatural properties with their use in different world regions by shamans from indigenous cultures. I found images of extraordinary masks from Nepal formed from large, single lingzhi [13]. Another mask is from the indigenous village Bella Coola in British Columbia, Canada (Fig. 5). It is believed that such masks were worn during ritual events to frighten evil spirits.

The enigmatic ancient mushroom stones carved in Mesoamerica between 1000 B.C. and 500 A.D. framed humans or gods in the likeness of mushrooms. They can be found in Mexico, Guatemala, and other places in the Americas and are thought to be shamanic objects depicting *Psilocybe* psychoactive mushrooms [14]. Figures with mushroom heads were discovered dated 2,000–1,000 B.C. from the most northerly petroglyphs in the world in the Petyemel river valley on the rocks of the Kuikule cliff, Chukotka, Russia [15]. An early Peruvian ceramic Moche portrait vessel from Peru depicts a human wearing a headdress encoded with two amanita-like mushrooms like the psychoactive fly-agaric, along with a mushroom-shaped ax [16]. The Moche culture reigned on the north coast of Peru from 100 to 600 A.D. Another “mushroom shaman” figure appears in the ancient cave paintings in Tassili n'Ajjer, Algeria [17]. It is believed to show the oldest known petroglyphs of psychoactive mushrooms. The cave paintings



**Fig. 4.** Ritual fungus mask, collected before 1924 by H.I. Smith from Bella Coola, a village on the west side of Dean River, British Columbia, Canada. (Mask, Canadian Museum of History, VII-D-460, CD1995-0355-005)





**Fig. 5.** Lingzhi, cast bronze, dimensions variable, 2014. (© Xiaojing Yan)

show people holding objects that look like mushrooms, and some have mushrooms growing from their bodies.

From the ancient mushroom-related symbolism found worldwide, we know not only that did mushrooms play an important role in the lives of indigenous cultures but that human identity is also deeply connected with the natural world. Each civilization has its own mythological stories with similarities between the supernatural creatures and magical plants. They are all connected to the origins of humanity and how humans exist in the world.

Lingzhi is the mushroom of spiritual prosperity, upon which legends were built. The visual record of lingzhi in Chinese and indigenous art provides insight into an incredibly fascinating relationship between human, natural, and spiritual realms. This is the magic mushroom that a little girl would dream of, to obtain supernatural powers, while listening to the legends told by her grandparents.

### CREATING LINGZHI BIO-ART

In 2014, I bought a dozen lingzhi mushrooms and had them cast in bronze (Fig. 6). Finished with a turquoise patina, the textures on the mushrooms are enhanced, resembling tree rings. These bronze mushrooms also mimic the bronze vessels and artifacts found in museums. The materials speak to aging and the passage of time. I arranged them onto the wall in the way that bracket mushrooms would grow in steps in nature. Against the white wall, these hoary objects appear to float in space. Bronze is often associated with monuments, images of power, or permanence and creates tension with lingzhi's delicate nature and mythology.

As an organism, lingzhi has a fragile and ephemeral life. However, the ancient Chinese collected lingzhi, and many of them have kept well for hundreds of years like those in the Forbidden City. They have more longevity than one would think, while bronze sculptures often get melted down and recycled. They are less long lasting than we would assume. I found the dichotomous nature of my lingzhi bronzes very interesting. I wanted to further my creative experimentation to preserve the cultural significance of lingzhi.

In early 2015, I visited a mushroom farm in China. These mushrooms, rarely found in nature, have now become mass produced and easy to find in the market. Unlike wild lingzhi, which are irregular in shape and color, commercially grown lingzhi are uniform in size, shape, and color. I was fascinated by the idea of humankind's control over nature and intrigued with the idea of growing lingzhi sculptures. Using lingzhi as a sculptural material not only speaks to the rich history of our relationship with nature but also allows me to embark on new explorations and experimentation.

After my visit to the farm, I started researching how to grow lingzhi mushrooms. It's important to first explain the growing cycle of a mushroom in a basic and simple way before introducing my mushroom sculptures. Mushrooms are fungus, but only a small percentage of fungus produce mushrooms. Mushrooms are just the "fruit" or "flower" of fungus. When we typically think of a mushroom, most of us are only aware of the stem and cap that appear above the ground or the wood surface. Upon maturity, mushrooms release millions of spores into the air. These spores are so small that they aren't easily seen, and they are the fungi equivalent of the seeds of a plant. If conditions are suitable, the spores can germinate. When germinated, they produce mycelium. Mycelia are networks of cells that appear like a plant root system. The mycelium penetrates the wood or other medium, breaking down those materials to extract nutrients for growth. The complex network of mycelium is often much larger than the mushrooms you see on the surface. Once the mycelium has grown enough to break through the surface and the specific temperature and light exposure are achieved, mushroom primordia, also called pinheads, will form. These small bumps will eventually become mushrooms, which are known as the fruiting body. When mature, this fruiting body will drop spores, and the whole cycle



**Fig. 6.** A lingzhi fungus with imperial poem in gill, composed by the Qianlong Emperor and titled *shengzhi yang zhi ping bayun* ("Eight rhymes on lingzhi screen by his honorable majesty"), elegantly inscribed in clerical script, signed Ruan Yuan. (© Sotheby's)

begins again. This is where my collaboration with nature began. I wanted to use lingzhi to grow sculptural works that show nature as the manifestation of uncontrollable phenomena supporting a cycle of life that is dynamic and inexplicable. I aimed to show lingzhi's characteristics of growth, aging, death, decay, regeneration, and immortality in my processes and forms.

After about two years of experimentation, with countless failures, finally I successfully cultivated my first lingzhi bust. There were many steps involved in the preparation of these spores for growth, and everything needed to be sterilized to prevent unwanted mold from growing. The substrate was mainly made of woodchips and had to be pasteurized in a pressure cooker for hours. I injected lingzhi liquid culture, the live lingzhi mycelium, into grain spawn bags. Once the grain spawn was colonized by lingzhi mycelium, I packed the mixture of pasteurized woodchips and the lingzhi grain spawn into the sculptural mold I created. The light, temperature, and humidity were controlled to ensure the growth of the mycelia. Appearing as a series of feathery webs, mycelia filled up the gaps between the woodchips, and it bound them together, acting as a binding agent. I then removed the sculptural mold, and the sculpture was now structurally intact, thanks to the mycelia. Figure 7 shows the stage when the mycelium completely covers the woodchips, turning it into a white papier-mâché-like sculpture. I then placed it in a small greenhouse with a controlled growth environment. At this point, I stepped back and let the sculpture sculpt itself. The sculpture evolved as the mycelium developed under the surface, and in a few weeks, the pinheads of the *lingzhi* popped up, slowly fruiting into lingzhi fruiting bodies. After about 2–3 months, the mushrooms matured and produced a cocoa-powder-like dusting of spores on the surface of the sculpture. This hybrid bio-art experiment, which relies as much on science as it does on fate, seemed to restore balance, with science and chance playing equal parts and with the hand of the artist, for the most part, on the sidelines. For me, it was important that each side of this equation had a chance to shine.

Not every attempt was successful. Often black or green mold appeared before the mushroom bodies had a chance to fruit. Especially with bigger forms, the process was much harder to control. So far, I have successfully cultivated 18 busts from the same sculptural mold, with each bust taking on its own unique form. I titled them *Lingzhi Girl*. These are

the girls in the stories, and the girls I imagine myself among, as one of them. Many people think they look like warriors from the terracotta army.

I produced a 45-second time-lapse video of the four-month process whereby the sculpture slowly transformed from the white mycelium stage into fruiting bodies and was eventually covered with the brown powder of the spores [18]. In Chinese mythology, it is believed that all things have spirit and can acquire human forms, magical powers, and immortality when they absorb the nimbus of the universe and the prime of the sun and moon. When there is a lack of energy during the transformation, they may keep some of their animal or plant traits. These busts can be seen as lingzhi in the process of acquiring the human form as the woodchips are bonded by mycelia. However, the video shows the reverse process by presenting the mycelium sculpture of a human form transforming into a hybrid of lingzhi and human form. This is a deeper view on the symbiotic relationship between humans and nature. Plants and animals provide food for humans and have been tended and bred by humans for thousands of years. Humans' increasingly parasitic symbiosis with nature may lead us to the destruction of the very thing that gives us sustenance. This raises a question on how we can steer our world toward better outcomes.

When I was satisfied with the growth, I halted the cycle of *samsara* (birth and death) [19] by slowly baking the sculptures in an oven, depriving them of their moisture and allowing the lingzhi to dry out and harden. When the mushrooms lose water, their surface wrinkles, creating a tree-ring-like texture. Mushrooms play a crucial part in the decomposition process by breaking down dead organisms in an ecosystem to help to release minerals, carbon, and other organic molecules back into the soil to provide food for plants and contribute significantly to carbon turnover in both air and soil. This feature of mushrooms enhances the *samsara* concept.

#### CONCLUDING THOUGHTS: DIFFERENT LOOKING INTO THE MUSHROOMS

A lot of people are afraid of mushrooms. People associate fungi and molds with death and decay, but in fact, that is the value of life in mushrooms—fungi participate in the cycle of life. They decompose dead and dying organisms and move all these nutrients back into the cycle. We are in awe of enigmatic mushrooms.



Fig. 7. *Lingzhi Girl #18*, cultivated lingzhi, wood chips and mycelium, 2021. (© Xiaojing Yan)



**Fig. 8.** Foreground: *Far from where you divine*, cultivated lingzhi, wood chips and mycelium. Background: *Star Mountain III*, star anise and metal pins, installation view at the Varley Art Gallery, 2017. (© Xiaojing Yan. Photo: Toni Hafkenscheid.)

The uncanny appearance of my *Lingzhi Girl* busts can be frightening for many viewers. But a Chinese viewer would recognize the lingzhi and immediately be delighted by the discovery.

Through the process of growing the lingzhi busts, I found out that the same mushroom can take on different forms according to the carbon dioxide level, humidity, and light conditions, from the typical shelf-like fungus of the Chinese apothecary to the prototypical toadstool with a long stem, to antler-shaped, horn-like forms. The 16 *Lingzhi Girl* busts take all kinds of lingzhi shapes. Lingzhi grows differently based on environmental conditions, age, and other factors. As it turns out, like humans they are shaped by culture and environment; they assume different forms and behaviors based on their habitat. The human body readily responds in a variety of biological and cultural ways to changing environmental stresses. We can acclimatize to a wide range of temperatures and humidity levels, not only by sweating through our skin; we have also developed different clothes to wear and different houses to survive in various climates. Our cognitive ability helps us to adapt to a novel environment by creating specific shelters, clothing, tools, speaking different languages, and adapting to different social habits.

Beyond the realm of Buddhist metaphysics, the lingzhi has a personal significance for me as a daughter facing the difficulty of being far away from my aging parents, struggling with the challenge of fulfilling filial duties, a common problem for children living overseas. And, as a daughter and a mother, I see the relationship of parent to child sharing many parallels to that of the lingzhi and the woodchips, one drawing sustenance from another. The woodchips are bonded by mycelium to create the sculpture form of a young girl, while this bust of a young girl also provides nutrition for the mushrooms.

Through lingzhi, we can catch a glimpse into nature's important role in Chinese mythology. In the immortalized Chinese landscape, the rare lingzhi mushroom has been found, venerated, and coveted for thousands of years. Eating a mushroom grown in the deep mountains provided one of the closest connections to nature. Inspired by the utopian

scenes depicted in traditional Chinese landscape (or *Shanshui*) paintings, I assembled a contemplative landscape charged with symbolism, where my lingzhi sculptures can dwell (Fig. 8). Accompanying them were the rabbits, deer, and other animals that often appear in both European and East Asian mythologies and folkloric tales. Hovering between worlds in a place that can only exist in the imagination, this fantasy world exists in between the real and the fictional, the human and the animal, the heavenly and the earthly.

Standing within exhibitions of my work, I felt as if my plants and animals could somehow communicate with viewers in this utopian fantasy world. Evidently, this wasn't just my fantasy. Scientists and mycologists have discovered that plants and trees can use mycelium's

underground networks as a sort of biological Internet to sound the alert when something perilous is drawing closer. At the point when a plant is attacked by insects, it radiates an admonitory signal that permits plants nearby to trigger their chemical defense systems before the invaders arrive. The fungal network that communicates within the ecosystem may provide an approach to comprehend the language of nature [20].

In 2019, I used electrodes to collect data from lingzhi mycelium. Then the bioelectrical recordings were saturated by an amplifier and turned into music through an algorithm. According to scientists, plants display emotional sensitivity in languages of their own. Electrical signals in plants respond to environmental stimulations; hence through sound, audiences could experience how patterns and melodies change in relation to fluctuations in the environment where the lingzhi sculptures were cultivated [21].

I am not alone in experimenting with mushrooms as materials. As a sustainable material, mycelia have been used by designers to create furniture, as a building material by architects, and even as a "leather" used in fashion products [22]. A California-based green burial company developed a mushroom suit for burial. Made from organic cotton and prepared mushroom spores, the suit will grow mushrooms after it is buried in the ground with a body inside.

Mushrooms represent rebirth, rejuvenation, and regeneration. They have been used in China and indigenous cultures as a powerful symbol for protection and good health. During a time when the collective experience of illness, death, and loss have been brought to the forefront due to the COVID-19 pandemic, I once again began reflecting on the relationship between life and death. I can empathize greatly with how people must have felt during ancient times. When the cause of a certain disease was not understood, the cures had to rely on traditional methods; lingzhi and other thought-to-be-magical mushrooms, part of traditional medicine and regarded as symbols of protection, provided reassurance and were believed to prevent illness and bring longevity. When we feel so powerless in the face



of natural disturbance, looking back to our ancestors and their relationship to nature can help us to reflect upon and build resilience using natural means.

My exploration into the world of mushrooms has become a window for me to understand the inner workings of nature in a more profound way. I am working on another series of experimental lingzhi sculptures. I am trying to grow lingzhi on found furniture. It's quite challenging, in that the wood of the furniture and the way it has previously been treated is totally out of my control. I do hope that with enough experimentation, there will be a few that become showcases for the wonder of nature's creation. I hope that by doing this, I can give the furniture a new life and purpose, drawing awareness toward a deeper understanding of human-nature relation-

ships, which I believe is of critical importance in the face of worsening environmental problems.

Yet, in this age of the Anthropocene, we can no longer afford to live in the realms of eternity and mystery that brought such comfort to our ancestors. Natural systems that have existed for centuries are now under direct threat from human actions. I am both horrified and fascinated by the way technological advancement gives humans the illusion of power over nature. My investigations with lingzhi mushroom delve into the meaning of spirituality and metamorphoses, as well as other questions about being and becoming, art and nature, art and science, nature and existence. I hope my work creates experiences, facilitates interconnectedness, and deepens unity with the natural world.

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## Acknowledgments

I gratefully acknowledge the support of the Chalmers Arts Fellowships program administered by the Ontario Arts Council. Many thanks to Andrea Carson Barker and Chen Shen for editing my manuscript and encouraging me to seek publication.

## References and Notes

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Manuscript received 8 March 2022.

XIAOJING YAN is a Chinese-Canadian artist whose work embraces her sense of having a hybrid identity. Following her permanent settlement in the Toronto area, her work reflects her journey through these various cultures, arriving at her own personal vocabulary. Her unique point of view unites the past and the present, encompassing culture and nature, art, and science.