Songs of Wind and Flowers

REFRAMING THE AZTEC DEATH WHISTLE

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Introduction

Musical instruments are unique semiotic objects, in that they conjure not just the sounds we associate with them, but the people who we associate with playing them. A broken guitar might remind of us a rockstar; a horsehead fiddle with a Tuvan throat-singer; or a banjo with an overall-wearing, straw-hat-toting farmer. While many of these images are grounded in and even reinforce cultural and aesthetic expectations, we must be cautious of how these associations play into the bigger societal pictures from which they emerge. Music technology and musicology grant us a unique historical perspective that we can use to analyze how different societies engage with and depict each other for these reasons, as the phenomenology of musical instruments crystallizes abstract social discourses into concise images, sounds, objects, and bodies. Thus, as music technologists, it is our responsibility not just to assess how musical instruments create sound and how we can improve on these mechanisms, but also how these very sounds and objects perpetuate the cultures that gave them their form, and consequently how we can use these instruments to address historical injustices. To this point, the focus of this research revolves around the so-called Aztec Death Whistle – presenting popular and archaeological theories surrounding it; addressing the Eurocentric stereotypes and histories of violence targeting Nahuas and other indigenous Mesoamerican peoples; providing a brief overview of Nahuatl poetry, song, and the translation thereof; and finally a synthesis by redesigning the instrument with a decolonizing performance practice intended to address these topics in a way that is audible to and inviting of Western ears to bring ongoing colonial histories of violence into discussion.

Popular Portrayals and Music Archaeology

First in order is an explanation of the Aztec Death Whistle's discovery, function, and perception. Dave Roos (2022) gives a concise history of the instrument, opening his article by stating:

> "Buried beneath the streets and plazas of modern-day Mexico City are the ruins of ancient Aztec temples where human sacrifices were routinely performed to appease the gods. In the late 1990s, while excavating a circular temple dedicated to Ehecatl, the Aztec wind god, archeologists uncovered the remains of a 20-year-old boy, beheaded and squatting at the base of the temple's main stairway. What made the Mexico City discovery so remarkable was that the skeleton of the human sacrifice was found clutching a pair of musical instruments in each hand. They were small, ceramic whistles decorated with a menacing skull's face. As the archeologists quickly realized, the skull image represented Mictlantecuhtli, the Aztec god of the underworld and of death itself."

Given the morbid circumstances of the discovery, it is no wonder that the instrument took the internet by storm. Roos highlights that pop-cultural myths came to surround the instruments and their replicas. Some such claims include that they were meant to imitate the screams of sacrificial victims, or that hundreds of Aztec warriors deployed them to terrify their opponents in battle, a claim circulated by indigenous instrument maker Xavier Yxayotl in a demo of the instrument that has been viewed 7.5 million times on YouTube (Yxayotl 2018). Whatever the basis of these claims, their virality has brought the Death Whistle into the forefront of discussions around the Aztec Empire and Mexica people.

The instrument also makes an appearance in *Ghostbusters: Afterlife (2021)*, which elicits an unearthly (heavily edited) shriek supposedly meant to ward off evil spirits (*Ghostbusters: Afterlife, 2021*). Former MythBusters host Adam Savage suggested to the film's director Jason Reitman that the Death Whistle be used in the movie, and thereafter Savage designed the props in a similar skull shape reminiscent of "rotted stone" (Savage, 2021). Savage's suggestion of the instrument, while fitting into the macabre aesthetic of the film, is just one of many examples of the mythical instrument being displaced from its context and culture. In this case, Savage's rendition of the Death Whistle 'rejects its reality and substitutes his own', as the film places the whistle on a heap of books in a farmhouse in Oklahoma, reduced to a curio devoid of historical context.

While there is a plethora of interpretations of the instrument and its use cases, the most popular ones thematically center on tying the instrument's jarring scream into ideas of ritualistic death, invoking terror, and gruesome bloodshed. Given the archaeological circumstances in which the instrument was found, these portrayals make sense to those who have been struck first and foremost by the shocking sounds, and especially for those whose understanding of the Aztec culture is of a warlike people who tore the beating hearts from the chests of their kin every day.

And yet, as we will discuss in this essay, there is much more to this instrument's history than meets the eye and ear. Arnd Adje Both, the first archaeologist to play the whistles and a preeminent scholar in pre-Cuauhtemoc (pre-conquest) Mesoamerican instruments, has done extensive work on the sounds and context of the "skull whistles" of Tlatelolco (Both, 2006). He discusses how the whistles achieve their sonic character from an air spring, which is a sound mechanism unused by other wind instruments (2006, 2010). By blowing a stream of air at an angle over a circular opening in a spherical container, the air stream devolves into chaotic noise as the air spring causes interference with the flow of air. While this mechanism is certainly capable of producing shriek-like noises, as is often the case in larger commercial replicas of the Death Whistle, Both notes that it is impossible to know if the original instruments were played in such a way intended to produce this noise (Roos 2022). The original instruments were analyzed and replicated with the help of CT scans to model their acoustics, ranging tonally from a fuzzy whistle to a loud shriek depending on how much pressure is used while playing. Similarly to how

other wind instruments such as clarinets and recorders can 'squawk' unpleasantly when played with too much pressure, the anatomy of the instrument itself is conducive to many sounds, and without additional context, it is hard to determine which of these sounds were intended.

The context in question here is very limited in scope, as the only two skull whistles discovered so far were located at a temple dedicated to the god of wind Ehecatl, but they nevertheless suggest a cohesive narrative for what sounds they might have been designed to make. Both strongly emphasizes the importance of their archaeological environment, as the rituals and mythology of Ehecatl are suggestive of how the clearer wind-like register might have been the intended use of the instrument in the absence of specific written records. Of primary importance is that Ehecatl – sometimes manifested as Ehecatl-Quetzalcoatl, a primary deity of the region implicated in many creation myths - is depicted among the pre-conquest calendrical rituals and gods inscribed in the Codex Borgia as diametric/complimentary to the skeletal god of death, Mictlantecuhtli (Both 2006). This posits the skull shape of the whistle as invoking the relationship between the two gods and consequently the duality of life and death. Building on the importance of Mictlantecuhtli in the whistle's ritual circumstances (aside from its sacrificial association) is that the whistles were not the only artifacts found near the sacrificial victim – a ceramic bowl full of obsidian blades connects the wind-like sound of the whistles to a myth of Mictlan, the land of the dead that Mictlantecuhtli ruled, where some souls went in the afterlife. While there were several supposed outcomes for the souls of the dead in Mesoamerican religion (which was by no means monolithic), one such outcome was that souls undertook a perilous trek through a field in Mictlan, with buffeting winds of icy obsidian blades. To protect the dead from such dangers, sacrificial objects would be burned or buried alongside the dead to take with them on their path, and those buried with nothing faced a grisly fate:

"(36) Auh in oncän in itz**eheca**yän, quil cencah netolïnïlo, mochi **[eh]ecat**oco in itztli, ïhuän in xältetl…"

> And in that place blow winds of obsidian, it appears that one is very miserable, that many fragments of obsidian pieces and gravel are carried by the wind…"

"(40) auh in äquin ahtle ïtlatquitzin, in zan iuh yäuh, cencah tlaihiyöhuia, cencah motolïnia, in ic quïza itz**eheca**yän."

> "and he who has no property at all, who goes all alone, he has a bad time, he suffers a great deal in passing through the place of the obsidian winds."

Modernized translation of Sahagun's *General History, Book III* and Michel Launey's *Introduction à la Langue et à la Littérature Aztèques (1980),* provided by David K. Jordan (2001). Emphasis was added to draw attention to the occurrences of the word Ehecatl, or wind, in the text.

Beyond this, Roos cites folklorist Lewis Spence's *Myths of Mexico and Peru (1913)*, where a section depicting the festival of Toxcatl references a whistle symbolic of the "wind-god's progress over the night bound highways" that sounds a "noise such as the weird wind of night makes when it hurries through the streets" (Spence 1913, p. 70). It is plausible that, given these circumstances, the whistle's wind-like sound, skeletal similarity to Mictlantecuhtli, and juxtaposition to obsidian blades drew upon the beliefs reflected in these texts, and served either to summon the circumstances of the afterlife, as burial goods to assist the deceased upon their journey through Mictlan, or to reproduce sounds of the night-wind.

And yet, with so few artifacts that fall into this organological anatomy, the nuances of the instrument and its uses are often brushed aside as the sound and shape of the whistle invite people to fill in the gaps. Until any instances of this instrument are found buried alongside a warrior or at the scene of a battle, the claims that the whistle was used in psychological warfare are unsubstantiated, and yet they hold purchase with those casually perusing the internet, famous TV hosts, and even indigenous instrument makers. While Both notes that a "new tradition emerged of artists, musicians, Aztec dancers, and Mexican nationalists incorporating the Death Whistle into their own… new stories", these new stories can often play into trends of dehumanizing, otherizing, and desecration of indigenous Mesoamerican cultures that are the legacies of conquistadors and Christian missionaries. It is towards a more respectful and decolonial 'new tradition' that this research seeks to contribute and encourage.

Land Use Acknowledgments

Before delving into deeper discussions of the histories and peoples discussed here, I must recognize that as an American of European descent, I was born on land that was taken by genocidal violence from the indigenous peoples living in America as a direct result of Western Colonization. I attended Cornell University for my undergraduate studies, which was the largest and most economically extractive university constructed on indigenous land taken via the Morrill Land-Grant Act of 1862 from the Gayogo̱hó:nǫ? (the Cayuga Nation), members of the Hodino̱hsǫ́:nih (Haudenosaunee) Confederacy (Cornell Land-Grant website). The Georgia Tech Atlanta Campus where I am conducting my graduate studies was built on lands belonging to the Mvskoke (Muscogee), who were also wrongly forced from this land. I acknowledge the continuing pain that these histories and precedents have inflicted upon Indigenous Americans throughout the continent. I hope that through works such as this paper, I can honor the history of indigenous peoples who have suffered from European Colonization, bring awareness to how American Imperialism is predicated on violence against indigenous bodies, and bring these histories into discussion within academic communities that often do not address these injustices as a priority of their research. While the study of music technology often engages with and runs alongside civil rights movements and emancipatory histories, it is still an exclusionary field to many marginalized identity groups, including indigenous identities,

and more work must be done to address these issues within the academic environment.

Statement of Intent

While this paper focuses primarily on the oppression and portrayal of the Nahua people of Mesoamerica, Avila et. al. highlights that the wider diaspora of Latin America is underrepresented in the field of music technology too. In their paper *Being (A)part of NIME: Embracing Latin American Perspectives (*2022) they discuss that even while Latin American technologists have contributed significantly to the field of music technology, the number of Latin American technologists participating in the New Interfaces for Musical Expression conference (NIME) – perhaps the most prestigious conference in the field – is low due to language barriers, steep costs of electronic music equipment, and the expense of attending the conference itself. The paper also explores the impact of coloniality on technology, quoting one participant of the study saying "The colonial relationship comes from technology, from where it is made, and even knowledge. When you come here (abroad), you are perpetuating that inequity" (Avila et. al., 2022). It has been well-documented that the Eurocentric historiographic invention of the terms "Scientific and Industrial revolution" serves primarily to substantiate colonial methodologies of domination because of the supposed technical superiority of the West over the Rest, despite the extensive history of intellectual theft and plagiarism among many prominent innovations associated with the Western canon (Harding 2009, Elshakry 2010, Fan 2012, Suman 2017). Thus, it is essential to encourage conversation in the field of music technology about the legacies of the technologically enabled colonization of Mesoamerica, as it too has a history stained by genocidal violence that continues to steal from and harm otherized bodies.

As discussed above, the Aztec Death Whistle has accrued fantastical associations without archaeological basis because of prominent stereotypes that proliferated to facilitate European colonization of the region. If communicating the nuanced histories surrounding the instrument and the cultures of the indigenous peoples of the region was enough on its own to dispel the misinformation surrounding the instrument at large, one would expect that these myths would have stopped proliferating, and yet they persist still. Undertaking a redesign of the instrument to utilize its attention-grabbing sonorities as a means of bringing attention to these misconceptions is thus more than an exercise in gathering information to perform a historically respectful and accurate context. Moreover, it is an exercise in selecting information that is digestible enough to attract the audience in mind, but indigestible enough to force them to reconsider their assumptions. The goal of this project is not to perform a completely historical recreation of how this instrument might have been used (outside of ritual sacrifice of course), but more so to use the instrument as a method of getting the audience to question what they have been taught from pop culture about the history of Mesoamerica's colonization.

While it is not within the scope of the paper to fully discuss the complex colonial discourses listed here as they have unfolded over the past five centuries, it is necessary to provide a summary of the issues that were considered when constructing a backdrop with which the Death Whistle could be reframed. This may also serve as a guide for others interested in the topic to avoid common misconceptions and pitfalls in a field littered with revisionism and mistranslation.

A Cursory Overview of Colonial Power Imbalance, Translational Intricacies, and Prototypes of the Capitalocene

For now, while it is important to provide context to the historical social dynamics that are responsible for how the Aztec Death Whistle has traveled from its origin in Tlatelolco into contemporary pop mythology, the main interest of this section is to focus on elements of this history that can be incorporated in the process of redesigning the instrument. There is extensive documentation and ongoing discourse in the field of indigenous Mesoamerican music, religion, and colonization which cannot possibly be fitted in this brief essay, so we must focus instead on what we can learn from these discussions, and how we can move toward a more equitable and wide-reaching conversation of the topics at hand through this musical endeavor. The topics discussed below will therefore focus less on a general history, and more on creating a constellation of historical, societal, and linguistic contexts from which compositional and design choices can be made.

A History of Manifold Misinterpretations: A Reading of Tomlinson's *Ideologies of Aztec Song*

It is difficult to discuss the history of the Aztec Empire without first talking about the Spanish Conquest and its unique archival challenges. While it is bitterly ironic to begin a discussion of indigenous histories from the European perspective, it is necessary to do so as the Christian missions and European governments set up in the wake of the Conquest systematically destroyed many of the pre-contact indigenous records, largely to facilitate converting and 'civilizing' the native populations (Arbagi, 2011). While several surviving codices were written during or shortly after the conquest surveying and incorporating perspectives from the indigenous peoples, it is essential to take them with a grain of salt as many of them are rife with Eurocentric biases that are not acknowledged by the authors. Bias is an inherent element in almost all primary sources, but we must be cautious of taking the word of accounts that do not attempt to address their biases and who have demonstrable conflicts of interest. Beyond the fact that many of the surviving documents were written by Europeans who were openly dismissive of indigenous cultural elements as blasphemous or barbaric, the language of Nahuatl was entirely pictographic before the introduction of the Romanized alphabet, and so even the indigenous accounts written in Nahuatl were written in a linguistic system filtered through European linguistic systems (Tomlinson). The result is that separate sources can be conflicting, incomplete, partially destroyed, or written in non-standardized language that complicates translation and contextualization. Our constructions of pre-Cuauhtemoc Mexica culture are consequently

patchy, and it is important to refer to archaeological records, when possible, as well as perspectives from later indigenous authors who are descended from the cultural and linguistic traditions of the Mexica.

Archival integrity aside, a larger hurdle has stood in the way of understanding the surviving records - linguistic and epistemological differences prevented European scholars from properly engaging with Nahuatl documents and literature during the years immediately following the Conquest of Mesoamerica. Gary Tomlinson undertakes a masterful analysis of the linguistic challenges in translating texts written in pictographic and early post-Cuauhtemoc Nahuatl documents. He hones Derrida's poststructuralist critiques of European logocentric language that elevates speech as the most 'evolved' form of language and emphasizes how the nuances of pictographic Nahuatl contribute to a localized perception of the world that embeds additional semantics. Alongside the systematized destruction of indigenous peoples, language, and thought, the context for many surviving texts has also been destroyed. The result is that many elements from these documents still do not have adequate translations, stemming in part from the inability of early European authors to preserve Mexica culture in media capable of containing the original semantics.

Furthering the post-structural critique, Tomlinson elaborates on how the gap between language and the concepts depicted by language, defined as *differance,* finds its greatest contrasts between European thought and Nahua thought in the realm of *in xochitl in cuicatl,* or Flower and Song, the term given to the artistic combination of music and poetry. By enforcing a Eurocentric paradigm upon the art, whereby the words of Flower and Song were deemed phenomenologically separate and more important than the music over which they were sung, European analyses obscured the *supplementarity* of the indigenous art form. Thus the semantic integrity of the documents and the initial efforts of European scholars to conduct formalized analyses of the art form was muddied by the inseparability of the two mediums.

While later generations of authors undertook the important task of approaching Flower and Song from the lens of an indigenous colonial discourse, the aversion to assess this literature was symptomatic of the culture shock that European colonizers used as a tool to otherize indigenous bodies. Tomlinson further elaborates on some of these initial attempts to analyze Flower and Song with European social evolutionary models through Lorenzo Boturini Benaducci's precis *Idea de una nueva historia general de la America septentrional*. While the full survey suggested in the precis was never completed, Boturini's attempt to frame Flower and Song within European models of social evolution as opposed to separated analysis under the European multimedia of poetry and song demonstrates a clear divide between indigenous and European philosophies. In Boturini's analysis of written collections of Flower and Song in *los cantares mexicanos*, one of the few volumes of Flower and Song transcribed from pre-contact indigenous Mexica tradition, he posits that while the songs had achieved sophisticated poetic styles indicative

of Vico's rational/humanist age of social evolution, even going so far as to extol the Texcocan tlatoani (king) Nezahualcoyotl for his immortalized compositions, the poems maintain thematic focus on 'earlier' wisdoms characterized by the intermediary heroic age. Tomlinson reduces Boturini's consternation poignantly: "The *cantares* bear the dual burden of aboriginal utterance and post-rational refinement."

Additionally, Tomlinson turns attention to the quintessential element of metaphor in Nahuatl – pairs of words that indicate a third semantic, termed by Garibay as *diphrasis*. Reminiscent of the circumlocutory kennings of Norse poetry, diphrasis was a hallmark not just of Flower and Song but is prevalent in Nahuatl altogether. Tomlinson provides the example of *in atl in tepetl* as an example of one such diphrasis, where "water and hill" signifies a town or settlement while inscribing its proximity to and dependence on the environment to place it within the tangible perspective of someone looking at the scene in person. The phrase 'Flower and Song' itself is a diphrasis emblemizing the colorful qualities of music and its ephemerality (Curl, 2009). Tomlinson agrees with seminal analysts in the field such as Leander, Pozos, and León-Portilla in that the act of assigning the art form the name Flower and Song served to crystallize the "indigenous humanism and aestheticism" embodied in the language and worldview built into Nahuatl. This literary tradition, according to David Carrasco, grounds pre-Cuauhtemoc Mexica culture in the works of great thinkers and philosopher-poets who "used language, instead of blood, to communicate and make offerings to the gods", using Flower and Song to "open the depths of the human personality to the illusive world of truth" (Carrasco as quoted in Tomlinson p.364).

The final element of Flower and Song that is mentioned in Tomlinson's analysis that is of primary importance to this research is that while many of the elements discussed above lend themselves to interpretation or at least provide us with analytic tools for translation in the absence of the specific cultural practices responsible for their composition, one linguistic feature of the poems has evaded understanding. The few remaining transcriptions of pre-Cuauhtemoc Flower and Song that have been recorded in texts such as *Los Cantares Mexicanos* are strewn with words with inserted phonemes that do not have direct translations. While it is likely that these phonemes are artifacts of the forced transcription of a vocalized art into a written format, Tomlinson emphasizes that they "inhabit a liminal space between Nahuatl sense and European nonsense that should undermine the confidence with which we demarcate either".

TABLE 1

Beginning of Song 44 from John Bierhorst, *Cantares mexicanos*

	Transcription with Underscored "Song Syllables"	*Translation*
1	Nican ompehua Teponazcuicatl.	Here begin log-drum songs
2	Tico, tico, toco toto, auh ic ontlantiuh cuicatl Tiquiti	Tico tico toco toto. And when the song ends: tiquiti
3	titito titi.	titito titi.
4	Tollanaya huapalcalli manca noçan in mahmani coatlaquetzalli ya	In Tollan stood a house of beams. Still standing are the serpent columns.
5	quiyacauhtehuac Nacxitl topiltzin on quiquiztica ye choquililo in	Nacxitl Topiltzin left it when he went away. Now our princes are
6	topilhuan ahuay ye yauh in polihuitiuh nechcan tlapallan ho ay.	bewailed with conch horns. Now he goes to his destruction yonder in Tlapallan.
7	Nechcayan chololan oncan tonquiçaya poyauhtecatitlan in quiyapana-	Yonder you are passing through Chololan. The land of Poyauhtecatl he
8	huiya y acallan on quiquiztica ye choquililon et[a]	traverses, and Acallan. Now *our princes* are bewailed with conch horns. *Now he goes to his destruction yonder in Tlapallan.*
9	Nonohualco ye nihuitz ye nihuiquecholi nimamali teuctla nicnotlamatia	I come from Nonoalco, I, Feather Swan, I, Lord Whirler, and I grieve.
10	oyahquin noteuc ye ihuitimali nechyaicnocauhyan i mā'tlacxochitl	Gone is my lord Ihuitimal. Matlacxochitl has left me in bereavement.
11	ayao ayao o ayya yyao ay.	
12	In tepetl huitomi ca niyaychocaya axalihqueuhca nicnotlamatiya	That the mountain collapses, I weep. That the sands have risen, I grieve.
	[*marginal:*] yehuayan	Gone is my lord *Ihuitimal. Matlacxochitl has left me in bereavement.*
13	oyaquin noteuc et[a]	

An excerpt from John Bierhorst's Los Cantares Mexicanos / Songs of the Aztecs, Translated from the Nahuatl, with an Introduction and Commentary (1985), as included in Tomlinson p. 368. Tomlinson's underlining focuses on words with an inserted "extragrammatical, nonsyntactic, but profoundly meaningful" phoneme "ya", which he argues is tied to the theme of "departure, passing, and bereavement" of the song.

While authors such as Bierhorst offer critiques to the *Cantares* regarding the circumstances of its compilation after the conquest, the supposed authorship of the songs, and whether the term *in xochitl in cuicatl* was ever used before Garibay's coining, Tomlinson emphasizes the importance of the surviving collections of Nahuatl music as an "indigenous colonial discourse… of resistance in which the Mexica tried to construct an efficacious vision of the strangers among them." Consequently, Flower and Song serves as a window for the uninitiated into the conceptual context and cultural surroundings of Mesoamerica in which it was produced. While a song in and of itself cannot be solely responsible for dismantling Eurocentric worldviews among its listeners, it serves as a concise and appealing means to invite newcomers to investigate the artistic practices of a culture that otherwise has been misrepresented to them by pop myths and persistent colonial stereotypes.

All these points mentioned above elucidate how the act of translating Flower and Song and its preservation in a solely textual format has historically excluded many of the situated philosophical nuances of Nahuatl, and that has perpetuated Eurocentric xenophobia in the few surviving documents. The fact that much of the classical Flower and Song tradition only survives in such a limiting medium of text devoid of music points to the incalculable loss of cultural heritage because of logocentric European academic practices tasked with preserving the histories that colonial violence and disease eradicated. It becomes clear, especially in Tomlinson's listing of European writers

brushing off Flower and Song as 'satanic' (362), that while some recognized Flower and Song for its highly refined artistry as time passed, it simultaneously defied analysis under the formulaic scrutiny of European philosophy until later authors were willing to undertake analysis in line with indigenous philosophies. This positions Flower and Song as an ideal literary body in which misconceptions about the Nahua family of languages, cultures, and communities can be resituated.

To provide lyrics for use in the performance reframing the Aztec Death Whistle that draws attention to the simultaneously resistive and relatable indigenous humanism that is often left out of discussions of the Aztec Empire and the Mexica people, one of Nezahualcoyotl's poems as transcribed in *los cantares mexicanos* was adapted for this research performance. While the performances composed for the redesigned Death Whistle were for a primarily English-speaking audience, thus necessitating a translation of the text to encourage memorability and engagement across language barriers, the 'meaningless vocables' as described by Bierhorst are highlighted in the piece rather than discarded, to acknowledge the loss of the art form's unique supplementarity because of Eurocentric academic paradigms. This was done by voicing these vocables exclusively with the modified Death Whistle, rather than being sung by the performer's Western body. We cannot recover all the history that was destroyed by colonization, but we can highlight these voids to bring attention to the all-too-common issue of revisionist fabrications filling these gaps, which is how the Death Whistle acquired many of its mythical backstories.

Contemporary Works and Mistranslations

It is worth mentioning that although Tomlinson's analysis focuses largely on Classical and Contact era Nahuatl literature, there has been a substantial body of literary work produced in Nahuatl, especially following the Mexican Revolution and its corresponding indigenist revival (León-Portilla, 2018). The rising popularity of Classical and Contact era Nahuatl through academic institutions as well as informal movements such as New Agism has promoted the study of ancient pantheons from pre-Cuauhtemoc Mesoamerica, and yet this has also been responsible for continued misrepresentations of indigenous peoples and cultures. Perhaps one of the more controversial instances of misrepresentation resulting from poor translations is the supposition of the existence of a dual deity named 'Ometeotl', as proposed by Miguel León-Portilla. While León-Portilla is one of the most contributive figures in the study of Nahuatl classical literature of the past century, his claim for the existence of this god is not grounded in substantive archaeological basis, but rather in five instances where he claims the name is mentioned in Contact era texts (León-Portilla, 1999). Each of these instances has been refuted by numerous scholars and Nahuatl speakers for a blatant disregard of the textual context, especially considering there is no other cultural or artefactual evidence such as the existence of temples to support the idea that the gods Omecihuatl and Ometecuhtli were perceived as one entity. While duality is prevalent throughout Nahuatl texts and mythologies from the region, Itzli Ehecatl and Richard Haly claim that the supposition of Ometeotl's existence which is

"found everywhere that is, except in primary sources" (Haly 1992) fundamentally is more accurately portrayed in the concept of 'teotl', roughly but not perfectly translated as 'god' (Ehecatl 2014). This duality manifests less as a 'good vs. evil' dynamic, and more as an interconnected wholeness of chaos and order, with 'teotl' framing the innate ability for action and change embodied by the universe. Moreover, Itzli Ehecatl claims that the term Ometeotl is not used by native Nahuatl speakers, indicating that the term León-Portilla uses was likely invented, and did not cross-check this theory with anybody bearing cultural and linguistic descent from the people he theorized about. Thus, it is important to read critical discourses and methods from contemporary indigenous authors and not just whoever are the most-cited authors in the field.

The nature of this work in reorienting Western conceptions about the history of the Aztec empire and the Mexica people must address these misconceptions as they arose throughout history, including power imbalances between endogenous and exogenous scholarship throughout the past five centuries since contact. But for now, this research's initial exploration addresses the historical circumstances immediately surrounding the Death Whistle, and thus it was most appropriate to select a poem that directly represents the people associated with the historical period in which the instrument was developed.

In addition, while a Nahua poet could not be consulted in time for the performance of this work, songs developed in the future of this research endeavor will be reviewed by and made in collaboration with the help of accomplished poet and author Martín Tonalmeyotl, who has expressed interest in the work and has provided an extensive body of contemporary Nahuatl poetry in line with the goals of the project. Consequently, for this performance, an effort was made to change the translation of Nezahualcoyotl's poem as little as possible to fit within the lyrical delivery style of the music. The lyrics are provided below and demonstrate what changes were made to document any injection of Western influence, mistranslation, and or personal bias that may have occurred in the process.

Death: Sacrifice, Evidence, Disease, and Climate

The primary accounts and archaeological sites that document the practice of ritual sacrifice are in no doubt chilling. Yet we must scrutinize the evidence and assess the stakes for those involved in this discourse, lest our emotions disrupt any sound discussion before it can begin.

FLOWERS ARE OUR ONLY GARMENTS

Flowers are our only garments,
only songs make our pain subside,
diverse flowers on earth,
Ohuaya ohuaya.

Perhaps my friends will be lost,
my companions will vanish
when I lie down in that place, I Yoyontzin -Ohuaye!-
in the place of song and of Life Giver,
Ohuaya ohuaya.

Does no one know where we are going?
Do we go to God's home or
do we live only here on earth?
Ah ohuaya.

Let your hearts know,
oh princes, oh eagles and jaguars
that we will not be friends forever,
only for a moment here, then we go
to Life Giver's home,
Ohuaya ohuaya.

Flowers Are Our Garments

Flowers are our garments
Songs make pain subside
Diverse flowers on Earth
Ohuaya, ohuaya.

My companions will vanish
When I lie in that place – I, Yoyontzin, Ohuaye!
In that place of song and of Life Giver,
Ohuaya, ohuaya.

Do we know where we're going?
Do we go to God's home, or
do we only live here on Earth?
Ah, Ohuaya.

Princes, eagles, and jaguars
We won't be but a moment
Till we go to the Life Giver's home
Ohuaya, ohuaya.

(Left) Translation by John Curl of Nezahualcoyotl's 'Flowers are our only garments', next to the modified text used for the performance of the modified Aztec Death Whistle.

Far from a single unified Aztec identity, some cities in the region resisted/resented the imperial expansion of the Triple Alliance of Texcoco, Tenochtitlan, and Tlacopan. Through accounts of the captain of the conquest Hernan Cortes and (humbler) accounts from others in his company like Bernal de Diaz, diplomatic efforts to levy local armies from the rival cities of the Triple Alliance, such as Tlaxcala, were padded with pleas to "abstain from human sacrifices" (Jansen et. al, 2022). Beyond demanding tribute from its vassals, the Triple Alliance had multiple institutional systems for gathering sacrificial victims, such as the tactic of Flower Wars These were multifunctional ritualistic wars that weakened the armies of their enemies, where (supposedly) non-lethal weaponry such as obsidian-lined macuahuitl clubs were employed to capture enemy warriors alive for sacrifice. Flower Wars also offered combatants the chance to gain combat experience and rise within the ranks of the military, legitimizing and valorizing the institutions of war that upheld the "mystico-militaristic" state ideology of the Triple Alliance (León-Portilla, 1992). However, outside of the Triple Alliance, there is significant archaeological evidence to suggest that human sacrifice was practiced to varying degrees throughout communities in the region for religious purposes.

Mendoza draws attention to how contemporary arguments surrounding the prevalence, militarism, political/religious importance, and primary accounts of human sacrifice are fraught with intense debate. This involves indigenous rights scholars responding to how Spanish propaganda used human sacrifice to denigrate indigenous people and cultures,

and forensic archaeologists who suggest that the practice did take place without consensus on the details. Mendoza highlights that while some revisionist claims ignore the supposed archaeological evidence of sacrifice because standardized forensic procedures using methods such as serological analysis are rarely used, there are also instances of clear exaggeration and disproven testimonies that litter the primary accounts of conquistadors for the sake of justifying conquest. Mendoza remarks that "Ultimately, scholarly discussion regarding Mesoamerican sacrifice and militarism remains shrouded in nationalistic, and culturally relative, frameworks of analysis that continue to hinder further exploration" (Mendoza, p.43).

It is here that it must be reiterated that the archival complexity and emotionally charged nature of the discussion are far beyond the scope of this paper – the purpose merely is to provide an overview of the discussion around the sacrificial practices that may have revolved around the Aztec Death Whistle. The point is not to devolve into whataboutism or to argue that sacrifice wasn't that bad, but moreover to indicate that the topic involves intense debate with high stakes for indigenous cultures that have been subjected to violence enabled by colonial propaganda. The project of reframing the Aztec Death Whistle seeks to draw attention to the often-omitted history of violence towards indigenous people, whether at the hands of Europeans or indigenous imperial violence such as the Triple Alliance. Part of this violence is that the discussions around such controversial topics are often refuted without allowing for rebuttals centered on nuanced evidence, the bias of primary accounts, and archaeological malpractices. Things are not quite as cut and dry as the prevailing narrative suggests, and there should be room for discussion instead of total rejection of Mexica culture on the grounds of debated sacrificial practices.

Beyond this, centering the discussion of the Death Whistle and colonization on death itself draws in an often-omitted disaster that ravaged the region as a direct result of European contact. Smallpox and other European diseases killed an estimated 6-60 million indigenous Americans in the region (Simmons, 2019). Beyond the collapse of Mesoamerican society, this mass dying resulted in changes in land use and plant growth that caused a drop in global tropospheric temperatures. Named the Orbis Spike, some climate scientists argue that this event should define the start of the human geological era, hereby referred to as the Plantationocene (Davis et. al., 2019). We avoid the term 'Anthropocene' in favor of terms such as 'Capitalocene' or 'Plantationocene' as discussed in Donna Haraway's *Anthropocene, Capitalocene, Plantationocene, Chthulucene: Making Kin* (2015), as Anthropocene distributes the blame for climate destruction across humanity altogether, whereas the imbalanced economic systems and displacement of biology responsible for climate change developed within Western imperialism, plantation labor bioethics, and the Atlantic Slave Trade (Davis et. al. 2019). Placing blame for the spread of disease before the age of virology is beside the point – the loss of life in the region was astounding and marked a paradigm shift towards colonial powers benefitting from violence towards indigenous communities and the integrity of global ecosystems. To tie

this concept into the composition, the date of the Orbis Spike – 1610 – was translated into a motif via semitones and is played on a flute to accompany *Flowers Are Our Garments*.

Metal: Gold, Circuits, Critical Making

Myths of gold such as El Dorado that spurred on the subjugation and oppression of indigenous populations stemmed from a difference in the metals assigned value between cultures. Gold was not used as a currency in many Mesoamerican communities and had little use as a tool because it was soft. The Mexica often traded it to the Spanish for beads and other more practical goods and were supposedly commanded to do so by Motecuhzomah II (Brandherm et. al., 2018). Such impunity to 'giving away' the European definition of wealth and power gave colonizers the impression that they had so much of it they didn't mind throwing it away for paltry goods. Myths of such auric abundance, particularly those such as El Dorado, spawned several expeditions over the centuries to find a city of gold, likely based on accounts of a ritual practiced in Lake Guatavita by the Muisca that did not place economic value on Gold, but rather religious value (Periferakis 2019, Quintero-Guzman 2023). While an in-depth analysis of the material values enabled by the Spanish quinta and embodied in Cortes' self-professed "sickness of the heart that only gold can cure" informs the capitalist legacy of extractive violence perpetuated against indigenous bodies and lands (Levy 2009, p. 34), this must be relegated to a later expansion of this work. For now, additional detail is paid here to how Western material values influence music technology practices.

Avila et. al. highlight that one way to "subvert coloniality is [by] '*hacking the imaginary*' (P9.1) of the Global North, which is usually '*shiny*', and made with 'leading edge' technologies" by instead "using concepts that aren't considered as much in the western context such as ritualistic aspects of music" (Avila et. al). By practicing not just an alternative method of constructing instruments that counter Western materialistic tendencies with critical making studies centered on responsible resourcing but doing so with a goal of an "embodied relationship with music", this research aims to promote healthier relationships with material possessions, which is discussed in the following section about how the instruments and props were made.

The Critical Making Process

Suzanne Kite outlines in her chapter of *How to Make Anything Ethically* an indigenous method for constructing functional technologies that are respectful to the environment and emphasizes the practice of developing technology usable for the next seven generations (Lewis et. al., 2020). Her method describes designing an artificial intelligence in "the good way", using the same rituals and techniques employed by the indigenous Lakota to construct a sweat lodge. The same process and mindset were applied while

developing this project's interpretation of the Death Whistle. Particularly concerning sourcing materials, the wood for the project was carefully selected from a nearby forest from a tree that 'called' to me. It had been struck and cracked at the base by another falling tree. Fallen wood is typically less desirable because of moisture and insect damage, but destroying healthy trees without consulting a forest manager is irresponsible and harmful to the forest. This broken tree, as pictured below on the left, was still alive, but the break was so severe that an infection had begun to spread through the trunk. There was still healthy wood towards the top of the trunk, and so the tree was cut carefully to separate the root system from the infection. After the trunk was separated, a section of healthy wood about a foot long was sawed off, and the rest of the trunk was returned to the base of the tree so that as it decomposed the nutrients could return to the root system that produced it. Throughout this research process, I returned several times to this trunk to make sure that no leaves or other sticks had fallen to obscure the new sapling sprouting from the root system, and at the time of writing it is growing well as shown on the lower right.

(Left) The broken tree from which the wood for the Death Whistle was collected, as pictured on April 3rd, 2024. The fallen tree that broke it is lying across the bottom of the image. (Right) The same stump, now with a new sapling emerging from the roots, imaged on April 29th, 2024. Leftover cuts of the wood are seen behind.

While returning with the wood, a chunk of bark had fallen from another larger tree with a hole in it that at first glance looked like a mask. I had not initially intended on using anything other than the Death Whistle and Flute for risk of distraction, but upon second thought it offered itself as an option to obscure my own identity further. This piece was

not about me, and so I decided to listen to the sign given before me and transform it into a mask. Wood glue was used to solidify the bark, and only a small clasp of metal was used to secure the strings that held the mask to the wearer's face.

In constructing the Death Whistle, hand tools were used to carve the nose-flute portion from the gathered tree trunk. The air spring was turned on an unpowered wood lathe and sanded down by hand. A reused ping pong ball was used for making the circular hole as the wood could not be reduced to the thin wall necessary to properly split the air, but in future versions, materials such as clay will be experimented with to replace this. A thin strip of wire bridged the gap between the nosepiece and air spring for precise positioning and angling of the flow of air over the hole, which reframes wire from its common use in music technology as an electricity carrier to a tangible structure that must be carefully bent by hand to the correct orientation for each performance. To preserve the wood from moisture accumulation in the nozzle and direct the airflow cleanly without dissipation from straggling wood fibers, a small junk plastic cone had a hole drilled through it and was housed in a cross-section of vinyl tube that allowed for the nozzle to be angled somewhat. It should be mentioned that prototypes for the reworked Death Whistle were not made following Kite's methods but will not be discarded as they each have different timbres that can still be used in recordings. Hasty prototyping contributes to significant material waste and will be avoided when continuing this project.

The Death Whistle belonged to a rich family of aerophones and flutes that were shaped to imitate another being, whether that be a skull, eagle, or flower (Both). Both elaborates on how flutes were used as the main melodic instruments in Nahuatl music, and so it was important to include this auxiliary instrument to provide melodic contrast instead of screaming for the length of the piece (2002, 2010). A particular sacrificial ritual depicted in Both's *Aztec flower-flutes: the symbolic organization of sound in late postclassic Mesoamerica* (2010), he describes how a prisoner of war who lived for a year among the people of a city dressed as (and literally embodying) the teotl Huitzilopochtli was sacrificed in the reenactment of a creation myth. While the specifics of the ritual are incompletely documented, this individual was given a flute in the shape of a flower which they would presumably learn to play over the year. During their sacrifice, the flute would be broken, symbolizing the act of plucking a flower, but also returning the magic of music as was borrowed from the Teteoh (Quiñones Keber 2002). This is reinforced by the discovery of multiple flower flutes at the base of the temple where this sacrifice was held, each bearing intentional fractures. In recreating a flower flute, a recycled length of PVC pipe was fashioned with a knife, awl, and deburring tool into a recorder-type flute with a ninety-degree functioning as a removable air-conduct. Since real flowers would be too delicate and temporary to fix to an instrument used for repeated stage performance, fake plastic flowers were attached to the removable head joint before the flute was spray-painted green. At the end of the performance, to recreate the return of music from the Mexica culture, the flowery head joint was removed and held high for the audience to behold. As the title of Nezahualcoyotl's poem is *Flowers Are Our Only Garments,* fake

flowers were also fixed to the mask and the Death Whistle, even though the metaphor of wearing flowers in Flower and Song is about the association of the afterlife with flowers (Vail et. al. 2010, Curl 2001). In this way, the instruments and the flowers upon them will hopefully honor the Mexica longer than a human performer can.

Death Metal, Riot Grrrl

Tying these thematically into the performance design involves a reorientation of the Death Whistle to fit into a musical style that sonically situates the sounds and histories in a genre that readily discusses death and violence. As noted in the 16th-century treatise *On Playing the Vihuela*¸ a time-tested method in music technology is to "change the music to suit the instrument or change the instrument to fit the music" (Bermudo, Juan. "On Playing the Vihuela." From Declaración de Instrumentos Musicales, published in Osuna, 1555). While considerations were made to the compositional and instrumental features of Nahua music to replicate within the composition, it is important for the song to 'make sense' within the ears of the audience for them to be engaged with the serious nature of the topics at hand. The broad subgenre of Death metal, while certainly far from unproblematic with its issues of representation, toxic masculinity, and senseless violence in some cases, hosts many bands and artists that use the depravity and intensity of the texture to convey historical and social messages. Regarding war, disease, and climate destruction, albums such as Bolt Thrower's *Those Once Loyal* and Cattle Decapitation's *The Anthropocene Extinction* have been defining records for the genre.

Cattle Decapitation in particular is known for its extreme vocal delivery and dense instrumentals that convey the barbarity of human consumption and capitalistic violence. Returning to Haraway's critique on the term Anthropocene, as well as previous releases from the band that address gender violence (see Alfred Rodgers' *The Meaning Behind The Song: Forced Gender Reassignment Surgery by Cattle Decapitation)* it presents an opportunity to hone the style of such bands to promote critiques of the genre using the demanding soundscape to give voice to those who have been oppressed by racist, colonial, misogynistic, homophobic, and/or transphobic violence. After all, metal doesn't shy away from raging against the machine – why not go a step further, and name the machine's exact transgressions?

Another genre that executes this very task is the punk subgenre of Riot Grrrl. Marked as a specifically feminine space for punks rejected from the toxic masculinity of the larger scene: "female empowerment aimed at reclaiming the multi-gendered spaces of the initial punk movement was most clearly manifested in what became known as the Riot Grrrl movement." (Dunn & Farnsworth, 2012). While often less concentrated on death generically, artists in the genre put the sheer depravity of gendered and queer violence into perspective, through songs such as *Dead Men Don't Rape* by 7 Year Bitch. While secondary to the main research of this project, I was invited to perform with the Georgia

Tech Music Technology Project Studio and Laptop Orchestra for a concert featuring works by female-identifying, trans, and non-binary forces in electronic music. As I identify as a non-binary musician, I took this as an opportunity to confront the transphobic hypermasculine elements surrounding heavy genres of music.

By adapting the poem *Healing Wounds* written by self-described "chicana dyke-feminist, tejana patlache, poet, author, and cultural theorist" Gloria Anzaldua from her collection *La Frontera/Borderlands* (1987), I was able to extend the Death Whistle's anti-coloniality to deflect heteronormative stereotypes that have targeted my work as an artist. The poem reflects on the difficulty in having to confront multiple identities as you present among different communities – these identities, which are cast upon you from a "word, look, or gesture" by "self, kin, and stranger", manifest as wounds. The pain is seen less as the ultimate takeaway though, with the healing process following in which one can learn their true identities and shed the old faces that no longer serve us.

One such example of a 'wound' is the word patlache as used in Anzaldua's bio. Patlache is a Nahuatl word that has been translated to many different results, including lesbian, hermaphrodite, and in the extreme, a paragraph from the Florentine Codex is devoted to a rant about how "The patlache is a filthy woman, a woman with a penis" (Sigal, 2005). And yet, looking deeper at the behaviors of people described by the term in the few existing sources about them written postconquest, queerness is typically associated with Christian sin, thus framing the translation of patlache within a lens of European institutional queer gendered violence (Sigal, 2005). This is not shared by all sources, lending to yet another patchy discourse because of only having a few surviving pre-contact documents on the subject.

Biblical parallels can be drawn to how transgender people across the United States are similarly being targeted with legislation that frames them as sexual deviants who wish to corrupt children, to the point that some argue Florida's anti-trans legislation constitutes genocidal rhetoric (Tangalakis-Lippert & Balevic 2023). The Supreme Court vetoed one such Floridian law for containing language that is 'too broad', which targeted musicians' ability to cross-dress and perform if it may be construed as sexually lewd or drag (NBC), which puts the trans community in a situation where our targeted identity jeopardizes not just our safety but forces us to make choices between who we are and how we can present in public. In this sense, my distorted heavy-metal vocal style signifies an association with the brutal masculinity often promoted by growling voices, and microaggressions are ample from people who compliment "That was sick, bro" or "brutal man!" after performances. There is an element of guilt associated with the fact that I pass as masculine enough to where people don't assume I am a trans performer and question my performance in the same way they do artists who don't 'pass', but there is also an element that cautions me from presenting more effeminately as I fear rejection from hypermasculine metalheads whom I aim to entertain.

Anzaldua's poem speaks to this pain, and so an additional verse was added that homes in on my perspective to draw attention to how the act of performing in the heavy music scene itself can be a wound. For this song, the Death Whistle allowed me to forego the use of my voice altogether, liberating my expression from my gendered vocal cords – this was not the original intent of the research but became a pleasantly surprising decolonizing feature of the instrument. Altogether, this experience and additional compositional foray demonstrate the ability of the Death Whistle to address injustices occurring at the intersection or borderlands of marginalized identities.

Both genres described above make use of screamed or shrieked vocals to express and mimic the violence they seek to address. Cattle Decapitation vocalist Travis Ryan's multi-track layered vocal style serves as a lasting source of musical inspiration for me and provides a method for how to work the Death Whistle into heavy compositions like these. The air-spring mechanism mimics the vocal technique of a high-frequency fry scream, which Ryan often pairs with lower false chord growls and different tongue configurations to achieve a unique 'vampiric' quality. By redesigning the Death Whistle so that it can be played with air from the nose, the sound-generating air spring can pair acoustically with the mouth of the user. While for now, this prevents the user from screaming to provide for perfect pairing of the two sounds and real-time augmentation of the voice, with practice the whistle can serve as an alternative style of delivery overtop of a backing track in a live performance setting. In future designs, an external air compressor connected to the Death Whistle could allow for the vocalist to not have to choose between organic singing and Death-Whistling, opting for a live combination of both styles simultaneously. In sum, death metal and Riot Grrrl provide the topical and sonic similarity to the Death Whistle that is desirable to promote engagement, memorability, and continued use of the instrument by vocalists outside of the academic community, while suggesting performative sonic textures that fit the shriek that has come to be associated with the Death Whistle.

Composition and Performance

The performance was accompanied by computer visuals coded by my collaborator Chaeryeong Oh, who consulted with me for input on an artistic vision and was a visual jockey for the performances. Their projections included intermingling cells with nuclei and cell walls merging and swapping fluidly, radially symmetric flowers growing and losing petals, a spinning fountain, orbs reminiscent of viruses, and psychedelic filters to apply upon these visuals. Flowers are also significant in their work which centers on Korean shamanism and folklore of the flower fields of *Igong bon-puri*. These aesthetics and visuals helped bring more attention away from my body as a Westernizing and masculinizing distraction and more towards the content of the sound and the work, offering the audience a multimodal spectacle to promote engagement and memorability. A section of the performance of *Flowers Are Our Garments* is available here (slide 7/8), the

live-streamed concert of *Healing Wounds* can be accessed at this link, and the backing tracks for both songs are provided here. A proper recording, mixing, and mastering of these songs will be done in the Fall semester of 2024.

Other details of these compositions that have not been discussed include the process of using MIDI guitars and drums. Beyond the convenience and downright impossibly difficult passages of music that Virtual Studio Technology instruments (VST) provide, they streamline the composition process and allow for a more unified compositional aesthetic built from my musical vocabulary. This allowed me to experiment with drum beats that include a more dynamic relationship between the kick and snare drums, to mimic the intricate high-low rhythmic syntaxes of the teponaztli, and to ensure drum fills have an emphasis on the toms reminiscent of the huehuetl. Guitars, while imported from Europe, have become prevalent in contemporary Nahua music, are common with storytellers (Sandstrom), and were necessary to fill out the texture of these heavy genres without overcrowding the flute in *Flowers Are Our Garments*. Guitar tremolo picking was employed to evoke a wind-like sound, tying into Ehecatl's temple where the whistles were found, and the manmade atmospheric changes associated with the Orbis Spike. A specific effort was made to avoid falling into common chord progressions, rhythmic formulae, and rhymes that characterize much of Western music, but enough syntactic features were left in to facilitate the entrainment of an audience familiar with these compositional regularities. The purpose not just of the songs but the research altogether was to invite the listeners to explore the edges of their knowledge, to interrogate what sounds right and wrong to them, and invite them to listen again or look for more information – not to throw so much at them at once that they are alienated.

Future Works

There are several avenues for the continued exploration of this research and the instrumental design of the Death Whistle.

From the mechanical perspective, the Death Whistle has great potential for extending the voice of users with minimal vocal training. Efforts to place the whistle within the mouth, while geometrically challenging, may enhance the ability to voice consonants with the instrument, which currently can only voice vowels. The inclusion of an external air supply could provide experienced vocalists with a doubled vocal quality, which has become popularized by heavy metal bands such as Cattle Decapitation. Shaping masks that are more conducive to pairing the Death Whistle to the mouth's vocal cavity could result in a more noticeable shaping effect of the mouth, and possibly increase the volume of the instrument for louder mic pickup.

In researching methods for performing and analyzing indigenous art, Gabriel S. Estrada's *In nahui ollin, a cycle of four indigenous movements: Mexican Indian rights, oral traditions, sexualities, and new media* elaborates on a geographically oriented method for interpreting works within an indigenous framework of gender and age as they correspond to the

cardinal directions or Nahui Ollin (2002). The framework ties figures progressive indigenous Mexican American histories within a constellation of masculinity in the East, femininity in the West, youth in the South, and old age in the North. As the research presented here already engages with and was presented alongside a nonbinary Korean collaborator about Korean folklore, Estrada's framework invites a broader examination of how different communities affected by imperialism across the world have resisted colonization. With the popularity of a (slightly misleading) saying in the climate change awareness community that 'flowers are blooming in Antarctica,' highlighting the rising temperatures (Petersen 2023), the themes explored within this paper could be applied to communities in the polar regions of the planet, such as Inuit communities that are losing their ability to hunt and travel due to melting ice sheets (Laidler et. al., 2009). This approach could invite the use of and reworking of other instruments that have stood as misrepresentative symbols of stereotyped cultures, and in reflection can invite viewers to assess through music technology the manifold ways that the dominant mode of economic production perpetuates violence against indigenous peoples throughout the *nahui ollin*.

Conclusion

The Aztec Death Whistle and the histories that inform its context have been misrepresented time and time again, often to the detriment of indigenous bodies. By displacing the technology from its original community and reducing it to a symbol of human sacrifice, the instrument has solidified enduring stereotypes against indigenous cultures that initially were created specifically for their subjugation. The specific archaeological and musicological context of the instrument was provided to address myths about its use and supposed sounds to address pop myths about psychological warfare. An overview of the controversies stemming from the translation of Nahuatl Flower and Song served to center another field rife with misconceptions. A Flower and Song poem was adapted from this literary body to inform a critical performance that reorients the Death Whistle for misled Western audiences. The unsettled discussion surrounding the prevalence and significance of human sacrifice in Mesoamerica was addressed to encourage a deeper engagement with the history of Mesoamerican cultures instead of rejecting them on often exaggerated emotional grounds. Environmental concerns and the biosecurity legacies of the Plantationocene were consolidated within the discussion of the Orbis Spike. A historical summary of extraction and colonial violence informed critical-making techniques to envision an alternative construction to the instrument that addresses the persistence in music technology of problematic material values that have enabled extraction from indigenous lands. Finally, contemporary musical genres of death metal and Riot Grrrl served to center the instrument within a framework of resistive composition where the instrument not only contributes to themes of death and oppressive violence but stands to develop existing vocal practices through acoustic augmentation of the voice. While the research done here is by no means complete, it

paints a constellation of decolonizing methods that tie situated historical injustices to modern musical resistance through the medium of music technology.

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