

## **Indigeneity and Computer Music in the Anthropocene**

*By Chieh Huang*

We are living in the Anthropocene epoch, a time when music artists are truly shaping our perceptions—from cultural norms to environmental consciousness. It is an exciting era for computer music as it continually morphs under various global influences. What if our knowledge of the world could propel computer music even more? I will explore that very concept using Indigenous musical elements and notions as starting point. My mission is simple yet profound – to investigate how Indigenous elements through computer music composition can echo throughout our current period – the Anthropocene. I will discuss Atayal principles – an Indigenous perspective with the potential to shift paradigms deriving from the Atayal/Tayal, Taiwanese Indigenous people, one of the largest Indigenous groups of Taiwan. And finally, I will dive deep into how all these transformations ripple through society and reshape the soundscapes around us.

Firstly, to evaluate computer music composition, I will use four key

concepts: relation, creolization, listening positionality, and three fundamental Atayal aspects. In "Poetics of Relation," Edouard Glissant defines relation as interconnectedness and shared knowledge instead of isolation (Glissant, 1997, p. 131). He rejects the notion of a single origin and instead emphasizes identity as a network of relationships within Indigenous cultures. Glissant's framework emphasizes the importance of recognizing the diverse nature of our world. He suggests that instead of a singular origin, multiple interconnected histories exist. He promotes the idea of creolization, which embraces transformation rather than focusing on roots. This concept can be seen as a fitting analogy for a composer's creative process.

In his work "Hungry Listening," Dylan Robinson digs into how who we are - our privileges, biases, and skills - can impact what we hear for better or worse. (Robinson, 2020) He breaks down how our understanding is shaped by settler colonial beliefs, and makes a case that shaking things up – what he calls "unsettling" – can give a boost to Indigenous sovereignty. The idea of "unset-

ting" asks us to stretch beyond our narrow viewpoint. Looking at it from an Atayal point of view, the focus isn't just on the listeners but also their connection with whatever they are listening to. This underscores just how different Indigenous viewpoints are compared to settler colonial ones when it comes to thinking about time, space, and balance.

### ***Origin of Life*<sup>1</sup>**

The piece, *Origin of Life*, metaphors that the concept of life can be divided into three fundamental aspects of Indigenous existence: these aspects are the self, influenced by its surroundings; the essence of sound, which involves vibrations from human and nonhuman entities; and the self as an initiating force, connected to relationality. These components are important for understanding Indigeneity as they reveal the interconnected relationships that define relationality. This also is useful to understand surrounded interconnected relationships in Anthropocene.

*Origin of Life* combines a motion sensor<sup>2</sup>, acoustic sounds, and a computer-generated backing track. The motion sensor represents the de-

pendence of an embryo on its maternal environment, while the backing track serves as a metaphorical backdrop like the womb. The acoustic sounds represent organic movements, with the vibraphone producing sound through mallets. Each movement symbolizes nurturing care, performed with attention and precision, reflecting a mother's care for her offspring.

*Origin of Life* also metaphorically explores the three aspects of Indigenous existence. The acoustic sound represents the individual's awareness and perception of the surrounding world, while also passively absorbing the environment. The backing track serves as ambient noise, sometimes interrupting the flow as discussed by Danielle Goldman (Goldman, 2007),

The motion sensor symbolizes the dynamic, interconnected, resonant, and self-influencing element. Identity and relationality are closely connected, as suggested by Edouard Glissant. Glissant's framework encourages to see the diversity of the world and the interconnectedness of histories. He emphasizes the dynamic process of creolization and the importance of si-

multaneous presence and coexistence in understanding and relating to indigeneity. (Glissant 1997, p. 89)

### **Indigeneity**

Approximately 370 million Indigenous individuals exist worldwide. The term 'Indigenous' emerged in the 1990s to recognize the original inhabitants of specific regions, in response to the struggles of colonized communities against erasure, genocide, and forced assimilation under colonial rule. The Austronesian Taiwanese, known as the Indigenous peoples of Taiwan, have lived in the region for over 5,000-6,000 years. The Atayal tribe, led by my grandfather, holds a prominent position among them. Despite my grandfather passing away before my birth and restrictions on practicing our language and culture, I still feel a strong connection with this tribe. My experiences resonate with many and shape my creative process. The changing physical environment, with its excessive development and loss of original charm, greatly influences my composition. The faded colors of tribal heritage speak to the impact of the Anthropocene era.

### **Various conceptions in *Origin of Life***

In *Origin of Life*, the initial self is characterized by diverse facets and connections. The concept of origin encompasses multiple histories and communities. Glissant's *Poetics* introduces opacity as a form of relationality, rejecting hierarchy and embracing a global perspective. The self is complex and embodies opacity, reflecting elusive parts of my persona. Opacity allows for freedom and existence beyond comprehension. In this piece, opacity is represented by acoustic sounds produced on the vibraphone keys.

One key concept in the first layer is opacity, represented by a descending three-note figure: two thirty-second notes followed by a sixteenth note. The first phrase is an eight-bar phrase, with the top notes (E-D-C-B) acting as pedal tones and gradually decreasing in volume as they descend. Opacity symbolizes the indescribable. The notation may seem simple, but the performance requires subtle nuances. While playing the first phrase, I adjust the tempo, similar to how individual sentences are articulated, in order to engage in a musical dialogue with

the backing track. The *ritardando* aligns with the "ha," "shi," and the sound of a water bell in the backing track. Additionally, the motion sensor, triggered by the speed of the mallet stroke, influences the tempo of the music in the backing track.

The piece's beginning also explores the idea of defense, a different form of relationship than opacity. The consonant sound represents a warning, as Indigenous cultures had to protect themselves from colonization. The constant ringing bell represents time, which is important for cultural changes caused by colonization and environmental shifts.

The first layer, the self, explores relation, opacity, and identity in Atayal culture. Musically, it focuses on tempo and the interweaving of multiple lines. Using a three-note figure and eight-bar phrasing, I interact with the backing track, constructing and articulating each phrase. Simultaneously listening and playing requires complex reception and execution. Each note's touch expresses emotion and must blend harmoniously with the backing track.

Dynamics are important, as each phrase connects to the next.

Around 1'28", the sound gate

opens and the motion sensor is activated, triggering prayer and insect sounds. This event highlights the theme of vibration. According to Nina Sun Eidsheim, action is inter-material vibration. Playing the vibraphone and listening to the motion sensor output show that listening is an active process involving the transmission and transduction of sound. In her book "Sensing Sound" Eidsheim argues that all sounds are interconnected, from air molecules to sound technologies, performance spaces, and human bodies. Vibrational sensations, not just audibility, are fundamental to music. Eidsheim also emphasizes that auditory events can occur in any direction relative to the listener, and factors such as familiarity with the sound and the uniqueness of human anatomy affect how we perceive and locate sounds. Vibrational experiences help us understand the connections between materials and human/non-human bodies, which contribute to the creation, processing, and production of music. (Eidsheim, 2015)

Vibration occurs when the arms lift and prepare to strike the vibraphone bar. At 1'28", sound waves from the sample (the prayer) enter

the ear and travel to the eardrum. As I recognize the sound, I lift my arms and prepare to strike the vibraphone bar. The mallet's movement generates energy that strikes the vibraphone bar, causing air particles to vibrate and collide, creating sound waves. This vibration also affects atoms, body parts, and organs within the body. My expression of the need for decolonization and freedom resonates through these stages of vibration. The computer-generated sound greatly impacts my body, showing the interconnectedness between human gestures, movements, vibrations, and computer technology, similar to the influence of environmental changes.

In the second phase, my physical movements, particularly of the arms and hands, activate the motion sensor, creating an overflow of sound beyond my limitations. This interaction between my movements and the motion sensor forms a connection. I am both producing and receiving sound as I improvise on the vibraphone. To compose this piece, I incorporated recorded prayers from Atayal culture into sound samples, some of which were played in reverse. Specific movements at certain measures activate the reversing

prayer. The phrase undergoes transformations as the prayers manifest. I revisit the original phrase with double stops and ascending/descending stepwise movements. This continuous motion enhances the prayers and intensifies the piece. Switching to the drum, I transition from quiet to loud, along with jingles, representing indigeneity. The drums and vibraphone play together, showcasing their intricate relationship. The vibes and gestures increase, triggering the motion sensor and blending acoustic and sensor-generated sounds. Techniques include broken chords, rolls, and tremolos, depicting different aspects of indigeneity. Eventually, the speed of the rolls aligns with the rapidly-paced phrase, metaphorically depicting the influence and pressure on Atayal culture.

The interrelation of sound, backing track, and motion sensor represents indigeneity and computer music in the Anthropocene era. According to Dylan Robinson's "Hungry Listening," genuine listening to Indigenous music involves uncertainty. Settler and Indigenous listening methods differ. Prayer serves as a reminder of origin and highlights co-existence and presence. Glissant

suggests that connectivity reveals different sources of indigeneity. Listening becomes the audience's active responsibility.

The motion sensor activates different sounds based on the performer's hand movements. Water noise is triggered by sudden motion or change of speed caused by a certain energy level. The degree of hand movement determines which sound samples are played. Steadiness triggers the music box sound, and an energy level above 20 also triggers music box notes. Sound samples are controlled by the hands' jolting motions at specific time points. All clips have the same amount of reverb to match the natural sound of the vibraphone. The prayer is treated with reversal, amplification, change of speed, echo, tremolo, and reverb. The sound treatments and motion sensor-triggered sounds convey a shared message of responsibility.

In the final section, the motion sensor echoes the initial phrase of the vibraphone's statement: a three-note figure descending. Acoustic playing introduces steady and up-and-down motions. To simulate Indigenous sound stereotypes, I enhance the initial vibraphone sound

with jingles and drums. Initially, I played only the floor drum with steady sixteenth notes and rolls, gradually adding the vibraphone to pair its metallic sound with the drum. The rhythm intensifies as the speed and energy increase with higher strokes. The vibraphone creates various textures, while the motion sensor plays the three-note figure. As the rolls and textures change, I bring back the drum with a more intense triplet, reminiscent of Atayal ritual music. The interaction between the background, foreground, and middle ground emphasizes the theme of relationality, with distortion reflecting the oppression present in our environment.

### ***Through the lens of Indigenous values***

In *Origin of Life*, I invite to plunge into a world brimming with Indigenous wisdom, particularly that of Atayal culture. The audience begin to grasp its depth when diving deeper than the surface-level act of music listening—it's an immersive cultural journey, not just passive sound consumption. This composition is not only about melody and rhythm; it's a tapestry woven from

threads representing time, space, and beings. The listeners' challenge is to understand these complex relationships presented within the piece and how they reflect Atayal values. The beauty here is in understanding this musical work as more than performance art. It represents intertwined connections among spirituality, arts, culture – even ourselves – as if inviting us all onto one shared dance floor. It is worthwhile to remember that there's no finish line for composers on this creative quest – they continuously seek balance in their work – just like life itself.

### **Reflections**

Growing up in an Atayal family has taught me three important aspects. These aspects are reflected in this composition: The first aspect is cross-generational and timeless. Music and gatherings in Atayal culture create a sense of community. Our music is passed down through generations and carries a disciplined essence and spirit. Dylan Robinson quotes in his chapter on Indigenous space in "Hungry Listening" his mentor, Lumlamelut Wee Lay Laq, who said, "It is good to remember the teachings of our ancestors."

(Robinson 2020, p. 27). This phrase is often repeated during gatherings to honor our elders and ancestors. Esteemed leaders play a crucial role in creating spaces that nurture the growth of Indigenous artists and thinkers across generations. In the Anthropocene, it is equally crucial for humans to create spaces that allow the natural landscape to change and evolve, and thus allow the musicians to create the right environment in the appropriate landscape – a natural landscape that fosters biodiversity.

According to Robinson, the current resurgence of work by Indigenous artists and scholars is thanks to the efforts of previous generations. These elders, artists, and ancestors created Indigenous spaces by challenging colonial systems and establishing new ones that benefit younger Indigenous scholars and artists. Robinson's discussion on ancestral connections and respect aligns with the first Atayal aspect, which highlights the importance of intergenerational dialogue, honoring elders, and passing down crucial disciplines through generations. The idea focuses on timelessness and is all about staying fresh and meaningful through the ages. Think of a

catchy tune that sums up its decade but fades as years pass – it lacks that timeless quality. The real power behind a piece lies in its ability to serve a purpose, be functional across generations, and resonate with listeners young and old.

The first aspect of *Origin of Life* exemplifies cross-generational and timeless characteristics. Performers must understand the culture and its values, as reflected in the patterns of the bells and sound syllables, to faithfully pass these elements to future generations. In Atayal culture, place plays a crucial role in fostering relationships. It goes beyond geography and time, encompassing one to three-dimensional areas and an infinite three-dimensional realm where events occur. In the second aspect, place; according to Dene scholar Glen Coulthard, place is not only a way to understand and engage with the world but also a source of resistance against power structures that seek to erase our sense of place (Coulthard 2016, 79). This knowledge is fundamental to our vision of postcolonial coexistence. In music, the essence of place is expressed as a spatial-relational aspect of sound.

The concept of place is seen in *Origin of Life*, with the first place being formed during the creation of my compositional ideas. The birth of the first place coincided with the translation of my ideas into notations, marking the piece's genesis. The second place is created through the dialogue between the performer and the composer. Here, I, as the composer, can fully understand my own concepts. The third place emerges when the performer conveys the music to the audience. While it is important for the musical components to be accurately relayed, the audience's perception can vary based on their experiences and training.

The third aspect of Atayal culture is all about togetherness and harmony. This unique philosophy focuses on fostering a healthy artist from every angle—mind, body, and spirit. It was my father who drilled into me how important this balance between nature and us humans really is. In the Anthropocene, awareness of place also affects how computer music is composed.

Think of interdependence as our natural state. As defined by cultural psychologists – it's not just you



alone in your bubble but a network where we're all intertwined. These connections have massive sway over Indigenous composers dipping their toes in classical music – a rich tapestry woven from countless personal experiences. These experiences also shaped the Anthropocene and the direction of computer music. Additionally, the cross-cultural musical materials in *Origin of Life* may not be as firmly anchored as expected. Various musical structures from the West, such as scale, mode, harmony, and meter, can be observed. Instead of relying solely on Western theory, I encourage readers to explore the music's relationships, dynamics, orientations, and essence from interconnected perspectives.

When engaging with *Origin of Life*, it is important to respect the culture, follow the composer's directions, maintain an open-minded and generous outlook, and embody humility in the Anthropocene epoch. The three Atayal aspects can be organized and seen as time, place, and beings - can enhance creativity. Time surpasses traditional boundaries, allowing for new forms and the transmission of legacies. The perspectives of performers, com-

posers, and audiences shed light on place, resulting in three unique musical dimensions. Composers aim to harmonize with the world in terms of beings. The piece *Origin of Life* exemplifies the aspects of time, place, and partially, beings.

In conclusion, the grand orchestra of existence prizes variety over singularity and values many origins instead of one. In this epoch marked by human impact – dubbed Anthropocene – it's on us to strengthen ties not just among individuals but across landscapes too. Our obligation runs deep, weaving through all aspects we've discussed in this article. From Atayal values of coexistence, harmony, and place, one understands the importance of allowing enough space for composers and musicians to create content that is suitable for the environment. A suitable environment produces electronic computer music that contributes to the fostering of an environment rich in biodiversity. In an era defined by human impact - the Anthropocene, computer music continues to evolve alongside environmental shifts, with humans playing a leading role as composers of these sonic changes. We are em-

barked on a complex odyssey where unpredictability is the only certainty.

### Notes

[1] *Origin of Life* performance  
<https://youtu.be/pNLsQzBvqWg>  
 (last access Nov 27, 2023).

[2] The motion sensor is called MUGIC, designed by Mari Kimura.

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