A FUSION OF NATURE AND TECHNOLOGY?:
ICELANDIC IDENTITY, ACTIVISM, AND THE ART OF BJÖRK

by

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The final copy of this thesis has been examined by the signatories, and we Find that both the content and the form meet acceptable presentation standards Of scholarly work in the above mentioned discipline.
This dissertation investigates the effects of massive industrialization, technological sophistication, and environmental problems in Iceland on the music of Björk, Iceland's most renowned living musician. In the seventy-year period since Icelanders gained independence from Denmark, their perception of themselves has changed from a fishing and farming community to an urban community preoccupied with technological development. I investigate the way this shift in Icelandic identity has been expressed through the art of Iceland's pop stars with a focus on Björk.

In the last twenty years, during Björk's rise to fame, Iceland has become a contender in the global economy in the areas of technology and sustainable energy. The collapse of Icelandic currency and the proposed construction of major hydroelectric power plants and aluminum manufacturing plants at the expense of the natural environment has forced Icelanders to make difficult choices. This dissertation investigates the ways Icelandic identity explains how Icelanders have responded to these choices and in particular how one Icelandic musician did. A preoccupation with nature, Icelandic nationalism, a pagan identity derived from old Norse Eddas and Sagas, self-sufficiency, rebellion, isolation or "alien" identity, and
a modern-day preoccupation with technology are recurring themes in Björk's music that provide a gateway to understanding a shift in Icelandic identity that has occurred during the last century.

An investigation into Icelandic culture, politics, economics, and popular music expression indicates the extent to which local environmental crises, the global climate crisis, and Icelandic popular music are linked. While retaining a vast pristine landscape, Iceland has still fallen prey to environmental destruction that plagues other locales of the world. Informed by the growing field of ecomusicology, this study views the popular music scene of Iceland as a kind of petri dish: a microcosm that demonstrates how economic and social pressures affect popular music. Just as Darwin found the basis for a theory of evolution in his study of the Galapagos Islands, we can learn about pressures that are put upon music and the ways that music responds to those pressures by studying this small island nation near the Arctic Circle.
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CHAPTER I

INTRODUCTION

An Ecomusicological Study of Björk

How does nature inform music? What can the study of music tell us about the natural world, humans, the built environment, constructed ‘nature,’ and their connections? Is the environmental crisis relevant to music? To answer questions about what the study of music can tell us about humans, the built environment, and constructed ‘nature’ it is important to investigate cultural identity and to recognize issues that are being addressed in the new subfield of ecomusicology. Aaron S. Allen states that interest in the relationship between humanity and the natural environment emerged throughout the academy in the 1970’s and has been brought to the forefront in the last decade as a result of the consciousness surrounding the climate change crisis (2011a). Allen defines "ecomusicology" (or "ecocritical musicology") as:

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1 In 2010, Aaron S. Allen addressed how describing "ecomusicology" as a "field" may be problematic: ". . . ecomusicology is (or was?) a new and unfocused, or perhaps one might say ‘emerging,’ field. In fact, I even wonder if it can indeed be called a ‘field’ because even those who ostensibly engage in it don’t necessarily acknowledge the word; furthermore, there are no textbooks on it, no scholarly association or journal dedicated to it, no degree in it, etc. Well, at least not as of 2010." Accessed October 11, 2015, http://www.ecomusicology.info/resources/supplementary/aaron-s-allen/allen-ecomusicology/.
the study of music, culture, and nature in all the complexities of those terms. Ecomusicology considers musical and sonic issues, both textual and performative, related to ecology and the natural environment.\(^2\)

Allen has also described how the term ecomusicology was born, the works of the scholars from which it derived, the many divisions within the subfield, and the complexity of the term "nature." Within ecomusicology is ecocriticism (or "ecological criticism"), a forum in which scholars offer political and/or critical approaches and encourage awareness of and concern for environmental crises. Ecomusicology also serves as an umbrella term that brings together the fields of historical musicology and ethnomusicology, which otherwise sometimes do not interact. Early studies categorized as ecomusicology involved efforts to connect human and non-human soundworlds through soundscape studies and acoustic ecology. Acoustic ecologists and sound and soundscape artists in the past have taken both artistic and activist approaches to represent the world around them and to increase awareness about issues of urban development and land, air, and water pollution. Ecological approaches to evaluating musical structure include studies of influence, mimesis, and/or reference of the natural environment using textual, sound, and/or extramusical means. Considerations of place are a common ecomusicological theme as with Feld's classic study of Kaluli acoustemology in Papua New Guinea with a political and critical agenda that goes beyond the descriptive and interpretive. Ecomusicology also addresses sustainability concerns surrounding the use of specific materials to make musical instruments. Ecomusicology is considered

socially-engaged scholarship that offers a fresh approach to confronting old
problems in music and culture and people's concerns about the environment. It is
around these approaches of ecomusicology that I frame a discussion of nature in
Björk's music in this dissertation.³

I chose Björk⁴ as the key figure of study in this dissertation as she is a pop
musician who uses nature as a recurring theme in her music. Björk was born in
Iceland, a place engaged in a recent debate about how the nation will use or
preserve its natural resources to its own and/or the world's benefit. Björk is an
international pop star who possesses a complex identity. She has risen to the top of
the "food chain of pop music" in Iceland and, while she comes from a particular
place and represents a new generation of people with political interests, she is at
the same time an artist first and foremost. Through an examination of Björk's
political activism and an exploration of her music, I expose the tension in the

³ Approaches in ecomusicology that I do not explore in this dissertation are gender and sexuality
studies, an acoustic ecological approach that involves the study of hearing loss or noise pollution, a
biomusic approach that focuses on the study of non-human animal worlds such as the soundworlds of
birds or whales, a philosophical approach to interspecies musicking, and a semiotic approach in
zoomusicology.

⁴ It is convention in Iceland to refer to Icelanders by their given name (first name) only. Their
surnames are constructed generally with the convention of "son of . . ." or "daughter of . . ." the first
name of their father. For example, Björk's surname is "Guðmundsdóttir" meaning daughter of
Guðmund. Surnames in Iceland are used rarely, and usually in circumstances to distinguish among
people with the same first name or for conducting official business.
relationship between being an artist and being a nation's political representative, a position she has earned as part of her fame. Björk, who began her teenage music career as a punk rocker, is an example of a new rebellious generation in Iceland that does not necessarily take former conceptions of Icelandic identity at face value and wants to participate in the world beyond Iceland. Björk is also an artist who makes a living through the creation of music and art and while the identity exhibited by depictions of her on her album cover art often represents an almost alien character, she nevertheless uses Iceland as part of her musical identity. In this dissertation I investigate the complex identity of Björk, how she expresses her identity through music, and how she and her music play a part in Icelandic identity of the younger Icelandic generation. I also investigate the way in which Björk has structured her electronic music around an Icelandic ideal of nature that is an important part of Icelandic identity.

Nicola Dibben points out that Björk's attachment to nature has been well documented in *The South Bank Show* (1997), and Marsh and West 2003 (Dibben 2009a). Dibben focuses on the way in which "Björk's artistic output, and the discourse surrounding it, reveals a unification of the natural and the technological" (2009a, 99) and argues that Björk situates her creative practice bringing together the ideas of the natural world (landscape and animals) and nature as instinctual

5 Also referred to as *Bravo Profiles: Björk* in Marsh and West 2003 and Dibben 2009a. Once available on VHS, this *Homogenic* documentary was removed from YouTube by the publisher's request.
behavior, constructed in opposition to technology and training (2009a). Dibben discusses nature as an antonym of commercialism and a source of comfort, and divides aspects of nature in Björk into four main entities: landscape, animals, the sea, and Björk's voice (2009a). However, a tension lies between nature and technology in Björk's work that Dibben does not address and at times huge gaps between nature and technology prove that these two entities are irreconcilable.

While Dibben's monograph explores Björk's identity, including its elements of nationalism, nature, technology, sound, emotion, and Björk's contribution, I approach a study of Björk's identity in several different ways. I provide a more detailed investigation of Icelandic identity through a historical lens based on early works such as Landnámabók (The Book of Settlements) and Íslendingabók (The Book of Icelanders), and devote an entire chapter to Icelandic identity to explore the way spiritual viewpoints on nature tie specifically to Icelandic identity. Then, in Chapter Four I relate Björk's identity to the Icelandic identity described by these texts and suggest the ways she fits into them and the ways she rebels against them.

I investigate aspects of Björk's political activism since the 2008 collapse of Iceland's currency, specifically her efforts to protect Iceland's backcountry, and describe the activities of her performances, letter writing, and appeals before government committees. I also analyze aspects of the Biophilia project that Dibben may address in a forthcoming work not yet released at the time of this writing.

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While Marsh and West (2000) address the nature/technology dichotomy in Björk’s work prior to 2000 and seek to dismantle binary oppositions, arguing for the fluidity of this relationship, I instead, by focusing on works by Icelandic authors, relate nature and technology to human elements shared by all Icelandic people rather than nourish or dismantle a discussion of dichotomies divided by gender. Since Björk is a leading woman composer in popular music, of which there are relatively few, I could have made gender the focus of this dissertation, but instead I chose to focus on nature, technology, aspects of Icelandic identity shared among genders, and environmental activism. Marsh and West also argue that Björk's popular music identity is a seamless fusion of nature and technology, disproving that a tension must necessarily exist between them, especially because of Björk's admission that she finds technology to be natural and nature to be technological. Dibben (2009a) similarly argues that Björk's videos are a prime example of how she demonstrates the compatibility of the natural and technological as computers and synthesizers are brought into harmony with organic processes and materials, and in her compositions she brings together acoustic and electric sounds. In these instances, as Dibben, Marsh, and West all argue in most cases, the fusion of nature and technology is at work and representative of Björk's art as well as some aspect of contemporary culture or Icelandic identity.

In the attempt by musicologists, critics, musicians, and fans to dismantle the dichotomy of nature and technology, an idea of a fusion of nature and technology as it occurs in modern society has emerged as a new trope and a marketing device for
pop musicians in which the gaps between nature and technology are no longer addressed. The word "fusion" used by Marsh and West (2003) is a loaded word and may convey different messages depending upon its audience. As defined by the *Oxford Dictionary*, the meanings for *fusion* are trifold, therefore allowing for some confusion. The first definition is 1. the process or result of joining two or more things together to form a single entity. The second is 2. the process of causing a material or object to melt with intense heat, especially so as to join with another. The third is 3. music that is a mixture of different styles, especially jazz and rock. The first definition implies that a new entity is formed from joining two things, but it does not identify how those two identities have been joined. The second definition implies that the new entity formed would not allow for a gap between the initial two entities. Making the assumption that a "fusion" would not allow for gaps, in *Biophilia* I found there to be aspects in which there were gaps between nature and technology allowing nature and technology to coexist side by side, but not creating a true fusion. An apt metaphor may be the mixture of oil and water. If one places oil and water in a bowl, they both will be contained within that bowl, but they will not mix together. In the music album, there is a gap between the lyrics and the songs in the way that the lyrics largely represent nature and the sound largely represents technology. I also found aspects in which a "fusion" of nature and technology seemed to be more of an illusion than a reality.
Paying particular attention to the 2011 app7 album *Biophilia*, I discuss not only ways in which the fusion of nature and technology is made believable but also the ways it works as an illusion more than a reality. The imagery in Björk's music, lyrics, album art, video art, and live performances is not as well described by the word "fusion" as it is by the word "Surrealistic," referring to the cultural movement that began in the early 1920s and known for the writings of André Breton and the visual artworks of Salvador Dalí that depict the disturbing and discomforting images of dreams. Icelandic authors have also embraced this Surrealist approach in their investigations of the social implications of Iceland's nature, technology and culture. Andri Snær Magnason has called Iceland a "Dreamland" while Sigurður Gylfi Magnússon has called it a "Wasteland with Words." Björk's art expresses confusing, dream-like images that combine both of these ideas, contradicting the happy harmony of nature and technology that she employs as a marketing slogan.

Björk is a leader of pop music in Iceland and she has managed to rally other Icelanders around political causes for the preservation of Iceland's environment. In the musical expression of these protests, Icelanders have opposed government policies through pop music concerts staged in public parks. Some examples of these are the 2006 *Hætta! (Stop the Dams!)* concert, the 2008 *Náttúra* concert, the 2011 "Karaoke Marathon for Nature," and the 2014 "Stopp - Gaetum Garðsins!" ("Stop -

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7 The word "app" is short for application software that causes a computer to perform tasks for computer users. The *Biophilia* app is a mobile app, or software that is designed to run on mobile devices such as smartphones and tablets.
Let's Protect the Park!"
) concert. The theme of the protests has been primarily to try to prevent foreign corporations from turning Icelandic wilderness regions into manufacturing plants. Because of Björk's heightened political status as a result of her pop music fame she has served in roles as both performer and producer for these benefit concerts. She has also written letters and addressed the press and government committees to protest government policy. In Chapter Three, I will discuss the extent of Björk's political activity in her efforts to protect Iceland's wilderness and I will show how she is both a model for young Icelandic musicians who wish to protect the natural lands of their home country, and for-better-or-worse a symbol to represent Iceland for outsiders who know little about Iceland, its popular music, or its environmental politics.

In Iceland, political opposition expressed through popular music has been directed toward the construction of hydropower and aluminum manufacturing plants by foreign corporations who benefit from the abundance of geothermal electricity rather than toward the geothermal power plants themselves. The waterfalls at risk in the building of new hydropower plants are the site of breathtaking scenery and are therefore more actively protected than the vast volcanic lands where the geothermal plants are built. Local Icelanders oppose the pollution generated by the manufacturing plants owned by foreigners and also the political control put into the hands of foreigners through deals that have been made between the Icelandic government and foreign corporations. A confusing irony emerges as local Icelanders protest renewable energy production while locals in
other countries protest the development of petroleum-based energy sources and advocate for the development of renewable sources.

In an exploration of views of nature and technology in young musicians in Iceland, I will address a shift in identity that has occurred since Iceland became an independent nation in 1944. This shift in identity has manifested as a change in ideology from Icelanders regarding their country as one of a fishing and farming community to that of a globalized society that thrives by means of industry and technology. In the last seventy years, one may witness drastic changes in the way Icelandic music has been presented, in the venues that are open for it, in the kinds of people who are listening to it, in the individuals, groups, and companies who are producing the music, and the musicians themselves. While the younger generation of Icelanders still holds onto older conceptions of Icelandic identity centered on literature, land, and language, they are also computer- and technology-savvy and connect with people of their generation in other countries as they participate in global music culture. Additionally, they display an element of rebelliousness similar to that which was expressed in post World War II rock 'n' roll in Europe and the United States and also during Iceland's declaration of independence from Denmark in 1944.
A Snapshot of the Icelandic Music Scene

I visited Iceland in the fall of 2014 to examine primary sources at the National Library of Iceland and attend the five-day Iceland Airwaves Music Festival, currently Iceland's largest showcase of popular music. During this trip, I also visited the National Bank of Iceland and Reykjavík's City Hall to investigate the collapse of the króna, the National History Museum to view exhibits about and artifacts from Iceland's past, the Saga Museum to experience its life-size wax figure audio tour about Iceland's Viking heritage, local book stores to retrieve the latest Icelandic books translated into English, and local music stores to obtain additional information about the current-day popular music scene in Iceland, browse their local music selections, and attend live in-store shows.

My trip to Iceland in November 2014 allowed me the opportunity to investigate Björk's identity within the context of the local Icelandic pop music scene and witness popular music as it has been occurring in Iceland in recent years. There I observed how elements of electronic music pervade popular music culture. The Iceland Airwaves Festival, Iceland's largest annual music festival, attracted more than nine thousand foreign visitors to Reykjavík during my visit in 2014. The festival celebrated its inception in November 1999 and grew from a single evening's concert to a five-day extravaganza, offering in 2014 the simultaneous performance of over two hundred bands and acts in more than forty venues. One of the offsite venues was the Blue Lagoon, the largest geothermal spa pool in the world and home

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to the Svartsengi geothermal power plant, annual producer of more than 150 mega watts for hot water production and 74 mega watts for electricity generation, which serves about twenty thousand people (Ragnarsson 2010). During the festival, the Airwaves promoters moved their headquarters from an office in Reykjavík to Iceland’s most prestigious concert hall, The Harpa, located in the capital city’s harbor. While electronic music was ubiquitous, this was by no means a stand-alone electronic music festival. The festival pass provided admittance to the sponsored and off-venue performance sites and, for those willing to stand in an additional queue for limited-availability tickets, to large acts such as Jóhann Jóhannsson\(^9\) conducting the Iceland Symphony Orchestra and the festival’s headlining act, The Flaming Lips, a jam band from Oklahoma. Off-venue concerts were free to the public and included DJs, singer-songwriters, and heavy metal bands. The ambience of the festival was all-inclusive, but popular music, specifically rock and electronica, dominated.

In addition to featuring Icelandic musicians, the festival brought in performers from nineteen countries and territories outside of Iceland: the Faroe Islands, Sweden, Norway, Denmark, Finland, England, Ireland, Scotland, France, Germany, Italy, Czech Republic, Estonia, Russia, Japan, Australia, New Zealand, Canada and the United States. If at one time Iceland embodied an identity of isolation, the Airwaves festival demonstrated that this is no longer the case. During

\(^9\) Jóhannsson’s score for the film *The Theory of Everything* earned him a Golden Globe award and an Oscar nomination.
the week of the festival, Reykjavík resembled a bustling European city with bars and clubs overflowing and streets teeming with pedestrians. One of the main sponsors to the festival was IcelandAir, the airline that provides direct flights among Iceland and many European, American, and Canadian cities at discounted rates. When the festival sold out more than a month in advance, I was able to secure a festival pass only through a package deal, purchasing a flight through IcelandAir. The Airwaves festival sponsored by its national airline promoted a culture of globalization and cultural tourism as foreigners descended upon Iceland in droves and returned to their home countries after one week's stay. A few enchanted visitors stayed behind to live out their dreams having recently discovered the Icelandic way of life.

Throughout the year in Reykjavík, clubs and bars are open on the weekends until four in the morning, and the youth from the city, suburbs, and even remote coastal towns converge on these nights to shake off their work-week and to forget their troubles. While Icelanders usually do not approve of drinking alcohol during the work-week, they party hard on the weekends, and this tradition lends itself to a disproportionately large popular music scene for such a small city and country. In the bars and clubs of Reykjavík on the weekends, electronic dance music, which saw its rise in Iceland in the late 1980s, transpires in all of its glory. The Reykjavík Art Museum, the original home to the festival, and two, large, general-admission open halls with no seating, the Norðurljós and the Silfurberg in the Harpa building, were reserved for electronic dance and electronic dance/rock fusion acts. The long queues
that formed outside the clubs in the stormy weather on Friday and Saturday night proved to attending Icelanders, Europeans, Canadians, and Americans that during this dreary week in November, Airwaves was the "place to be."

The effects of globalization were apparent in both the large number of foreigners who attended the concerts and the performance styles of the bands. Many of the bands drew techniques and practices from American and European popular music. Nolo, a duo from the suburbs of Reykjavík, used a combination of laptop programming, synthesizers, and live instruments as the two members traded vocal solos and sang in harmony. They played through vintage synthesizers, one of which was a rarity obtained by Ivor Bjornsson's father, also a musician, via a wayward journey to a thrift store in Denmark. "Yes, this is a very special keyboard," Ivor said.

The other half of the duo, Sjón Lorange, a music-composition student at Reykjavík's art college, cited the band's inspiration as coming from American and European bands, but mostly American. Even though Europe is closer to Iceland in geographic proximity, Sjón claimed the American influence on Nolo's music had come from listening to bands through mass-media such as television, radio, and the Internet. He particularly followed American bands that uploaded videos of their music to YouTube. In addition to playing guitar and keyboard, Sjón drew samples from "Fruity Loops," a Windows-based sequencing software program. During shows where their drummer was "playing for some other band," he drew drum samples from his laptop as a substitute.
While electronic dance music attracted a large number of young people to the shows, many of the electronic performances at Airwaves were sit-down, cerebral events. The Harpa Kadalón, the chamber hall in the Harpa, was set aside specifically for sit-down electronic music performances. "Production" prevailed strongly as a festival theme, as performers manipulated sound in the newest or most interesting ways using the latest electronic equipment, software, and techniques. Laptop performance was ubiquitous. Acts billed as laptronica often involved one or two producers using laptops as musical instruments and performing the music of an entire band. One laptronica performance duo, T.V. Thoranna Björnsdóttir & Valtýr Björn Thors, projected the image of one of their laptops onto a large video screen as they engaged in "live coding," sometimes referred to as "on-the-fly programming," a laptop performance technique centered on the practice of improvised interactive programming. The video screen flashed computer code with programming commands and rapid displays of successive 1s and 0s. The ten-member band that followed, Inferno 5, delivered a performance-art piece mixing laptop programming with poetry, singing, mechanical props, homemade instruments, and abstract sounds.

In Iceland's national theatre, the Þjóðleikhúskjallarinn, also known as "The Þjóð," or "The National," Yagya, a computer science student at the University of Iceland, played to a late-night crowd of young people in a club-type atmosphere where the music was enjoyed in various ways: some people stood and stared, some sat and talked with friends, some slept, and many danced. Yagya, whose real name
is Áóalsteinn Guðmundsson, cites some of his influences as Philip Glass, Basic Channel, and Brian Eno. Musically, he focuses on atmospheres and moods, avoiding heavy rhythms and concentrating on the softer side of music. He claims to "find harmony and beauty in the simple sounds of nature and wants his music to flow naturally through the listener." Themes of nature were prevalent in the music expressed by many artists at the Iceland Airwaves Festival, but the festival was not a political event, in contrast to the aforementioned Icelandic benefit concerts for nature, so the artists were not there to engage in the fight over Iceland's wilderness crisis. Motivations of the participating musicians were variable and spanned a wide range. Some enjoyed the opportunity to perform. Others relished the community or social aspect of the event. Some focused on the career opportunity: a chance to attract fans, get discovered, or land a major-label record deal.

**Major-label Icelandic Pop Stars and Nature**

Two Icelandic bands besides Björk to have achieved major-label record success are Sigur Rós and Of Monsters and Men. Of Monsters and Men is a five-member, indie-folk band that formed in the last decade. With success in Iceland and


growing popularity in the United States, Of Monsters and Men signed with
Universal for a worldwide release of their debut album.\textsuperscript{12} The band released its \textit{Into the Woods EP} in December 2011, featuring four songs from its debut album, and later released \textit{My Head Is An Animal} in the United States in April 2012. In June 2015, its latest album \textit{Beneath the Skin} debuted at #3, moving sixty one thousand units and outpacing \textit{My Head Is An Animal} in chart performance.\textsuperscript{13} Their summer 2012 world tour took them to the Newport Folk Festival in Rhode Island in July, as well as the Osheaga Festival, Montreal and Lollapalooza, Chicago in August. That summer, they also performed in several European countries including Ireland, Germany, Italy, and Sweden.\textsuperscript{14} Of Monsters and Men performed their song "Mountain Sound" in October 2012 on the PBS music show \textit{Sound Tracks: Music Without Borders}. In 2013 they performed on Saturday Night Live and at Coachella, the First Annual Boston Calling Music Festival, Bonnaroo Music Festival in Manchester, Tennessee, Lollapalooza Brazil and Chile, and T in the Park, the largest music festival in Scotland. In 2013, their song "Little Talks" was voted into the Triple J Hottest 100 of 2012 at number two, a prestigious musical honor in

\textsuperscript{12} Ibid.


Australia, and they appeared at the Glastonbury Festival and the Optimus Alive! festival in Lisbon, Portugal.\textsuperscript{15}

While Of Monsters and Men has gained momentum on the international pop charts in the last few years, the band Sigur Rós hit the international scene many years before. The music of Sigur Rós is often classified as "atmospheric" or "ethereal" and involves soundscapes of multiple-track layering of sounds created by acoustic and electronic instruments. Having formed in 1994, they played Madison Square Garden in 2013 and toured internationally. Their single "Hoppipolla" ("Hopping into puddles") from their second album \textit{Takk (Thanks)} received significant commercial exposure sounding in the trailers for the BBC natural history series \textit{Planet Earth} in 2006, ITV's coverage of the 2006 Oxford and Cambridge Boat Race, advertisements and closing credits for the BBC's coverage of England games during the 2006 FIFA World Cup, television advertisements for RTÉ's Gaelic games coverage in Ireland, an advertisement for Oxfam, the trailers of the films \textit{Children of Men}, \textit{Slumdog Millionaire}, Disney's \textit{Earth}, the 2011 film \textit{We Bought a Zoo}, and the final scene of the movie \textit{Penelope}.\textsuperscript{16}

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Of Monsters and Men, Sigur Rós, and Björk are all Icelandic pop music artists that have been internationally successful and display elements of nature in their art. All three bands express nature imagery through their lyrics and video imagery, but a differentiation in musical style distinguishes one from another. Of Monsters and Men draws from an acoustic, folk-mountain sound similar to American bluegrass or Appalachian music, which also derived from English, Irish, and Scottish folk traditions. This association with “mountain-music” makes their fans align them with “nature” in spite of the urban and international lifestyle that recording and touring brings. In addition to their “natural” sound, an “urban” sound emerges from a style of drone singing similar to Thom Yorke of the English band Radiohead mixed with “ambient” instrumental sounds created by electronic instruments. Possessing a similar sound and preceding Of Monsters and Men, Sigur Rós has been classified by critics as “nature-soundscape” music, alluding to its “ambient” electronic guitar and synthesizer sounds that lack danceable beats but that still express ideas of nature through videos and lyrics. It is the lyrics and video imagery of Sigur Rós that makes listeners and critics equate their soundscapes with natural landscapes. Björk’s projects have extended an expression of nature beyond video imagery and lyrics in two ways. In her early albums, she recorded sounds directly from nature and mixed them onto her albums. With the *Biophilia* app suite, she attempted to equate scientific explanations of phenomena that occur in nature with musical structure. To make the app suite, she hired app programmers to program iPad applications with many functions. One function was to control giant
instruments that she had commissioned by engineers and machinists so that she could manipulate the instruments through software programs on an iPad, controlling them with swipes and touches on a touchscreen. A documentary called *When Björk Met Attenborough* shows her visiting London's Natural History Museum and collaborating through discussing ideas about natural science as part of the project. The bonus documentary to the *Biophilia Live* (2014) film shows her collaboration with the Chief Executive Director, Mamoru Mohri, PhD, and Curator, Maholo Uchida, at the Miraikan museum in Tokyo to teach the apps in a children’s education program with the mission of combining “musicology” with scientific aspects of nature. With more industry connections and sales receipts from eight studio albums and their related tours, Björk was working with a larger budget than both Sigur Rós and Of Monsters and Men, so she was able to explore nature in her project with greater complexity.

The nature metaphor is powerful and plays out in different ways according to different artists and their fan bases. A consensus for a method to approach nature is seemingly absent in Icelandic music. The lack of consensus carries through to politics as well, as different political parties and interests debate various ways to preserve nature (P Árnason 2005). The government of Iceland advertises plans to solve the global climate crisis by selling sustainably-generated energy to foreign corporations. They argue that if foreign corporations come to Iceland and use sustainably-generated electricity for their manufacturing plants instead of burning fossil fuels, the result is a reduction of global carbon emissions to one-seventh of
what they would be otherwise. Others argue that this is a ploy to rescue the economy from its 2008 collapse. The "afforestation faction" of Icelandic environmentalists advocates for planting trees and growing forests because of the rich volcanic soil, and they promote solutions to capture carbon emissions in the volcanic soil and turn them into organic matter. The conservationists represent a third faction expressing the desire to eradicate industry, leave Iceland's natural lands undisturbed, and protect the migratory birds and other wildlife living in Iceland (Thórhallsdóttir 2002).

What is at Stake

In the way popular music transpires in Iceland, we can see the expression of a shift in identity that has occurred over the last seventy years. This shift has been from an identity as a fishing and farming community to an identity preoccupied with urbanization and globalization. While Icelanders still maintain a strong preoccupation with nature, an adherence to Icelandic nationalism, and a Norse identity derived from their literary heritage of the Eddas and Sagas, in recent years they have become consumed by a preoccupation with technology and modernization. With their new republic that began in 1944, they have also reclaimed their identity of rebellion after centuries of oppression by colonists that hearkens back to their early settlement during the Viking age. Their "alien" identity, or identity of isolation has remained a theme in modern years, but with their increasing
participation in the global age, it is somewhat incongruous to identify themselves and be viewed by others as "isolated."

Hence this dissertation deals with the identity of Björk and of young Icelandic popular musicians on multiple levels. What is at stake for these musicians is political in one sense, but artistic in another sense. Young Icelanders, while seemingly concerned with nature, have individual perceptions of it and express these different perceptions of nature in different ways in their music. Being artists first and foremost, sometimes their musical expressions seem to be less concerned with nature and more concerned with a wholehearted embrace of the technological revolution that has overcome Iceland. While Björk may no longer be "young" by pop star standards, she continues to release new and innovative music, and is vocal in the Icelandic environmental protection political debate, which magnifies her influence to both the younger generation of pop stars and its audience. But while Björk is an activist, it is important to recognize that she is a working artist first. She is still trying to profit financially from her music which influences decisions about the way she creates and markets her image, her videos, her performances, and her music releases. In the winter of 1857-8, Karl Marx wrote of the complex, overlapping, and interacting relationships between production and consumption and evoked the idea that a "product receives its last finishing touches in consumption," while suggesting that a railroad on which no one rides is only a
"potential railroad" (Marx 1857, Negus 1996: 134).\textsuperscript{17} According to this analogy, Björk is the railroad, and without her fans, she would be merely a "potential railroad."

Outline of the Dissertation

Chapter Two describes aspects of Icelandic identity and argues that historically Icelanders have been preoccupied with nature, Icelandic nationalism, a Norse identity derived from the Eddas and Sagas, self-sufficiency, extreme behavior, isolation or "alien" identity, and a combination of paganism and Christianity, but that a change in perception of identity in Iceland during the last seventy years has drastically changed the country's popular music. This perceptual change of identity has manifested in two ways. The first involves the way Iceland was formerly a fishing and farming community established by the original settlers and continuing later under the thumb of the Danes, but in the last seventy years has become a community preoccupied with technology, particularly in the fields of sustainable energy, information technology, and investment banking. Secondly, the change has occurred in the way the community has joined the global community rather than isolated itself from it. In Iceland's music the change has been a shift from a

\textsuperscript{17} The manuscript of Marx's \textit{Grundrisse}, a series of seven notebooks he drafted chiefly for purposes of self-clarification, became lost and was first published in its original German-language entirety in Moscow in 1939.
suppressed expression of an art form banned by its colonizers and derived mostly from Irish and English traditional music to a music that has joined the global community mimicking its all-encompassing forms of musical expression including western classical, world, jazz, folk, and popular music genres.

Chapter Three describes how changes in environmental politics and economics have created a rebellion among the locals of Iceland against the Icelandic government and how this rebellion has been expressed by Icelandic musicians in public forums, public concerts, and on popular music recordings. The climate crisis informs popular music and one particular genre within popular music, electronic music, and one particular location, Iceland, which serve as a microcosm of a debate about environmental issues that is expressed by popular musicians internationally and is relevant in all parts of the world. Björk has been a key figure in the popular music scene in Iceland to advocate for her country's environmental interest and her activist actions have included organizing concerts, performing for benefits, writing letters to Iceland's and England's newspapers, challenging a corporate CEO for his company's harmful actions to Iceland's environment, creating a trust to support local, environmentally-friendly businesses, speaking before government committees, and lobbying local politicians.

Chapter Four focuses on how aspects of Björk’s identity parallel and diverge from those of Icelandic identity defined in Chapter Two. Björk has been a leader as a musician advocating for environmental change in Iceland and aspects of her identity have brought her to this position. Björk’s political activism represents for
the seventy-one-year period of change in Iceland between 1944 and 2015 a powerful response to the political and environmental changes occurring therein. Icelandic identity, Iceland's politics, and Iceland's economics have put pressure on Björk's music and shaped her pop music career. Björk is a unique individual in addition to being an Icelander, and her individuality has helped set her apart from other Icelanders and prompted her rise to international pop stardom. The combination of her Icelandic identity and her unique individual identity shapes her artistic output.

Chapter Five addresses the way a "fusion" of nature and technology in some of Biophilia's songs and apps works according to authorial intent and listener perception, referencing the poietic fallacy, or the false conviction that what matters most (or more strongly yet, that all that matters) in a work of art is the maker's input (Taruskin 2004).¹⁸ The Biophilia project is in many ways a response to early definitions of the term biophilia as described by philosophers and scientists, Aristotle, Nietzsche, Marx, Erich Fromm, Stephen R. Kellert, and Edward O. Wilson. An investigation of the audience reception and authorial intent of Björk's 2011 Biophilia suggests that a fusion of nature and technology is at the heart of authorial intent, and while this vision is often received at face value by its audience, the fusion is surreal, acting more as an illusion than a reality. An analysis of the

¹⁸ Dibben used a similar approach covering material prior to Biophilia, showing concern with "the idea of nature that (Björk's) output constructs" as opposed to a "prevailing mode of reception [which] reflects a problematic aesthetic in which composition is seen as having been inspired by nature and expressive of it; 'problematic' because it posits a real and unmediated nature which music mimics" (2009a, 53).
way technology and nature function in the instruments created for the project, in particular the Tesla Coil, the Pendulum Harps, and the Gameleste, as well as how they function in the songs, "Thunderbolt," "Mutual Core," and "Dark Matter," and their corresponding apps reveals a gap between nature and technology and illustrates the illusion created by the artist for the listeners and viewers. *Biophilia* is also an artistic expression in which Björk's unique and often-shifting identity and elements of Icelandic identity merge and diverge. The scores that are part of the app suite presented in a moving digital format function for children's education rather than musicological analysis or performance practice. The *Biophilia Remix Series* addresses a niche "dance music" and electronically-oriented audience within the relatively new "remix" genre to promote both the careers of the original artist and the remix artists, but maintains the leadership role of the original artist.
ICELANDIC IDENTITY

A Twentieth-Century Shift in Icelandic Identity

Icelandic historian Guðmundur Hálfdanarson writes that when evaluating Icelandic identity, one must be careful to avoid the Borealist approach. Answers to questions such as "Where and what is Iceland?" and "Is it a part of Europe or a technologically advanced and prosperous part of the third world?" can only be based on subjective choices bound by debatable and shifting categories like "European" and "third world." He also says, "Similar to 'race' or 'nations,' analytical categories of this sort can serve as the basis for people's self-identification, but sometimes they are thrust on groups not to formulate their own knowledge of themselves but rather to explain the classifiers' own perceptions or prejudices" (2013, 468). So noting that I am an American with my own perceptions and prejudices, and attempting to classify Icelandic identity avoiding a Borealist approach, I argue that Icelandic identity has been formed by conceptions of nature, nationalism, a Norse mythology derived from the Eddas and Sagas, self-sufficiency, extremism, isolation or "alien" identity, and a combination of paganism and Christianity. The twentieth century has presented a shift in Icelandic identity encompassing a return to rebellion, a modern-day preoccupation with technology, and a move toward a globalized identity. In this chapter, I investigate how the more traditional elements of Icelandic identity have changed from that of a fishing and farming community to a community
preoccupied with technology that is engaging in a shift toward globalization as opposed to the isolation it experienced for centuries. Even though this shift in identity is occurring, certain elements of Icelandic identity have remained steadfast, and I will discuss the ways in which Icelanders are unwilling to release older conceptions of Icelandic identity. I will relate this twentieth-century shift in identity to how it has played out in electronic popular music that has emerged from Iceland in the last several decades as an outgrowth of popular music.

In order to understand the twentieth-century shift in Icelandic identity, I will first define the elements of Icelandic identity that have prevailed in Icelanders over a historical period, and then I will identify how these elements of identity have changed over the last seventy years. Beginning with Iceland's settlement in 874, and looking at Iceland's medieval period, Karlsson (2000) suggests that the island's population looked upon itself as a group of Norwegians living away from their mother country. He arrives at this theory through many factors. One is that the island was settled mainly from Norway and was part of the Norwegian kingdom in the thirteenth century. Secondly, the early inhabitants preserved the tradition of their Christianization by a Norwegian king. Thirdly, these inhabitants shared a language with Norwegians throughout the Commonwealth period, alternatively using the terms Norse (norrøna) and Danish (dønsk tunga), to refer to a language that was spoken by the Germanic inhabitants of the whole Nordic area.\footnote{The name Icelandic (íslandska) was not adopted for their language until the sixteenth century.} Fourthly,
Icelanders occupied the posts of court poets to the Norwegian king and were overwhelmingly their historiographers.

In contrast, many of the musicians I spoke with at Airwaves identified with their Irish slave heritage. While there are many references in Landnámabók to the early Norwegian settlers being accompanied by Irish slaves, other evidence suggests that not all of the early Irish inhabitants of Iceland were slaves. The Pálsson and Edwards translation of Landnámabók speaks of the role of the Irish in the early inhabitation of Iceland:

In his book On Times the Venerable Priest Bede mentions an island called Thule, said in other books to lie six days' sailing to the north of Britain. He says there's neither daylight there in winter, nor darkness when the day is at its longest in summer. This is why the learned reckon that Thule must really be Iceland, for in many places the sun shines at night there during the long days, and isn't to be seen during the day, when nights are longest. According to written sources, Bede the Priest died 735 years after the Incarnation of our Lord, and more than 120 years before Iceland was settled by the Norwegians. But before Iceland was settled from Norway there were other people there, called Papar by the Norwegians. They were Christians and were thought to have come overseas from the west, because people found Irish books, bells, crosiers, and lots of other things, so it was clear they must have been Irish. Besides, English sources tell us that sailings were made between these countries at the time. (1972, 15)

Pálsson and Edwards further note that the reference to Papar agrees with Ari Thorgilsson's Íslendingabók (The Book of the Icelanders). The word papi (pl. papar) is borrowed from Irish papa (itself a Latin loanword) which occurs in early texts in the sense of "an Irish anchorite" (Pálsson and Edwards 1972, 15). Place names compounded with the word papi as the first element in the early inhabitants' language are known in the Isle of Man, Cumberland, the Hebrides, Caithness, Shetland, Orkney, The Faroes, and Iceland (1972).
While industrialization and modernization have fully transpired in Iceland, particularly in its capital city Reykjavík, not all Icelandic popular musicians believe in the harmony between nature and technology, between the rural and the urban, or between the agricultural and the industrialized. With every cultural shift comes a backlash, and some Icelanders still reject the technology that has entered their lives, if not on a practical level, at least on a theoretical level. Some musicians who are concerned with how modernization and technology have changed their way of life for the worse participate in the vitalization of Icelandic folk music (Tyrkjaránid) and Icelandic instrumental folk music (Íslandsklukkur), both of which are performed at The Folk Music Festival of Siglufjordur. Those who play traditional instruments, such as the Icelandic langspil and fiðla, rather than electronic or electrically-amplified music act by example and preserve Icelandic cultural tradition while counteracting the political belief that urbanization destroys the natural environment. Anna Þórhallsdóttir revived interest in the langspil in the 1960s as it was disappearing from Icelandic musical traditions, spearheading a revival movement. Young people may also partake in The International Organ Summer in Hallgrímskirkja Church in Reykjavík, a summer concert series hosted by the Friends of the Arts Society in collaboration with The Society of Icelandic Organists and The Schola Cantorum Chamber Choir, which as of 2015 celebrated


its twenty-second year. Icelandic folk CDs are available for purchase at the Keflavík airport along with the popular music CDs of the bands that performed at Iceland Airwaves, although it is not clear whether the performers on the folk CDs include young performers.

A Historical Preoccupation with Nature

Ólafur Kvaran states "Nature has been an important cornerstone of the Icelanders' cultural identity and is therefore not only a visible presence, but a part of the national consciousness" (Kvaran, Kristjánsdóttir, and Sawin 2001, 9). On June 17th, 1944 the greatest minds in Iceland convened on the banks of Lake Pingvallavatn to declare independence. The island nation of Iceland developed quickly thereafter. Out of this accelerated modernization, an almost mythological relationship to nature and a brand-new fixation on technology became part of Icelandic consciousness.

In this dissertation, I address questions about the relationship between humanity and the natural environment particularly as they relate to popular, Icelandic, electronic music. Iceland provides a prototype for beginning this

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discussion because its central highlands are a highly contested terrain both physically and conceptually. Þorvarður Árnason states that "plans for hydropower or touristic development clash with hopes to create national parks and nature reserves, and 'combatants' on either side frequently draw on cultural-historic representations of this nature to drive home their point" (2005, 25). The significance of discussing nature and technology in Icelandic music lies in the way that Iceland has increasingly been faced with confronting an ideological conflict between the rural landscape creed upon which it was founded as a nation, and its industrialization. Icelandic artists "develop a relationship with their environmental base and use their art to effect a reconciliation with an abused natural environment" (Kvaran, Kristjánsdóttir and Sawin 2001, 16). The political debate regarding the exploitation of Iceland's natural resources became particularly contentious at the start of the twenty-first century, and Iceland's best-selling book of 2006, *Draumalandid (Dreamland)* by Andri Snær Magnason, castigated the government for its attitude toward Icelandic nature (Dibben 2009a). In Chapter III, I provide some insight and promote some further dialogue about how the environmental crisis is relevant to Icelandic popular music.

Icelanders displaying an interest in nature is not a new phenomenon. The fascination goes all the way back to the discovery and naming of the island. Ari Porgilsson the Learned (1068-1148), a priest and the earliest native historian to write in the vernacular, confirms in a book entitled *Landnámabók* (the Book of
of which he appears to have written at least part of the original version probably dating from c. 1097-1125, that the idea of an Icelandic affinity to nature is very old. One version of Landnámabók chronicles the discovery of Iceland as follows:

3. Snowland
The story goes that some people wanted to sail from Norway to the Faroes - a Viking called Naddodd,\(^8\) to name one of them. They were driven out to sea westwards, and came to a vast country. They went ashore in the Eastfjords, climbed a high mountain, and scanned the country in all directions looking for smoke or any other sign that the land was inhabited, but they saw nothing. In the summer they went back to the Faroes, and as they were sailing away from the coast a lot of snow fell on the mountains, so they called the country Snowland. They were full of praise for it. According to Sæmund

\(^7\) Pálsson and Edwards (1972) make note that there are five extant versions of the Book of Settlements, one of them only a fragment. The version translated by Pálsson and Edwards, Sturlubók, was compiled by Sturla Thordarson (1214-84). Preceding Sturlubók were two versions: one compiled by Ari the Learned and Kolskegg the Wise, the original Book of Settlements, and the other by Styrmir Kára son (d. 1245). In his masterly analysis of the complex problems arising from these different versions of the Book of Settlements, Professor Jón Jóhannesson in his 1941 book Gerðir Landnámabókar arrived at a stemma, which has been accepted universally by scholars and is unlikely to be challenged: Ari’s Book of Settlements (early twelfth century), Styrmisbók (c. 1220), Sturlubók (c. 1275-80), Melabók c. (1300-1310), Hausbók (1306-08), Stardsórbók (before 1636), and Thórdarbók (before 1670).

\(^8\) An alternate spelling of Naddodd is Naddoddr. According to another version of Landnámabók, the country was first discovered by a Swede named Garðarr Svavarsson who lost his way in a storm when he intended to sail to the Hebrides to claim his wife’s inheritance (Karlsson 2000).
the Learned\textsuperscript{9}\, the place in the Eastfjords where they landed is the one now called Reydarfell. (Pálsson and Edwards 1972, 17-18)

So, according to \textit{Landnámabók}, Naddodd was a Norwegian Viking who is credited with the discovery of Iceland, and this Viking named the country for its snow.

Post-settlement, over a long period of about five hundred years, views of nature turned to ones of fear after several severe outbreaks of pestilence and other natural misfortunes had occurred. Björn Th. Björnsson wrote of this period:

The nation as a whole viewed mountains, lava fields and deserts as the abode of malevolent forces and feared them. For many centuries, the old cross-country paths had been left un-trodden, to become overgrown; people were convinced that deserts were inhabited by demons and outlaws, who lay in ambush to seize the possessions or take the lives of travelers; in their minds, volcanoes were the gaping maw of Hell, while blizzards and evil storms originated in the glaciers. (Björnsson 1964, 34)

The view of nature during the following "enlightenment" period can be captured by the words bucolic, utilitarian, and reformist. Poet and naturalist Eggert Ólafsson who lived from 1726 until 1768 sought to educate and better the lives of Icelanders by introducing new agricultural techniques and even some proto-factories. In the nineteenth century, Eggert and Bjarni Pálsson challenged the traditional view of nature by ascending the volcano Hekla, which according to them no one had dared before. This romantic period brought a subtle change where nature began to be revered for her beauty, not only her utility (P. Árnason 2005).

Following Romanticism, Orla Vigsø argues how Nordic perception of identity in the modern era is so tied to nature that it involves a denial of urbanization. He

\textsuperscript{9} Sæmund Sigfusson "the Learned" (1056-1133) was Iceland's first historian, but all his works, including the one referred to here, are now lost (Pálsson and Edwards 1972).
has described a twentieth-century Nordic self-perception that is preoccupied with nature as follows: "We have regarded ourselves, and continue to do so, as peasants, as farmers with close ties to the soil. Deep down, in short, we have never been urbanized" (Vigsø 1995, 116). His article includes posters of the Norwegian Labor Party from the 1920s and 1930s that characteristically depicted a fjord separating town and country with images of people living in the country in the foreground of the posters, while the image of the town lies in the background with smoking chimneys and no people. Conversely, in other European countries at this time, political parties made the town with its industrial workers the center of attention so they could appeal to the labor movements occurring in cities and find support in the urban proletariat. But the Scandinavian social democrats, on the contrary, appealed for many years to the petty bourgeoisie who identified instead with the countryside. Vigsø states of the election posters,

The town is behind the water, far away but not inaccessible. . . . The town is a basis for at least one essential precondition for prosperity, so we should be glad that it exists; we may even spend part of our lives there. But we belong in the countryside, and it is ours. . . . Many people love the cities for their excesses, their ‘liberated’ ways, and their anonymity, but it is still the country we turn to when we want to characterize the nation. . . . But we have become urbanized; we do actually live in towns, and most rural villages are being steadily depopulated. (1995, 123)

Vigsø argues that for Nordic peoples, the city was created as a means of prosperity, but they have not embraced the ideology of the city or industry; for ideological metaphors, the people turn to nature. Vigsø describes nature metaphors frequently used by Norwegians: "The sky ‘is’ freedom and infinity; the tree ‘is’ solidity and natural, harmonious growth; the sea ‘is’ magnificence and power; and
so on" (1995, 125). While these nature metaphors argue that a Nordic identity is preoccupied with nature in spite of industrialization, the Nordic perception of the city is being redefined by a younger generation of Nordic people who, particularly through popular music, embrace urbanization in a way that it contains its own, unique ideology. Dibben touches on some of these tensions when she says, "There are oppositions between conceptions of Icelandic identity as rural, traditional, and tied to the land, versus the country's current position as an industrial, urban, modern state" (Dibben 2009a, 145). A similar tension among Icelanders exists between a desire to preserve their national culture and their desire to become globalized, which are at odds with one-another.

In the twentieth century, the nature debate shifted from the question of an affinity for town or country to a question of natural-lands preservation. In terms of modern-day Icelandic views of nature regarding protection of the natural environment, P. Árnason states:

The conception of the central highland or öæfi as a useless and ugly desert - much more an infertile or even degenerate wasteland than any 'pristine' wilderness - is pitted against arguments that emphasize the uniqueness of its landscapes and/or the magnificence of the stark but overpowering features of a nature that seems to define or embody the very essence of the sublime. (2005, 25)

These visions of a useless and ugly desert or "Wasteland" (Magnússon 2010) versus the very essence of the sublime or "Dreamland" (Snær Magnason 2008) are reiterated by these other two authors, each of whom render an opposing view of nature. The battle for the physical terrain of the central highland is therefore a struggle between at least two competing Icelandic conceptions of nature as well as
for the heart and minds of the public to whom this nature belongs, culturally and spiritually.

Icelandic pop band Sigur Rós and Björk both display a strong identification with nature and express the "Dreamland" faction of views toward Iceland's landscape in their work. Both participated in the Náttúra concert in the park to raise money to save Iceland's highlands from industrial development. Sigur Rós's fifty-minute short documentary film called "Heima," consisting of a collection of videos shot in sixteen different locations around Iceland, arrests the viewer with its stunning landscape cinematography of Iceland's countryside. The title "Heima" translates to "At Home," which asserts the way the band is indigenous to Iceland and also gives the viewer the sense that the band feels more comfortable in Iceland's natural beauty than any other place in the world. Shooting "Heima" after returning from an international tour, the making of the documentary was a kind of homecoming for them. During "Heima," Sigur Rós communicates through images of Iceland's unique volcanic island landscape: glaciers, lava fields, waterfalls, geysers, hot springs, cliffs, black sand beaches, and the ocean. In one song they play a stone marimba constructed from natural elements of the landscape's geologic features. The footage of the turf-roof houses in the countryside evoke the bucolic life from Iceland's past. "Heima" also conveys the idea of the vastness of nature through long, panning shots across the landscape. Former keyboardist for the band, Kjartan Sveinsson, discusses his affinity for vast space, "I think it's the space we have, not
just the land. We have a lot of geographical space, which is great. To be able to see far and wide, diverse things" (Dibben 2009b, 138).

**Iceland as a Fishing and Farming Community**

The Icelandic preoccupation with nature is tied to the way Icelanders have earned their living from the sea and the land for centuries. The first documented permanent settler of Iceland was Norwegian Ingólf Arnarson who was directed by his gods to build his farm at Reykjavík in 874 (Pálsson and Edwards 1972).

According to *Landnámabók*, the man who gave Iceland its name, Floki, was a Norwegian who maintained sustenance by both fishing and keeping livestock. One of the versions of *Landnámabók* states:

There was a man called Floki Vilgerdarson, a great Viking. He set off in search of Gardars’ Isle . . . . On board Floki’s ship was a man called Thorolf, and another called Herjolf, and also a Hebridean called Faxi . . . . Floki and his crew sailed west across Breidafjord and made land at Vatnsfjord in Bardastrand. At that time the fjord was teeming with fish and they got so caught up with the fishing they forgot to make hay, so their livestock starved to death the following winter. The spring was an extremely cold one. Floki climbed a certain high mountain, and north across the mountain range he could see a fjord full of drift ice. That's why they called the country Iceland, and so it's been called ever since. (Pálsson and Edwards 1972, 17-18)

During the so-called Commonwealth period, a period of early constitutional rule that took place in the eleventh and twelfth centuries, fishing was an important occupation. The first concrete evidence of Icelanders exporting fish from Iceland was an amendment to the Icelandic law code, issued by King Eiríkr Magnússon in 1294. The term "fishing camp" began to be used to apply to the whole island by the late
Middle Ages. From the fourteenth century onwards, the most prosperous families tended to settle and obtain farms in the coastal areas of the western part of the country, defining the development period of the system of mixed farming and fishing that was to characterize Iceland for centuries. Farming determined a primary residence for a family and the place where women lived and children were raised. Fishing was predominantly carried out in late winter from January or February until May, a time when cod migrated to the southern and western coasts for spawning and also when less of a workforce was needed on the farm. In the nineteenth century, fishing developed into a year-round occupation with its own fishing towns. At this time, it became common for women without husbands to run farms as they were inevitably numerous in a society dependent on fishing, an occupation with a significant death toll for men (Karlsson 2000).

Between the fourteenth and eighteenth centuries, "shepherding" transpired on the farms, and as early as the twelfth century early laws of Grágás and later Jónsbók addressed the problem of overgrazing in common pastures (afréttir). The farmers were advised "to find the maximum number of sheep that could use the pastures without affecting the average weight of the flock" (Eggertsson 1992, 433). The ocean, by contrast, was generally regarded as a boundless common resource at this time (Pálsson and Helgason 1996).

In the nineteenth century, the political and economic discursive focus shifted from that of farming to fishing as new markets developed in Spain and England for Icelandic fish and an expanding market economy emerged for fishing. It was at this
time that fishing became a full-time occupation and a separate economic activity. During this process, the focus of discussions on economics and production shifted from the land-owning elite to the grass-roots of the fishing communities, and in the process agriculture was redefined as a burden to the national economy (Pálsson, and Helgason 1996).

In the twentieth century, Iceland caught up with its neighbors in economic terms through the mechanization of fishing and a battle for sovereignty ensued over its offshore fishing grounds (Karlsson 2000). As a result of over-fishing, the so-called cod wars of the 1970's with Britain and West Germany ensued and Iceland claimed national ownership of the fishing stocks in coastal waters. The culmination of these events was described by the Icelandic minister of fisheries as the final stage of Iceland's struggle for independence. But this did not solve the over-fishing problem because the Icelandic fishing sector thereafter expanded further. By 1982 Icelandic politicians and interest groups increasingly agreed that a per-boat quota-system based roughly on historical catches would be needed to prevent the "collapse" of the cod stock. In 1984, the government initiated a process of enclosure and privatization and by 1990 with the ITQ system (individual transferable quota), quotas became extended into the distant future, linked to permanent property rights, and fully transferable and divisible (Pálsson and Helgason 1996). A fisherman could also take his quota to the bank and borrow against it. The fish had not only become privatized, they had been securitized. Michael Lewis says of this economic, social, and cultural phenomenon:
It was horribly unfair: a public resource - all the fish in the Icelandic sea - was simply turned over to a handful of lucky Icelanders. Overnight, Iceland had its first billionaires, and they were all fishermen. But as social policy it was ingenious: in a single stroke the fish became a source of real, sustainable wealth rather than shaky sustenance. Fewer people were spending less effort catching more or less precisely the right number of fish to maximize the long-term value of Iceland's fishing grounds. The new wealth transformed Iceland - and turned it from the backwater it had been for 1,100 years to the place that spawned Björk. If Iceland has become famous for its musicians it's because Icelanders now have time to play music, and much else. Iceland's youth are paid to study abroad, for instance, and encouraged to cultivate themselves in all sorts of interesting ways. Since its fishing policy transformed Iceland, the place has become, in effect, a machine for turning cod into PhDs. (2001, 30)

Icelandic Nationalism

Philip Bohlman writes, "It is impossible to listen to European music without encountering nationalism" (2004, xxi). He also writes,

Nationalism contributes fundamentally to the ontology of European music, that is, music's "ways of being" in Europe. However, I have avoided, assiduously so, stating that all European music is nationalistic. Much is, much is not, but that's not the point. Surely some European musicians have distanced themselves from nationalism, say, composers of the nineteenth and twentieth centuries who strove for what they imagined to be autonomy in music. In quite different ways, there have been nationless musicians in the twentieth century who skirt the borders of national style because of the real physical violence it might bring upon them. But even here, that is, even in the conscious attempts to move away from national identity in music, the specter of nationalism haunts modern practices of folk, popular, and classical music, and that specter travels under the name of "Europe." In a very real, practical sense, it is because of that specter that nationalism shapes the ethnographic field in which we encounter European music today. (2004, xxi-ii)

A discussion of whether the specter of Icelandic music travels under the name of "Europe" requires an examination of whether Iceland is a part of Europe or is not.
In several scholars' arguments, Iceland is depicted as an anomaly of its European counterparts (J.P. Árnason 2012, Oslund 2011, S.G. Magnússon 2010). These depictions include Iceland's geographic distance from Europe, a history of slower economic and cultural development than nations on the European continent, and Iceland's current state of political affairs in which the Icelandic government recently applied to join the European Union and then later retracted its application. A study of these anomalies could lead one to conclude that Iceland is not currently a part of Europe. Therefore, I would argue the nationalism found in Icelandic music does not travel under the name of "Europe" even though for centuries Iceland was colonized by Denmark. In popular music protests against the Icelandic government's environmental policies, however, Icelanders rally around a specifically Icelandic nationalist cause of preserving Iceland's wilderness. This is not to say that all Icelandic pop music is nationalistic. On the contrary, much of it is individualistic rather than nationalistic. However, in the context of preserving Iceland's environment, it is more accurate to argue that Icelanders often use popular music to rally around a nationalistic cause.

Several elements blend to create nationalist sentiment for Icelanders. One is the preservation of their language, Icelandic, which is still very close to the Old Norse that the first settlers brought to Iceland in 874. The preservation of the Icelandic language allows Icelanders to maintain their identity and to keep their secrets. Gunnar Karlsson writes:

"Our knowledge of Icelandic history is mostly conserved in monographs and articles in Icelandic... The history of Iceland is for the most part a secret"
kept for those who can read the language which has developed in the country through eleven centuries. (2000, 5)

A second element that expresses nationalist sentiment is the preservation of Icelandic landscape. Þorvarður Árnason conducted an empirical survey in the last twenty years in Iceland, Sweden, and Denmark to discover the degree to which concern for the environment in contemporary societies was rooted in a nation's cultural heritage. He found that of the inhabitants of the three countries, Icelanders placed a higher importance on the natural landscape as a national symbol but paradoxically tended to view nature in a more negative light than either the Swedes or the Danes (2005).

A third element is the preservation of culture derived from Norse literature, particularly the Eddas and the Sagas. Icelanders rally around nationalism because of the way the medieval literature tells the story of their heritage, and also the way it has been read widely beyond Iceland. Scholar Jóhann Páll Árnason distinguishes Iceland from other Nordic countries as such: "The idea of a Nordic world would be incomplete without reference to the only country that produced a distinctive literary tradition during the formative medieval phase of Nordic history and maintained linguistic continuity throughout later transformations" (2012, 229). Literary scholar Jane Smiley says of the Sagas, "The prose literature of medieval Iceland is a great world treasure - elaborate, various, strange, profound, and as eternally current as any of the other great literary treasures - the Homeric epics, Dante's *Divine Comedy*, the works of William Shakespeare or of any modern writer you could name" (*The Sagas of Icelanders* 2000, ix). As for Ursula Dronke's
translations rendered in *The Poetic Edda Vols. 1 and 2*, she says "Atlakviða and *Hamðismál* are among the oldest surviving poems in the Germanic languages and the problems they raise are fundamental to early Norse literature" (1969a, vii).

*Atlamál* and *Guðrúnarhvót* provide a vivid contrast to the earlier treatment of the same themes in *Atlakviða* and *Hamðismál*; all four poems date back to c. 1270.

*Völuspá*, *Rígsþula*, *Völundarkviða*, *Lokasenna*, and *Skírnismál* "all relate in some way to the period from the ninth to the eleventh century, when Norsemen were in most familiar contact with the Irish and the Anglo-Saxons. Assimilation of the distinct traditions from these neighbor nations is most marked; at the same time all five poems share a mature affinity of style from being conserved as living poetry for two centuries in Iceland" (1969b, vii). Though Taylor and Auden agree with Dronke that Icelanders had recorded their culture and history through literature earlier than their Nordic and British counterparts, they argue that the content of Icelandic Eddic and Skaldic poetry is comparable to its Germanic and British Counterparts though the form and the treatment of Germanic gods is different. They say:

The heroes of Icelandic heroic legends participate in the same events and belong to the same historical milieu as the heroes of Old High German and Old English heroic poetry. Old Icelandic poetry is unique, however, in the manner in which it treats traditional Germanic gods. There are only scant references and allusions to the Germanic pagan pantheon in Old English Chronicles and genealogies. Possibly the early arrival of Christianity in England - first with the converted Romans during the last years of the Empire's occupation, and then with the Celtic monasteries, and finally with the proselytizing Roman Catholic Church during the sixth century A.D. - seems to have inhibited the continuation of whatever poetic tradition might have existed about the older gods. Both Old English and Old High German traditional poetry successfully adapted their techniques to the incorporation of Christian materials, while the Old Icelandic tradition seems never to have been able to incorporate the new materials, except in a few isolated later
literary imitations of the traditional form. The reason for this difference in the development lies undoubtedly with the late arrival of Christianity in Scandinavia (A.D. 1000) and the paucity of foreign clergy in Iceland before the fourteenth century. Traditional myths appear to have been very popular in Iceland for three centuries after the conversion, while comparable poetry was being forcibly suppressed on the Continent and in the British Isles. Further poetry as entertainment was obviously tolerated and encouraged in Iceland at a time when arts in Christian Europe were directed toward revelation of the Scripture and declaration of Church doctrine. (1969, 14-15)

Hence, the content of the folklore found within Icelandic literature is unique, and Icelanders are fond of this singularity. They sometimes even express that they feel threatened when people from other countries discredit their beliefs in elves, fairies, and trolls, a common theme found throughout the Eddas and Sagas and one that still pervades the culture today (Magnússon 2010, Lewis 2011, Aston 1996). In their efforts to become part of a globalized world, however, Icelanders also sometimes express that it is no longer "cool" to be a believer.

A fourth element about which Icelanders express nationalism is protection from the threat of foreign rule. After being under Norwegian and Danish rule from 1262 to the mid-nineteenth century, the nationalist movement began in Iceland when the c. sixty thousand inhabitants of Iceland, mostly poor peasants, set out to achieve practical independence from Denmark. These peasants gained home rule in the early twentieth century, but once again faced threats of foreign rule with the advent of World War II. Denmark became occupied by Germany on April 9th, 1940, and at that time Britain offered Iceland protection from Nazi invasion, but Iceland insisted upon remaining neutral (Karlsson 2000). "Whoever possesses Iceland," wrote the German geopolitician Karl Haushofer, "holds a pistol pointed permanently
at England, America and Canada” (Pitt, 1977, 136). One month after the German occupation of Denmark, on May 10th, 1940, people in Reykjavík woke to the sound of aircraft and the sight of five or six naval vessels sailing towards the harbor. It was unclear from a distance whether they were German or British ships, but as soldiers began to emerge from the ships, it became apparent to the Icelanders that the ships were British and the soldiers had arrived to precede the German navy, to bring with them a new British minister for Iceland, and to arrest the German consul who was presiding in Reykjavík. The Icelandic government initially protested the British occupation, but by the evening the Icelandic prime minister, Hermann Jónasson, addressed the nation over the radio and asked for the British soldiers to be looked upon as guests. Icelanders were not in support of Nazism; the most support shown by Icelanders toward the Nazi party occurred in 1934 with a 2.8% approval during local elections (Karlsson 2000).

When the German army reached the English Channel, the British authorities felt that they could no longer afford to have such a large force stationed as far away as Iceland, which was in less immediate danger of invasion. At this point the British proposed to hand the protection of Iceland over to the United States, which had not yet entered the war, but was in support of Britain's position (Karlsson 2000). The British also saw that Iceland could serve as a military outpost during the Battle of the Atlantic, in which American participation began in 1939, long predating its official entry into the war (Pitt 1977), and could help stabilize the Allies' interests in the future. Britain mediated an agreement between the
governments of Iceland and the United States in which Iceland agreed to entrust the United States with its protection on condition that the US force would leave the country as soon as the war was over. The Americans arrived as a sixty-thousand-strong force and built a new airfield and a large military base in the Reykjanes peninsula near the fishing village of Keflavík. In March 1945, two months before the capitulation of Germany, the United States government suggested to Prime Minister Jónasson that US military forces should be allowed to remain in Iceland permanently. Jónasson asked the Americans to wait, knowing that this would not be popular either in his own political party espousing nationalism or among the opposition party, the Socialists, who looked upon the United States as the hotbed of capitalism. In the autumn of 1945 the United States government sent the Icelandic government a formal request for permission to keep three permanent bases in Iceland. After an Icelandic committee was established to address the request, it was generally rejected. The Americans remained in the country through the winter and the following summer, but with a reduction to two thousand troops. In the late summer of 1946, Jónasson entered into a treaty with the United States under which the American army was to leave Iceland but allowed to keep staff and equipment at Keflavík airport for six-and-a-half years in whatever quantity was deemed necessary to support the post-war American presence in Germany. The last American soldiers left Iceland in May 1947, but an aircraft company, Iceland Airport Corporation, took over running Keflavík airport (Karlsson 2000), which
today functions as an international airport channeling tourists to Iceland and between North America and Europe.

The war provided an opportunity for Iceland to gain its independence from Denmark. The Althing, Iceland's parliament since the tenth century (Grønlie 2006), temporarily dissolved on April 10, 1940 as soon as it was known that Denmark had succumbed to German occupation (Karlsson 2000). At this moment, the 560-year-old rule of the Danish Crown came to an end in Iceland. The following year, former members of the Althing and other Icelandic politicians established a new Icelandic post of Regent (ríkisstjóri) in the Icelandic constitution to replace the Danish king's role. While this decision was unconstitutional, Icelandic politicians used the war and the security provided by the American military presence to postpone general elections due to take place in the summer of 1941 and leave the country without any stable political leadership for most of the war years. After internal political conflicts between the so-called Legal Separatists (lögskilnaðarmenn) and the Quick Separatists (hraðskilnaðarmenn), between February and March 1944 a reunified Althing unanimously agreed to the establishment of a new Icelandic republic. It was during this time that a strong sense of nationalism prompted Icelanders to create a new and independent nation-state called Iceland (Karlsson 2000). After World War II, a sense of nationalism weakened because constructions of Icelandic identity after Iceland gained its independence became threatened. A paradox emerged whereby Icelanders began to believe that they had been shaped by their history, while in
reality they have been and still continue to be shaped by outside influences in a modern era of globalization (Hálfdanarson 2012, 267-8).

The widespread use of the English language in a country where the people have fought so hard to preserve their ancient language constitutes one of these threats. Of more than two hundred Icelandic bands at Iceland Airwaves, the majority sung in English. I asked several of the bands why they sing in English, and a common reply was, "Because it's cooler. It's cooler to sing in English." This led me to ask why. Could it stem from a desire to write an international hit song? Writing songs in English as opposed to Icelandic allows Icelandic musicians to access a greater population and therefore makes them more marketable on an international level. Additionally, the question is political because whether or not singers choose to sing in their local language is a decision that will be perceived as stating a local affiliation versus a global one. In popular music in Singapore, Yasser Mattar has shown that Singaporean consumers, like many other consumers of popular music globally, judge the quality of musicians based on their perceived 'authenticity.' Therefore Singaporean consumers show little support for their domestic English-language musicians because they perceive these musicians to be inauthentic (Mattar 2009). This proves not to be the case in Icelandic popular music for two reasons. The first is that the economy of Iceland relies heavily on tourism of English-speaking visitors. English is taught in local schools and many people in Iceland speak English to the point where one might consider Iceland to be a bilingual country. The second is that the globalized agenda of the youth of Iceland
who support popular music is stronger than their local agenda when it comes to language, meaning that their desire to be a part of the new world youth culture overrides their desire to preserve their own language, particularly when singing songs. This cultural aberration has manifested in The Eurovision Song Contest, the annual music competition Europeans love to hate, a study in contradictions as widely celebrated by its fans as disparaged by its critics (Raykoff and Tobin 2007). English has become the lingua franca of Eurovision songs, even though it is the national language of only two participating countries, Great Britain and Ireland. The language boasts the greatest number of winning songs overall, including ABBA's "Waterloo," possibly the contest's most famous winning song. As of 2005, twenty-six nations had presented English-language songs. In contrast, French-language songs, the second most-frequent winners have been presented only by the Francophone nations of France, Monaco, Belgium, Luxembourg and Switzerland (Raykoff and Tobin 2007). Benoît Duteurtre, a French music critic who writes for Le Figaro expressed his bemusement of the non-native English singers imitating American pop styles at the Eurovision Song Contest:

That evening, the European peoples seemed united by collective acceptance of being members of a subjugated province—through music that could not possibly have been more undifferentiated in its variety, speaking a poorly mastered language as if they were three hundred million slaves, stringing together only the language’s most rudimentary expressions.\(^\text{10}\)

But at Eurovision, sometimes the language in which the contestant sings depends on the country's government. Spain's 1968 contestant chose to mask his singing in Catalan with a song titled "la, la, la" knowing that singing in Catalan was prohibited under Franco's regime. The infraction did not go unnoticed by the Spanish government who replaced him with another performer who sang in Spanish. Eurovision songs have often featured vocables and nonsense words as a way to circumvent barriers among participant nations and potential voters. Among these were Monaco's 1967 "Boumbadaboum," and three other winners: Britain's 1969 "Boom Bang-a-Bang," Holland's 1975 "Ding Dinge Dong," and Sweden's 1984 "Diggi-Loom Diggi-Ley." Many critics have censured this infantile approach to linguistic expression arguing that it detracts from Eurovision's artistic dignity (Raykoff and Tobin 2007).

Returning to whether singing in English might earn a band a hit, the locals who performed at Airwaves were clearly not earning a living from their music, regardless of whether they were trying to or not. The Icelandic band "Nolo" told me that most Icelandic bands at Airwaves performed for free drinks and no other form of payment. A few of the hand-picked Icelandic bands had made it onto record labels with international connections, but others were releasing records at their own expense on their own labels, or had previous records released on a local Icelandic record label that had since gone, in Nolo's words, "bankrupt." Another Icelandic band at the Airwaves festival claimed, "Our record label has asked us to buy our own records from them but we can't afford them." Hence, singing in English
becomes a tactic for survival for these bands, overriding the sentiment to preserve their national heritage. However, artists like Björk who have gained success in the international music arena sometimes sing in Icelandic when they perform at home to gain affinity with the locals (see the section in Chapter Three "Björk and Activism"). Therefore, an Icelandic popular music artist's language choice is often related to its audience and the occasion for performance.

A fifth reason for nationalist sentiment in Iceland is the visible threat of environmental destruction by outsiders. Alcoa's plans to build aluminum plants on their National Forest lands have threatened the preservation of their land. Since a loss of forest lands would interfere with Icelanders' pride in their natural landscape, the threat of this destruction binds them together in a new cry for a nationalist effort to protect their land. However, recently, they have been forced to choose between their land and their economy, which presents them with a conflict. Andri Snær Magnason, the author of *Dreamland*, spoke of this conflict in an interview with the local newspaper.

There is something that happens when people are offered an oil refinery or an aluminium smelter, when people are offered the Big Solution and they anticipate billions coming in to the economy in the next three to four years, for them, that's a lifetime. Usually, it is difficult to anticipate the next six months, but three years, that's a lifetime, so people become blinded to their own capabilities and opportunities. They stop asking what they can do, and every opportunity becomes a threat to the Big Solution. You need to prove to the nation that you really need the Big Solution, so people talk themselves into complete hopelessness, to the level where there is nothing else available in the situation. It becomes a battle of un-independence. It is absurd. This idea of independence . . . we are led to believe that our health-care system, our education system, our very existence, is thanks to aluminum.\(^\text{11}\)

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\(^{11}\) Sveinn Birkur Björnsson, "The Machine is Deaf," *Reykjavik Grapevine*. 
The "Big Solution" refers to the deals the Icelandic government made with foreign aluminum manufacturers to harvest Iceland's oversupply of sustainably-generated electricity. This statement by Magnason shows how the environmental cause is a nationalist one, but so is the cause to save the Icelandic economy. The statement also indicates how Icelanders are confused by the message the government is sending to them about what is best for their country.

A Nordic or Norse Identity Derived from the Eddas and Sagas

Both the words Nordic and Norse roughly translate to the word "north," yet the term Nordic tends to be used to describe regions and cultures, particularly those in a contemporary-age context, while the term Norse tends to be used when speaking of language, peoples, and literature, particularly in a historic context. Jóhann Páll Árnason and Björn Wittrock define the Nordic region as "five independent states which are commonly included in definitions of the Nordic region (and now formally associated through membership in various organizations): Denmark, Finland, Iceland, Norway, and Sweden.\(^{12}\) These countries are characterized by a high, and in a European context arguably unique, degree of commonality in terms of traditions, cultural habits, institutional structures,

\(^{12}\) A third term, Scandinavian, confuses things further. The term most explicitly refers to the Scandinavian peninsula on which Norway, Sweden, and Finland are situated but sometimes is used interchangeably with the term Nordic.
languages and closeness of cooperation" (Árnason and Wittrock 2012). However, historically, the Nordic region extended beyond these five independent states.

For three centuries from the early sixteenth to the early nineteenth centuries, that is, during what is normally referred to as the early modern period in European historiography, the Nordic countries were divided by a chasm between on the one hand the conglomerate monarchy of Denmark, including Norway, Iceland, the Faroe Islands, Greenland, and a range of other possessions, not least in Northern Germany, and on the other hand the Central-Eastern Swedish Realm that had today's countries of Sweden and Finland at its core and with Baltic or German possessions attached to it. This chasm was a persistent feature of Northern European history and has shaped institutional and political legacies of relevance up to the present day. It was also deep enough to lead to some of the most bloody military conflicts in European history. (Árnason and Wittrock 2012, 2)

Ármann Jakobsson, who writes about Viking Icelandic literature, defines the terms "Nordic" and "Norse" in these contexts:

In the year 900 there was no Icelandic literature as such. The settlement of Iceland was still in progress at that time and it makes no sense to speak of "Icelanders" at this juncture. There were settlers from various parts of Northern Europe, mainly Norwegians according to the thirteenth century settlement myths, but also from the Norse colonies in the British Isles which may account for the Celtic traits found in the genes of modern Icelanders. The language spoken was a West Norse hardly distinguishable from Norwegian and other West Nordic languages until the thirteenth or fourteenth century. And, like their language, the literary activity of the settlers cannot be comfortably described as specifically Icelandic; it was of Germanic and Nordic origins. The oldest Icelandic literature may be divided into two groups:

1. Eddic poetry which is a part of the collective Germanic poetic tradition.
2. Skaldic poetry which can be considered as Nordic and in particular a West Nordic poetic tradition.

The word skaldic came from the Icelandic word for poet, skáld. Skaldic poetry is formal in character and individual in composition. Taylor and Auden state, "While the meter and diction of Eddaic poetry are relatively simple, skaldic verse is composed in a variety of complex forms and employs a larger number of involved
metaphors, or *kenningar* (1969, 13). Neither of these oldest poetic traditions are exclusively Icelandic but both found their place in the medieval literature of Iceland (Jakobsson, 9).

The Eddas and Sagas of Icelandic literature are a vast body of study (Dronke 1969a, 1969b; Taylor and Auden 1969; Hreinsson 1997) to which some scholars devote their careers alone. They also have been the genesis for popular operas, stories, and films. Richard Wagner's operatic Ring Cycle combined elements of the German medieval *Nibelungenlied* with the Icelandic *Völsunga Saga*. As a linguist of Old Norse, J.R.R Tolkien drew extensively on the literature of medieval Iceland for his *The Lord of the Rings* series. The name he chose to set his story – Middle Earth – is derived in part from the Norse word miðgarð, a realm in Norse mythology in which humans live surrounded by a vast ocean inhabited by a world-encircling serpent named Miðgarðsormr. Jules Verne based his *Journey to the Center of the Earth* on a secret tunnel in the crater of the Icelandic volcano Snæfellsjökull. Verne's characters learn of this tunnel when a mysterious parchment in runic letters from the leaves of one of the original Sagas written by Snorri Sturluson falls into their hands (Oslund 2011).

The poetic Edda were a kind of precursor to music performance in Icelandic society. One might relate them to modern-day spoken-word performances, though they occurred during medieval times. Taylor and Auden write,

Icelandic traditional poetry finds its origin in oral composition long before the art of writing was known or used in Scandinavia to record poetic texts. The poetry is traditional in the sense that it was transmitted by oral performance, and survived for centuries, passed from generation to generation, by oral
transmission. There is no question of authorship, for the poet (*fornskáld*) was a performer rather than an originator. He recounted familiar material and his performance of a particular story differed from other performances in metrical and lexical interpretation. (1969, 13)

Icelandic pop band Sigur Rós particularly displays Norse mythology in their music and videos. In their fifty-minute short documentary film called "Heima," one of the band's destinations in the film is Asbyrgi, "a dramatic horseshoe-shaped canyon in northern Iceland which, according to legend, is the hoof print of Odin's horse, and home of the 'hidden people' from Norse mythology" (Dibben 2009b, 135).

The Eddas and Sagas first made their way into *rímur* (Icelandic epic song) and then later into Icelandic popular music. They are referenced in Björk's hits as well as in the music of many other Icelandic popular musicians.

**An Identity Divided between Paganism and Christianity**

Þorvardur Árnason names four distinct religious eras in early Icelandic settlement that define an Icelandic identity (2005). The first is a pagan era that takes place from settlement in the late ninth century until the conversion of Christianity in the early to mid-eleventh century. The second he calls the "commonwealth" period marking the conversion to Christianity at the end of the *godórð* political system in the late thirteenth century. The third is the catholic era which occurs from the beginning of Danish rule until the mid sixteenth century. And the fourth is the reformation which occurs over only a decade between 1541 and 1551.
Following Ingólf Arnarson's settlement in 874, Iceland remained completely pagan for about 120 years following (*Landnámabók* c. 1097-1125). The early settlement or "pagan era" was characterized by views of nature related to the animistic religion, based on belief in Óðinn and his fellow Æsir, which had been the dominant religion amongst people of Norse/Germanic descent. The surviving Eddaic and Scaldic poems are our main sources of information about how Icelanders (and other Nordic peoples) envisioned nature before their conversion to Christianity. (P. Árnason 2005, 16)

It is difficult to determine exactly what this paganism consisted of because the Germanic peoples of Europe did not become literate, apart from the minor use of runic inscriptions on stones and sticks, until they had adopted Christianity (Karlsson 2000; Grønlie 2006). However, Snorri Sturluson in his thirteenth century *Snorra-Edda* (Prose-Edda) portrays an extended family of deities called Æsir (sing. Ass), which has partly absorbed the smaller family of Vanir (sing. Vanr), also sometimes referred to as Æsir, enumerating twelve male gods and twelve goddesses. The three gods who occur most often in Icelandic sources are Thor (Þórr), Odin (Óðinn), and Freyr (Karlsson 2000). Illuminating the preservation of paganism during the conversion to Christianity and the birth of oral history writing, Grønlie notes,

> What continues to astonish about early Icelandic histories is less their affinity with Latin European Christian literature than their resilient secularism, witness surely to a strong oral tradition which survived the conversion and passed into a new literate world, giving rise to literary genres not found elsewhere in medieval Europe. (2006, viii)

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In the year 1000, with the conversion of Icelanders to Christianity, the dominant thinking switched to the worship of the holy trinity of Father (God), the Son (Christ), and the Holy Spirit. Jóhann Páll Árnason and Björn Wittrock note of Christian identity in Icelanders:

The major European regions are to a great extent (but not exclusively, and not all to the same degree) defined by the historical circumstances in which they became parts of the civilization of Western Christendom. That seems eminently applicable to the Nordic world, where the formation of Christian monarchies in Denmark, Norway and Sweden (as well as the more marginal non-monarchic Christianization of Iceland) during the High Middle Ages set the stage for regional history. (Árnason and Wittrock 2012, 7)

To a visiting tourist, Reykjavík's most noticeable architectural structure is an immense, concrete church called Hallgrímskirkja that stands atop the city's tallest hill and serves as a directional point-of-reference for one who meanders the city's streets. Hallgrímskirkja was named for the poet Reverend Hallgrímur Pétursson, who wrote Iceland's most popular hymn book. For six hundred króna, one may take an elevator trip up the church's tower that rises seventy-five meters for an expansive view of the city and surrounding ocean and volcanoes. The church's architect, Guðjón Samuelsson, never lived to see the completion of the building, as its controversial construction took thirty-four years to complete between 1940 and 1974. The 5,275-pipe organ is a main-attraction, and from mid-June to mid-August the choir and organists perform concerts for the public. Services are conducted in Icelandic, but the last service of the month is in English. Tying Iceland's nationalist cause to the church, a statue of the Viking Leifur Eiríksson, the first European explorer to land in North America and son of the Viking conqueror Eirík the Red,
who discovered Greenland, stands proudly outside the front of the church at the top of a long staircase that leads to the church from one of Reykjavík's busiest shopping streets. The statue was a present from the United States to commemorate a centennial anniversary of the Alþing, the National Assembly of Iceland (Presser, Bain, and Parnell 2013; Aston 1996).

In Njal's Saga, the battle between paganism and Christianity is described as a battle between Þórr and Christ. In this saga the poetess Steinunn asks the Christian missionary Pangbrandr, "Have you heard . . . that Þórr challenged Christ to a duel and that Christ didn't dare to fight with him?" (Karlsson 2000). While Christianity remains prevalent in Iceland today, the elements of paganism preserved by the Sagas and Eddas appear in song lyrics and visual presentation as a part of popular music culture. One of the most widely-attended shows at Iceland Airwaves was a ten-piece rock-electronic band fronted by a leader named Æsir.

A Self-Sufficient and Extreme Identity

In his social history of Iceland, Sigurður Gylfi Magnússon portrays the history of a culture of extremes and a self-sufficient people. As for extremes, he begins the book with a story of a farm laborer from Strandasýsla, a town in the remote northwest of Iceland, who castrates himself when he believes his fiancé may

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love another. After relating this grim tale, Magnússon examines the material conditions under which people lived in eighteenth- and nineteenth-century Iceland, and how food-shortage, incurable diseases, and cold, damp housing affected not only Icelanders' physical well-being but also the way they thought, viewed the world, and reacted to life experiences. In the eighteenth century the country suffered a succession of volcanic eruptions, crop failures, famines, and a smallpox epidemic. In the eighteenth and nineteenth centuries hydatids, diphtheria, and typhoid took many lives. Housing conditions were basic, primitive, and severe. Most farms had only a small living room with a low ceiling and a turf roof where people both worked and slept, and a kitchen in which the smoke and soot generated from the hearth was often unbearable. To compensate for lack of firewood and other available heating materials, living quarters were often built above the cowshed so that families benefitted from the warmth rising from the livestock. Windows were few and small, and opening one meant letting cold air in and warm air out, so harsh smells often lingered in the houses. Lack of sanitation, bad hygiene, and monotonous and poor-quality diets were problems that led to disease and high child mortality rates. Animal bones were widely used as toys for children. Death was a constant presence and children born in the nineteenth century had a low expectation of reaching their first birthday. It was not uncommon for a woman to bear more than ten children in the hopes that a few would survive (Magnússon 2010). Ólóf Sigurðardóttir, a nineteenth-century farmer, offered an account of sanitary conditions in her journal:
Washtubs big or small did not exist in our home. Soap or detergent I first saw as a grown woman. All clothes were washed in warm urine - collected urine - and then rinsed out in water. Shirts were changed once a month, but underwear and bed linen very rarely, once or twice each winter, and then it was almost impossible to get them clean. Socks were seldom washed during the winter: they were laid out on a rock if they were wet in the evening and the dirt rubbed off them in the morning. In summer, sandy socks were rinsed in the stream. Urine was usually used to wash hands, but milk, milk whey, and milk curds were used for washing the face and considered better than water. Clothes were washed in pots - food pots of course. The chamber pot, which was made of wood, was used for washing hands. . . . Everyone ate from a bowl. Twice a year - before Christmas and on the first day of summer - they were washed out using stock from smoked lamb, but otherwise they were licked clean by the dogs after they had been used. (Magnússon 2010, 55)

The twentieth century brought with it industrialization and harsh labor laws and working conditions in the city. As wages were low compared with elsewhere in Scandinavia, Icelandic workers tended to compensate by working longer hours (Karlsson 2000). Also, attitudes toward and laws regarding alcohol consumption in Iceland in the twentieth century were viewed as extreme by outsiders. Icelanders outlawed the import of alcohol beginning in 1912 and all sale of it beginning in 1915. In 1922 the Althing made an exception in the prohibition law for wine with up to 21% alcohol content after Spain threatened to place high tariffs on Icelandic salt fish if Iceland did not lift the prohibition on Spanish wines. After years of little tradition of wine drinking in Iceland, people gradually learned to distill their own spirits. While the prohibition laws were repealed mostly in 1933, the ban on beer remained for several decades afterwards as Icelanders attempted to prevent their youth from its abuse (Karlsson 2000). Today, Icelanders generally frown upon consuming alcohol during the work week and then binge on it during the weekends (Lewis 2011).
Another cause for extreme behavior is Iceland’s location near the north pole and its effects on patterns of daylight and darkness. The suicide rate in Iceland increases during the winter and spring resulting from the harsh climate and the lack of natural sunlight. While suicide becomes an answer for some during Iceland’s darkest months, others immerse themselves in the arts: literature, poetry, painting, and music. The local currency, the króna, is decorated with poets and artists and Icelanders buy and write more books per capita (sixteen per year) than anywhere else on earth. As of 1996 the country had nine chess grandmasters and three Nobel prize winners out of their mere 260 thousand population (Aston 1996).

Aston attributes Icelandic extremism not only to the seasonal patterns of daylight and darkness, but also to the weather. He says,

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This island, isolated in the Atlantic, can suffer sleet, snow, rain, sun, sometimes all in an hour. The weather also supports the hardcore Icelandic humour, at the expense of tourists who drive their hired jeeps onto glacier rivers, only to float away. (1996, 8)

An example of this humor is the way Icelanders have named their annual summer outdoor electronic music festival "Extreme Chill." Those who survive the harsh climate and extreme patterns of daylight and darkness have developed a certain hardiness. A learned tendency of self-motivation and self-sufficiency have reduced archetypal problems of poverty, begging, homelessness, unemployment, class division, and social inequality in Iceland to a minimum (Aston 1996).

Another example of extreme behavior in Icelanders is the risk-taking made by its investment bankers to cause the collapse of Iceland's currency. Although merely a handful of Icelanders were responsible for bringing down the economy of an entire country, those few were in a great enough position of power to change the fate of the entire Icelandic population. The government's response to the collapse was also extreme in the way it was quick to sacrifice the country's independence to foreign interests when Iceland had only in this century become a republic after an extended period of colonization.

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Isolation, or an "Alien" Identity

Situated on the periphery of global economics and culture, Iceland has been involved minimally in global affairs.17 William Cronon argues that "Iceland and the North Atlantic have served for the past two centuries as a landscape and region for meditating on a peripheral ‘other’ that has stood as a defining counterpoint to everything that Europe and the rest of the modern world were ceasing to be" (Oslund 2011, xi). Icelandic identity has been formed by an exaggerated version of this concept, more so than in other Nordic countries, with perhaps the exception of Greenland. While Sweden and Norway have updated their native languages, Icelanders have remained adamant about keeping their native tongue free from outside influence. Iceland, historically, has also been one of the less economically developed of the Nordic countries, along with Greenland, experiencing at times extreme poverty. Ironically and remarkably, Iceland recently catapulted to the rank of 5th richest country in the world (Dibben 2009b).

A paradox of an Icelandic alien identity reveals itself in the oppositions between conceptions of Icelandic identity as belonging to a nation that is bounded, homogeneous, and isolationist and a nation that desires to be seen as an equal to that of other European nations. This also manifests as a clash between a wish to be globalized and a wish to preserve national culture (Dibben 2009b).

17 This excludes Iceland's role in World War II as a military outpost for the Allies, an involvement that began against the request of Icelanders (Karlsson 2000).
An Identity of Rebellion

Rock 'n' roll, a genre of popular music which itself came about only in the last seventy years, coinciding with the period of the new republic of Iceland, has always met with criticism from the older generation. Stuart Hall and Paddy Whannel identify this phenomenon as a "generation gap" within the social structure of British society in which a "younger generation" challenges the staid conventions and puritan restraints of bourgeois morality espoused by the "older generation" (1964). In a documentary of a performance of the British rock band Cream at the Royal Albert Hall in 1968, the filmmaker Tony Palmer describes the way "the older generation" has attacked popular music for its commercialism, the pretentiousness of some of its lyrics, and the shoddiness of its music. But Palmer defends rock as being a music of rebellion that is misunderstood by its detractors. He says,

It rarely occurs to most people that many pop performers had a severe classical training which they ultimately found to be stifling and destructive. . . . Most people insist on listening to pop music at minus three decibels when it was actually intended as a physical assault. In live performance, and at its most advanced, pop is intended to attack the eye as much as it does the ear. Experiments using the full paraphernalia of light and sound are only a beginning."18

18 "Cream Farewell Concert," YouTube video, 51:38, the live recording of Cream's final concert at the Royal Albert Hall on 26 November 1968. Aside from the band's reunion concert in 2005, it is Cream's only official full concert release on video. It was originally broadcast by the BBC on 5 January 1969. It was not released on video in the US until 1977. The opening act for the concert was future progressive rock stars, Yes. Director: Tony Palmer, Producer: Robert Stigwood, Cinematography;
This aura of rebellion that rock music brings merges well with a modern Icelandic identity. Icelanders have good reason to feel rebellious in the twentieth century. A long period of colonization by the Danes fueled this rebellion. This idea of rebellion against an oppressor is an homage to Iceland's early Viking heritage. The Vikings left their native Norway in search of a free way of life and conquered nearly everything in their path. William Cronon says of the Vikings:

Skilled as they were in ship construction, maritime navigation, trade, raiding, and warfare, these Vikings, as we now call them, ranged from Iceland, Greenland, and even Newfoundland in the west to England, France, Russia, and the Black Sea in the east, wreaking havoc wherever they went. In 793, they sacked the Northumbrian monastery of Lindisfarne and began the ninth-century settlement of what came to be called the Danelaw in England. A century later, they occupied the northwest coast of France, where the province of Normandy - the name itself means home of the Norsemen - would become the base from which William the Conqueror would undertake the Norman Conquest of Anglo-Saxon England in 1066. Father to the east, comparable Viking beachheads were established in Poland and Russia.

(Öslund 2011, ix)

By the end of the fourteenth century Iceland had become a colony of the Danish Crown and remained that way until World War II. In the Viking age, Iceland and the neighboring Faroe Islands served as Viking waystations. In the Danish colonial era they remained on the outer fringes of European geopolitical and cultural life (Öslund 2011).

The Viking spirit of rebellion lay dormant until the early twentieth century when Icelandic scholars studying in Denmark's capital city, Copenhagen, applied pressure to the Danish government and as a result Iceland was granted home rule.

in 1904 and its own foreign minister in 1918. This spirit of rebellion lasted through World War II as Iceland seized the opportunity, created by the German occupation of Denmark in 1940, to work toward forming a republic; Iceland ultimately declared its independence in 1944 (Karlsson 2000).

**Iceland's Musical Identity**

A culture's history is a contributing factor to the shaping of its identity. Every culture has a musical history that plays a part in forming its current musical identity. This section investigates the history of music in Iceland and the way it has changed from medieval times to the present day. It looks at the way young Icelanders currently accept or reject musical traditions from their past and ways they have adopted and integrated music from other cultures into their own.

In one of the earliest historical records of medieval church affairs in Iceland, *Kristni Saga (The Story of Conversion)*, an unknown author documents a priest named Þormóðr singing mass in Iceland: "The priest whom King Óláfr had provided for Hjalti and Gizurr was called Þormóðr. He sang mass the next day on the brink of the gorge up above the booth belonging to the people of the Western Fjords" (*Hauksbók c.1306-10*).\(^\text{19}\) Irish monks came to Iceland before Norse settlers and quite

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\(^{19}\) Gronlie (2006) writes that the text of the *Kristni saga* is preserved in *Hauksbók* where it is written in Haukr's own hand immediately after his version of *Landnámabók (also known as Hauksbók)*. The part of the manuscript that contains the two works (AM 371 4to) is fragmentary, comprising only
possibly chanted as part of their religious practice. That chanting would constitute the earliest singing in Iceland, though there is no written record of these liturgical chants. The monks, however, left Iceland when the Norwegians arrived because they did not wish to live with heathens (Pálsson and Edwards 1972). Reykjavík later became the capital and cultural center of Iceland, so it is important to note this early period of paganism in Reykjavík, from which much of modern Icelandic culture and music still draws.

The first historic mention of musical instruments comes in Heimskringla, c. 1230 (The Kings’ Saga) when its author, Snorri Sturluson, speaks of fiddlers. There Snorri tells of Hugleikur, king of Sweden, who was not a man of war but a man of culture and at his court were both fiddlers and harp players as well as actors. It is not clear what kind of fiddle Snorri and other medieval writers were referring to because there are no descriptions of how the instrument looked or how it was played.20 The first clear evidence of the Icelandic fiðla is in a dictionary or an encyclopedia written in the eighteenth century by Jón Ólafsson (1705-1779). He

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mentions and describes a boxed, cavernous instrument with two strings. The Swedish explorer Uno von Troil visited Iceland in 1772 and wrote in his diary that he saw two instruments, langspil with six brass strings and a fiðla with two brass strings, both played with a bow. The National Museum of Iceland (Þjóðminjasafn) has a simple but clear drawing by the painter Sigurður Guðmundsson of a fiðla he saw in 1856. It is believed that the fiðla on the drawing was owned by Sveinn Pórarinsson, who was well known for his fiðla playing. The Þjóðminjasafn currently owns three Icelandic fiðlas, the oldest of which was probably built c. 1800.

In another story written by Ari Þorgilsson, known as Íslendingabók (The Book of Icelanders), Ari explains how Iceland was Christianized by public consent at the Althing, the oldest Parliament in the world, in the summer of 999 or 1000 (Grønlie 2006). At Hólar, Jón The Holy Ögmundsson was voted Iceland's first bishop and built the first Icelandic school building. It was at this school that ecclesiastical music-teaching began in Iceland. The Bishop Jón strictly forbade dancing and secular music, "singing low-minded songs of love," and writing "naughty" poetry, all of which were issued serious punishment, including sometimes execution. The Bishop Jón reigned until 1121.21

Iceland maintained a political system of rule by local chieftains, but after many years of civil war fell to the Norwegian throne in 1262. Iceland came under the sovereignty of Denmark in 1379 when Norway and Denmark formed the

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21 Hildur Heimisdóttir, "Langspil and Icelandic Fiðla," drawing from Viðburðir í íslensku tónlistarlifi (Íslensk tónlist í 1000 ár, 1056 – 1839).
Kalmar Union, and remained a colony of Denmark until 1944 (Karlsson 2000). The Danish crown's further prohibition of secular music kept Iceland, during its period of colonization for hundreds of years, as a land whose music was restricted to the church, where small organs accompanied liturgical singing. Most of the literature from this Catholic age was destroyed after the victory of Lutheranism. Though few letters, documents, and sources on music and arts from this period remain, one letter does show that there was at least one pipe organ in Iceland. Once the reformation began, chant, or Catholic psalms sung in Latin gave way to metered psalmody as Danish and German psalms began to be sung with Icelandic lyrics. The first hymnbook in Icelandic, published in 1549, contained only lyrics, no music. Sheet-music printing began in 1589, when Bishop Guðbrandur Þorláksson published a hymnbook containing words and music.22

Between the fourteenth and eighteenth centuries, the inhabitants of Iceland were mostly sheep farmers or fishermen, or both. Icelanders remained poor and uneducated and lived with no luxury, their homes being built typically from turf and rocks. Everyday work was laborious and spare time was short. During the winter, the family would usually gather together in the house, knitting or processing the sheep wool while one member of the family would read out loud or sing. This was occurring while J.S. Bach and Haydn were writing their masterpieces in Europe. This period in Iceland is therefore considered to be an extended medieval age in Iceland. The end of the eighteenth century particularly

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22 Ibid.
denoted a period of stifled progress when in 1783 the worst natural disaster in the history of Iceland occurred, known as Skaftáreldar. Mount Grímsvötn erupted, causing famine all over the country and the death of ten thousand Icelanders, more than 20% of the nation. Musical life began to improve in the early nineteenth century when Magnús Stephensen returned from Copenhagen and published a psalm book to improve church singing. A pipe organ was purchased for the Cathedral of Reykjavík in 1855. The first Icelandic book on music theory was published in 1870 and at this time Icelandic people began to compose secular music and publish it, mostly short songs for voice and piano accompaniment.²³

Iceland currently claims as their two national folk instruments, the langspil (a four-string, bowed zither used to play drones), and the Icelandic fiðla (a fiddle). In 1855, Ari Sæmundsen published a book about how to learn to play the langspil entitled Leiðarvísir til að spila á langspil (Woods 1993). In his book, Sæmundsen describes the langspil as a long thin box, wider at the bottom end with one to six strings. In the early twentieth-century version, a curved soundbox was built to improve sound qualities. The 1855 book provides a guide on how to play the instrument and information on how to construct one. The langspil may be played with a bow, by plucking the strings by hand, or by hammering. The langspil exists in two basic versions, straight and curved and is generally around 80 cm in length, but others have been found in lengths ranging from 73 to 104 cm. The langspil was

²³ Ibid.
generally constructed from driftwood and has been found in variants mostly of pine wood, but also birch, Douglas fir, oak, and walnut (Woods 1993).

Every summer, performances of Icelandic folk music transpire at The Folk Music Festival of Siglufjordur. This festival takes place during five days annually in July and is held at the Folk Music Centre in Siglufjordur, which is open June 1st through August 31st and otherwise by appointment. The festival offers workshops on music and old handcraft, and lectures on both Icelandic and foreign topics. At The Folk Music Centre, visitors may view video recordings of people of all ages chanting epic poetry (rímur), singing quint-songs (tvísöngur), reciting nursery rhymes, and playing folk instruments such as the langspil and the fiðla. The Folk Music Centre is located in Madame House where the Rev. Bjarni Þorsteinsson lived for ten years between 1888 and 1898. Þorsteinsson was Iceland’s original and foremost collector of folk music, and a musician and composer of pieces for solo voice and choir. He began collecting folk songs c. 1880 and after twenty-five years published the only major collection of Icelandic folk songs Iceland has known entitled Íslensk Pjódlög (Steingrímsson, Stone, and Mosko 2000) with the support of the Carlsberg Foundation in Denmark. The book contains hundreds of folk songs, some that Bjarni transcribed after listening to singers and chanters from various parts of the country, and others that were sent to him by fellow collectors. The Folk Music Centre was not opened until July 2006, the 100th anniversary of Bjarni’s

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24 “The Folk Music Festival of Siglufjordur,” The Folk Music Centre.

25 Ibid.
book. As the town priest and an active politician, Bjarni is considered by many Icelanders to be the "father of Siglufjordur,"\(^\text{26}\) a role that parallels those of other European folk collectors/editors such as the Brothers Grimm and Francis James Child.

Icelandic folk and traditional music resembles Celtic music in its sound. While the Icelandic language comes from Old Norse, the Norwegians, when they colonized Iceland, took with them prisoners of war and slaves from the British isles, Irish and Scottish people, as well as "freemen" from Scandinavia (Pálsson and Edwards 1972; Grønlie 2006). The bagpipes found in Icelandic traditional music and the kilts worn in the performances date back to the Celtic music found in today's Scotland and Ireland and the Germanic music found in today's Scandinavia.\(^\text{27}\)

Icelandic folk music scholar Dr. Bjarki Sveinbjornson states that Iceland was far behind its fellow Nordic countries Denmark, Sweden and Norway in publishing a book of folk music. The first publication in Denmark was in 1812, in Sweden was 1814, and in Norway was 1840. In contrast, the first main publication on Icelandic music heritage did not occur until 1906. However, five Icelandic songs were published in the French encyclopedia, *Essai sur la musique ancienne et moderne* in 1780. Though the date of origin for these songs is unknown, the texts of the poems for these songs came from ninth-, tenth- and eleventh-century Eddaic poetry. If the music set to these texts in this French encyclopedia originated from that same time

\(^{26}\) Ibid.

\(^{27}\) Hildur Heimisdóttir, "Langspil and Icelandic Fiðla."
period, these five songs would be the oldest examples of published Icelandic music.\textsuperscript{28}

Western European Classical music did not infiltrate Iceland until the twentieth century. The first Icelandic symphony was written in the early twentieth century by composer Jón Leifs. Leifs's output also included three string quartets, piano music, songs, choral works (both accompanied and unaccompanied), a sizeable number of short orchestral works, an organ concerto, and oratorios (Pickard 1999). Five years after World War II ended, The Icelandic Symphony Orchestra was founded and developed its art until eventually it was nominated for a Grammy award in the year 2009.\textsuperscript{29}

Iceland gained exposure to American jazz during World War II when the sleepy, windswept fishing village of Keflavík, today known as Reykjanesbær, was home to a United States Military base during the US occupation of Iceland.\textsuperscript{30}

"Broadcasts of bebop from the base's radio station (AFRS 1484 AM on the dial,\

\begin{footnotesize}\
\footnotesuperscript{29}Heimisdóttir, "Langspil and Icelandic Fiðla."\
\end{footnotesize}
Armed Forces Radio Station)\textsuperscript{31} . . . [were] intended for the troops but receivable on local radios" (Gienow-Hecht 2015, 171-2). By the late 1950's, Americans outnumbered the locals in Keflavík by three to one, and young Icelanders absorbed the American cultural influence, which gave rise to a new Icelandic teenage culture.\textsuperscript{32} Young people, familiar with old time psalmody and Icelandic country songs, began to hear jazz and pop around the soldiers’ barracks.\textsuperscript{33} Pop singer Haukur Morthens had a weekly radio show at the only radio station operated by Icelanders, Ras1: The State Radio, where he played a single he received from a stewardess entitled "Heartbreak Hotel" by Elvis Presley. Tony Crombie & his Rockets was the first rock combo to play Reykjavík in 1957.\textsuperscript{34} A cultural debate began about the validity of big band jazz versus bebop versus rock 'n' roll. In the


\textsuperscript{34} Ibid.
1960's, Beatlemania arrived and was particularly concentrated in Keflavík. The popular and long-lasting Icelandic band Hljómar, formed in 1963, was inspired by the Beatles, and resided in Keflavík. During this time, theatres also began to show early American rock films.

In the 1970s, "singing balls" for the older generation was a popular phenomenon. Iceland also saw a sudden growth of music schools at this time. Einar Órn, who played in two of Björk's former bands, The Sugarcubes and Kukl, and who is now a music teacher, describes both of these cultural phenomena:

When I was teaching in Kirkjubæjarklaustur, I met a few grandfathers who had sung a cappella at these types of balls. . . . The Reykjavík Music School was founded in 1930 and instruments began to be imported. But I think it really started to happen sometime around 1970 when every village wanted to have its own music school. Children no longer just played football but also studied music. Björk was one of those who benefitted from this.

A musician named Heiða, who belongs to a second wave of Keflavík musicians who grew up in the '90s and plays in the bands Hellvar and Unun, says, "When I was

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36 Dr. Gunni, "The History of Icelandic Rock," Reykjavik Grapevine.

37 Referred to as Einar Melax in this more-recent newspaper article.

38 Valur Gunnarsson, "The Liverpool Of The North."
growing up here, there wasn't much to do, so you either had to take up sports or form a band.”

Similar to the way it has happened in many other countries of the world, popular music in Iceland that was initially influenced by British and American popular music, broadcast via radio and television, expanded immensely through mass production, mass distribution, and the Internet. Statistics Iceland indicates that the number of record releases grew each year, beginning with 51 releases in 1979 and peaking with 292 releases in 2006. By 2012, the number had dwindled from its peak to 170. Pop/Rock releases peaked in 2009 at 81.3 percent of the total number of Icelandic record releases, including genres other than Pop/Rock, and dwindled to 76.5 percent in 2012. In 1979, the percentage of Pop/Rock releases was at its lowest with 52.9 percent. The progression of popular music styles in

39 Ibid.


41 Ibid.


43 Ibid.
Iceland has mimicked that of popular music styles in the United States and Great Britain. In the 1970s, the band Trúbrot followed the British and American-influenced classic-rock style. In the 1980's, following Trúbrot, were bands that played progressive-rock, Iceland's first punk rock band Fræbblarnir, and the political rock of Bibbi Morthens and his band Utangarðsmenn (Dibben 2009b), which recalled Bob Dylan's political lyrics. Music video, following the lead of America's Music Television (MTV) allowed for the popularization of a greater number of bands in Iceland. With the advent of home recording technology, Icelandic bands began to release records independently. The DJ and electronic music revolution occurred when turntables, sequencers, samplers and computers became available for public consumption and the DJ scenes in London, New York, Berlin, Montreal, San Francisco, and Los Angeles reached the youth of Iceland through mass-media.

Today, in addition to having a giant, multistory, newly-built concert hall, The Harpa, Reykjavík is home to an arts academy and a national opera. Numerous musical festivals occur throughout the year. In 2014, The Icelandic Museum of Rock 'N' Roll opened in Kef City. The museum recounts the lyrical tradition of the nineteenth century romantic poets turned to folk singers who performed throughout Scandinavia in the early twentieth century before jazz and rock became widespread. The building which houses the new Icelandic Museum of Rock 'n' Roll

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44 Hildur Heimisdóttir, "Langspil and Icelandic Fiðla."

is called Hljómahöllin in honor of the 1963 band, Hljómar. The building also houses lecture halls and the popular music hall Stapi, which was part of the local scene for decades before the museum was founded.\footnote{Ibid.}


**Globalization, Generational Concern, and Modern-Day Preoccupation with Technology**

The issue of Icelandic identity formation is also a generational one. The older generation has not been drawn to electronic music the way the younger generation has been. While the preferences of generations older than the current generation of Icelandic youth have not been the focus of this study, it would seem that those who fall within these generations might prefer to listen to performances within the European classical music tradition or perhaps traditional Icelandic music such as rímur (Icelandic Epic song) or performances of traditional Icelandic instruments.
such as the langspil and the fiðla. Young people prefer not to be described as
country people, which is the way that Icelanders have been identified by outsiders
for centuries, particularly during the period when they were colonized by Denmark.
For the current generation of Icelandic pop music stars, urbanization, rather than
being shoved into the background of consciousness, is depicted to exist
harmoniously with nature within an Icelandic identity. Instead of being described
as country people, many young Icelanders instead wish to be identified as
cosmopolitan. As many young Icelanders feel connected to environmental activism,
they push for local wilderness preservation, a movement I will address in Chapter
Three.

The advent of globalization has been responsible for many cultural
phenomena in Iceland, one of which has been a preoccupation of Iceland's youth
with gaining wealth through investment banking. Many young Icelanders studied
finance in the universities with the hopes of getting rich quickly by taking big
investment risks (Lewis 2008). These risks led to the collapse of Iceland's currency,
the króna, in 2008, which was caused when Icelanders used a cobweb of holding
companies to avoid consolidated accounting, accumulate dividend payments
through off-shore special purpose vehicles (SPVs), and successfully tunnel money
out of the banking system through easy access to risky borrowing. The bankruptcy
of Iceland's three largest banks, Glitnir, Kaupthing, and Landsbanki, with a
combined total balance sheet of $180 billion amounted to the third largest
bankruptcy in history after Lehman Brothers ($691 billion) and Washington Mutual
($328 billion), and was almost three times larger than the bankruptcy of Enron (Johnsen 2014). Regarding the banking crisis, Hálfdanarson notes the change in the new generation when he says, "Without the slightest reservation, the Icelanders - who for centuries were renowned for their lethargy and resistance to change - were transformed into a nation genetically predisposed to taking economic risks and seeking fortunes abroad" (2012, 270).

When visiting the city of Reykjavík today, it is difficult for one to believe that less than one-hundred years ago this port city was a fishing and farming community. Reykjavík displays all of the trappings of a modern European or American city. In some ways, it is more modern. As in the U.S., Europe, and much of Asia, credit cards are accepted and preferred, even by the shuttle bus I rode from the airport to my hotel. The absence of both tipping as a social custom and a small business cash preference or discount eliminates the need for a tourist to carry currency. The design of the furniture inside most buildings had the appearance of modernity; an apt description might be "typically Scandinavian," resembling a Scandinavian Designs or Ikea furniture store in the United States. The cleanliness of the city also stood out as being particularly "Scandinavian." The sidewalks and streets were free from litter and I did not see a single person sleeping on a park bench or begging for change on a street corner. I was surprised, however, given the abundance of sustainably-generated electricity that Iceland produces, that they had not yet built an electric bus system similar to the Muni transit system in San
Francisco. Perhaps the high winds and frequent snow and rain pose a problem for the logistics of an electric mass-transit system.

Reykjavík's concert hall, The Harpa, which had its opening concert in May 2011, was designed by the Danish firm Henning Larsen Architects in cooperation with Danish-Icelandic artist Ólafur Eliasson. The Harpa's multiple performance venues accommodate different genres of music. Its facade, covered in alternating concave and convex glass panels, reflect light in different colors depending upon the angle at which one views them. The Harpa's location on a rocky beach allows one to view the ocean and the mountains of the opposite shoreline as the island wraps around a bay. The Central Bank of Iceland lies directly across the street from the Harpa and houses a similar modern architecture with black glass panels. The architecture of the buildings of Reykjavík tends to blend the ultra-modern (e.g. the Harpa and the Bank of Iceland) and Tudor that you might find in countryside towns of Europe.

The Iceland Airwaves festival concert promoters catered to a younger generation and made their fascination with technology apparent through the festival's frequent updates to their iApp and communication with their followers through email and iOS notifications. The iOS app was essential to navigating one's way through the Iceland Airwaves experience as it contained the schedule of all the shows that one could browse by artist, venue, or day, as well as descriptions of

49 The city is reminiscent of San Francisco in its appearance. Reykjavík has similar hills with views of the ocean and the city's harbors.
artists and venues, and an interactive map of Reykjavík that, once connected to a wireless network or through cellular service, showed the device's location relative to a pre-programmed location. The Airwaves app listed descriptions of more than two hundred bands and more than forty music venues around Reykjavík. When I arrived hungry from travelling at the festival headquarters, I asked the kind woman at the information booth for a local restaurant recommendation. She replied, "Do you have the app?" When I told her that I did, she instructed me to sign on to the wireless network there at the Harpa and she gave me the password. When I asked her where she liked to eat she replied, "Oh, there are so many, it's hard to say, what are you looking to eat?" I said, "Something delicious. Who are the best chefs in town?" She replied, "Well, the app is really the best thing to find what you are looking for."

This was my first face-to-face encounter with a young Icelander who suggested a technological solution as a substitute for conversation or personal accountability. I later found other evidence of technological substitutions in the iPads that are featured in the recently-built Rock 'N' Roll Hall of Fame in Keflavík, which serve as a supplement to traditional print displays. The iPads provide museum-goers with additional information about the subjects of the exhibits. The computer technology that acts as a mediator for communication that I witnessed while visiting Reykjavík supports Jonathan's Van Meter's argument that once
Iceland had become quickly modernized, Icelanders developed a new fixation on technology.\textsuperscript{50}

CHAPTER III

THE ENVIRONMENTAL DEBATE WITHIN POPULAR MUSIC: FESTIVALS AND ACTIVISM

The Climate Crisis and Icelandic Electronic Music

What is the sustainability debate in Iceland and how are young popular musicians contributing to it? Does the activism that underlies the lyrics of Icelandic popular music help to sway the actions of Icelandic politicians to protect their natural lands? Is the voice expressed by Icelandic youth through music being heard by political powers? How much unspoiled nature should Iceland preserve and what does it sacrifice for clean, renewable energy? Does electronic music in Iceland contribute to the carbon footprint in Iceland? Do Icelandic musicians contribute to the carbon footprint of foreign countries during colossal international tours?

In order to answer these questions, it is necessary to examine the politics and economic effects of sustainable energy in Iceland, beginning with what has happened to Iceland in the last twenty years due to its over-production of sustainable energy. As clean energy has brought in polluting industry and international corporations, a dark side of green energy has emerged in Iceland. An overproduction of sustainably-generated electricity in Iceland has created the greatest threat to its own environment; it has provided the nation with a resource that is not exportable and that may be exploited only by importing industry that consumes massive amounts of power at great costs to the environment. As climate
crisis is a global problem incapable of being solved at a local level, and because it requires a reduction of carbon emissions by all industrialized nations of the world to eliminate the problem, it follows that Iceland has risen to an enviable position in the way it has managed to generate an overabundance of clean energy. Yet Iceland experienced a recent turn of events unrelated to its energy production that caused it to re-evaluate its uses of energy (Lewis 2011). In the fall of 2008 Iceland's local currency, the króna, collapsed. Icelandic leaders were forced to rescue their country's economy with some dramatic action. When Alcoa, the internationally-established American aluminum manufacturer, offered Iceland a means to recover from its economic crisis by building aluminum plants on Iceland's pristine lands, Icelandic leaders were faced with the choice between leading their country into an economic depression or overtly exploiting their natural landscape. The Icelandic government thus implemented a plan to turn its wilderness into a massive system of hydroelectric and geothermal power plants by constructing dams and reservoirs (Snær Magnason 2008). A paradox therefore emerges whereby Iceland protects its atmosphere at the expense of its wilderness.

Musicologist Aaron S. Allen asks the question "Is the environmental crisis relevant to music - and more importantly, is musicology relevant to solving it?" (2011a).¹ This chapter argues that the climate crisis and popular music are linked

and that musicology can help by examining the role that music, musicians, and their audiences play in contributing to the crisis. One particular genre within one particular location, electronic music in Iceland, serves as a microcosm of a debate about environmental issues among popular musicians worldwide.

In discussions about electronic music, it is often overlooked that this genre of music depends upon electricity. Electronic music can not be made without the use of electricity and even the most acoustic forms of popular music cannot become popularized without electricity. While popular music did not single-handedly cause the climate crisis, electricity and other sources of power are required for all forms of recording, production, mastering, manufacturing, and distribution, all of which are essential to the dissemination of popular music. So popular music is implicated in the climate crisis and contributes to it. Electricity is produced all over the world primarily by burning fossil fuels that create greenhouse gas emissions. How to address controlling these emissions is partially the responsibility of scientists and politicians, both of whom have reached an international stalemate on climate policy-making. The Framework Convention on Climate Change (FCCC), focused on international policy, and the Intergovernmental Panel on Climate Change (IPCC), focused on scientific assessments in support of the FCCC, use two incompatible

definitions to define the crisis, leaving a lack of consensus not only among politicians, but also among scientists. Looking beyond the Kyoto Protocol, negotiated under the FCCC in 1997, if climate policy is to move past its stalemate, leaders of the FCCC and IPCC must address their differing definitions of climate change (Pielke 2004).

The issues most debated in solving the crisis are the time and cost of eliminating the problem and the question of who is to foot the bill. In 2007, Google, the company known for its search engine and maps and topography computer application, generated a simple idea for addressing the crisis: to improve existing renewable energy technologies so that they can deliver prices to consumers that are competitive with fossil fuels. Google's project, called RE-C, aimed to produce one gigawatt of renewable electricity for less than the price of coal with the hopes of accomplishing this goal within years, not decades. Google invested in new geothermal drilling research and development and put $168 million toward Brightsource's Ivanpah solar tower in the Mojave Desert. By 2011, however, Google realized that this energy initiative was incapable of succeeding as planned and curtailed the project for reasons that their new technology investments would be adopted too slowly to avert significant global warming because the electricity
generated would not be cheap enough to displace all of the existing coal and natural gas plants that have been paid-for already.²

Other groups like the IPCC disagree with Google's pessimistic view and argue that we can drastically cut carbon emissions with today's technologies if we add additional policies such as carbon taxes, efficiency regulations, and subsidies. Many clean-energy technologies are not competitive with coal and natural gas because fossil-fuel burning plants and gasoline-consuming car owners are free to emit large levels of carbon dioxide without paying for the damage it causes. Regulations that require older, dirtier power plants to shut down early and taxes imposed on gasoline would give clean-energy companies a competitive advantage. However the likelihood of legislation of this nature to pass quickly is also unrealistic, as it would face heavy lobbying by fossil-fuel burning companies and opposition from taxpayers. It would require governments and taxpayers to subsidize not only putting solar panels on every roof of every home, but also to subsidize battery storage for the days without sunshine. So the debate rages between those who think we need major technological revolutions to solve the problem (such as affordable solar panels and batteries that could store electricity and power an entire home for less than current utilities can) and existing technology plus incremental

progress, better efficiency, and the right mix of policy. Solving the crisis therefore implies combatting complex global economic, political, and cultural problems.

In 2008, Björk released a statement on her official website declaring: "I believe that profits, technological advances and working together with nature can all go hand in hand. None need to be sacrificed at the expense of the others" (Dibben 2009b, 147). Being part of the corporatized music industry, pop stars seek to protect their image by making public statements affirming that they reap profits without expense to the environment, and it is difficult to separate this motive from Björk's statement. Björk performs at music festivals that attract large crowds of young people who are surrounded by a certain environmental consciousness, and many of her concerts are billed as eco-festivals. However, the irony of eco-festivals is that under the pretense of promoting environmental protection, thousands of people travel hundreds of miles to the festival, pollute the air with gasoline emissions and jet fuel, pollute the land on which the festival takes place, listen to music through giant amplification systems and watch elaborate light and mechanical shows that consume massive amounts of energy. Both touring pop stars who stage elaborate shows and the consumers who purchase tickets to attend the shows are faced with ethical questions about consuming power and polluting the environment.

With this awareness, the band Radiohead hired a consulting group to examine the ecological and carbon impacts of their 2003 and 2006 tours to help them develop a strategy for reducing the impacts of future tours. Factors considered

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3 Ibid.
were sound, lighting, and audience transportation. A Stanford University engineering student who analyzed the data concluded that the carbon emissions generated by the electrical elements of the band's performance was slight in comparison to the carbon emissions created by the audience in attending the event.

In this case, more blame could be placed on the fans than the band for generating carbon emissions; however, it is important to consider that the event would not occur without the artist's performance. If an international pop star is to be concerned about the environment, that star must consider factors of environmental encroachment while touring internationally as well as factors that affect her or his home environment. This is why it is important to determine different environmental concerns of people of different locales, in this case the difference between the environmental concerns of Icelanders versus environmental concerns, for example, of Americans, whose home is a place that Björk includes in her tours.

Global industrialization, made possible by technological advancement, has threatened the global environment with such problems as industrial and chemical pollution, traffic congestion, and nuclear dangers. But due to factors such as low

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population density, limited industry and renewable forms of energy production, Iceland is relatively free from many common environmental problems that plague more densely populated or more industrialized countries. Conversely, Icelanders must deal with problems that are not commonly encountered in other countries, such as soil erosion and deforestation (P. Árnason 2005). Oslund claims that by the start of the twenty-first century Icelanders had long been using the geothermal energy of their volcanic landscape to produce hot water so inexpensively that there was no need to charge for it (2011). The generation of electricity in Iceland in 2014 was 100% renewable with 71% being produced by hydropower and 29% being produced by geothermal power. In contrast, Americans paid a premium price in the prior year for renewable energy as only ten percent of energy produced in the United States in 2013 was renewable and 90% was produced by non-renewable sources, primarily fossil fuels.

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Björk and Activism

Björk's environmental activism has been expressed through organizing and performing at benefit concerts, using her popularity and influence to draw together organizations and individuals in Iceland who are interested in fighting for Iceland's environmental causes, in writing letters to the local newspaper, and in speaking before governmental committees to change government policies and influence future decisions regarding policy-making.

The earliest evidence that suggests Björk performed for an environmental cause occurred in January 2006 when she performed at what she calls the Hætta! concert.\(^8\) While Hætta! is Old Norse for "danger, hazard, jeopardy, or peril,"\(^9\) the English translation for the concert was the "Stop the Dams!" The concert took place at the Laugardalsholl Stadium on January 7th, 2006 and was a "mega-benefit" gig for the fight against the Kárahnjúkar dams and the "aluminium corporate invasion of Iceland."\(^10\) The concert included performances by Icelandic music artists Björk, Sigur Rós, Ghostigital, Mugison, Rass and Mum. Foreign artists with Icelandic affiliations, Damon Albarn, Damien Rice, and Lisa Hannigan also performed. Björk says about getting involved in environmental activism for Iceland, "I've never been a part of anything like this before, and I never really thought I would. But there is

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\(^9\) http://en.wiktionary.org/wiki/hætta

just so much at stake here.”\textsuperscript{11} Perhaps she got her inspiration from her mother, Hildur Runa Hauksdottir, who about three years earlier in October 2002, staged a hunger strike against plans for Alcoa’s multibillion-dollar power project above Vatnajokull, the largest glacier outside the polar regions. This wilderness area in the "Highlands" of East Iceland, the home to reindeer, rare geese, plants, glacial rivers, snow-covered volcanoes, and deep, basalt canyons, was the setting for the video of Björk's 1997 single from \textit{Homogenic}, "Jóga."\textsuperscript{12} Björk expressed her frustration with Iceland’s environmental situation in an interview she posted to the savingiceland.org website before the ‘Stop the Dams!’ concert:

The situation has reached a crossroads. Iceland’s economy which was seventy percent fish went down, so what instead? The attention went from the sea to the land. Fifteen years ago they stopped building a dam in the 1970s because people spoke out and there were artistic protests. But now in 2005 there is this industrial revolution and this way of thinking to sacrifice nature for progress. They [sic] are not long term benefits and we can do so much more with nature. We can work with nature. For example, hotels have been put up all over Iceland, and there are tourist centers to tell tourists about the nature. We will not be able to rewind this natural destruction and as I’ve travelled I’ve begun to realize that this is not a modern way of thinking. Fifty years ago we were independent but what are we going to do in one hundred years from now? We are not making progress with this.\textsuperscript{13}

\textsuperscript{11} Sveinn Birkr Björnsson, "The Machine is Deaf."


Fast-forward to June 30, 2008 when Björk and Sigur Rós performed together at the *Náttúra* concert in Laugardalur Park in Reykjavík as they protested the rise of the polluting aluminum industry in Iceland and its devastating effects on the environment\(^{14}\) to much more fanfare. Björk was both the public figurehead and sponsor for this initiative, which included research, workshops, conferences, and lobbying the government (Dibben 2009b). Ten percent of Iceland's population attended.\(^{15}\) Björk's release of the "*Náttúra*" single demonstrated her initiative to contribute to a discourse emphasizing the duty of a country’s people to protect their own land. Iceland competes only with Svalbard, an island about the size of Iceland located between Greenland and Russia, for the largest remaining wilderness area in Europe (Thórhallsdóttir 2002).

Around this time Andri Snær Magnason published a book and DVD entitled *Dreamland* detailing the invasive and destructive activity of aluminum smelting to


which Björk wrote the foreword explaining the locals' reaction to the book and the problem. She writes:

This book had an enormous impact in Iceland when it came out. After Icelandic politicians had sold Icelandic nature cheap to some of the industrial giants of this world without the people's consent, the Icelandic people were upset. We didn't get a chance to defend ourselves. Or our nature. I have a feeling this is a universal problem that our generation will find solutions to. This book is one of these solutions. (Snær Magnason 2008, 6-7)

At the Náttúra concert, Björk performed her song from Volta, "Earth Intruders," which could be interpreted as referencing big industry from foreign countries developing her nation's countryside. In Earth Intruders she sings,

Shower of goodness coming to end
The doubt pouring over
Shower of goodness coming to end

We are the earth intruders
We are the sharp shooters
Flock of parachuters
Necessary voodoo

Metallic, carnage
Furiocity [sic], feel the speed

There is turmoil out there
Carnage, rambling

Here come the earth intruders
There'll be no resistance
We are the canyoneerers
Necessary voodoo

And the beast
With many heads
And the arms rolling
Steamroller
The "we" voice could be a personification of foreign industry invading Iceland's countryside. The "shower of goodness coming to end" could be the end of a pristine landscape. "The doubt pouring over" might reference the feeling of Icelanders questioning the solution to Iceland's dilemma. The "necessary voodoo" would be carried out by the foreign company: "necessary" to save Iceland's economy, "voodoo" to disturb the mythic creatures (elves, fairies) that Icelanders believe inhabit the countryside. "Metallic" might refer to the aluminum, "carnage" once again to the disturbance of the mythic creatures, "furiocity [sic], feel the speed," to the rapidity with which deals are being struck by the Icelandic government leaving no time for the Icelandic people to react or organize. "And the beast, with many heads, and the arms rolling, steamroller" may be a personification of the construction equipment utilized to develop a manufacturing plant.

Björk expressed that between 2006 and 2008 young Icelanders were beginning to find a voice in the environmental debate. She said in an interview in 2008 in Iceland's primary newspaper, The Reykjavík Grapevine:

I think the atmosphere is also very different from what it was when we did Hætta! concert in ’06, especially among young people, and outside of Reykjavík. At first, people thought they had no influence; this thing would go through no matter what they thought. But now I think, and that is what makes me especially excited for this concert, there is an awakening. I’m not exactly excited to push my own opinions and have people agree with me, I’m excited that people want to be heard. I’m excited to hear from people outside Reykjavik, people who live in Húsavík, and other places where projects are being planned. These people have not had a strong voice in the media.16

16 Sveinn Birkir Björnsson, "The Machine is Deaf."
The environmental issue in Iceland extends beyond protecting Icelandic nature. The debate also surrounds foreign policy regarding how Iceland should contend with its economic problems and how it should do business with companies from other nations. Björk is particularly vocal when it comes to preserving Icelandic independence. She says,

Me, personally, I am not absolutely against dams. I could live with dams like Sigalda and the old smaller dams. What rubs me wrong is that we are doing it in the service of these big corporations. I came up through the grassroots, and I've never signed a big contract, I've been offered a five-years salary for doing a car advertisement, but I have always said no and maintained my own independence. This is where I am coming from, and I think that is why I am still making music today. I have total creative freedom. I believe that we should stop thinking: “Let’s do so much awesome [sic] with Alcoa,” but rather just do one third of what we have done with them, but instead do it all by ourselves, own it ourselves, and make something of it ourselves. If it is aluminium, we should make something from the aluminium here in Iceland, and put a stamp on it: “MADE IN ICELAND,” and sell it, rather than just be a stop for primary production. I think it is so important that we own it ourselves. I think that of all the people who opposed the Kárahnjúkar dam project, if it had been three times smaller, made by Icelanders – if this was an innovative start-up by Icelanders – and we would maintain all the profits for ourselves and make our own product from it here in Iceland, I think probably half of the people who were against Kárahnjúkar would have been of another opinion. . . . It is not just a matter of being independent, because I am an environmentalist as well. But I think there is a certain percent of Iceland that is possible to dam, without going to the excesses of Kárahnjúkar.17

This statement shows that not only is Björk concerned with preserving Iceland's economic and political independence, but she is willing to compromise in regards to preserving the environment regarding her stance on dams. But she is only willing to compromise to a certain degree. She says,

17 Ibid.
We always continue to be a colony. We’ve been brainwashed, first we had the Danes ruling us, then we had the US Army and there was this panic when the army left. It is like people can’t make independent decisions. The first steps are always scary for a grassroots operation. What should we do next? What is good for me? Or my village? My country? But people have to stay the course for those first difficult ten years or fifty years or what it becomes. This is something I feel I know something about. I have been a part of grassroots operation from the start of my career, and I was a broke single mother, but I never sold out. I stayed the course for ten years, selling books house to house to make a living. I did everything on my own terms, and I think that is the most important thing.\(^\text{18}\)

In October 2008, Björk wrote a letter to *The Times (London)* in excess of one-thousand words expressing her dismay at the Icelandic government's conduct in economic and environmental matters. She begins her letter,

> Usually I ignore politics, but the men who made Iceland go cap in hand to the IMF are now bent on ruining its landscape. After touring for eighteen months I was excited to return home a few weeks ago to good, solid Iceland and enjoy a little bit of stability. I had done a concert there earlier this year to raise awareness about local environmental issues and ten percent of the nation came to it; but I still felt it wasn't enough.

> So when I returned I decided to contact people all over the island who had attempted to start new companies and bring in new greener ways of working but had not succeeded. For a long time Iceland's main income was fishing, but when that become uneconomic people started looking for other ways to earn a living. The ruling conservatives thought that harnessing Iceland's natural energy and selling it to huge companies such as Alcoa and Rio Tinto would solve the problem.

> Now we have three aluminium smelters, which are the biggest in Europe; and in the space of the next three years they want to build two more. The smelters would need energy from a handful of new geothermal power plants and the building of dams that would damage pristine wilderness, hot springs and lava fields. To take this much energy from geothermal fields is not sustainable.

> A lot of Icelanders are against the building of these smelters. They would rather continue to develop smaller companies that they own themselves and keep the money they earn. Many battles have been fought in Iceland on these issues. One resulted in the Environment Minister insisting

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\(^{18}\) Ibid.
for the first time that an environmental impact assessment should be carried out before any smelters or dams were built.

And then the economic crisis hit. Young families are threatened with losing their houses and elderly people their pensions. This is catastrophic. There is also a lot of anger. The six biggest venture capitalists in Iceland are being booed in public places and on TV and radio shows; furious voices insist that they sell all their belongings and give the proceeds to the nation. Gigantic loans, it has been revealed, were taken out abroad by a few individuals and without the full knowledge of the Icelandic people. Now the nation seems to be responsible for having to pay them back.¹⁹

She continues by explaining the way Icelanders have been demanding the resignation of David Oddsson, who made himself chairman of Iceland's Central Bank after nineteen years as Mayor of Reykjavík and thirteen years as Prime Minister. Then she criticizes the British Prime Minister for undermining Icelandic interests for short-term political gain. She discusses the ways Icelanders are highly educated in advanced sciences and argues for the Icelandic government's support of Icelandic companies run by these scientists rather than serving Alcoa and Rio Tinto. She concludes by saying that Iceland can be more self-sufficient and more creative and use the economic crisis to become more sustainable and to teach the world everything her country's people know about geothermal power plants.

In 2008, she invested in Iceland's green future financially when she partnered with a women-owned Icelandic venture capitalist firm called Andur to create a fund in support of sustainable, environmentally-friendly Icelandic businesses. The fund's goal was to attract both foreign and local investors, and cited

the low value of the króna as a good entry point for those seeking to make a foreign investment. The initial local investment to get the fund started was one hundred million Icelandic króna. The purpose of the fund was both to revive the Icelandic economy and work toward sustainable solutions for Iceland's natural environment.20

In 2010 the environmental debate became contentious again when Canadian-owned Magma Energy, by means of its Swedish subsidiary Magma Energy Sweden AB,21 struck a deal with the Icelandic government to buy a major geothermal power supplier in Reykjavík called H.S. Orka. In May Björk spoke in Icelandic at a press conference that was called to protest the sale of the Icelandic public utilities company HS Orka to Magma Energy of Canada.22 She also wrote a letter to The Reykjavík Grapevine. In this letter she wrote,

Dear friends,

I can no longer remain silent on the very pressing subject that is the


sailing off of Iceland's nature.

I hereby challenge the government of Iceland to do everything in its power to revoke the contracts with Magma Energy that entitle the Canadian firm complete ownership of HS Orka. These are abhorrent [sic] deals, and they create a dangerous precedent for the future. They directly go against necessary and oft-repeated attempts to create a new policy in the energy- and resource management of this nation.

Warmly,

Björk Guðmundsdóttir²³

On July 13, 2010, Jón Pórisson (the Icelandic assistant to Eva Joly), the writer Oddný Eir Ævarsdóttir, and Björk signed a formal proposal submitted to the Public Representative of the Icelandic Parliament which, according to its authors, aimed to initiate an open discussion and encourage reconsideration of the sale of H.S. Orka to Magma Energy, ensuring that the interests of the public were being protected and that clarification is achieved on all aspects of the case which may decisively decide the future of Iceland.²⁴ Björk organized a press conference along with a performance on Monday July 19th in Reykjavík’s Nordic House to address these issues and she gave a statement to The Grapevine beforehand, which said:

How we react to this particular case will set a strong precedent for how we will handle matters concerning our energy resources in the future. We are not in a strong position—post-banking collapse, Icesave and the like—and many parties will try and take advantage of our situation to try and force through "good deals."

I also think it is overwhelmingly tragic that after everything that’s gone on—all the bankruptcies, the rise in unemployment, the pots and pans revolution and the SIC report—that we are still selling our wealth and


resources at bargain rates in shady deals made behind closed doors. Have we learnt nothing? We are still behaving like a colony.\textsuperscript{25}

Ross Beaty, the CEO of Magma energy responded to the action Björk was taking with the following statement:

\begin{quote}
I have a cheeky proposal to Björk: if she is so worried about foreign investors buying HS Orka, why doesn’t she, with all her millions invest in buying some of HS Orka? I offer her a 25\% stake at no profit to Magma – she can buy the shares at exactly what it cost us. That is what I am offering the pension funds. Let her put her money where her mouth is, as I am personally doing.\textsuperscript{26}
\end{quote}

Björk replied to Beaty’s comments in another letter to \textit{The Grapevine} writing,

\begin{quote}
Dear Ross:

noticed your message for me. You offering me shares in H.S. Orka shows that you totally miss my point. I feel this company should not be privatized, it should be given back to the people. Therefore I am not interested in shares. But if I would get the same deal as you, a 70\% bullet-loan for Icelanders to buy usage of their own resources, I might reconsider. Who wouldn’t? You didn’t really put your money where your mouth is, did you? Good bye.

Björk

P.S. I also saw in \textit{The Financial Times} when you asked me, personally, to pop over to your office and you would lower how long Magma’s usage of our resources is going to be. This only reveals how willing you are to cut deals outside law and order.\textsuperscript{27}
\end{quote}

Ross Beaty replied by writing a more formal letter to \textit{The Grapevine} addressing some of the questions that came with the July 13, 2010 proposal signed by Björk, Jón Pórisson, and Oddný Eir Ævarsdóttir including: Who are Magma

\textsuperscript{25} Ibid.

\textsuperscript{26} Catharine Fulton, "Ross Beaty’s Got a Proposal for Björk."

Energy’s shareholders? How much is Magma investing in HS Orka? What is Magma Sweden's role in the purchase? How will Magma profit from this purchase? What kind of jobs will be created for Icelanders as a result of this purchase? How will Iceland profit from this purchase?  

In October Björk spoke at another press conference to address questions about Iceland's energy sources, this time in English. She noted the way over the last two hundred years Icelandic heroes had fought for Icelandic independence and yet in a span of four years between 2003 and 2007 the momentum to build independence was interrupted by a few decisions made by the government. She found it shocking that the independent government of Iceland was willing to relinquish Iceland's relatively newly-achieved status of national independence. Regarding the question of what to do with Icelandic energy sources, she noted that the country was divided along political lines, so she therefore called for the writing of new laws and a referendum upon which all of the people of Iceland should vote. Rebuking the government committee for their actions, Björk argued that a few people have been making decisions for the whole country and that this situation must change. She also castigated flaws in the legal system and demanded revisal of local laws.


29 "BJÖRK SPEAKS ABOUT ICELANDIC LAWS REGARDING ACCESS TO ITS ENERGY SOURCES," YouTube video, 2:33, from a press conference at the Nordic House on 13th October 2010
Beaty and his company won the battle eventually despite Björk's petition and letters; the Icelandic government approved the sale of H.S. Orka to Magma Energy Corporation. Björk retaliated with a karaoke protest and a petition that she presented to Prime Minister Johanna Sigurdardóttir with forty-seven thousand Icelandic signatures.\(^\text{30}\) She dubbed the singing protest "Björk's Karaoke Marathon for Nature," which was a singing fest that lasted for three days in January 2011 in Reykjavík. During the music marathon, she circulated a petition asking the government to consider revoking the takeover and reportedly garnered twenty thousand signatures.\(^\text{31}\)

Fast forward another three years to March 2014, when Björk fronted a campaign to raise thirty-five million Icelandic króna (approximately $285,000) for the preservation of Iceland's highlands. Together with two Icelandic conservation agencies, the Iceland Nature Conservation Association and Landvernd, the


Icelandic Environment Association, Darren Aronofsky, the Hollywood director of the 2014 film *Noah* which was shot in Iceland, and punk rock pioneer Patti Smith, she launched the "*Stopp - Gætum Garðsins!*" ("Stop - Let's Protect the Park!") benefit concert[^32] for which the Palmi Jonsson Nature Protection Fund contributed twenty-four million Icelandic króna (approximately $195,000 as of this writing).[^33] The remainder of funds was raised by ticket sales to the *Stopp!* concert, which included performances by Björk, Patti Smith, and other upcoming Icelandic bands such as Of Monsters and Men, Samaris, Lykke Li, and Mammut. The performances occurred in Reykjavík's newly-constructed Harpa. Tickets sold for the Icelandic premiere of Aronofsky's *Noah* at Sambíó in Egilshöll also contributed to the campaign. The performers were all volunteers and all profits went towards the campaign. Björk said of the event,

> The focus for this event here is to protect the Icelandic highlands with the aim of making it into one big national park and to accomplish this we ask people to become members of these two Icelandic Nature Protection Societies. One is more about activism and the other is dealing more with legal things, and on this matter they have united. People can go online on their websites and donate money if they want and become members of these societies.^[34]


[^34]: Ibid.
When asked if she thought the strength-in-numbers approach would make a difference, she said, "We'll see - there's a lot going on right now. People are not agreeing with the government from many different angles. I think it's curious to see what will happen."\(^{35}\)

Björk recognizes that Iceland is not the only place where an environmental crisis is occurring. She also acknowledges the global environmental crisis and the importance of approaching it from a business perspective. In an interview with an Icelandic journalist she said,

> The world is standing at a crossroad with the future of energy right now. To nail all our energy down to aluminium smelters right now is ridiculous. Why should we not be a part of this change? Why should we not be a part of the innovation? We should discover something new. I am not just thinking about saving nature now. If I were a businessman I would be thinking forward, towards the future. I think there would be more money in that.\(^{36}\)

**Environmental Concern as a Generational Issue**

Concern for the environment has tended to unfold as a generational issue. Issues of environmental concern have been taken up more by Generation Y/Millenials and Generation Xers than by Baby Boomers and prior generations because only in the last twenty years have the devastating effects of climate change become evident and risen to the forefront of public debate. It is also only recently that a large number of schools have taken the initiative to add environmental

\(^{35}\) Ibid.

\(^{36}\) Sveinn Birkir Björnsson, "The Machine is Deaf."
programs to their curricula in areas such as environmental engineering and environmental design. The name change from "global warming" to "climate change" or "the climate crisis" indicates how the problem has worsened and today extends beyond sea level rise and icecap melting to increased violent storms, extreme and sudden changes of temperature, and the threat to human and animal populations. Popular music has thus become a forum for environmental activism because popular music tends to be a music of rebellion enjoyed by and aimed towards younger generations. Björk, in the foreword to Snær Magnason's *Dreamland*, notes how concern for the "green revolution" is a generational concern when she writes:

> We were a Danish colony for six hundred years. They treated us as colonizers do. We were taxed heavily and isolated from the rest of the world which partially turned out to be a good thing because we missed out on the industrial revolution and once we got our independence in 1944, me and my generation and anyone younger were excited to head straight for the green revolution and keep our nature. . . . Instead, Iceland's politicians seem to want to catch up as quickly as possible and do what Western Europe did in three hundred years to its nature in the space of five. . . . Right now they are planning to build five of the largest aluminum factories in the world in Iceland. Last year they built one. Four to go? (No more 'untouched') Anyway, most Icelanders are not against dams or harnessing nature, but believe it can be done in a 'green' way, without sacrificing nature, and so the Icelandic people profit from it, not the international industrial giants. . . . Andri in his book not only explains the situation - what these politicians did behind the scenes - but also suggests other ways to interact with Icelandic nature and keep one's dignity. (Snær Magnason 2008, 6)

For those not trained in science or politics, young people can feel that they are contributing to a solution to the problem by being active in a discourse established by popular music. Being connected to a youth movement in Iceland also allows young people to feel connected with other young people in different parts of the world. Through a popular music identity of activism, instead of feeling inferior to
European or American youth because of Iceland's geographic isolation or their rural or pagan ways, many young Icelanders can instead self-identify as belonging to the world.

**Geothermal Energy and Hydropower: Sustainable Energy Sources, Possible Solutions to the Climate Crisis, and an Icelandic Way of Life**

Iceland provides a fascinating case-study of a nation that uses sustainable energy as its primary energy source for nations who aspire to follow that model. Studying the way Iceland produces power could provide a gateway to solving the global climate crisis. Because of Iceland's location on one of the earth's major fault lines, the Mid-Atlantic Ridge, Iceland is one of the most tectonically active places on earth. More than two hundred volcanoes are located within the active volcanic zone running through the country from the southwest to the northeast, and at least thirty of the volcanoes have erupted since the country was settled over eleven hundred years ago. In this volcanic zone there are at least twenty high-temperature areas containing steam fields with underground temperatures reaching 250°C within 1000m depth. These areas are directly linked to the active volcanic system. About 250 separate low-temperature areas with temperatures not exceeding 150°C in the uppermost 1000m are mostly in the areas flanking the active zone. Engineers have located over six hundred hot spring areas with temperature of over 20°C (Ragnarsson 2010).
During the course of the twentieth century, Iceland went from what was one of Europe's poorest countries, dependent upon peat and imported coal for its energy, to a country with a high standard of living where practically all stationary energy and roughly 82% of the primary energy comes from indigenous renewable sources (62% geothermal, 20% hydropower). The rest of Iceland's energy sources come from imported fossil fuel used for fishing and transportation. Iceland's energy use per capita is among the highest in the world and the proportion provided by renewable energy sources exceeds most other countries. Space heating is the most important direct utilization of geothermal energy in Iceland, as of 2009 covering 89% of all houses in the country. Other sectors of direct geothermal use are swimming pools, snow melting, greenhouses, fish farming, and industrial uses that include drying seaweed, producing commercial liquid carbon dioxide, drying fish, salt production, drying of imported hardwood, retreading of car tires, wool washing, curing of cement blocks, and steam baking of bread (Ragnarsson 2010).

Icelandic scientists reported in 2010 at the Proceedings for the World Geothermal Congress that energy reserves for the potential generation of electricity in Iceland were estimated at roughly 50 TWh\textsuperscript{37} per year, of which 30 TWh come from hydropower and 20 TWh from geothermal. These figures translate to a potential for electricity generation in Iceland of 60% hydropower and 40% geothermal. Bjarnarflag, the first electricity-generating geothermal power plant in Iceland is located in Namafjall and began operating in 1969. The plant closed for

\textsuperscript{37} TWh or terra-watt hours
three years between 1985 and 1987 partly due to volcanic activity in the area, but then reopened and resumed operations. The other five geothermal electricity-generating plants are Krafla, Svartsengi, Reykjanes, Nesjavellir, and Hellisheidi. There was a seventh geothermal electricity-generating plant at Husavik in Northeast Iceland which began in 2000 when a Kalina binary-fluid 2 MWe generator was put into service, one of the first of its kind in the world. The plant utilized 120°C water as an energy source to heat a mixture of water and ammonia, which in closed circuit acts as a working fluid for heat exchangers and a turbine. Part of the hot water leaving the generating plant at 80°C was used for the town's district heating as well as the local swimming pool. Unfortunately, due to operational problems the plant shut down in 2007 (Ragnarsson 2010).

Geothermal energy is an ideal solution for energy use in Iceland because of the way Reykjavík and the surrounding towns are built upon an active volcanic zone. But all areas of the world, whether they are built on volcanic zones or not have the potential to harness geothermal energy. Some of the single-family homes in Boulder, Colorado are built on top of wells that use a geothermal heat pump to heat the home.38 Geothermal power plants may be built anywhere in the United States with the latest technology in drilling called EGS (Pruess and Spycher 2010), but the high costs of deep drilling and laws against fracturing39 prevent the United

38 I visited such a home located within the city limits of Boulder during the summer of 2014 and received a tour of the geothermal heat-pump system.

39 Fracturing more recently has become known by the slang "fracking."
States in particular from benefiting from this renewable source of energy. Currently there are only a handful of geothermal power plants in the United States located in California, Oregon, Nevada, Utah, and Hawaii\(^40\) (DiPippo 2012) and geothermal electricity represents only a fraction of all electricity generated in the United States while the U.S. is ranked #2 of all nations in the world for carbon emissions.\(^41\)

Changes in the economic situation of Iceland since its currency collapse have fueled a debate of how to address the overabundance of electricity that the country is able to produce using renewable resources. Musicologist Aaron S. Allen calls environmental crises a failure of culture. He faults not only engineering, science, ecological misunderstanding, accounting, and bitter politics, but also holistic problem solving, interpersonal relations, ethics, and a lack of imagination and creativity (2011b). Blaming the environmental crisis on culture is a new perspective that is not often addressed in scientific articles or news about the climate crisis. For Icelanders, engineering and science is not the level on which they have failed; they have succeeded in harnessing their natural resources to provide their population

\(^{40}\) “Current List of Geothermal Power Plants.” Global Energy Observation. This project was conceived and developed by Rajan Gupta and Harihara Shankar. Dr. Gupta is a fellow of Los Alamos National Laboratory and a theoretical High Energy physicist. “Our hope is that open source information and analysis will lead to trust and transparency through informed discussion that will result in responsible action. Our goal is to help accelerate all three aspects of the global energy challenge,” accessed October 11, 2015, http://globalenergyobservatory.org/list.php?db=PowerPlants&type=Geothermal.

with renewable energy. It is what their government has chosen to do with their nationally-owned energy that has become a problem for the country's people. Ecological misunderstandings, bitter politics, a failure of holistic problem solving, interpersonal relations, and divisions of ethics in particular have prevented Iceland from creating a sustainable-energy utopia that includes wilderness preservation and independence from foreign interests.

This chapter has shown how Björk has used her own celebrity status in Iceland to do activist work locally in her country of birth. As a pop star, she successfully rallied Icelanders around a cause about which she is passionate through organizing musical events that brought together Icelanders to protest against local government policies. She also used her celebrity status to influence local politicians and voice her opinion in Icelandic and British newspapers. In spite of Björk's having gained some political success on a local level, this chapter has also identified the ways in which she did not address environmental problems on an international level and the difficulties presented by global activism, and in particular the ways in which it is difficult for a pop star to address the global climate crisis.
BJÖRK AND IDENTITY

Björk, born November 21st 1965 in Reykjavík, is an international popular music star whose identity is notoriously difficult to categorize. She is a performer, an actress, a composer of film music, a singer-songwriter and a producer of collaborative works. While she is positioned within popular music, her musical and artistic tastes span into other genres such as classical, jazz, and world music, and the artistic systems she has created have imaginatively combined music, fashion, and visual culture. Björk is a musician who in the process of becoming famous was suddenly forced to question her identity. In a 1997 interview, Björk discusses her own musical identity:

I want to be truthful about Iceland and being from Iceland. And I don't mean Viking helmets and all of that shit. I was born here in 1965. I was born with raw nature everywhere, but still brought up with computers and technology. For a lot of people, nationalism is a bad thing, because it's about the past. What's beautiful about modern days now, all over the world, is more and more people are having similar lifestyles. . . . And because of that, our identity becomes even stronger, because the opposites meet in an even more fierce way. I go to London, and I've never been so Icelandic. When I lived here, I didn't even think about it. The sound of [Homogenic] was an attempt to be truthful to updating what we are today and what we sound like.1

This statement, in which Björk talks about "wanting to be truthful about Iceland," shows that when questioned about her identity, she offers a confusing, non sequitur statement comprising themes of nature, technology, Icelandic nationalism, and globalization. It expresses how she did not think about her Icelandic identity until she was forced to answers questions about it when she became a pop star and others sought to place her identity in a shoebox. Björk's answer to a question about her identity brings up questions about the meaning of identity and whether "identity" is the way an individual thinks about oneself or the way others seek to categorize that individual in an attempt to better understand that person's behavior and thoughts.

The country of Björk's birth is relatively unknown in the West. While pop stars from England project an identity familiar to Westerners, pop stars from Iceland remain mysterious. To Americans and even Icelanders, Björk's physical appearance is unusual. Accounts of her early life speak of her being called "China girl" by her peers because her facial features appeared to be more Asian than Icelandic. Others have attributed her exotic facial features to partial ancestry of the Inuit, a native people from neighboring Greenland who are sometimes referred to as Greenland's Eskimos. However, in spite of much written speculation, no writer has provided evidence of her Chinese or Inuit heritage. Additionally, Björk was behaving unlike many of her fellow Icelanders who were passionately tracing their genealogy. For example, *The Book of Settlements*, an important early historical

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account of Iceland's settlement, is presented as an annotated genealogy with its 399 chapters each bearing the name of an early settler. Additionally, in 1966, the company deCode genetics was established with the ambitious aim of mapping the Icelandic genome. In 2001, a version was posted on the web under the name, Íslendingabók, and attracted more hits than any other in Iceland and by 2010 was estimated to have been visited by approximately two-thirds of the entire nation (Magnússon 2010).³ The passion of Icelanders for their genealogy is understandable as Iceland is a relatively small and isolated country and not only are Icelanders interested in who their relatives and ancestors may be, they also confront accusations of incest and would like to know the truth about their heritage. Björk's apathy for pursuing her own genealogy appeared to be a punk move in which she characteristically rejected the status quo, but her attitude changed when, while she was working on Biophilia, National Geographic offered to take a DNA swab of her and send her the results. Björk says of this event:

³ The initial idea behind the project was that "by collating these records it might be possible to identify the causes of a host of common genetic diseases. The founder of the company was a bioscientist by the name of Kári Stefánsson who had worked for several years at a number of internationally regarded scientific institutions in the USA. . . . The project provoked Fierce controversy and attracted international attention. It was seen as a daring and futuristic experiment, almost like something out of science fiction. In particular, considerable reservations were expressed about the proposal to introduce a new law on medical records granting the company access to sensitive personal data" (Magnússon 2010, 253). The Icelandic database is located at https://www.islendingabok.is/ and requires establishing an account to log in.
I got really excited. I found out that my mother's side is Phoenician, an ancient civilisation from present day Syria that actually became Celtic and went to Ireland. Icelanders still today tell stories about when the Vikings picked up Irish women on the way to Iceland . . . and then on my father's side I'm from a really big-time common oceanic western European branch which is sort of Portugal and west of France and Britain and Iceland. 4

Björk composed her song "Hollow" on Biophilia when she received this information about her DNA. Her video for the song is a computer animation of DNA strands and her lyrics to the song indicate that despite once not wanting to be like other Icelanders who obsess over their genealogy, she is equally interested, and that she yearns to belong to her heritage:

Hollow, my ancestors have access
Hollow, I'm falling down the abyss
Hollow, looking for some answers

Generations of mothers sailing in
Somehow they all were shipfolks

Hollow, the ground is opening up
Swallows me up
The trunk of DNA

Trunk of DNA, trunk.

Now come forth
All species
Come forth
Hollow.

Like a bead in necklace
Thread me upon this chain
I'm part of it
The everlasting necklace

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4 Quoted in Dibben's analysis of "Hollow" in the Biophilia app (Björk, Scott Snibbe 2012).
Jewels after jewels after jewels after
Jewels after jewels after jewels

Breathe out
I yearn to belong, let me belong, let me belong

Björk's actions are those of a person people generally describe as eccentric. Her unusual behavior accentuates her strange physical appearance and she speaks English with an Icelandic accent in a way that sets her apart from other internationally-successful pop musicians. Björk's seemingly strange identity may be natural to her, or she may be affecting it because the popular music industry demands it. Keith Negus asks the question: Do we have a core personality or "nature" that remains unchanged over time, or do we take on, acquire or simply make up and adopt new characteristics throughout our life? Negus indicates how theoretical assumptions about identity have shifted from ideas about identities as "essential, given, and fixed," to a more dynamic perspective which approaches identities as "constructed, actively made, and open to further change" (1999, 99, 133). Björk's actions and statements support Negus's argument in the way that her identity has been constructed by both herself and the music industry and constantly changes and adapts as she is faced with new challenges and new musical collaborations.

Negus also asks the question, "Do we possess multiple identities which are manifested in various ways at different moments" (1996, 99). In Björk's case, the answer is clearly "yes." Her art and actions make her stance on nationalism at times ambiguous. Best described as possessing a kind of neo-nationalist sentiment
specific to contemporary Iceland, her identity is connected strongly to Iceland yet she belongs to a new generation of Icelandic people confronted with a different reality than their parent's generation because they have been thrust into a modern, urbanized world. To reconcile the tension between nature and technology as binary opposites, her art expresses a desire to unify these two entities, and establish a symbiotic relationship between them. In doing this, she projects an alien identity that is associated with counter-cultural values. Björk's constructed identity is a product of her living in a globalized world in which she is forced to define how she belongs in the world.

Why Björk?

In setting out to write a dissertation about Icelandic identity and activism, and particularly nature and technology in Icelandic music, why was Björk my choice? Some people I speak with are familiar with Björk's work, some are huge fans, and others tell me they have never heard of her. Most do not know that her name is phonetically pronounced "Byerk." To begin, Björk's timing for entry into the field of popular music was fortuitous. Her first international commercial success in her band the Sugarcubes in the late 1980's happened during a time when U.S. record companies were looking for artists that could stand out in their field and they were willing to commission projects to promote and distribute the music of artists who stood apart. Björk was wise to look for success beyond Iceland as the
record companies who could provide the most financial backing to rock artists at this time were in London, New York and Los Angeles. Her connections to her British Record Label One Little Indian\(^5\) helped her get a deal with Warner/Elektra in the United States, and this company promoted and distributed her music internationally. Once Björk had some money in the bank and the status that comes with being signed to a major label, she was able to commission artists to work with her on future records. The number of other artists with whom she has collaborated is one of the largest in pop music.\(^6\) In the 1990s she toured worldwide with U2, and wrote a song for Madonna, declining an offer to collaborate on an album with her. Harnessing outside talent to boost the quality and sales of records released under her own name has made Björk stand out as a solo, female recording artist. As success begets success, she became the most financially successful musician in Iceland and therefore became influential in local politics there, supported by her own finances and local and international connections.

Lastly, nature has been a theme in all of Björk's albums. The theme of her 2011 *Biophilia* was specifically "nature, technology, and music" as stated in the introduction to her film of the same name and the app release that accompanied it.

The feat of being the first artist to release an app album, and that she was creating

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5 One Little Indian was founded in 1985 by members of various anarchist punk bands and managed by Derek Birkett, who was first a member of the British punk band Flux of Pink Indians. Though the name of the record label most likely derived from Birkett's former band, others see the name and relate it to a possible connection between Björk's Inuit or Sami heritage, or endian hexadecimal code.

6 I will discuss her collaborations in further detail later in this chapter and in chapter V.
apps for iPad before the iPad was even released indicate her affinity with computer technology. Her "app-album" served as a kind of promotion for Apple Inc., the California-based computer and personal device technology company and the creator of the iPad that currently boasts the largest market capitalization of any corporation in the world as of this writing.

While Björk is no longer considered to be young by pop-star standards, she continues to release new and innovative music, and is vocal in the Icelandic environmental protection political debate, which makes her influential with both the younger generation of pop stars and its audience. Because she embodies the relationship between nature and technology in contemporary popular music with which young people are concerned, she serves as a prototype to explore the tension between nature and technology in Icelandic music.

Björk's career as a musician began at an early age. Signs of a proclivity toward music came early in Björk as she was able to sing the whole of The Sound of Music from the age of three, and she was admitted to music school at age five. She recalls singing on the school bus during field trips: "I'd be in the back and people would drive back and be sleepy, and they'd ask me to sing. . . . My mom [complained] that she couldn't take me to a bus when I was three or four years old, because I would stand up on a chair and sing songs for everyone."7 Her big break came when an Icelandic radio station commissioned a documentary on her music

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school and Björk sung a version of a disco tune named ‘I Love to Love’ on the radio. After that broadcast, Björk was approached by a local record label called Fálninn to record a children's record and its 1977 release made Björk a star in Iceland by the age of eleven (Gittins 2002).

Even at this early age, Björk had a strong mind about the music she would perform. Recalling in subsequent years to the UK monthly music magazine Q, Björk said, "The record label offered me all these songs and I turned them down because they were shit. . . . I got upset in the end so my mom got her hippie musician mates to come up with songs for me" (Gittins 2002, 11).

Though most of the songs on Björk's first album were written by others (original material from her Stepfather Sævar and his friends, some covers of European pop tunes, some Icelandic folk songs set to pop rhythms), Björk at eleven years old did compose one instrumental piece. The newly-made child star declined the opportunity from Falkinn to record another record because she received more attention after the first record than she desired. She said of this initial fame, "After I made my album, suddenly everybody loved it and wanted to be my friend and put me on the cover of magazines, and that didn't interest me at all. But it did help me sort out in my head very early on what my priority was - and that was music" (Gittins 2002, 15).

Her teenage projects included a punky all-girl quartet named Spit and Snot, a relatively experimental jazz-funk combo named Exodus, and a hippy-band called Tappi Tikarrass (translating roughly to "Tap The Bitch's Ass") two of whose tracks
appeared on a slightly higher-profile documentary called *Rokk Í Reykjavík (Rock in Reykjavík)*. Björk's next project was a six-piece band called *Kukl*, which translates roughly to "Witchcraft," followed by a loose, subversive movement called *Smekkleysa SM SF* (Bad Taste Ltd) that initiated a Reykjavík arts awards show, formed a publishing company, and staged "happenings of various levels of aesthetics." Ironically, Bad Taste Ltd did not have a musical wing until the band *Sykurmolar* (The Sugarcubes) emerged. In The Sugarcubes' debut hit single, "Birthday" Björk sings of a girl who "Scrabbles in the earth with her fingers and her mouth - she's five years old." Gittins says of this song "The song's true appeal, though, was Björk's alien, unearthly, scat-yodeling vocal performance on the chorus, which was genuinely like nothing that anyone had ever heard before" (2002, 21).

When the Sugarcubes played London, they became the subject of a major label A&R bidding war. Björk says in her usual delicate manner that the Sugarcubes were not interested: "We told them all to f-u-c-k off because we were still being terrorists" (*The South Bank Show* 1997). Instead The Sugarcubes recorded for London-based independent label One Little Indian for whom Björk still records today. At the center of *Life's Too Good*, the Sugarcubes first album released in April 1988, lies Björk's otherworldly vocal that catapulted the group onto the world stage (Gittins 2002).

In 1992 Björk broke out as an international superstar with the release of her solo album, *Debut* with music that filled clubs across Europe and the U.S. and, as

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8 Ibid.
Billboard reported, received extensive college radio airplay. The international success of the Sugarcubes and Björk's solo albums raised awareness of the Icelandic popular music scene, facilitated the success of other Icelandic artists such as Sigur Rós, and contributed to Iceland's attractiveness as a tourist destination. Björk directly supported new Icelandic pop music through her involvement with the non-profit organization Bad Taste Ltd, which went on to release both Mum's and Sigur Rós's first albums.

In addition to being a symbol representing young pop musicians, Björk also recognizes the lifestyle and cultural change that has taken place over the last century in her home country about which she said:

"It's been quite a mad century for Iceland. Because like a hundred years ago my grandparents generation, they were brought up in mud houses. Their lifestyle was like Middle Ages. Then we became independent in 1944 and we became after World War II, I think, the fifth richest country in the world really quickly. It developed in maybe eighty years what say [sic] England has developed in four hundred years. It's so quick that it's almost violent." (The South Bank Show 1997)

Björk's follow-up project to *Biophilia* was a collaboration with Venezuelan Producer Arca called *Vulnicura*, meaning "Cure for Wounds." In March 2015 she released a retrospective at the MOMA that celebrated the technological achievement of the *Biophilia* app album and film. After being absent from Iceland Airwaves in 2014 as a performer, as of March 2015 she was scheduled to return in November 2015 as the festival's headliner, but she posted a press release on August 5th, 2015 cancelling
both performances, citing a scheduling conflict.⁹ The cancellations were not without precedent. Several Björk shows were also cancelled in 2008, 2011, and 2012, due to medical problems and staging issues.¹⁰

Nature and Björk

The word nature is associated with the singer and composer Björk through nine distinct categories. These categories are the name she was given by her parents, her public statements, her song lyrics, the naming of her songs and albums, the imagery in her music videos, the staging of her live performances, her references to other Icelandic artists, particularly Jóhannes Kjarval, the way she records sounds directly from nature and mixes them into her albums, and last but not least, her most valuable asset - her singing voice.

Many critics and musicologists have referenced these nine categories and described Björk's music as "natural," or being preoccupied with nature. Many also posit nature against technology and discuss whether these two elements are fused in her music or work against each other. I attempt to look beyond authorial intent


and separate Björk's electronic music from these nine concepts to discover whether Björk's electronic music is actually "natural" or if the "nature" occurs merely through an association with these other nine factors. But first, I will define these nine categories of "nature" and their association with Björk herself or her artistic output.

**Nature in her Given Name**

Björk's father, electrical engineer and union leader Guðmundur Gunnarsson, and his office worker wife named their daughter with a word in the Icelandic language that means "birch tree," itself an element of the natural landscape.

**Nature in her Public Statements**

Björk has asserted on her website, "Iceland and its pure untouched nature are synonymous. If that is lost our uniqueness is lost, just as if Paris lost its fashion, New York lost its skyscrapers, Los Angeles its Hollywood" (Dibben 2009b, 131). Björk argues that the overarching sound of *Homogenic* is inspired by the volcanic and seismic activities of Iceland (*The South Bank Show* 1997). She also contends that the contrasts between fire and ice and the constant movement of the earth's plates under the surface play out as electronic beats and classical strings, or more specifically, "volcanic behavior and very over-romantic patriotic strings" (*Inside Björk* 2002). In an interview with David Hemingway, Björk says of the song "Jóga" on *Homogenic*: "I was doing a lot of experimenting with beats trying to make them
sound volcanic." Later in life, Björk goes as far as to say that nature is her religion. I will go into detail about this in the section entitled "Björk, Paganism and Christianity."

**Nature in her Song Lyrics**

There are countless examples of lyrics in Björk's songs that depict nature. The broader categories of nature to which she makes reference are landscape, the ocean, weather phenomena, the human body, plants, animals, and the universe. Sometimes she uses the word *nature* itself to create a metaphor.

References to landscape describe Iceland's volcanic mountains, forests within and beyond Iceland, waterfalls, lakes, rivers, and streams. In two songs from the album Björk recorded when she was eleven years old, the tune penned by her stepfather entitled "Arabadrengurinn" that translates as ‘Arab Boy’ (Gittins 2002, 12) gives a fairytale account of a young girl from Iceland who holidays in Egypt and meets a young Arabian boy on a Cairo night train. The lyrics say the boy "sings of the water in the oasis and rivers." In track 06 on that same album entitled "Fusi Hreindyr," Björk sings about a character from an Icelandic children's tale named "Fusi The Reindeer" (Gittins 2002, 13) who lives "in harmony with the waterfalls and the birdsong." In the song "One Day" from *Debut* she sings "one day, when

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you're ready an aeroplane will curve gracefully around the volcano with the eruption that never lets you down." On Post in the song "Hyper-Ballad" she speaks of where she lives in Iceland: "We live on a mountain, right at the top, there's a beautiful view, from the top of the mountain, every morning I walk towards the edge, and throw little things off, like car-parts, bottles and cutlery, or whatever I find lying around, It becomes a habit, a way to start the day." On "The Modern Things" she brings together images of idyllic mountains and urban industrialization: "All the modern things, like cars and such, have always existed, they've just been waiting in a mountain for the right moment." In "Isobel" she sings about a woman from the forest who travels to the city: "In a forest pitch dark, glowed the tiniest spark, it burst into a flame, like me, like me." On Homogenic in the song "Jóga" she sings of the beauty of Iceland's landscape: "Emotional landscapes, they puzzle me, then the riddle gets solved, and you push me up to this, state of emergency, how beautiful to be." In the song "Aurora" on Vespertine she sings about the glaciers on Iceland's mountains and how they appear in the different lights of day, moonlight, and the northern lights: "Threading the glacier head, looking hard for moments of shine, from twilight to twilight. . . . Aurora, Goddess sparkle, a mountain shade, suggests your shape." In "Quicksand" on Vulnicura she equates quicksand, a lake, volcanic steam, and clouds with human philosophies and emotional states, "Our mother's philosophy, it feels like quicksand, and if she sinks I'm going down with her, locate her black lake, the steam from this pit will form a cloud for her to live on."
The ocean, seashore, and islands also serve as major themes in Björk’s songs. She uses pearls from the ocean as a metaphor in at least 2 songs: 1. "Oceania" with the words "every pearl is a lynx" and 2. "Solstice" when she sings "an unpolished pearl in sky-black palm of hand." On *Debut* in the song "There's More To Life Than This" she sings of a fantasy to steal a boat early in the morning from the Reykjavík harbor: "It's still early morning, we could go down to the harbor and jump between the boats and see the sun come up, we could nick a boat and sneak off to this island." On *Volta* in the song "Wanderlust" she sings again about islands as a place of fantasy and escape: "I have lost my origin and I don't want to find it again. . . . wanderlust from island to island." In "Violently Happy" she sings about singing to the ocean, a compositional method she practices and enjoys: "I tip-toe down to the shore, stand by the ocean, make it roar at me, and I roar back." In "The Anchor Song" she sings about her relationship with the ocean: "I live by the ocean, and during the night, I dive into it, down to the bottom, underneath all currents, and drop my anchor, this is where I'm staying, this is my home." In "Bachelorette" on *Homogenic* she uses metaphors of a killer whale and the water to describe a sexual relationship: "leave me now, return tonight, tide will show you the way, if you forget my name, you will go astray, like a killer whale trapped in a bay, I'm a whisper in water, secret for you to hear." In "Oceania" on *Medúlla* she uses metaphors of the ocean, the shore, and stingrays to describe again personal relationships: "One breath away from Mother Oceania, your nimble feet make prints in my sand, you have done good for yourselves, since you left my wet embrace and crawled
ashore. . . . stingrays are floating across the sky. . . . You show me continents, I see the islands." "Atom Dance" on *Vulnicura* is another song in which she uses ocean imagery to describe love: "Our hearts are coral reefs in low tide, love is the ocean we crave restlessly turning around and around, I am dancing towards transformation." On *Biophilia* in the song "Cosmogony," she uses a sea without fish, boats, or people as a metaphor to describe the universe: "and they say back then our universe was an empty sea." On that same album in "Hollow" she makes reference to the Vikings and their journey across the ocean to Iceland: "Generations of mothers sailing in, somehow they all were shipfolks, hollow, the ground is opening up, swallows me up." In the song "Thunderbolt" she sets the ocean as the scene for her thunderstorm experience: "Waves irregularly striking, wind stern in my face."

Weather and atmospheric phenomena is another theme in Björk's lyrics and include celebrations of the sun, the snow, the air we breathe, and electrical storms. In "One Day" she sings, "One day, when you're up to it, the atmosphere will get lighter, and two suns ready, to shine just for you." On the album *Vespertine* in "Sun In My Mouth" she sings, "I will take the sun in my mouth and leap into the ripe air." In that same album on "Aurora" she sings, "I tumbled down, on my knees, fill the mouth with snow, the way it melts, I wish to melt into you Aurora. . . . Spark the sun off me." On *Vulnicura*, in the song "Quicksand" she sings "We are the siblings of the sun, let's step into this beam." In "Solstice" on *Biophilia* she compares the sun to humans: "and then you remember that you, yourself, you are a light-bearer, a light-bearer, receiving radiance from others, flickering sun flames."
On Vulnicura, in the song "Quicksand" she invites us to include the sun as a member of our families "we are the siblings of the sun, let's step into this beam." In "The Dull Flame of Desire" on Volta she equates lightning with enchantment: "Like lightning flashing in the sky, but there's a charm that is greater still, when my love's eyes are lowered, when all is fired by passion's kiss." On Biophilia in the song "Thunderbolt" she presents a thunderstorm as a saving grace: "Thunderstorm come scrape those barnacles off me." She uses the air we breathe in "Vertebrae by Vertebrae" on Volta as a metaphor when she sings, "Up on the toe, looking forward to, the air is thinner here."

References to the human body often show a connection between nature and the self. This connection is apparent in "Bachelorette" when she sings "I'm a fountain of blood in the shape of a girl, you're the bird on the brim hypnotized by the world, drink me, make me feel real, wet your beak in the stream, game we're playing is life, love's a two way dream. . . . I'm a tree that grows hearts, one for each that you take, you're the intruder's hand, I'm the branch that you break." In the song "Triumph of a Heart" on the album Medúlla she also demonstrates this connection between nature and the self: "The nerves are sending shimmering signals all through my fingers, the veins support blood that gushes. . . . The stubborn trunks of these legs of mine serve as pathways for my favorite fuel, heading upwards towards my kidneys. . . . smooth, soft, red, velvety lungs, are pushing a network of oxygen joyfully through a nose, through a mouth." In "All Neon Like" on Homogenic she references human bones: "Not 'til you halo all over me,
I'll come over, Not 'til it shimmers 'round your skull, I'll be yours." In "Vertebrae by Vertebrae" on *Volta* she also sings about bones and different body parts: "Up on the toe, and the spine . . . she came here to lose face, got down on her knees . . . on four legs . . . vertebrae by vertebrae . . . the arms ooze out of my shoulders, I curl my tail inwards." In "Oceania" she describes the taste of the human body: "your sweat is salty." In "Sun in My Mouth" on *Vespertine*, she displays a separation of the body and the self when she refers to her flesh as a mystery: "with chasteness of sea-girls will I complete the mystery of my flesh." She uses flesh again in "Oceania," but this time as a sexual reference: "sweet like harmony made into flesh you dance by my side." In *Biophilia* she sings about body science. In "Hollow" the theme is genetics: "the trunk of DNA . . . now come forth, all species, come forth, hollow." In "Virus" she uses illness as a metaphor for a co-dependent relationship, "Like a virus needs a body and soft tissue feeds on blood, someday I'll find you. . . . The perfect match, you and me, I adapt, contagious . . . I feast inside you, my host is you. . . . you fail to resist my crystalline charm, like a virus, patient hunter, I'm waiting for you, I'm starving for you, my sweet adversary."

Björk's passion for plants appear in her lyrics as references to flowers and trees. The word *branch appears* in at least three of her songs: (1) "Bachelorette" when she sings "I'm the branch that you break," (2) "Solstice" when she sings "the third branch from the star," and (3) "Earth Intruders" on *Volta* when she evokes images of an army marching its way through the jungle: "We are the earth intruders, muddy with twigs and branches, marching." In "Unison" she uses the
metaphor of a tree and its gardener to describe a domestic relationship: "Born stubborn, me, will always be, before you count 1-2-3, I will have grown my own private branch of this tree, you: gardener, you: discipliner, domestically." On *Biophilia* in the song "Crystalline" she compares the formation of rocks with the growth of vegetation: "Underneath our feet, crystals grow like plants." On *Vespertine* in the song "Pagan Poetry" she uses the image of a flower to portray beauty and darkness: "Swirling black lilies totally ripe, but the darkest pit in me, it's pagan poetry." In "Sun In My Mouth" she evokes a surreal image of flowers burning in the ocean: "I will wade out, till my thighs are steeped in burning flowers." In "Virus" she uses the way mushrooms grow on trees and as a metaphor for sex: "Like a mushroom on a tree trunk as a protein transmutates, I knock on your skin and I am in."

When referencing the animal kingdom, Björk includes insects, arachnids, reptiles, amphibians, birds, and mammals. In "Isobel" on *Post* she sings of an insect that communicates with the protagonist of the story: "Moth delivers her message, unexplained on your collar, crawling in silence, a simple excuse." In "All Neon Like" she evokes forest imagery with references to the web of a spider, the cocoon of a caterpillar and the soul of an amphibian to describe love: "I weave for you the marvelous web, glow in the dark threads, all neon like, the cocoon surrounds you embraces all so you can sleep fetus-style . . . your turtle heart." In "Oceania" she sings, "every boy is a snake is a lily," comparing a human to both a reptiles and a flower. She continues, "every pearl is a lynx is a girl," comparing an organic gem
within an oyster to a mammal, and creating metaphors of birds and water "Hawks and sparrows race in my waters." to describe love and confusion. In "Cosmogony" on Biophilia she personifies a different mammal, attributing human qualities to it, and using it as an existential metaphor: "until a silver fox and her cunning mate began to sing a song that became the world we know."

The universe including the stars and planets is another major theme in Björk's songs, particularly in Biophilia but additionally in her previous albums. On Biophilia in the song "Crystalline" she sings "I'm blinded by the lights, in the core of the earth . . . listen how they grow . . . Crystalline, internal nebula, rocks growing slow-mo." In "Cosmogony" she sings about the wonder of the universe and the Big Bang Theory: "Heaven, heaven's bodies, whirl around me, make me wonder . . . and they say back then our universe wasn't even there until a sudden bang, and then there was light, was sound, was matter, and it all became the world we know." In "Solstice" she draws parallels between the universe and the human heart: "When your eyes pause on the ball that hangs on the third branch from the star, you remember why it is dark and why it gets light again, the earth, like the heart, slopes in its seat, and like that it travels along an elliptical path, drawn into darkness." On Medúlla in the song "Desired Constellation" she uses the universe as a metaphor for complexity and chance: "With a palm full of stars, I throw them like dice, repeatedly, on the table, repeatedly . . . until the desired constellation appears." On Vulnicura, in the song "Quicksand" she uses the universe as a
metaphor for a broken heart and its process of recovery: "Define her abyss, show it respect, then a celestial nest will grow above."

Lastly, when she uses the word nature itself, she does so usually to create a metaphoric image. In the song "Isobel" she gives human characteristics to nature saying that it "forges a deal" and "raises wonderful hell" and even compares nature to herself: "In a tower of steel nature forges a deal to raise wonderful hell like me, like me." On Volta in the song "Wanderlust" she describes nature as a system with laws and uses a sailing metaphor to depict ambition and adventure: "whether sailing into nature's laws or be held by ocean's paws." In "Hope" on Volta when she sings "Nature has fixed no limits on our hopes" she names nature as the regulating body for human hope and ascribes to nature the power to allow hope without boundaries.

Nature in the Titles of her Songs and Albums

On her children's album entitled Björk the song "Langt Ude i Skoven" translates to "Far Out in the Forest." One song on this album is titled "Jóhannes Kjarval" which is the name of a celebrated Icelandic landscape painter. The titles "My Spine" and "Oxygen" recorded as B-sides during the Post era reference the human body. The songs "Frosti," "Aurora" and "Cocoon" on Vespertine all have themes of outdoor natural elements, "Frosti" for Iceland's ice, "Aurora" for Iceland's Northern Lights or Aurora Borealis, and "Cocoon" for insects that live in the forest, particularly moths which she references in several songs. The song "Oceania" on

Five of her album titles have themes of nature. Björk's third electronic album, Homogenic, is defined by the Oxford Dictionary of Biochemistry and Molecular Biology as (1) describing a gamete that contains only one allele of a particular gene, and (2) describing two genetic elements that are descended from a common ancestor by a known sequence of steps, and (3) an alternative word for homogenous. In an interview during the making of the album, she said she titled it this way because she wanted the album, in contrast to her first two electronic albums, to be only one flavor. She says:

When I did Debut and Post, they were very much like greatest hits of my musical passions for all my life. And I knew it would take two albums to do that. That's why I call them Debut and Post, before and after, of getting rid of the back catalog almost, gracefully. Because you can only move on if you do that. So this is like a fresh start for me. And that's why I want to call this album Homogenic or genus or genius or whatever, I'm still working on that, because it's one flavor. It just me, now, here, and it's going to be instead of all
these different instruments, it's just going to be beats, strings, and voice.  
*(South Bank Show 1997)*

Regardless of composer intent, the title ultimately refers back to a scientific term relating to genetics, a science of discovery in all living things. The cover art for the album depicts a kind of *homogenic* creature represented by Björk, a person created by many races and cultures that has come together to form a single being.

Her sixth studio album is titled *Medúlla* whose Oxford dictionary definition indicates a noun in Anatomy: the inner region of an organ or tissue, esp. when it is distinguishable from the outer region or cortex (as in a kidney, an adrenal gland, or hair). It is also short for medulla oblongata. In Botany, it is the soft internal tissue or pith of a plant. Her eighth studio album titled *Volta* is a river in West Africa that is formed in central Ghana by the junction of its headwaters and flows south to the Bight of Benin. At Akosombo in southeastern Ghana the river has been dammed to create Lake Volta, one of the world's largest man-made lakes. Volta is also the surname of an Italian physicist also known as Count Alessandro (1745–1827). He is best known for his invention of the voltaic pile or electrochemical battery in 1800, which was the first device to produce a continuous electric current. Björk's ninth studio album, *Biophilia*, according to a theory of the biologist E. O. Wilson, is an innate and genetically determined affinity of human beings with the natural world. Her tenth studio album is titled *Vulnicura* which is an original word, a conjunction of two Latin words *vulnus* for wound and *cura* for care. An initial association with wound is to a human or animal body, but in this instance is most likely a reference
to the human heart, in particular Björk's own as most of the albums lyrics portray her reaction to a breakup with longtime partner Matthew Barney.

Nature in the Imagery of her Music Videos

Many of Björk's music videos have been created using special digital effects such as CGI (computer-generated-imagery), stop-motion animation, claymation, or robotic effects. When the videos contain images of nature, the digital effects of the video production (as opposed to live-video or film-shooting) combined with the nature imagery produces an effect of a "fusion" of nature and technology. The CGI graphics of "Hyperballad" show Björk standing on top of a mountain in Iceland and then later running through its fields. The production of "Isobel" and "Hyperballad" on Post produce similar effects. The first song on her first electronic solo album, Debut, entitled "Human Behavior," creates the effect of a fusion of nature and technology when, as the video begins, its protagonist walks through a forest among bears and porcupines. In "Isobel" the viewer sees a fantastical image of Björk sleeping in a lake surrounded by a river with a waterfall, clouds, shimmery rain, and a forest full of trees. Since in reality Björk could not be sleeping in a lake because she would drown, this video effect places the viewer in the realm of surrealism. The technical effects create a willing suspension of disbelief in which the viewer perceives the image to be real.

The video of "Jóga" on Homogenic, contains more specific images of Iceland's geography. "Jóga" is another CGI production, and cuts between a variety of glacial,
coastal and mountainous Icelandic landscapes with panoramic shots of mountains, lava fields, volcanic rafts, and sandurs, the braided sands resulting from glacial bursts (Dibben 2009a). It also shows the pulsating rocks of volcanic mountains. The video for "Bachelorette" depicts the mythical character of Isobel, a forest goddess who goes to the city to try her luck at fortune and fame but eventually returns to the forest because that is where she belongs. The Isobel character is metaphoric of Björk herself, eaten by forest vines in an indoor box in the middle of the video illustrating that though she may run from the forest to the city, she can never truly escape the forest. Like Isobel, Björk can never fully reconcile the forest and the city in her music, her politics, or her lifestyle.

**Nature in her Singing Voice**

Because opinions vary widely about whether Björk's singing voice is natural or unnatural, it becomes clear that the term *nature* is a metaphor and a cultural and personal construction when used with reference to describe a human singing voice. Instead of posing the question "Is Björk's voice natural or unnatural?" which cannot be answered satisfactorily because it possesses both qualities or neither depending upon whom one asks, a better question is, "what are the cultural and personal constructions of the term *nature* that lead us to describe a singing voice as one or the other?"

The camp that describes Björk’s voice as natural, argues that, aside from body percussion such as clapping and body slapping, sounds made by the human
voice are the most natural sounds an individual can create. Vocal sounds, unlike instrumental sounds, do not require the assistance of any human-made or artificially manufactured sound instrument, and therefore vocal sounds are pure, or "natural." Sounds made from the human voice reverberate through nasal, throat and mouth cavities, the larynx, and the human respiratory system, and the human body is usually considered to be a "natural" entity. Also, every singer possesses a unique tone caused by the uniqueness of human genomes, referencing the "natural" way humans pass DNA from generation to generation. Another construction of "naturalness" is descriptive adjectival metaphors, and the comparison of the sound of the singing voice to other entities. Björk describes her own voice as stark, comparing it to her natural volcanic landscape and the stark weather. She says, "In Iceland, you have the lava, almost no trees, almost no animals and almost no people, so things are very stripped down. It's very naked." She finds this "nakedness" in her voice to be "natural." As a part of her singing style she shouts, whispers, growls, and spews gibberish, which many people look-upon as child-like instincts. When one witnesses children on a playground interacting with one another and temporarily freed from discipline, one sees them screaming, shouting, growling, crying, laughing, and whispering. Before children learn language, the first words they often speak resemble gibberish. Björk's style of singing possesses these child-like qualities that people often equate with nature, or a sense of naturalness.

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12 David Hemingway, "Björk: The Icelandic singer. . . ," Record Collector.
Others describe Björk's voice as "alien," "strange," or "other-worldly," lacking a gentleness and being dissimilar to types of singing that they are accustomed to hearing that they have internalized as being "natural" ways to sing. Björk's style of singing is conscious meaning she chooses to sing the way she does. She wants her voice to stand out and be different from that of other performers. This "fabrication" of her singing style also causes people to call her voice "unnatural." They would argue that a natural singing style is one that did not involve pre-meditation or was not trying to be different. Singing requires physical skills and stamina to control tone and manage breath, and singers, like athletes, must train in order to perform at their peak (Peckham 2000). Björk is a trained singer who works to create sounds in a specific way, which also causes people to consider her voice "fabricated" or call it "unnatural." At one point in her career, Björk lost her voice and was ordered by her doctor to stop singing and suspend her career if she was to sing again. That her singing was causing harm to her larynx and was interfering with her ability to speak is another argument against the naturalness of her singing style. Some people identify the melodies that she sings or the harmonies she creates with her band as "alien" or "strange" and equate this divergence from Western tonal harmony with her voice itself. Another issue is the method of delivery of the vocals to the listener. On a sound recording delivered through a streamed audio file or a compact disc, the vocals have become digitized. This camp argues that a pop singer's vocals are not natural on account of this delivery. Even if they were to disregard the delivery process, the pop vocals are usually processed through mixers and other
sound processors during the mixing and mastering process. This is a digital process, and once again puts a layer of technology on the vocal sound. In live performance, this camp argues that pop vocals are amplified and therefore are not natural. If a pop vocal performance did not involve any mixing or amplification this camp may deem the voice to be natural if it did not interfere with any of the criteria listed in the beginning of this paragraph.

Qualities that people ascribe to a singing voice and how they judge these qualities as natural or unnatural are judgments based on culturally learned information about singing, melodies, and harmonies. Some of these judgments are based on personal taste. When a person likes a sound, that person tends to deem it to be "natural" as the most logical way to explain her or his taste for it. Conversely, if one finds a sound to be displeasing, one tends to deem it "unnatural." To add a further layer to the discussion, there are those who ascribe metaphor to a singing voice, comparing the sound of the voice to other sounds like "this voice sounds like the wind, or a bird, or machines, or Iceland's volcanic landscape." If the comparison is to a natural entity, then the voice is considered to be natural. Conversely, if the voice is compared to an unnatural entity, the voice is considered to be "alien" or "strange." Metaphor is thus a powerful way to ascribe meaning but provides more questions than answers when a contradicting metaphor also applies.

Nature in Her Live Concerts

In a discussion of nature in Björk's concerts, one must analyze instrumentation,
staging, repertory, sound, video art, lighting, and costumes. Each of these elements differs from album to album so live concerts for each album must be treated separately. Here, I use the *Homogenic* concert as an example to discuss nature in Björk's live concerts. Marsh and West argue:

The *Homogenic* concert stage was designed in a manner that specifically addresses the distinctions between Western perceptions of natural and technological. The stage is divided in half, with the Icelandic string orchestra (representing "nature" or "traditional" music) on one side and live mixer Mark Bell (representing "technology" or "non-traditional" music) on the other. Throughout the concert, Björk moves freely between the two realms, embodying their crucial link. Björk also establishes an Icelandic context and presence by opening the concert with a traditional Icelandic ballad. She proceeds to synthesize the two components throughout the concert and ends on a purely techno level with the remix of "Pluto." Although Björk began the concert with an Icelandic ballad and ended with her most "techno"-sounding composition from the album, the concert does not project a theme of technology consuming nature, rather, the fluidity of her movement between the two realms disrupts the distinction of both, rejecting the idea that one has power over the other. (2003, 194)

As for nature in instrumentation, Marsh and West have argued that electronic instruments are technological while acoustic instruments are natural. Regarding staging, the authors' claim that by moving onstage between them Björk embodies a crucial link between the Icelandic string orchestra and Mark Bell is dubious as it implies that one could not exist without the other. On the contrary, the Icelandic string orchestra and Bell worked without one another regularly before Björk brought them together for the *Homogenic* project. As for repertory, the authors ascribe a quality of "naturalness" to the traditional Icelandic ballad and I think most people would agree that folk music has a natural quality. But many people would argue that ballads lose their natural quality once they become amplified by
an electronic PA system. The folk songs further lose their natural quality once they are played by electronic musical instruments onstage and their sound is transmitted through electronic signal processors. Even though Marsh and West argue that nature and technology exist in harmony on the *Homogenic* concert stage, many people would argue that electronics overpower nature in this performance because it is a pop music concert, in which the ultimate delivery of the music is through electronic devices such as microphones, mixers, and a PA system. The listeners therefore hear overwhelmingly sound processed through technology even though they might be viewing musicians playing orchestral instruments. The electronic musical instruments onstage also overpower the acoustic string ensemble because they are designed to work with an amplification system whereas the instruments of a string ensemble were not designed originally to be amplified.

Lighting and video art are also technological aspects of a live music show. If the lighting in the *Homogenic* concert were truly natural, meaning there were no electric lights, only sunlight, then this concert could be said to be lit naturally. No concert given at night, unless it were given under moonlight alone, could truly be said to be lit naturally. For all of these reasons pertaining to instrumentation, staging, repertory, sound, video art, and lighting, it is impossible to argue for the harmony between nature and technology in the *Homogenic* live performance.

For a discussion of costumes in Björk's live concerts, allow me to shift to the *Biophilia* live show, where the most notable costume was worn by Björk and
consisted of a dress designed by Iris van Herpen\textsuperscript{13} and a wig created by Raphael Salley. The dress was a short-sleeved mini-dress with grapefruit-sized bubbles that protruded in a pattern throughout the dress. The fabric was cream-colored with a metallic sheen that changed colors depending upon the lighting for a given song. The wig extended from Björk's head by about ten inches in all directions as if it were teased outwardly and appeared to be made of a synthetic material. The wig-maker, Salley, based the colors on "an Icelandic mountain with multi-colored surface caused by heavy mineralization."\textsuperscript{14} The dress and wig ensemble evoked the image of an amoeba that one might view through a microscope. While the dress and wig attempted to evoke nature imagery, they were both produced by machines and made of synthetic materials. Therefore Björk's costume for \textit{Biophilia} serves as a metaphor for nature but is not truly natural.

Referencing Other Icelandic Artists in Her Work

Track 05 of Björk's earliest album was named after Iceland's most revered nationalist artist Johannes Kjarval, who worked in oils, and was the first Icelandic painter to focus upon the moss and rock that permeates Iceland's moist and volcanic


temperate landscape (Gittins 2002, 13). The images in the video for "Jóga" are strikingly similar to Kjarval's paintings. Like other Icelandic artists of the time, Kjarval's paintings depict a pristine landscape (including the historic site at Pingvellir) that reinforces the "natural" elision of nation with land, which was central to the Icelandic nationalist movement. The importance of Kjarval to Björk's artistic output is also evident in that she titled one of her earliest compositions after him - the track 'Kjarval' from her 1977 eponymous album that she recorded when she was a child. Björk was first exposed to a Kjarval painting through a picture that hung above her grandparents' piano that she used to play (Dibben 2009a). At an early age, Björk associated Kjarval's work with making music.

**Recording Sounds from Nature to Include in her Albums**

For some recordings Björk recorded sounds from nature and mixed them into her recordings.

For "Cover Me" on her album *Post*, Björk's producer Nellee Hooper sent her into a cave full of bats in the Bahamas to record her vocals. Björk said of the recording session:

As I went into the cave, I had headphones and a very long lead and it was dark and (Nellee) said if I get into trouble, "Just pull on the microphone lead." It was like he was waiting in a boat and I was down diving and if I got into trouble I'd pull on the rope and he'd pull me up. I walked inside. The music came over the headphones and I was crawling on all fours. I'm going hunting for mysteries, cover me. . . . and all these bats were flying round my head! And you could actually hear bats singing on the tape! (Björk and Sjón 1995)
The live recording of the bats did not live up to Björk’s audiophile standards and she scrapped it during the editing process. Instead she transformed the piece "Cover Me" into a harpsichord and dulcimer accompaniment. While a listener is unable to hear the bats on the commercial release, Björk claims to have been inspired by the experience and says about the song: "So in theory, it's the cave. In practice, it's the studio" (Björk and Sjón 1995). She brings the bat sounds back in Biophilia Live when she ends the double-CD music album with a track called "Bat Sounds." Once again, however, it is an electronic depiction of the bat sounds, not the recording from the cave in the Bahamas. The bat experience is an example of the unbridgeable gap between nature and technology in Björk's music and resembles the classic trope between theory and practice. In this instance Björk proves that for a pop record it is much more effective to have an artificial audio rendering of bats than to have the real thing.

For Debut, Post, Telegram, and Homogenic, Björk travelled around London, Spain, and Iceland recording ambient noises onto a portable multitrack recorder and used these sounds as samples to include and manipulate on her records (The South Bank Show 1997). In Iceland in particular, those sounds included geysers, volcanoes, the ocean, the wind, and other sounds that occur outdoors in nature. The nature sounds, therefore, proved to be useful because they not only provided inspiration for Björk, but they also could be manipulated by her and her producers in the studio.
Nature in her Electronic Music

The beats in "Jóga" are aligned with the idea of seismic energy, and may be heard as iconic of the raw, volcanic landscape's movement. The sounds are distorted, suggesting unrefined power. In the video for "Jóga" the distorted beats coincide with a computer-generated animation showing tectonic plates splitting apart, so the sounds therefore are suggested by Björk to be heard as mimetic of Iceland's seismic activity. In the video, the rocks of the volcano pulsate like ventricles in a heart pumping blood, leaving the viewer/listener to ponder the suggestion of the metaphor: are Iceland's volcanoes it's geological heart? Supporting Björk's statement about the beats on Homogenic, "I wanted the beats to be almost distorted. Imagine if there was Icelandic techno. Iceland is one of the youngest countries geographically. It's still in the making. So the sounds will be still in the making," Dibben argues that Björk's vision for Homogenic revolves around instrumental sounds with a mimetic character. Dibben attributes this mimetic character of the beats in large part to their timbre which is created with a high degree of distortion and filtering. She argues that when sounds are distorted it is because there is more energy that can be recorded or reproduced, thereby invoking the idea of an excess of power (2009a). But because beats and perhaps even distortion and filtering indicate power, may one deduce that Björk's beats are mimetic of volcanoes?

Standing on their own, without video imagery, Björk's beats cannot be mimetic of volcanoes for two reasons: (1) many people perceive distortion as a

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A technological additive to sound and think of a natural sound as clear and undistorted, (2) while an erupting volcano is a powerful and destructive force unable to be tamed by humans, it is merely one representation of power. If one may equate power with volcanoes, could one not also equate power with the ocean, the wind, a lightning bolt or even things human-made such as an airplane, a skyscraper, or a computer. Could power not also be equated to a political regime, a monetary fortune, or a baby's cry? The point is that the attribution of nature to a particular piece of music is often expressed through metaphor which is placed there by humans after the piece's creation. For example, if Björk tells us often enough that her beats are about volcanoes, we start hearing volcanoes every time we hear her beats through a process of association. Björk's use of volcanic sounds is another example of the unbridgeable gap between nature and technology in music. Björk chose to mimetically render volcanic sounds with electronic processing instead of using her raw recordings of their sounds. In this instance, she proved again that, like bat sounds, volcanic sounds cannot be recorded and rendered successfully on a pop record without begin manipulated in the studio using technology. Listeners, therefore, use their imaginations to generate their own imagery.

Dibben is not the only musicologist who likened the music of an Icelandic composer to seismic activity and to the extreme conditions of Iceland's climate and natural surroundings. John Pickard, when describing Jón Leifs's Saga Symphony, calls it "a language of extremes: registral, textural and dynamic." He also compares two melodic lines to seismic plates:
Here a line in high woodwind and strings moves in rhythmic unison and contrary motion with a line in low woodwind and strings. The relationship between these lines has nothing to do with traditional 2-part counterpoint of European art-music; rather it is an extension of the principles of Tvisöngur through the admission of contrary motion and dissonant intervals (minor 7th, major 9th). It is perhaps not too fanciful to liken these two lines to two geological plates, grinding against one another (Iceland is, after all, riven by the fault which separates the European and American continents). (1999)

Pickard also makes the claim that many of Leifs's works respond to the stimulus of the Icelandic landscape:

Most of Leifs's works are programmatic at some level and the extra-musical stimulus is invariably drawn from his native Iceland. These divide into two main types: works directly relating to the Icelandic sagas and those which respond in a more general sense to the stimulus of the extraordinary Icelandic landscape. (1999)

Here Pickard establishes a myth in which musicologists connect Icelandic music compositions to Icelandic landscape, and Marsh, West, and Dibben later perpetuate Pickard's myth. Björk communicates the myth through her videos, which tell a story for every song. Is one ever able to separate the music, then, from the video imagery that accompanies it? If a listener places a Björk techno beat next to another techno beat, does Björk's sound any more volcanic than its counterpart? This brings us to the question: what does volcanic activity actually sound like? As mudpots and geysers pulse irregularly instead of regularly, it would not be fair to liken their sound to a steady, driving, dance beat. The reality is that Björk's techno beats resemble other artists' techno beats that do not have the intention of imitating the sound of volcanic activity. The samples of natural sounds that Björk captured on

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16 Tvisöngur (or twin-song) is, as the name suggests, sung by two voices.
her portable multitrack recorder are so obscured by effects in her finished, produced songs that it is impossible to distinguish the sound of a geyser from the sound of the wind, or the sound of a volcano from even the chirping of a bird. Although the beats on *Homogenic* sound more like an erupting volcano than a chirping bird, the sound of the beats could just as easily invoke the sound of machines churning in a factory. So if we are to consider meaning in music beyond authorial intention, listeners might interpret sounds as being "unnatural" when the sounds are created by electronic machines and refer back to technological processes.

**Icelandic Nationalism and Björk**

In her 2009 book titled *Björk*, Nicola Dibben analyzes the relationship between Björk's identity and the geographical landscape of Iceland. Placing particular emphasis on the song "Jóga," a centerpiece of *Homogenic* where Björk explores "emotional landscapes" of her soul and psyche. Dibben contends that Björk claims an explicit national agenda with "Jóga." In an interview with David Hemingway, Björk says of the song "Jóga":

I think that song is several things. At the time, I was going to move to London for a couple of months to record an album. I ended up doing two records and touring the world. I'd never been so long away from Iceland, so when I started preparing for *Homogenic*, it was very obviously supposed to be a love album to Iceland nature. I'd learned enough about studios and beats to make modern Icelandic pop music. It isn't Icelandic music trying to be English or American. I was doing a lot of experimenting with beats trying to make them sound volcanic. With this song, I really had a sort of national anthem in mind. Not the National Anthem but certain classic Icelandic songs
very romantic, very proud. Mountains, glaciers, that kind of thing. All the puffin stories are rubbish, though.\textsuperscript{17}

\textit{Homogenic} consisted entirely of material Björk had written after she had left Iceland, and so was the first opportunity for her songs to fully represent the impact of her experiences in London. The media's focus on her Icelandic identity also heightened Björk's perception of her national identity, along with the new perspective on her identity that moving to another country provided. Björk attributed the consciousness of her Icelandic identity during her years in London to her collaboration with what she saw as an "immigrant" community of British musicians: DJ and \textit{tabla} player Talvin Singh, known for his fusion of Indian classical and Western pop styles, Leila Arab who moved to London from Iran in the late 1970's, jungle DJ Goldie, born Clifford Joseph Price of Jamaican and Scottish descent, and trip-hop DJ and rapper Tricky, born Adrian Thaws, whose family came from a variety of ethnic backgrounds (Dibben 2009a). Björk says of belonging to this scene:

\begin{quote}
Being Icelandic with different baggage from those people led me to ask; what is Icelandic music? Can I just be a girl who grew up in Reykjavík and be proud of it? But still use the drum machine and have something to say in the musical capital of the world today, without making me feel the yokel deep down inside me, the fish factories and dried fish? (Dibben 2009a, 42)
\end{quote}

Dibben says that Björk's questioning of her identity within a British, multicultural context reflects a more widespread issue of cosmopolitanism: namely, tensions between globalization and the idea of national identity (2009a).

\textsuperscript{17} David Hemingway, "Björk: The Icelandic singer."
Björk likens the electronic beats on the *Homogenic* album to a heartbeat. In the final moments of the *Jóga* music video, the camera's gaze enters Björk's chest to find a heart-shaped island, similar to that of Iceland. These closing moments of the video can be understood as a visual realization of Björk's nationalist sentiments, and of her music's articulation of that attachment (Dibben 2009a). Björk says, "the music comes more or less from one direction: straight from the heart, because home is where the heart is" (Björk interviewed in van den Berg 1997). The representation of the Icelandic landscape as pure and raw in the video for "Jóga" is also a landscape ideology drawn from Icelandic nationalist literature and art.

In a display of nationalism at the concert for environmental awareness in Laugardalur Park (see Chapter II, Björk and Activism), Björk performed at least one song in Icelandic, which is different from the way she usually performs songs in English and the way most of her music is released as English language records. This illustrates the way popular music artists from countries whose native language is not English use their native language at home to gain affinity with the locals, while they use English when their music enters the global arena to connect with people outside of their home country.

**Icelandic, Nordic, and Scandinavian Identity in Björk**

As Björk was born and raised in Iceland, she identifies as being an Icelander. Some fans know that she is Icelandic and identify her in this way. Others love her
music and are oblivious to her Icelandic heritage. Some know her for her bizarre behavior that has been publicized by the media, such as the swan dress she wore at the Oscars or the time she attacked a paparazzo in Thailand who had been stalking her to obtain pictures of her son. She is the only Icelandic person that many people could name, so for better or worse she has become a representative of Iceland. Those who love her attribute good qualities to Icelanders they have never met. Outsiders who think she is "bizarre," "strange," or "alien," think that Iceland is home to the exotic and unusual. Alex Ross, a music critic for The New Yorker, who has written about Björk as residing among the most gifted vocalists alive describes her voice in this way: "This is somehow a voice that comes in from the north, that crosses vast spaces, that does have something ancient - something very old in the grain of it. . . . I cannot think of another voice like it in classical music, in pop music. It's instantly recognizable. You hear one or two notes from it and you know it's Björk."18 Here Ross ascribes to Björk the highest compliment of a vocal sound incomparable to any other voice in classical music while attributing to it metaphors of the ancient, the explorer or one who transcends boundaries, and the North. While the observation that Björk's voice is powerful and unique may be accurate, the attribution of it to the ancient and the North is a perpetuation of Icelandic myth whereby all things Icelandic are considered Nordic, Viking, and ancient.

It is therefore important to note when a Norse identity derived from Iceland's literary heritage of the Eddas and Sagas is a true influence on the composer, and

when it is merely interpreted by listeners as a perpetuation of Icelandic myth. While Björk does not reference her Icelandic roots on every song of every album, *Homogenic* is an album in which Björk particularly draws upon her Icelandic identity. Withdrawing from the club sounds of London and New York that had characterized her previous two solo works, *Debut* and *Post*, she isolated herself in a large villa in Spain to record *Homogenic* in an attempt to both reconnect with her Icelandic roots and express her individuality. She invited the Icelandic String Octet to record with her, and ultimately the unique combination of classical strings and electronic dance music gave the album its signature sound. A member of the string octet argues how Björk's use of parallel 5ths in her compositions for this album invokes Icelandic folk music (*The South Bank Show* 1997). Drawing from Norse mythology, the closing song, "All is Full of Love" symbolizes the idea of death and rebirth and was inspired by "Völuspá," the Eddic poem that recounts the end of the world and its regeneration (Gindt 2011). Björk says of the song, "In Icelandic mythology, you have this Saga where the Gods get aggressive and the world explodes and everything dies and then the sun comes up and everything starts all over again. It's the last track on *Homogenic* after 'Pluto' which stands for death. ‘All is Full of Love,’ is like the birds coming out after a thunderstorm" (Hemingway 2002, 43).

Evidence of Björk’s interest in the Sagas came at an early age in the album she recorded when she was eleven years old. This interest is apparent in two tracks. The first is entitled "Búkolla," the name of a cow in a Saga. This song relates the
tale of Björk and Búkolla running from two pursuing Icelandic ogres, pausing only to see first a fire and then a mountain spring up from a hair on a cow's tail left on the ground (Gittins 2002). The second is the translation of the Beatles' song "Fool on the Hill" into Icelandic, the original language in which the Sagas were written. In the Icelandic interpretation of this title "Álfur Út Úr Hól," the word álfur actually means "elf," a mythological character from the Sagas and Eddas in which Icelanders still believe today.

Björk draws on the vocal technique used to narrate the Norse Sagas from the twelfth and thirteenth centuries in what ethnomusicologists call "heightened speech," a combination of speech and singing, but what is referred to by folklore specialists as rímur, or a particular kind of narrative poetry versified from previously existing prose literature, such as sagas, romances, or novels (Steingrimsson, Stone, and Mosko 2000). Rímur is characterized by narrow vocal range and irregular meters (Pickard 1999). Njáll Sigurðson, a folk music historian, explains that Björk uses her voice in a specific way, like the Old Icelandic choir men who were reciting the rímur (The South Bank Show 1997). Although Björk's vocal technique is more lyrical and spans a wider range than performances of rímur, elements of rímur technique are still detectable in bits and pieces throughout many of her albums. Björk discusses the influence of Icelandic literature on her music:

Iceland was a colony for six or seven hundred years, and it was treated very badly by the Danish. We were not allowed to play music and dance. It was supposed to be an act from the devil, or something. And so what we got obsessed with was storytelling, the Sagas, you know that's all our culture, it's basically very literature-based. Probably the most important music in Iceland was half-talking, half-singing, kind of chanting. (The South Bank Show 1997)
Björk might have been the first Icelandic pop musician to draw from the Icelandic Sagas and Eddas, but is not the first Icelandic musician to have done so. The composer of the first Icelandic symphony, Jón Leifs, composed works of two main types: those directly relating to the Icelandic sagas and those which respond in a more general sense to the stimulus of the volcanic landscape (Pickard 1999).

Vigdís Finnbogadóttir, the president of Iceland for sixteen years between 1980 and 1996, spoke of Björk's Icelandic identity in an interview:

The women of the sagas, they are very strong and Björk is one of them. It is said about the Icelanders that they are bold in art. They do not calculate the steps. If I do this today, this will happen tomorrow. They do today what they have to do today. Oh, that's very Icelandic because we live with this "nature," and the elements that we have to defy all of the time. We are not thinking about it everyday, but it forms our character, of course. (The South Bank Show 1997)

Finnbogadóttir may be alluding here to the risk-taking sensibilities that Björk shares with the Icelandic investment bankers who brought about the collapse of Iceland's currency. When Björk decided to create an app album, she claimed she could not afford to hire the engineers and app developers for the project and that her record label convinced both to work for a percentage of the profit. If this statement is true, then the risk would have fallen upon Björk had the project failed. The engineers and developers would have been out their time and expenses and could have potentially sued Björk for their losses. As far as Finnbogadóttir claiming that Björk does "not calculate the steps," however, it seems like a far cry from the rest of the way Björk negotiates her recording and performing career, controlling every aspect of her art, similarly to Madonna.
In addition to expressing her local Icelandic identity, Björk also sometimes displays a "Scandinavian" identity indicating that she sees herself as belonging to a larger, regional group. In her song "Hunter" on Homogenic, Björk sings the lyrics "I thought I could organize freedom, how Scandinavian of me!" displaying the way she identifies beyond Iceland to Scandinavia, a term that refers to both the Scandinavian peninsula and the geographic region that comprises Norway, Finland, Sweden and, depending upon the source, sometimes also Denmark and Iceland.

**Björk, Paganism and Christianity**

Björk’s public statements about religion and the role religious themes have played in her musical activities have revealed some apparent contradictions over the years, indicating that perhaps her views toward religion have changed over time or that perhaps she is not being straightforward about them. In interviews, she has called herself an atheist, often without mentioning the spirituality in her music. Pagan mythology enters into many of her song lyrics and video imagery depicting the stories from the Eddas and Sagas, but in interviews she does not call herself a pagan or say that paganism is her religion. Historians have classified paganism as a pantheistic religion pre-dating Christianity in Iceland, but since Icelandic literature is the main source of its preservation (as opposed to church ceremonies or other organized religious activities) Björk’s display of paganism in her music may indicate that she views paganism as more of a cultural phenomenon than a religious one.
Christian influence can be found on the record Björk made as a child in collaboration with her stepfather and her mother. For example, track 08 "Oliver," tells the Christ-like story of a beautiful boy in Valhalla who is nailed to a cross and receives the "rewards of victory" although his "hands are cold" (Gittins 2002, 14). The *Inside Björk* documentary partially chronicles Björk's summer 1990 bicycle journey between Iceland's rural churches during which she composed some of the music for *Debut*. Björk said of the trip, "I would set myself a target, and then I would go and improvise and write one song and record it on my Dictaphone." A scene from the documentary shows her inside an oceanside church called "Strandarkirkja" singing a song called "The Anchor Song," while accompanying herself on the church's organ. Rather than singing in English, as she does on the record, she sings in Icelandic. While she may not have been praying to God on this musical, self-guided tour, one cannot deny the spiritual aspect of it. While one might argue that the tour was about composing on the churches' organs, another might argue that it is impossible to remove the religious context from the sound of an organ in a church. Regardless, one can see a certain element of spiritual journey involved in this compositional process. Björk may not embrace Christianity as a religion, yet she used churches and organs in her creative musical process to make her first electronic music album.

In a French-Canadian television interview in 1997 when she was twenty-nine years old, Björk claimed that Icelanders do not have religion. She was answering a
question about the unforgiving climate of Iceland and the danger of living close to an active volcano and how it shapes the people who live there. Björk said,

... because we've got one thousand years of being on our own on this island trying to survive pretty rough circumstances, and we don't have any religion so we couldn't really scream for help to God or Allah or Buddha or to someone, so we always decided when you are in trouble you have to help yourself.¹⁹

At this early stage of her career, Björk showed a frustration with religion or perhaps a belief in the futility of it. While denouncing God, Allah, and Buddha, she did not mention the pagan gods, so perhaps an underlying sentiment was not one of disdain towards them. Her denial of Christian activity of any kind in Iceland is belied by the church services that continue to take place in Iceland's numerous churches, and the history of Christianity in Iceland, which I established in Chapter Two. In 1997 Björk was in a "punk rock" phase of her career, so denying Icelandic Christianity goes along with the punk manifesto of rejecting the status quo. Also, young people are more likely to represent the people of their country with the actions of those in their immediate social circles, especially during an interview in a foreign country. In 2002, in a BBC interview for the documentary Inside Björk, she clarified her thoughts on religion. She said,

I've always been one-thousand percent certain that I was an atheist. And I'm slowly having to realize as I got a little bit older, maturer [sic], that I perhaps I have a religion and it's nature. (Inside Björk 2002)


In a 2004 interview, she refrained from denying the complete existence of Christianity in Iceland, acknowledging that God may be worshipped there. She also reiterated the idea from two years prior that when she seeks spirituality in her life she turns to nature:

Compared to America, or even Europe, God isn't a big part of our lives here. I don't know anyone here who goes to church when he's had a rough divorce or is going through depression or something. We go out into nature instead. Nature is our chapel.\(^{20}\)

In this interview, she refers to ideas about nature prevalent in German Romanticism. She also acknowledges the pagan spirituality of Icelanders, believing in elves and fairies, noting how she has reacted to it in the past, and then makes an allusion that believing in pagan spirits is no more deserving of ridicule than believing in Jesus Christ. She said:

There is this stereotype of Icelanders all believing in spirits, and I've played up to that a bit in interviews too. As a member of Sigur Rós said, whenever a foreign record company comes over to sign an Icelandic band, the first thing they do is ask the band members whether they believe in elves, and if they do, they get signed. I hate to sound grumpy, but there are a lot of people out there who believe in a two thousand year-old fairy tale. Both sides are waiting for their Messiah to arrive. And then people point their fingers at us Icelanders and say we are superstitious.\(^{21}\)

But when it comes to a subject of real passion, the way the international music business operates and what the Internet revolution has done to the way the major labels do business, she invokes God, if perhaps only in jest:


\(^{21}\) Ibid.
“You know, it's ironic that just at the point the lawyers and the businessmen had calculated how to control music, the Internet comes along and fucks everything up. That almost seems like divine intervention.” Björk gives the finger again, this time waving it into the air, challenging, no doubt, that great lawyer in the sky. “God bless the Internet,” she adds.22

Perhaps her criticism is not directed specifically towards God, but rather at Iceland's moralists. In her 2007 album *Volta,* she expresses her disgust of them in the lyrics to her song "Wanderlust" when she sings

I am leaving this harbor
Giving urban a farewell
It's habitants seem too keen on God
I cannot stomach their rights and wrongs

One would imagine the harbor to be the Reykjavík harbor close to which she owns a home. These lyrics indicate perhaps a feeling of condemnation of her own behavior by the Christians who live in proximity to her or perhaps a feeling of vexation directed toward their righteous behavior.

**Björk's Self-Sufficient and Extreme Identity**

Björk talks about her self-sufficient identity in the following interview where she constructs a punk, or avant-garde, kind of Icelandic identity.

If there is such a thing as Icelandic characteristics, we are talking about an individual who is fiercely independent. It's like so self-sufficient, it's like

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22 Ibid.
arrogant. And some people who invented anarchy like one hundred or two hundred years ago, Icelanders are like, "So?" (The South Bank Show 1997)

Also in 1997, in a television interview conducted for a French-Canadian television show, Björk was questioned about how the harshness of Iceland's climate and landscape has shaped the personality of the people who live there. She replied,

Well, to put a long story short, I think that maybe it has made them a little bit of extremists [sic]. But you have this in Canada where they in the summer are 24 hours, and in the winter there are only nights, and also so people get very introvert in winters and in the summertime they are extremely extroverts. Well, I don't know more, maybe a little bit about self-sufficiency. . . . [Icelanders are] very self-sufficient. If your car breaks down, you fix it yourself. And if you're hungry you go hunting. And if you get ill, you cure yourself. And if you need a painting on the wall, you paint a painting. And if you need a pink dress, you make a pink dress. And if there is no good music to dance to and to get drunk to in your town, you make it yourself. So I think that's quite good. But I think generalizing [sic] is always a bit dangerous. But I like dangerous things, so I did this for you.23

Björk touches on the extremism she felt in Iceland with her teenage band Kukl.

The booklet of Kukl's record evokes feelings spawned by living in Iceland's northern-situated latitude with white nights in the summer and a maximum of four hours of daylight during the winter solstice. The booklet states that Kukl's purpose is "(To) depict the Marriage of Heaven and Hell: The Union Of Opposites, Cold Claustrophobic Winters with the . . . Midsummer Sun of the Summer Months" (Gittins 2002, 19). Björk also discusses the effects of Icelandic extremism in her book Post:

Realistically, being from Iceland affects me in two ways. The first is in the genes of Icelandic people – especially because they were isolated for twelve hundred years and obviously they could only interbreed. So it's very self-

sufficient. There's this hardcore optimism. If you don't work eighteen hours a day you're a loser. It was very hard to live there. The weather is hardcore. People in Iceland still don't know how to have a civilized meal. It takes them five minutes to eat, because they work while they eat. I'm exaggerating here, but there's always this kind of hurry. Trying to make the most of your time. There's this workaholicism [sic]. It's the only way to survive. I truly think that people who didn't live like that usually died! It's the survival of the fittest, it really is. We are born to exaggerate and do the maximum. (Björk interviewed in Björk and Sjón 1995, 29)

Björk's biographer Martin Aston says of Iceland, "The state religion is officially Protestant but Icelandic belief in the self is stronger" (1996). Björk's poet-lyricist-novelist friend, Sjón, who co-authored the book Post also discusses the extremism of the Icelandic character. He says:

It's a manic society. Everybody is manic about what they're doing. But at the same time it's a manic-depressive society. So you also get these deep, disturbing feelings. Even when you're running around doing everything at the same time, you're aware of the darkness and the disturbing feelings in you. (Sjón interviewed in Björk and Sjón 1995, 29)

These behaviors in Icelanders may be attributable to the patterns of daylight and darkness that vary dramatically according to the season because of Iceland's proximity to the north pole. The summer solstice allows only a few hours of darkness while the winter solstice yields only a few hours of daylight.

**Björk's Alien Identity**

Björk's alien identity serves as a metaphor to represent individuality, strangeness, exoticism, and a sense of not-belonging. The metaphor of alien identity functions similarly to punk identity in that it is used to distance herself from the
status quo. In Iceland, where the norm is "Icelandic Identity," she uses her alien identity to distance herself from Icelandic conceptions of the status quo. On an international level, she uses her alien identity to distance herself from other international pop stars and globally-accepted ideas. On the local level in non-Iceland countries, she uses alien identity to distance herself from local culture. A promotion of alien identity allows Björk to do as she pleases within her career and her artistic work as she projects the idea that she does not attempt to conform to mainstream ideas. Her alien identity works in conflict with her Icelandic identity when she is in Iceland attempting to belong to local culture. Her alien identity works in conjunction with her Icelandic identity when she promotes herself abroad and Icelandic identity is useful in making herself appear strange and alien to foreigners. Her alien identity is a tool that she uses to satisfy certain functions, and when she is not in need of this identity, she pushes it into the background and ceases to highlight or promote it. Her alien identity comes across more strongly in certain phases of her career and on certain albums than others.

In 1993 in an early phase of her solo career, Björk asserted that her alien identity began when she was a child:

I think it’s funny and actually I couldn’t be more pleased with the situation. When I was growing up, I always had this feeling that I had been dropped in from somewhere else. That was how I was treated at school in Iceland where the kids used to call me ‘China girl’ and everybody thought I was unusual because I was Chinese. It gave me room to do my own thing. In school, I was mostly on my own, playing happily in my private world making things, composing little songs. If I can get the space I need to do my own thing by being called an alien, an elf, a China girl, or whatever, then that’s great! I
think I’ve only realized in the past few years what a comfortable situation that is.  

At this early age, she took a situation in which she was being "alienated" by her peers and turned it into a favorable condition by which she had the space to do as she pleased.

Her third electronic solo studio album, *Homogenic*, is one in which her alien identity is projected strongly. The alien identity personified in the *Homogenic* cover art is reminiscent of the alien identities projected by British pop star David Bowie, African American jazz artist Sun Ra, funk artist, George Clinton, and reggae artist Lee Scratch Perry. Michael Jackson also exemplified an alien projection in pop music through his signature "moonwalk," which became an early manifestation of his popularity. As evident in the music of Sun Ra, Clinton, and Perry, space and alien themes are integral to a musical stream of Afro-futurism in which artists project empowering images of black power through futuristic imagery and control of technology (McLeod 2003). Perry, Ra, and Clinton have constructed worlds of their own, futuristic environs that subtly signify the marginalization of black culture. In doing so, these three artists have thrown their own identities into question, taking on a multitude of costumes and alter egos. Each musician becomes a myth-making, alias-talking, self-styled postindustrial shaman (Corbett 1994). Bowie's *The Rise and Fall of Ziggy Stardust and the Spiders from Mars* narrates the story of a bisexual alien rock superstar who ends up a victim of his own success as he commits rock 'n' roll suicide. Bowie's alien persona was emblematic of his bisexual alienation.

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24 Thorsteinn Gunnarsson, "Björk," *I-D.*
from the heterosexual male-dominated world of rock music (McLeod 2003). Ken McLeod says that in general, popular music's use of futuristic space and alien themes denotes a related neo-Gnostic withdrawal and alienation from traditionally dominant cultural structures in an attempt to unite us with a common ‘other’ that transcends divisions of race, gender, sexual preference, religion or nationality.

Space and alien imagery forms a consistent and recurring trope in pop music that is particularly important in resisting reductive worldviews commonly associated with scientific essentialism, as well as providing an empowering voice to many marginalized identities. By drawing on the fantastical and improbable possibility of alien existence, artists actively subvert and negate notions of authenticity. McLeod notes that like a time-travelling, omnipresent alien presence, music takes us outside of our bodies and place while simultaneously reminding us of our location and what it means to live there (McLeod 2003).

Björk subscribes to the ideas Corbett and McLeod describe regarding the constructed identities of Sun Ra, George Clinton, and Lee Scratch Perry, even though she comes from a different country and is of a different race. Björk's alien image, along with her relationship with an independent record company, One Little Indian, and her eccentric artistic and fashion sense demonstrate her commitment to counter-cultural values. These values are evident in Björk's solo career through her refusal of sponsorship and use of her music in product advertisement (Dibben 2009a). Her infamous swan dress at the 2001 Academy Awards that was capable of laying eggs on the red carpet horrified most of the press and stars attending the
event and overtly jabbed the American film industry, particularly the superficial values that consume Hollywood. While Björk's swan-dress antics were not well-received at this event, she did pave the way for Lady Gaga, whose dramatic acts of artistry in anachronistic settings were more warmly embraced by the public and press.

Björk's musical identity manifests itself through various facets of her Icelandic heritage. Two examples of this are Iceland's isolation and its exoticism. Since Iceland is isolated geographically as well as culturally, the press characterizes Björk as exotic which contributes to her alien image. Björk has also increasingly communicated the idea that music can be made by anyone, thereby undermining a dominant commercial principal that music is the domain of specialists and a commodity, an ideology which sustains the economic basis of the music industry. For example, on her album Medúlla, the non-synchronous layering of voices and the use of choir which is associated with amateur music-making, and her video "Triumph of a Heart" directed by Spike Jonze in 2005 that includes a scene of Björk and friends singing a capella inside the Reykjavík club Sirkus support this idea that goes against the dominant ideology (Dibben 2009a). In this video, Björk has a romantic relationship with a cat, who eventually grows to the size of a human being, as they live together in a cabin in a fjord in Iceland where no one lives for miles around.25 Many of the isolating and bizarre images from this video contribute to

25 "Björk - Triumph Of A Heart (Official Music Video)," YouTube video, 5:25, directed by Spike Jonze, written by Björk, from the album Medúlla, 2005, posted by "Every Björk video.," Aug 11, 2010,
Björk's alien identity. Björk's 2011 iPad release of Biophilia is another "alien" way that she communicates with her fans through interactive computer apps that encourage amateurs to make their own music.

While Björk does not claim to be an extra-terrestrial being, she uses her alien identity to serve her purposes when she wishes to express exotic, punk, or individualist ideals. Both at home and abroad, Björk asserts her individuality when it serves her purposes. On the international stage, a construction of an Icelandic identity asserts this individuality and works in conjunction with her alien identity as she projects a persona that is different from others. In Iceland, she uses alien identity to express individualist ideals and distance herself from Icelandic identity. But she pushes her alien identity into the background when she wishes to unite with other Icelanders for political purposes and rally around nationalist Icelandic causes.

Rebellion and Björk

Björk’s proclivity for rebellion became evident during her teenage years.

Recalling the days of her teenage band Kukl,

It was a very stupid local sense of humor, a bunch of 16-year-old terrorists drinking absinthe that we smuggled from Spain and writing terrible tunes and being arrested a lot of times, and having art exhibitions and making our own films, and basically art sort-of terrorism if you want, sort-of sabotaging what we thought was really snotty. I think the people that ended up forming Kukl and The Sugarcubes and Bad Taste, they were bound to meet, in such a

accessed October 11, 2015, https://www.youtube.com/watch?v=yvgVsxaqYgA.
small town, having the same obsession, basically being terrified of mediocrity. I think that always has been our biggest enemy, mediocrity, materialism, and narrow-mindedness, small town mentality. And we'd do anything to break that down. *The South Bank Show 1997*

Kukl made it to Europe, touring with Crass and playing with The Fall, Chumbawumba, and Einsurzende Neubauten. They even played while Björk was seven months pregnant with her first child (Gittins 2002, 19).

Later in her career, Björk refused permission to release the recording of Schoenberg's *Pierrot Lunaire*, and she allowed release of the piece written for her by John Tavener, *Prayer of the Heart*, as part of a birthday compilation, but only on condition that there would be no advertising of her involvement on it. Her album of jazz covers released in 1990 called *Gling Gló* has consistently sold more than one hundred thousand copies per year despite Björk's refusal to market it. Björk says, "Some of those things that I did, or agreed to do, or was persuaded to do were right for me at that time, but where I am now they don't really fit in. And I'm really interested in presenting this vision, and as far as I'm concerned some of those things cloud that, obscure it, make it less clear and focused. So I'd like to delete them and not have them available" (2006 interview with Derek Birkett as it appears in Dibben 2009a, 194). Björk protested strongly against her record company's wish to include the standard, "It's Oh So Quiet" on her *Greatest Hits* compilation as she expressed the following sentiment:

> For a couple of months, I was like, "Why the f**k did I do 10 years of entering the unknown and having this feeling of being a pioneer?" . . . when you go blindfolded into the unknown and you've been on a mission that the world needs new music and you've experimented with all sorts of people and have this excellent adventure - doing that for 10 years and sitting down with the
record company people and they say, "Oh, forget about everything you've ever done. The only thing that's worth anything is 'It's Oh So Quiet.'" You just go, "What?!" I didn't work like a lunatic and wave the flag and the trumpet, with this fierce believe [sic] for all this time to have [that] song be the only result.  

In this quotation, Björk portrays herself as a pioneer with a mission of creating new music for the world. Her construction of identity as a pioneer enters into conflict with her desire to sell records. She would like to maintain artistic integrity but she begins to realize that the public wants something other than new music. Conversely, in that same year she expressed a leaning away from non-mainstream expression when she said, "I could've so easily gone and become a composer and done some avant-garde music in some corner for the chosen eleven and half person. But I've never wanted to do that" (Inside Björk 2002). The discrepancy between these two statements which were made about the same time indicates a turning-point in Björk's career where she was faced with learning to balance artistic expression with commercial success.

In creating an identity of rebellion, sometimes Björk appropriates the rebellious attitude contained within an Icelandic Viking identity. In interviews, sometimes she has attributed her independent attitude to her Viking heritage and expressed her experimental approach through metaphors drawn from Icelandic

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ropes of ships and Vikings waving a pirate flag. In a 1997 television interview, she expressed her anger regarding Iceland's long period of colonization by the Danes:

We were a Danish colony for six hundred years and they treated us like shit. And we hate the bastards. And only fifty years ago we became independent. So they had all sorts of tricks on us. They taxed us very heavy. I mean maybe it's not just the Danish. All sorts of countries that take colonists sort of enslave them. And one of the things they did not allow was singing and dancing but I think we did it anyway. We were quite cheeky about it.

In her construction of a rebellious identity, Björk plays both sides. On the one hand she expresses a desire to be free of a society that has constrained her, on the other hand, she justifies her rebellion using her Icelandic heritage.

Globalization and Björk

Gísli Pálsson and E. Paul Durrenberger work toward a theory of globalization as it applies to Iceland in the introduction to their ethnographic and anthropological compilation Images of Contemporary Iceland: Everyday Lives and Global Contexts, as Ulf Hannerz points out (1992, 1993), partly drawing upon Marshal McLuhan's concept of the "global village," recently the human world has become a "global ecumene" (1993, 44) in a very real sense, an area of persistent social interaction and cultural flow. These global flows have been coming over the human horizons since we started walking, but they became exponentially faster first with boats and printing, then with airplanes and telegraphs, and now with electronic and fiber optic networks and computer technology. The conventional anthropological idea of cultural translation in

27 Valur Gunnarsson, "Waving a Pirate Flag," Reykjavik Grapevine.

the global mosaic of cultural islands, therefore, is no longer appropriate, if it ever was. (Pálsson and Durrenberger 1996, 6)

While we may no longer need cultural translation, a more recent concern of globalization is: How does one belong to the world? Björk is part of a new generation of Icelandic people thrust into the modern, globalized world. The globalized aspects of Björk's identity therefore symbolize the shift in Icelandic youth culture that has occurred as the younger generation has becomes less isolated from, and more a part of, the modern world. Growing up in the modern world, Björk was exposed to recordings of Jimi Hendrix, Eric Clapton, and other American and British rock musicians through her mother's hippy scene, to jazz through her father, and to Icelandic traditional music through both her grandmothers (Dibben 2009a). Her global interests were displayed at an early stage of her career as the cover to her childhood album showed her sitting cross-legged surrounded by Middle Eastern artifacts and paraphernalia. She later reacted to her environment by engaging in musical collaboration with people from other countries, recording albums in London and Spain, and crossing genres of art music, world music, and subgenres of popular music while maintaining an Icelandic identity. Her world music projects have included collaborations with Malian kora player, Toumani Diabaté, Congolese electric likembé ensemble Konono No 1, and Inuk throat singer Tagaq. She has collaborated with British electronica musicians Graham Massey, Mark Bell, and Matthew Herbert, US hip-hop and R & B producer Timbaland, progressive rock drummer and vocalist Robert Wyatt, noise rock drummer Brian Chippendale, and experimental percussionist Chris Corsano. Only a handful of other international
artists such as Damon Albarn or the Kronos Quartet have achieved anything like this wide body of musical collaborations (Dibben 2009a). One of her collaborators, Evelyn Glennie, a blind percussionist who performed on Post, proclaims her awe at Björk's ability to "hang onto her own identity no matter who she collaborates with" (Inside Björk 2002). One might argue that she hangs onto her own identity because she has worked tirelessly to craft it to serve her career.

While Björk's boundary-crossing may be a reaction to or consequence of globalization, it also has been problematic to commercial success, suggesting that Björk in some instances may be more artistically motivated than commercially motivated. Sales of Björk's later albums were smaller than her first two solo albums Debut and Post. Debut went double-platinum in 1994 and Post went platinum in 1996 in the UK, and both albums went platinum in the United States in 2001, but to date her other albums have reached no higher than Gold in the UK. However, each new project has been buffered to some extent by sales of her back catalog (Dibben 2009a). Björk's changes in instrumental palette and collaborators from one album to another risked losing previous audiences. The difficulty in classifying her art worked against industry norms of genre categorization. A record company's marketing plan for an international artist often plays down the national origins of the performer to create the idea of a pop star who transcends her or his national background. Simultaneously, the "world music" category was formulated to provide a market for diverse music that affirmed a sense of place. Effectively, this was a re-territorialization of "domestic" music for consumption in other places (Negus 1999,
Björk therefore challenges the music industry's attempt to categorize the music market by foregrounding her own nationality in her music and performances while at the same time fusing different world music styles (Dibben 2009a).

Björk's unique fashion style that is situated between the popular and the avant-garde expresses her patriotic politics and is characterized by the shifting and unstable identity of the Icelandic geographical body. This style helps her articulate the tension between national Icelandic concerns and the global context and industry in which she works. Alexander McQueen's creation of the costume for Björk's Homogenic with a cover shot by photographer Nick Knight turns Björk into a multi-ethnic, surreal character through its representations of Japanese, Chinese, African, and Arctic cultural elements. Blue contact lenses with dilated black pupils and airbrushing give her eyes an alien-like quality. She wears a Japanese kimono and her hair is styled like a geisha. Ice flakes in the backdrop and in the floral pattern of her kimono communicate a cold, Nordic atmosphere. Her exposed chest emphasizes her oversized, East-African neck rings. Chinese-inspired long and curved nails extend the natural contours of her body while also conveying a sense of aggression and non-utilitarianism, evoking an image of animal claws. However, the persona created by the Homogenic cover also appears to be submissive because her movements are hindered by the tight obi that binds her breasts, the golden rings that threaten to choke her, the hairstyle that weighs more than her head itself and is pulled back so tightly that it contorts her face. Her lips are puckered in a kiss.
that is brought to the fore by ruby red lipstick. The created object of a figure looks uncomfortable as if she had been put in a difficult situation (Gindt 2011).

During this period of her career, Björk was performing with strained vocal chords and complained of being overworked, trapped in a chain of touring and promotion, followed by reporters all over the world, and suffering heartbreak from a curtailed relationship with jungle/drum-and-bass artist Goldie. During this time, she also dodged a mail-bomb sent by a mentally-ill fan who subsequently videotaped his own suicide. Pytlik (2003) argues that the figure on Homogenic's album cover depicts Björk's identity at the time, one that no longer belonged to her but rather was the property of some greater global phenomenon. Whether this identity was crafted by Björk at this early stage in her electronic solo career and served her purposes at the time, or whether she became entangled in a business venture from which others stood to profit, and fans and reporters lost control, could be argued to some length. The Homogenic character is, in some ways, reminiscent of the Frankenstein scenario in which the doctor created his own monster. Undeniably, though, the identity crafted for Homogenic now belongs to Björk and from this point forward in her career she became free to implement it.

While Iceland became globalized when the United States occupied it during World War II, Björk's identity has been shaped not only by her Icelandic identity that had become globalized, but also by the way she became an international pop star living abroad, and touring the world to perform and promote her career. She incorporated elements of world music into her own music as early as her childhood.
album and as late in her career as *Biophilia*. With the Gameleste in *Biophilia*, which allowed her to harness the sound of all of the brass instruments of an Indonesian orchestra with a single instrument that she could control with a touchscreen, we can see an evolution of Björk's globalized musical tendencies whereby she absorbs music from other cultures and manipulates it using technology.

**Technology and Björk**

Electronic musicians have their own, unique identities within popular music. What separates electronic music from other kinds of music is that artists generate it using computers and other electronic machines. Computers and electronic machines require a great deal of power to construct, are useful for a relatively short period of time before obsolescence, and reside in landfills ever after. Thus, they seem to be diametrically opposed to the natural ideal that Icelanders are known to celebrate and embrace. Yet Björk has worked closely with electronic producers ever since her 1995 album, *Debut*, essentially her debut as an electronic artist. From 1993's *Debut* to 2011's *Biophilia*, Björk has built on a body of pre-existing work by incorporating styles such as Krautrock, disco, post punk, house, hip-hop, techno,

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29 Even though Björk first made a commercial recording when she was eleven years old, it was not until *Debut* that she began immersing herself in electronic music. On her children's album entitled, *Björk*, she sang solo in Icelandic on pop tunes and settings of children's tales. Prior to *Debut*, she released mostly punk and rock albums, notably with the internationally-touring band, The Sugarcubes.
trance, jungle, drum-and-bass, industrial, downtempo, ambient, breakbeat, and hardcore while creating something new within the larger genre of electronic music.

Björk’s interest in electronics began with her father Guðmundur Gunnarsson, an electrical engineer, and head of the Union of Icelandic Electrical Workers, and her grandfather who was also an electrical engineer (The South Bank Show 1997).

Björk talks about her early love for electronic music here:

I'm obsessed with electricity.... and I've been obsessed since I was a kid with people like Stockhausen ... and Brian Eno. Electricity has always existed and it's not just a phenomenon of this century. It's always been here - thunder and lightning. And in Iceland, Thor's hammer. Electricity and equipment are just tools instead of wood or leather or metal. And all of these things that we so far make music out of, stroking a string, we are using electricity, to make for the ear. For me, that is probably what I would call "techno." (The South Bank Show 1997)

Demonstrating that she was on a quest for new sounds, arrangements, and approaches in her music, Björk, in interviews, opposed the common belief that technology is cold and soulless. The following quotation is taken from an interview in 1993 when Björk was making the transition from guitar rock to techno. Referring to how her friends were feeling about this transition, she said:

A lot of my friends are so scared of computers and technology. I wanted to write this lyric about all these Walkmans and remote controls crawling up your leg and jumping inside your head and taking over like science fiction. Of course it's rubbish because computers are just tools. If I hear one more person saying there is no soul in computer music I will puke. The reason there is no soul in it is because no-one put it there. It's like looking at a guitar and asking it to write a song. (Björk interviewed in Björk and Sjón 1995)

With this statement, Björk expresses to others that she has a greater comfort with and understanding of technology than the average neophyte. It also allows for the possibility that technology, particularly technology in her own music, can express
nature instead of being opposed to it. She reiterated these ideas four years later when she said,

I find it so amazing when people tell me that electronic music has not got soul and they blame the computers. They've got their finger, and they point at the computers like, *(imitating a stodgy, old person)* "There's no soul here!" You can't blame the computer. If there's not soul in the music it's because nobody put it there. It's not the tool's fault. *(The South Bank Show 1997)*

Björk is particularly attracted to the convenience of portable, multitrack, digital recorders and samplers. She claims to have written many of her tunes for her early electronic albums by recording vocals and other sounds into them. While holding one of the devices in her hand in a kind of show-and-tell she exclaimed:

And you have eight tracks and one hundred noises. And you can make as many songs as you want. And a lot of my tunes, for the last four years I wrote on that. It's so incredibly convenient. Put the batteries in and you can write on the airplane, at Graham's house, on top of a volcano, in a pub, or in the tube. But this is a different machine. This is like a sampler. Mark Bell bought this one and he's just teaching me it. *(The South Bank Show 1997)*

Mark Bell, with whom Björk collaborated on several albums, and who died tragically young, said of the sampler:

It's just a way of capturing noises, like acoustic instruments, or other noises but then being able to change the pitch of them, to make any noise and music them *[sic]*. It could be a dart shooting for a drum sound. *(The South Bank Show 1997)*

When asked about the harsh texture of the drum beats on *Post* that accompanies Björk's voice, Bell says:

Whether the drums are real hard and then the voice beautiful it's . . . the contrast. If something can be beautiful, then this thing's got to be ugly. Because if everything is beautiful then nothing is beautiful. *(The South Bank Show 1997)*
During their collaboration for Post Björk and Bell recorded sounds into multitrack recorders and samplers and traded files back and forth to edit. Bell worked mostly in his studio and Björk worked on the go. Working on Homogenic, Björk sat on the beach with her multitrack recorder connected to headphones and layered vocal tracks while adding effects allowed by the device. One might say that she was composing on the beach. Describing this process she says,

> What I like to do ... is kind of put the effects on my voice. I make a conscious choice that the beats for this album will be very simple, almost naive, but still very natural, but very explosive, like they are still in the making, which for me is very much Iceland. And we would collect, very slowly over a period of almost a year, a library of noises. (*The South Bank Show* 1997)

This compositional process might be compared to *musique concrète*, a post-World War II genre attributable to Pierre Schaeffer and Pierre Henry, where magnetic tape was able to capture Western Art Music performance and transform it from a temporal experience into a solid, concrete object (Young 2000). After sounds were recorded, the tape could be manipulated: reversed, sped up, slowed down, or spliced together in a process that resembled film editing. Pierre Henry says of the genre,

> It doesn't come from interpretation or performance. Its essence is imagination. This imagination is linked to a technique: it's the fabrication of music. Fabrication, but also the conception and composition. It is thought, imagined and engraved in memory. It's a music of memory. *Musique concrète* is based on nothing. It's a dust of a sound, a comma of sound. In *Spiral*, the sound came from some sort of amplified respiration that repeated itself endlessly. This music cannot be played with acoustic instruments, but rather with electronic tools. (Young 2000, 20)

Contrary to Björk's assertion, Henry insists with particular sentences of this statement that a fusion of nature and technology in electronic music is impossible.
"It's the fabrication of music" implies the synthetic quality of electronic music. "The music cannot be played with acoustic instruments, but rather the electronic tools" implies that the materials for making electronic music are unnatural. However, Henry's statements "its essence is imagination" and "it is thought, imagined, and engraved in memory," attribute human qualities to the music. Calling it a "dust of a sound," he compares the sound to both an element of the cosmos and dead skin.

Equating Spiral's sound with "amplified respiration," he alludes to breath. Henry's description includes both natural and unnatural metaphors, leaving its reader with a surreal image of musique concrète, similar to the surreal imagery found in Björk's music.

Although Schaeffer and Henry were forerunners of the kind of music Björk was making, Björk cites Karlheinz Stockhausen as an influence. She says of her early music training,

> They sent me to classical music school when I was five. I was there for ten years. It was very conservative but I was a bit of a rebel. I would do my own little projects in the corner. I would get a lot of freedom. That's how I got introduced to Stockhausen and electronic music. I basically got introduced to all music there is, in European at least, let's say last four hundred to five hundred years. And even though I ended up deciding the majority of it was not maybe my cup of tea, at least I knew it existed, so I could say, ok, I've dealt with this. So I think very quickly I said, ok, you've got classical music, you've got pop, you've got jazz. And everybody thinks their stuff is great and the rest is crap. I loved introducing my grandparents to Jimi Hendrix's stuff or my Mom to classical stuff. (The South Bank Show 1997)

Even though Björk described classical music as "not her cup of tea," significant traces can be found in her music, particularly in the string arrangements for the string-octet on Homogenic. It is notable also that she recorded a string octet on this
album instead of layering synth sounds that emulate strings. This mixing of acoustic and electronic instruments supports the theory that on the surface her music fuses nature with technology, or at least fuses electronic music with acoustic music, but obscures the gaps that lie beneath this surface that I explained in the "Nature and Björk" section and will further explore in Chapter Five.

In 1996, when Björk had the opportunity to meet Stockhausen, her childhood electronic composer idol, a record of their interview revealed the difference in their philosophies and approaches to electronic music. In this meeting, Björk asked Stockhausen his thoughts on pushing the boundaries of music:

Do you think it's our duty to push everything to its limits, use everything that we have, like all the intelligence and all the time, and try out everything, especially if it is difficult, or do you think it's more a question of just following one's instincts, leaving out the things don't turn us on? (Guðmundsdóttir and Stockhausen 2013, 4)

Stockhausen replied that answering a question like hers was a matter of hearing an inner call, and then there would be no question. For him the inner call was concentrating day and night on one very narrow aspect, composing and performing and correcting and publishing his scores. And for him, this was the right way. And as part of what he called his "one vocation" he also conducts orchestras

30 This interview between Björk and Stockhausen was transcribed in a German Musicology journal and translated into English (Guðmundsdóttir and Stockhausen 2013).
and choirs, rehearses extensively, runs around setting up speakers with technicians, and arranges all the rehearsals (Guðmundsdóttir and Stockhausen 2013).\(^{31}\)

Björk's recent creation, the 2011 album *Biophilia*, invented a new genre, the iPad album. With the record industry dying a slow death, a dearth of folks buying CDs, an international catalog of streaming music available for free on Spotify,\(^{32}\) and billions of people downloading music for free, some critics have credited Björk with trying to save the music industry. *Wired* magazine called Björk's iPad album "a musical format which will smash industry conventions."\(^{33}\) For three years prior, Björk worked with innovators and cross-field auteurs to create an experience for her

\(^{31}\) This article also indicates how Stockhausen was acquainted with and did not really know how to relate to his numerous admirers and followers. Musicologists have pointed out that Stockhausen did not enjoy most of his followers' music, but when they sought him out, he was usually polite about his distaste for it.

\(^{32}\) For Spotify, the Swedish company that formed in 2006, the tie of Nordic bands to online music streaming could be as much a tie of economic nepotism as technological affinity. However in March 2015, Björk's British record label, One Little Indian, delayed the release of *Vulnicura* on Spotify, and mainstream music artists and catalogues such as Taylor Swift and The Beatles were boycotting the streaming service because of poor artist royalty distributions. Sven Carlsson, "Spotify, a music streaming service going for broke," Yahoo! News, March 11th, 2015, accessed October 11, 2015, http://news.yahoo.com/spotify-music-streaming-going-broke-063650873.html.; www.spotify.com.

listeners. As well as a normal album of songs, an app for each track was made available for purchase that includes an essay on musical analysis, a moving-graphics score, an animated visualization of the song with the lyrics and an interactive game. Björk's use of app technology was perceived by critics as a clever way to expand her reach in music beyond the conventional format of pop music consumption that has been recently struggling.

With the *Biophilia* project, Björk invented a new genre of album release called the iPad album, challenging the idea of what constitutes an album. It is the first audio album to have simultaneous release as an interactive app for smartphone and tablet. Each track on *Biophilia* is named for and depicts some phenomenon that occurs in nature. The electronic format of the iPad album complements Björk's warm sentiments about electronic music and the nature imagery she employs in each of the apps. Björk asserts in video interviews accompanying the iPad album that each song on the album directly imitates nature. The app for the song "Crystalline," for example, allows one to whiz through the universe picking up crystals along the way. A reproduction of the Tesla Coil, one of the instruments Björk uses on the album, allows one to make lightning strikes, arcs of electricity, and create music out of them. The app for the song "Dark Matter" is an "education app" that teaches the chords of the song in an engaging and unique manner. The songs on the album directly imitate nature as the musical structure of

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"Moon" mimics human biorhythms, the arpeggios in "Thunderbolt" represent the
time between lightning and thunder, and the choir in "Cosmogony" evokes the
sound of solar winds and the steam of particles which flow away from the sun.
While some have interpreted Björk's marketing act as a panacea, and others as a
gimmick, Björk describes the album as "how I see myself in the universe, and
humankind."35

Whether in her public statements, her political activism, or the making of her
art, Björk constructs her identity carefully to suit her purposes. In these purposes, a
tension emerges between Björk the proud Icelander and Björk the rebellious punk.
When she promotes her music to consumers on the international stage, she speaks
to a global audience and uses her Icelandic identity to appear alien, strange, exotic,
and exciting. When she performs to a local Icelandic audience, and in particular
when she performs at an event to rally for a local, Icelandic, environmental cause,
she uses her Icelandic identity to convey a sense of the local, familiar, and belonging
to a community into which she was born and has always belonged. While she
markets her work using the theme of a unification of nature and technology, these
two entities combine in a Surrealistic way rather than a realistic way. Approached
individually, the two entities of nature and technology appear hopelessly separate
and cannot be reconciled in her work. While nature functions mostly as a metaphor
in her work, the technology is real, therefore leaving a chasm between the real and
the metaphoric.

35 Ibid.
CHAPTER V

AN ANALYSIS OF BIOPHILIA

*Biophilia* is Björk's most ambitious work yet. In this work she brought together a wide array of nature elements in an effort to merge nature and technology and present herself in a total embrace with nature, technology, and the universe. In her efforts to depict both world music and the mysteries of space, she sought to overcome the geographical distance between cultures and the physical impossibilities of the universe through her musical innovations. She enlisted engineers to meet the challenge of creating a touchscreen device that controls original musical instruments. She attempted to merge her art with science by inviting scientists to collaborate with her. She attempted to overcome the divide between artist and audience by creating an app suite that allowed listeners to interact with her songs. She even employed a musicologist for the purpose of teaching music to her fans. *Biophilia* is in many senses a *gesamtkunstwerk* for Björk.

Did Björk succeed in achieving the goals of her *gesamtkunstwerk*? How did the wide variety of listeners ranging from fans to critics to musicologists receive this work? Was her work believable and convincing or did her subject matter become

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1 A term used by Wagner for his notion, formulated in his theoretical essays of 1849-51, of an art form that combined various media within the framework of a drama (*Grove Music Online*, s.v. "Gesamtkunstwerk," accessed October 11, 2015, http://www.oxfordmusiconline.com/).
blurred by her delivery? I will begin to answer these questions with a discussion of the title of the work: "Biophilia."

Edward O. Wilson brought scholarly attention to the term biophilia through his 1984 book entitled Biophilia and again through a book he edited with Stephen R. Kellert entitled The Biophilia Hypothesis. In this hypothesis, Wilson and Kellert assert that the bond between human beings and other living systems is genetically instinctual and that human survival is necessarily linked to other living systems. Although Erich Fromm first coined the term biophilia in his 1964 book The Heart of Man: Its Genius for Good and Evil, the term derived from early philosophers and has since been defined by other biologists. Fromm discusses how Aristotle evoked the biophilia concept of "love of life" and the idea of reciprocity and how friendships are beneficial to both parties in multiple ways, but especially in the way friendship generates happiness. The foundation of this concept can be found in Aristotle's Ethics, wherein his discussion of friendship, philia, lies a theory of interspecies obligation (Santas 2014). Unlike phobias, philias are the attractions and positive feelings that people have toward organisms, species, habitats, processes, and objects in their natural surroundings. While Aristotle, Nietzsche, and Marx all struggled to define the essence of man, and all three defined essential qualities of man, none arrived at the evolutionary concept that man is constantly changing nor at a theory

\[\text{\textsuperscript{2}}\] Aristotle defined man as a political animal, Nietzsche arrived at the concept that man can promise, and Marx called man an animal that produces with foresight and imagination (Fromm 1964).
of contradictions that lie between man's instincts and his awareness which lie at the heart of biophilia (Fromm 1964).

Björk draws from these concepts to create her 2011 work which she also titled Biophilia. She describes Biophilia as "an ambitious and grand project" that involves exploring the science of sound, inventing new instruments, creating new forms of musical notation, and fulfilling a quest to use nature and technology in an attempt to understand and teach others about musical structure in a radical new way. As part of the project, she collaborated with the naturalist Sir David Attenborough who provided scientific insight into phenomena and processes of nature: lightning, thunder, volcanic eruptions, cycles of the moon, the way ice crystals grow in an arctic environment, and the mysteries of the universe. In their meeting, Attenborough and Björk discuss some of the mathematical intersections of science and music and the origins of uses for the human voice. "The human larynx is capable of so much more variety of sound than is required for language," Attenborough says, "the fact that your larynx can produce this extraordinary range of sound can't be just an accident. . . . That range of sound was at one time or another valuable and functional" (When Björk Met Attenborough 2014). Here, Attenborough offers an evolutionary explanation similar to the one Kellert and Wilson argued in The Biophilia Hypothesis (1993). The theme of the song, "Virus," in which Björk

3 Sir David Attenborough is best known for writing and presenting his 1979 to 2005 BBC natural history television program called The Life Series for which he surveyed animal and plant life. He is a younger brother of the late director, producer, and actor Richard Attenborough.
explored the way a virus attaches to its host demonstrates a study of interrelationship between an organism and its physical environment, which early ecomusicologists called "scientific ecology."\

Launching the Biophilia app for the first time, one is greeted by Attenborough narrating against images of the cosmos with the following words:

Welcome to Biophilia, the love for nature in all her manifestations, from the tiniest organism to the greatest red giant floating in the farthest realm of the universe. With Biophilia comes a restless curiosity, an urge to investigate and discover the illusive places where we meet nature, where she plays on our senses with colors and forms, perfumes and smells, the taste and touch of salty wind on the tongue. But much of nature is hidden from us that we can neither see nor touch like the one phenomenon that can be said to move us more than any other in our daily lives, sound. Sound, harnessed by human beings, delivered with generosity and emotion is what we call music. And just as we use music to express parts of us that would otherwise be hidden, so too can we use technology to make visible much of nature's invisible world. In Biophilia, you will experience how the three come together: nature, music, technology. Listen, learn, and create. Travel the cosmos lying at your fingertips. Touch the galaxies and move through their three dimensions. Discover the different song apps as they're introduced into the constellations and explore their extra features. And should you feel lost in space, you can always use the musical compass icon to take you home. Now, forget the size of the human body. Remember that you are a gateway between the universal and the microscopic, the unseen forces that stir the depths of your innermost being and nature, who embraces you and all there is. We are on the brink of a revolution that will reunite humans with nature through new technological innovations. Until we get there, prepare, explore, Biophilia. (Björk and Snibbe 2012)

While Björk and Attenborough assert in this introduction to the app that technology is a tool "to make visible much of nature's invisible world," this chapter argues that the technology Biophilia uses obscures the nature that Björk sets out to express. Rather than fusing nature and technology, Biophilia more aptly depicts a

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Surrealism, or a separation between nature and technology. Björk's *Biophilia* project manifested itself in many facets: a recorded album, an app suite, the Remix Series, a tour, a film of the tour, a film about Björk's meeting with Attenborough, and the creation of large-scale electronic musical instruments. For each of the songs of *Biophilia*, Björk commissioned the design and creation of custom musical instruments, each of which attempts to fuse nature and technology to create an artistic statement that embraces not only nature, but sometimes also world culture. While sometimes technology and nature work in tandem, other times technology obscures or subjugates nature. But *Biophilia* not only depicts the relationship between nature and technology; it also represents an expression of Björk's Icelandic identity and her often-shifting identity as a global pop star.

Like many albums, the *Biophilia* music album is a collection of songs, an artwork that is fixed, yet open to interpretation by the listener. The app suite is a collection of games and learning tools for user interaction that provides a different experience for the app-user than the experience a listener might have when listening to a pop album, which is what Theodor Adorno described as a passive experience (1945, 1976). Adorno maintained that popular music was distributed by the music industries as "mass culture," required the listener to make very little effort, was produced for the purpose of entertainment, and led merely to passivity. Therefore I have separated my analyses of the songs and the apps in the following section. However, I would like to note that there are certain times when it makes more sense to discuss a song and its corresponding app together, particularly when
addressing a single theme that belongs to both. For example, in Norse mythology, the god Thor carries the thunderbolt as a symbol of all-conquering power, so I argue that the song and app "Thunderbolt," in essence represents conquest; the song is a song of conquest and the app is an app of conquest. The reference to Thor also expresses Icelandic and Nordic identity in both the song and the app. Björk’s naming the song "Thunderbolt" indicates an impetus to mix light and sound in artistic expression as the word indicates a flash of lightning with a simultaneous crash of thunder. This mixture of light and sound is particularly evident in her music video for "Thunderbolt" and her live performance of it. While a thunderbolt can be magnificent to watch and hear, it is also a destructive agent, capable of setting fires and killing unwitting bystanders. The word is often used in similes and comparisons to refer to a sudden or unexpected event or item of news. The repeating lyrics "May I? Can I? Or have I too often craving miracles?" underscore a metaphor of uncertainty which might be experienced by one in the path of a destructive storm. These words also draw a parallel between the power of a miracle and the power of a thunderbolt. The app and the song both express this uncertainty, but also this power. These elements of uncertainty are similar to feelings Icelanders were expressing during the time Björk made this album shortly after the króna had collapsed, and Iceland was entering a restructuring period in its economy. Icelanders received the metaphoric shock of a thunderbolt when their currency was devalued by less than half, and people were walking in the city streets with bags of
money (Lewis 2000) on the day of the collapse. Iceland was searching for "miracles" in the way of economic recovery.

Bearing in mind the concept of music as metaphor as discussed in Chapter Four, the following chapter analyzes three songs from Biophilia, "Thunderbolt," "Mutual Core," and "Dark Matter," focusing on the way the depiction of a fusion of nature and technology serves as an illusion rather than a reality. The technology of each app attempts to express the feeling of nature but technology ultimately obscures nature and expresses Icelandic identity. From a musicological standpoint, the scores that are part of the app suite succeed in some ways and fail in others under the new format of a dynamic app score. The Biophilia Remix Series serves as a popular music vehicle that addresses a niche dance-music audience and ultimately functions as a way for Björk to broaden her musical influence.

The Biophilia app suite and the Biophilia Live film state in their introductions that an exploration of the way nature, technology, and music come together is more or less the purpose of the Biophilia project. In Björk's work prior to Biophilia, Musicologist Nicola Dibben calls Björk's output a response

... to a general cultural anxiety about the relationships between technology and nature. (2009a, 95)

She acknowledges that the perspective Björk articulates creates a problem of

... an apparent incompatibility between two aspects of contemporary Icelandic identity: nature, tradition and the rural, versus technology, modernity, and the urban. Furthermore, Björk's artistic output presents something of a contradiction that until now I have chosen to ignore: while it articulates ideas of nature, this expression is achieved through distinctly technological means. (2009a, 71)
But when she examines technology in depth in Björk's work, she finds,

By presenting technological modernization as an extension of Iceland's mythological past, the technological and modern are reconciled with the natural and traditional. (2009a, 97)

Suddenly, according to Dibben, "general cultural anxiety" is relieved, and the "apparent incompatibility" has dissolved because Iceland's mythology has "reconciled" these problems. Dibben also concludes that:

Björk's artistic output during her solo career naturalizes technology rather than technologizes nature. (2009a, 98)

This chapter argues the opposite. Björk's artistic output does not naturalize technology, rather it technologizes nature. From a sociological perspective, the general cultural anxiety among young people in Iceland is not relieved, and Iceland's mythology has not reconciled the incompatibilities between nature, tradition and the rural, versus technology, modernity, and the urban. Instead, Björk creates a new kind of Icelandic myth in which nature and technology exist in peace and harmony.

**The Instruments**

One critic notes of the instruments Björk created for *Biophilia*, "Partly robotic and partly mechanical, each item in her arsenal of music boxes can be viewed as a work
of art, beyond its musical functionality." In a pre-screening interview at the 2014 Tribeca Film Festival, Björk explained the unique stories behind the creation of each of the instruments. She said that her initial idea was to compose the music for *Biophilia* by making patterns out of nature on a touch screen. Each instrument was built for her so that she could plug an iPad directly into it, but at the time she began working on the project the iPad had not yet been invented so she used a precursor tablet called a "Lemur" made by the French company, JazzMutant.

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These "patterns out of nature" that Björk made first on her Lemur and later on her iPad are not as natural as she claims. To begin, the Lemur and the iPad are both electronic devices. Many of the giant musical instruments constructed for *Biophilia* are made of wood and metal and appear at first glance to create sound through acoustic processes. However, the idea behind all of the instruments collectively was that they be MIDI-controlled\(^9\) instruments that Björk and her musical collaborators could manipulate through swipes, finger touches, and other similar motions on a touchscreen.\(^{11}\) So bearing in mind the way the instruments work rather than the way nature metaphors were used during the creative process, I argue that the instruments ultimately are fabrications of technology rather than objects of nature.

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10 MIDI stands for Musical Instrument Digital Interface and is a technical standard, protocol, and digital interface that carries event messages specifying parameters such as notation, pitch, velocity, volume, vibrato, audio panning, cues, and clock signals that allows a wide variety of electronic musical instruments, computers, and other related electronic devices to connect and communicate with one another.

The Tesla Coil

The arpeggiated bass line heard on the song "Thunderbolt" is generated by a gigantic musical instrument built by Aron Soscho called The Tesla Coil. Standing about thirty feet tall, and working as other tesla coils do, Björk's instrument is powered by electricity and converts a low voltage into a high voltage through a transformer which is transferred up a giant tower and releases a bolt of electricity that resembles a lightning bolt. While Björk claims that this bolt of electricity is "real lightning," it is actually generated by a manmade structure and manifests as a controlled bolt of electricity, contained between inductors and by some ground mesh, that returns the electricity back to the Tesla Coil. On stage, the visual


16 "How Giant Tesla Coils Work (with ArcAttack)," YouTube video.
phenomenon of the controlled electrical light show serves as a representation of natural lightning. While Björk represents a phenomenon that occurs in nature through a human-made musical instrument, in contrast to Benjamin Franklin's legendary 1752 kite experiment, Björk's Tesla Coil instrument does not involve a human attempt to harness a lightning bolt that occurs in nature during an electrical storm. So her claim that her instrument produces "real lightning" serves primarily marketing purposes to promote the theme of a fusion of nature and technology which is at the heart of her promotion of the *Biophilia* project.

While the Tesla Coil instrument is visually stunning, extraordinarily loud, and provides an entertaining prop for her live show, a fascinating question for musicologists about the instrument arises: How can a tesla coil generate a bass sound? An aural and optical illusion makes the sound appear to originate at the tesla coil as its light show imitates the sounds of simultaneously occurring bass notes. But, actually, Björk's rig of electronic instruments on and offstage initiates the sound through a complex process that involves sending a MIDI signal to the Tesla Coil, which interprets the data, amplifies the pitches, and creates a unique, distorted timbre for them.\(^\text{17}\)

The onstage rig that sends the MIDI data to the Tesla Coil consists of a ReacTable, a Mac laptop, an iPhone, and four conjoined iPads that have been synced to work together. The ReacTable (sometimes spelled reactable) is an

electronic musical instrument with a tabletop Tangible User Interface that has been
developed within the Music Technology Group at the Universitat Pompeu Fabra in
Barcelona, Spain by Sergi Jordà, Marcos Alonso, Martin Kaltenbrunner, and
Günter Geiger.\textsuperscript{18} The ReacTable is a round, translucent table that generates
electronic music in a darkened room with a backlit display. When a user places
blocks called "tangibles" on the table, the virtual modular synthesizer creates music
or sound effects with commands generated by placement of the tangibles as well as
fingertip swipes. Björk hired Max Weisel, a sixteen year-old American, to program
several iPad apps for the project. In an interview for NPR's "All Songs Considered"
program, Weisel attempts to explain how the ReacTable works with the iPad apps
he developed.\textsuperscript{19} The ReacTable looks like a table-top lit up by an orange backlight
with a white dot in the center and pulsing circles that move away from the dot. It is
reminiscent of the green tabletop radar screens that appeared in 1960s and '70s
submarine and war movies and other adventure movies such as the James Bond
franchise. The tangibles look like stacking toy wood blocks for young children. When
Weisel places the tangibles on the ReacTable, a progressively developing, white
circle moves around the block in a circular motion in the same way apps do when
they are being updated through the iTunes store. This moving, white circle houses

\textsuperscript{18} "Reactable: Genesis of the project," MTG: Music Technology Group, Universitat Pompeu Fabra

\textsuperscript{19} "Watch: NPR Goes Behind the Scenes of Björk's 'Biophilia' Show," Nonesuch, February 21, 2012,
an outer-ring that stays static while the inner ring progresses. A white line connects the dot in the center of the ReacTable with the outer-ring and modulates like a sine wave or a sound wave animating the melody being played through the ReacTable.

In the NPR video interview, Weisel demonstrates the way the ReacTable communicates with the Tesla Coil. The ReacTable has a camera underneath, and it reads the symbols on the tangibles to select different samples pre-programmed into a connected Mac laptop. Weisel selects different electronic music samples by rotating the tangible. As Weisel places another tangible onto the ReacTable, it recalls a "modifier" for the sample. In the song "Declare Independence," Björk's message to the Faroe Islands to declare independence from Denmark as Iceland did in 1944, the face-up tangibles show numbers and letters in the pattern of a cross. The numbers and letters ZB341 are scrolled onto one of the sides of the tangible. In Weisel's description, the ReacTable is not the only trigger that controls the Tesla Coil so he must be careful to avoid overloading the signal. He says when operating the Tesla Coil, he must choose a simple sample because the more complex the sample, the more the sound comes across as noise. The Tesla Coil works in a way that it is turned on and off at a given frequency, and this on-off pattern is what creates the instrument's "zapp" sound. He says it sounds similar to a square wave because it operates in an "on-off" mode without an in-between way of recognizing a sound signal. ArcAttack, a band that builds tesla coils for their own musical performances, describe how a tesla coil generates a pitch:

20 The builder of Björk's tesla coil was Aron Soscho who is not a member of ArcAttack, but here
We have so much control over the oscillation with the logic chips. Inside this box down here we actually have a micro-controller. And so we're actually sending MIDI data over this fiber optic cable straight to that micro-controller and that micro-controller interfaces with a bunch of logic devices that can tell the tesla coil to start oscillating or to stop oscillating. And so the way that we actually produce a pitch with the coil is that if we just let it resonate at its resident frequency it's about 40 kHz which is way too high to hear. So what we do is operate it in a burst. So we'll turn it on for say two or three-hundred microseconds and the secondary will go through maybe fifteen or sixteen cycles and then we'll shut it off. And when we do that the tesla coil makes an arc and it sounds like a pop. So if we want to play a note say at 440 Hz which is an A, what we would do is we would let it go through that process 440 times a second so we are creating 440 of these bursts a second which is creating 440 pops a second, and then your ears perceive it as a pitch.21

So the sounds that appear to come through Björk's Tesla Coil are collections of pitches generated by The ReacTable and linked to a software program that runs on a connected laptop computer that sends a MIDI signal to the tesla coil to interpret and amplify the sound. As the Tesla Coil amplifies the signal, it shoots out bolts of electricity, a kind of human-made lightning, that offers a visual image for the sound being generated. The result is both the amplified pitches of computer-generated sound and a visual representation of those sounds, giant bolts of electricity contained between two vertical pillars. The wood-block tangibles serve as a kind of score, reminiscent of ragtime piano-rolls, and are a feature that make playing the ReacTable more tactile than operating samples directly through a laptop software program using a touchpad or mouse. Also, the manipulation of the tangibles and the light show of the ReacTable is something that is stimulating for an audience to watch: a person moving blocks around a colorful, lit-up tabletop. As a

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ArcAttack offers a description of how a tesla coil generates a pitch.

21 “How Giant Tesla Coils Work (with ArcAttack),” YouTube video.
whole, the Tesla-Coil rig amounts to a visual performance. People come to Björk's concerts to hear her sing, watch her band play, and enjoy the visual display of costumes, props, video art, and a light show. Laptop performance has received criticism for being a bore to watch because an audience can see only a person with her or his head looking at the laptop, and unless the laptop screen is being displayed over a projector, the audience cannot see what the performer is doing to create the sound. Weisel acknowledges this point and notes the ReacTable was added to the show in order to defeat the stereotype of a boring laptop performance.

He says:

So every electronic artist has that cliché, behind the laptop, he could be checking his email, you really have no idea what he is doing at all. So I've basically been brought on tour to replace a lot of that. So we have this Ableton\textsuperscript{22} section and we really want to engage the audience and (let them) know what I'm doing and how it connects to what they're hearing. And so the first app that we've written is "Cosmogony," but it works in a few of the different songs. And so all of the iPads are connected via Bluetooth, and if you give it a second, they'll all kind of react and snap into sync. What happens is each iPad is running its own app, and it syncs up spatially and via Bluetooth all of the apps [synced together create] animations and things like that. And so . . . for this app it's acting as a giant screen. Initially we're using it like a drum pad. And so for Cosmogony, we can go "doog, doog, doo (imitating sounds of an electronic drum set)."\textsuperscript{23}

In this section of the interview, Weisel operates the four, connected iPads as an electronic drum kit, each iPad serving as a separate drum. Weisel refers to the 4-up iPad setup as a live-mixing, audio-engineering piece of software that accesses

\begin{itemize}
  \item \textsuperscript{22}Ableton Live is a software music sequencer and digital audio workstation for OS X and Windows.
  \item \textsuperscript{23}Ibid.
\end{itemize}
Ableton Live and uses the touch screens of the four iPads as mini-triggers. Weisel says he developed a different iPad app for the performance of the song "Náttúra" which is the encore for the Biophilia tour because originally in the Ableton software it relied heavily on two knobs controlling a high-pass and a low-pass filter respectively, and that was not acceptable because the audience and the band are jumping around and going crazy at that point in the show and the digital performers require a more tactile way of performing the piece than operating two knobs. The iPad 4-up setup was the answer for creating this more tactile and "jumping around" experience for the digital performers and audience.

This description of how Björk's Tesla Coil is used in performance reveals the enormous challenges faced by Björk in her attempt to demonstrate a fusion of the natural and the technological. Björk has concocted an enormous technological web of computers, and mechanical and electronic devices in order for her audience to see music being made in a new way and to be entertained as one would expect during a concert of an international pop music icon. Although she uses the metaphor of a thunderbolt that occurs in an electrical storm to depict the Tesla Coil, the instrument itself is a complex creation of technology. While Björk attempts to make electronic music more exciting by adding visual performance props like the 4-up iPad setup and the Reactable, which exhibit an illusion that her musicians perform in a more natural way, ultimately these performers operate creations of technology. Nature in the Tesla Coil serves primarily as a surreal visual illusion as nature is subjugated to technology.
The Pendulum Harps

This section addresses the Pendulum Harps on two levels: 1. with reference to Icelandic identity and 2. with reference to their embodiment of nature.

The Pendulum Harps created for the song "Solstice" are an expression of Icelandic identity and the way *Biophilia* expresses Björk's unique and often-shifting identity. The summer and winter solstices are important times of year for Icelanders because they represent the two days of extreme light and extreme darkness. Much of Icelandic life revolves around these two extremes of daylight and darkness including weather, psychological temperament, activities, and commerce. I discussed Iceland's two solstices in Chapter Two as being connected to extremes in behavior in Icelanders. The Pendulum Harps created for the song "Solstice" in *Biophilia* therefore speak particularly to this aspect of Icelandic identity. The way that pendulums swing to and fro are similar to the polar or binary aspect of the solstices, in a metaphoric swinging back and forth between extreme daylight and extreme darkness. The instruments were developed by engineers at the Massachusetts Institute of Technology and are two free-standing structures that reach twenty-five feet and are made of plywood and metal. Björk stands in-between the two Pendulum Harps during her performance in live shows,24 which creates the image that Björk is framed between two giant representations of Icelandic identity.

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24 "Björk - Solstice - Biophilia project with the pendulum harp (Live at MIF).avi," YouTube video, 1:16, video footage of the first *Biophilia* concert taken by a member of the audience, posted by "Björk,
The Pendulum Harps also offer an opportunity to explore the concept of nature as it applies to a musical instrument based on the movement of a pendulum, an idea that started with Steve Reich's composition "Pendulum Music" in 1968. For Björk's pendulum harps, while seeming to represent the natural movement of a pendulum, the exact tone produced is actually controlled by a computer. Software manipulates the rotation of each pendulum head to determine the note that is struck when it passes the equilibrium position. For the song "Solstice," musical robot builder Andy Cavatorta created four "gravity harps," robotic pendulums each with a harp containing eleven strings that slowly swing back and forth to play musical notes while they hang twenty-five feet in the air. Cavatorta hired Patten Studio to develop the electronics and firmware needed to control the movements of the pendulums to make them play music. Most of the motion used to play the harps comes from the natural motion of the pendulums, but the pendulums also each have a motor attached to start and stop them as well as to restore energy lost to friction and adjust timing. Given a production timeline of only five weeks, Cavatorta led a team of experts in music, mechanics, electronics and software to create the musical instrument.25


In a performance of Reich's piece, "Pendulum Music," each act as a pendulum hung from a suspended beam and with the purpose of emitting sounds of feedback as they swing. With the assistance of four people acting as triggers for the beginning of the swinging motion, two of the microphones are released simultaneously (as much as human error allows) and the other two microphones are released simultaneously about a second later. The microphones swing and generate feedback tones for about eight minutes and forty-five seconds before they gradually slow to a stop as dictated by the law of friction. The musical process displays an element of chance that was prevalent in John Cage's music. In this composition, Reich sets the parameters but does not control the outcome of the sound. Rather than writing pre-conceived notes and expecting the microphones to produce particular pitches, the sound result is ultimately produced by the way the pendulums are released and naturally swing to a stop. One might say that gravity ultimately dictates the pitches, not the composer. However, the end result is not left completely to chance, as the composition takes place in a controlled environment. With multiple performances, the sound result becomes predictable. It is also remarkable how the "natural" swinging motion of the microphones yields a feedback sound similar to digitally-processed signals in electronic music today and is prevalent in much of Björk's computerized music.

The swinging motion of Björk's Pendulum Harps differs from that of the pendulums used in Reich's "Pendulum Music." While Björk's Pendulum Harps may appear to move "naturally," motors and robotic elements are necessary to control the movement of the instrument in order for it to maintain its momentum and to achieve the desired musical timing and effect. Nothing is left to chance in Björk's Pendulum Harp performance. While Björk's Pendulum Harps give the illusion of a natural pendulum motion, they ultimately function in service of art and must be adjusted with technology. In contrast to Reich's pendulums, nature in Björk's Pendulum Harps is not so much fused with technology as it is subservient to it.

**The Gameleste**

Björk overcomes geographical distance between cultures through her invention of the Gameleste. The instrument, which is played during the song "Crystalline," serves as a representation of Björk's global music identity and the way she incorporates elements of music from other cultures into her own Icelandic cultural music identity. A gamelan is an orchestra from Indonesia representing a centuries-old tradition with its own specific tuning and rules and may be considered by outsiders as a form of Indonesian classical music. At the Tribeca *Biophilia* performance Q&A, Björk explained that she had wanted to create a gamelan as one of the instruments for *Biophilia*, but she changed her mind because of the cost of a gamelan and the number of people it would take to operate one. Instead she used a
celeste\textsuperscript{27} that she had purchased from the Symphony Orchestra of Iceland, who had sold it to her cheaply because it was falling apart. So Björk and Björgvin Tómasson gutted the celeste and replaced it with, in Björk's words, "bronze notes" and called the instrument a Gameleste. While it is built like a piano and operates similarly, the sound it emits bears more resemblance to a gamelan. In addition to this Gameleste, Tómasson also created two other MIDI-controlled organs simply called MIDI-controlled-pipe-organs.\textsuperscript{28} Both a piano and the instruments of a gamelan are acoustic instruments that do not require electricity to operate, but the Gameleste is operated by a MIDI-controller which makes it an electronic instrument. Therefore, the Gameleste loses the natural quality of a gamelan because it is controlled through a touchscreen.

The Gameleste is an important part of Björk's international image and indicates her desire to incorporate world music into her live and recorded performances. While she decided it was outside of her budget to purchase the numerous individual musical instruments of an authentic Indonesian gamelan and hire gamelan musicians to play them,\textsuperscript{29} she nonetheless appropriated Indonesian gamelan music when she created the Gameleste and included it as part of \textit{Biophilia}.

\textsuperscript{27} A pipe organ defined as \textit{Voix céleste (Fr.)}. A term apparently dating from the 1840s to denote a long-familiar effect achieved in the same way as \textit{Unda maris} and \textit{Piffaro}. Narrow-scaled pipes are usual for such stops from the late nineteenth century onwards (\textit{Grove Music Online}, s.v. "Organ stop," accessed October 11 2015, http://www.oxfordmusiconline.com/).

\textsuperscript{28} “Björk Biophilia QandA Tribeca 14,” YouTube video.

\textsuperscript{29} Ibid.
Her knowledge of authentic Indonesian gamelan music beyond a superficial one is doubtful as she has never claimed to have played in an authentic gamelan orchestra or to have hired an Indonesian gamelan consultant to advise her. The acoustic properties of the Gameleste make it seem more “real” or more “natural” than if she had used an electronic sampler to produce the same sounds. While using a sampler to create the sounds would have been more cost-effective, the Gameleste adds a visual element to her stage show as both a prop that belongs to her trilogy of pipe organs and the way the keys move on their own like a player-piano as demonstrated in the live performance of "Crystalline." But despite the acoustic properties of the Gameleste, to call it "natural" would be misleading as it is indisputably a creation of technology.

The Songs

Thunderbolt

Of all the songs of Biophilia, "Thunderbolt" is Björk's most ambitious attempt to fuse nature and technology. The digital music offers meaning through a focus on electricity, which is dually defined as an entity that not only develops in nature in the guise of a thunderbolt, but also powers the instruments that generate the

sounds for electronic music. The resulting song "Thunderbolt" is less of a fusion of nature and technology than it is a triumph of the individual over nature.

**Timeline for Thunderbolt**

0:01 Björk's breath can be heard. It is the sound of air passing through her vocal chamber as she inhales and breaks the silence with a soft, unpitched sound. The audible breath works as a premonition of the story to come.

0:03 The first strophe, the simplest of the five cycles, begins and introduces melodic and harmonic motifs that recur in the four strophes that follow. Björk's voice enters simultaneously with a simple dyad from the organ. This first strophe is in free meter as Björk continues to sing in a single voice over dyads of sparsely-placed organ parallel fourths. The free meter of this first strophe is reminiscent of *alap*, the first section of a Hindustani raga, in which the melody is established in free meter without rhythmic accompaniment before rhythm is established in a following section.

0:32 The first refrain of the first strophe begins as Björk sings starkly, "May I, can I, or have I too often? Craving miracles," words that repeat in each of the following four choruses. The organ sounds a repeated dyad at a continuous pitch as accompaniment.

1:01 The second strophe begins with Björk's lead vocals and organ as before, but in contrast to the previous free-metered strophe, the Tesla Coil bass enters in rhythmic arpeggios, giving the cycle a steady pulse in 4/4 meter. A gentle and harmonious Melodyne choir voice enters.

1:38 The first refrain of the second strophe begins as Björk sings against the organ dyads and without the Melodyne choir as she did in the refrain in the first strophe, but this time the arpeggiated Tesla Coil bass is added.

2:02 The third strophe begins. A slow, electronic drum rhythm indicating the electronic dance genre enters and creates a swaying sensation. The Melodyne choir partly mimics and partly harmonizes Björk's lead vocal, alternating chords and contrapuntal melodies. The organ is present but the Tesla Coil bass is absent.

2:36 In the a' section of the third strophe the instrumentation stays the
same but the electronic drums flourish during the lyrics "universal intimacy, all embracing." The Melodyne choir also crescendos during the cadence marked by the lyrics "all embracing."

2:58 (a dramatic pause before the musical crescendo) A silence occurs before the fourth strophe begins. We hear Björk sing only the word "craved" harmonized in a single chord by the Melodyne choir after which we can hear Björk take a breath. Then, all of the voices enter to begin the fourth strophe. The dynamics escalates to their loudest point. The Melodyne choir harmonizes in the greatest number of voices. The tesla coil bass slows to cut time, sounding the arpeggiated bass line from the previous strophe at half-tempo. The texture becomes so dense and polluted that the underlying harmony is obscured.

3:57 (the lyrical crescendo of the song) The fifth strophe begins as the Melodyne choir enters during only two lines of lyrics: "All my body parts are one" and "Revive my wish" while Björk's solo vocal sounds starkly against the arpeggiated Tesla Coil bass still in cut time. The organ repeats the bass line established by the Tesla Coil in the first strophe as a motif.

4:31 (the musical denouement) The refrain of the fifth strophe begins with Björk's voice and the distorted Tesla Coil bass; the organ and the Melodyne choir have dropped out and do not return. The arpeggiated Tesla Coil bass slows to cut time once again, cut in fourth this time from its original tempo, and sounds at its most digitally distorted so that its pitch is barely distinguishable. Björk sings the chorus one last time at its slowest tempo.

4:52 (outro) Only the few sounds of the distorted Tesla Coil bass sound its arpeggios as the bass notes decrease in tempo.
### Cyclical Form of "Thunderbolt" by Björk

<table>
<thead>
<tr>
<th>Verse 1</th>
<th>Chorus</th>
<th>( V_2 )</th>
<th>( S_2 )</th>
<th>( S_3 )</th>
<th>( S_4 )</th>
<th>( S_5 )</th>
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<tbody>
<tr>
<td>refrain</td>
<td>refrain'</td>
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<td>( r' )</td>
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<td>a</td>
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<td>b</td>
<td>b'</td>
<td>a</td>
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<td>b</td>
</tr>
</tbody>
</table>

| 0:00 | 0:32 | 1:01 | 1:38 | 2:02 | 2:36 | 2:58 | 3:36 | 3:57 | 4:31 | 4:52 |

### Linear Trajectory of "Thunderbolt" indicating Varying Texture and Meter

<table>
<thead>
<tr>
<th>( A_1 )</th>
<th>( A_2 )</th>
<th>( A_3 )</th>
<th>( A_4 )</th>
<th>( A_5 )</th>
<th>Outro</th>
</tr>
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<tr>
<th>( V_1 )</th>
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<th>( V_2 )</th>
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<th>( V_3 )</th>
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<th>( V_4 )</th>
<th>( C )</th>
<th>( V_5 )</th>
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<tbody>
<tr>
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<td>Björk's voice organ dyads</td>
<td>Björk's voice organ dyads</td>
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<td>Björk's voice organ dyads</td>
<td>Björk's voice T.C. bass</td>
<td>T.C. bass</td>
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</tr>
<tr>
<td>Melodyne choir</td>
<td>T.C. bass</td>
<td>Melodyne choir</td>
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</tbody>
</table>

| 0:00 | 0:32 | 1:01 | 1:38 | 2:02 | 2:36 | 2:58 | 3:36 | 3:57 | 4:31 | 4:52 |

- **Outro**
- **(coda)**
THUNDERBOLT STROPHIC FORM AND LYRICS

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<td>a'</td>
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<tr>
<td>a'</td>
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<tr>
<td>b</td>
<td>Refrain</td>
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<td>a'</td>
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<td>b</td>
<td>Refrain</td>
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<td>b'</td>
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<td>b</td>
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<td>b</td>
<td>Refrain</td>
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<td>b'</td>
<td>Refrain</td>
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Analysis of Thunderbolt

The musical structure of the song "Thunderbolt" could be thought to represent the escalation of an electrical storm that occurs in nature. "Thunderbolt's" form may be described in two ways: either verse-chorus in which the chorus is short, or strophic with a refrain. The strophes each differ in their arrangements of the five voices: Björk's lead vocal, an organ, the tesla-coil bass, electronic drums, and the sound of a choir, the last of which is created by Björk manipulating her voice through the Pro Tools Celemony Melodyne plug-in as she layers harmonies with multi-track recordings of her own voice (I refer to this voice as the "Melodyne choir").

The form of the song progresses on a linear trajectory even though it is cyclical. Each strophe demonstrates a musical continuity of harmony and instrumentation, but escalates with each strophe in melody, texture, dynamics, complexity of arrangement, and application of electronic techniques culminating with a polluted texture and the Tesla-Coil bass at its most distorted for the musical crescendo in the fourth strophe. A kind of lyrical crescendo occurs in the fourth strophe with the words "universal intimacy all embracing" to accompany the musical crescendo, but the true lyrical crescendo that represents the thunderstorm story occurs in the fifth strophe with the words "I am inviolable" in which Björk's vocal part undergoes its own crescendo. The refrain of the fifth strophe acts as a sort of denouement for the song, like one found in a short story. Through the lyrics and the music, the

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protagonist of the story seeks to harness the power of a thunderbolt that strikes during an electrical storm.

The story of an electrical storm parallels this musical structure because of the events that occur as a storm unfolds. First clouds develop, the sky grows dark, a few drops of rain fall, then rain pours. Often a storm starts out with a light breeze, which escalates into a fierce wind. Thunder and lightning arrive at the most intense part of an electrical storm. The closer lightning gets to its viewer, the louder the clap of thunder, and the brighter the glow of lightning. Sometimes when a storm is close enough, a viewer can see lightning in the sky or traveling down from the sky to touch the earth. The musical crescendo of the song in the fourth strophe represents the storm at its loudest and most intense.

The first strophe in free-meter, reminiscent of alap, highlights Björk’s global musical influence and hearkens back to the Indian music included on her first album that she recorded as a child.\textsuperscript{32} It also further indicates her desire to absorb world music and place it in her own compositions. The change to a steady pulse in the second strophe, and the richer texture with the added Melodyne choir indicates a progression both in the music and the storm. The dropping-out of the gentle Melodyne choir in the second strophe and the addition of an ostinato organ bass pedal B note indicates an ominous foreshadowing of the storm’s escalation.

\textsuperscript{32} The score on the app differs from this interpretation and represents that Björk and the organ sounds collide in alternating meters of 5/4, 6/4, and 3/4 for each of the measures. A free meter approach suggests that the organ sounds follow Björk’s vocal cues contrary to a premeditated, shifting, time-signature approach.
An open expression of the individual’s victory over nature occurs in the fifth strophe when Björk sings the words, "As lighting hits my spine, Sparkling, Prime runs through me, I am inviolable." Here, the lyrical crescendo of the song occurs as the protagonist is struck by lightning, not to her or his death, but in an act of empowerment. The outro resembles the last drops of rain from a thunderstorm that has come and gone, leaving only a path of destruction in its wake. This destruction functions as a cleansing and revival for the protagonist.

Overall, this song represents a victory of humans over nature in a surreal representation. The software capabilities of the Melodyne Pro Tools plug-in offers the listener an illusion of the sound of a full choir. The Tesla Coil instrument that can be heard on the recording provokes a recollection of the 1931 film, Frankenstein, directed by James Whale, starring Boris Karloff, and based on the novel by Mary Shelley, which also uses a tesla coil and tells the story of a doctor who tried to achieve victory over nature and achieve God-like power. "Thunderbolt" depicts a thunderstorm as a force of great magnitude, but not one as powerful as the human who remains insusceptible to the storm's destruction.

Mutual Core

In "Mutual Core," nature is used as a metaphor for human emotions and human relationships. The lyrics indicate how Björk not only desires to merge with the earth, but also that she is the earth. From the perspective of authorial intention, the lyrics represent natural processes and the beats attempt to use technology to
evoke an image of tectonic plate movement. The beats in "Mutual Core" are similar to the beats in "Jóga" on her album Homogenic, which Björk has claimed are supposed to represent volcanic activity. In "Jóga," Björk also compares volcanic activity to processes that occur in human romantic relationships. The verse-chorus song structure of "Mutual Core" may be interpreted as embodying two different processes of an erupting volcano. The 5/4 meter in the verse suggests a wandering or ambling, something unsettled, and this unsettling may be applied to the tectonic plates which constantly move and collide into one another and the shifting relationship between two human beings that Björk describes in the lyrics. The switch to duple meter in the chorus makes a stronger case for union as the soft, meandering chords of the organ from the verse abruptly change to a forceful electronic keyboard sound accompanied by rhythmically punctuated electronic drums. The verse represents the shifting of the tectonic plates and shifting personal relationship while the chorus represents the eruption that leads to union.

Comparing a binary structure to two shifting or colliding plates has become a trope to describe Icelandic music. The musicologist John Pickard established a narrative about Icelandic music being primarily about nature, and Björk has followed in this tradition. For example, Pickard compares the opening of Jón Lief's Saga Symphony to seismic plates (see Chapter Four, "Nature and Björk"). The lyrics to "Mutual Core" may be interpreted as aligning emotional strife with a volcanic eruption caused by a troublesome relationship that eventually ends in union. The volcanic eruption could also be construed as a sexual image and a link
between disharmony and harmony. Björk's lyrics poetically relate the nature of her soul to the natural processes that occur in the geothermal landscape of her home country. The words "This eruption undoes stagnation, you didn't know that I had it in me" evoke images of a fight between lovers, and the suddenness with which conflicts begin, while they could also refer to the sudden onset of a volcanic eruption in nature, a dangerous and destructive force that constantly threatens the inhabitants of Iceland. She exclaims with the lyrics, "I know you gave it all, offered me harmony if things were done your way, my Eurasian plate subsumed, forming a mutual core." Since Björk had been in a romantic partnership with an American, the father of her daughter, that went awry, and since she tends to write self-confessional songs, one may infer the struggle and submission required to create harmony between lovers of two different cultures. The lyrics evoke images of a sacrifice made in order to achieve a harmonious state and resume a union that was in the throes of being torn apart. As Iceland sits upon a geologic fault line where the Eurasian plate meets the Atlantic ridge, perhaps the two characters of this story each represent a fault line. Like the fault lines, the characters are constantly shifting, being both torn apart and then reuniting again. Björk could be viewed as the Eurasian plate while her American partner embodies the Atlantic ridge. In its depiction of sacrifice, "Mutual Core" also speaks to a larger problem. Björk and the younger generation may have to sacrifice either their beloved electronic music or their hopes for a brighter environmental future, which prove to be at odds with one another.
Dark Matter

Björk succeeds in eliciting nature in "Dark Matter," a song with no lyrics, through shifting tonality, her use of vocables, and metaphor associated with the song title. The subject of this app and song is dark matter, nature at its evasive purest: a minimally-defined element of space. In its scientific definition, unlike normal matter, dark matter does not interact with electromagnetic force, meaning that it does not absorb, reflect or emit light, making it extremely hard to identify. Researchers have been able to infer the existence of dark matter only from the gravitational effect it seems to have on visible matter, yet they still find it to account for about 26% of all matter in the universe. The words "dark matter" also have cultural and literary significance beyond scientific definition. A dark matter is a subject that is off-limits for discussion between people. It is a morbid event or a morbid thought. It represents anything in opposition to light. These wide array of meanings allow for different possible interpretations of the song and app. The song's absence of lyrics demonstrate a kind of absence that is reminiscent of the lack of light reflection which creates darkness. Instead, Björk sings vocables which show her composition in its rawest stages; it is the way she usually composes a song.

33 CERN. "Dark Matter." The name CERN is derived from the acronym for the French "Conseil Européen pour la Recherche Nucleaire," or European Council for Nuclear Research, a provisional body founded in 1952 with the mandate of establishing a world-class fundamental physics research organization in Europe. At CERN, physicist and engineers are probing the fundamental structure of the universe. The organization claims to have invented the world wide web. Accessed October 11, 2015, http://home.web.cern.ch/about/physics/dark-matter.
before she sets lyrics to it by stringing vowels and consonants together to create melodies. The free meter of the song evokes the infinity of time and the vastness of outer space.\textsuperscript{34} The vocables give the song an alien quality through words or vocal sounds that communicate but do not come from earth. This alien quality of Björk's voice in this song directly counters Dibben's argument (2009a) and those of music critics who assert that Björk's vocals are "natural." The shifting tonalities in the song give the listener the feeling of floating, vastness, or being lost, all feelings that could be related to how one may imagine experiencing outer-space. When points in the song do seem to resolve, they rest on either the B-flat minor or the C locrian scale, tonalities that are not particularly related in traditional Western music harmony, but more in world, contemporary, and modern music. The shifting between these two scales provides uneasiness for the listener and a sense of wondering what is to come.

As for the technology in "Dark Matter," Björk created this track by improvising using a Nintendo game controller to play with musical material.\textsuperscript{35} The only instrument used in the song besides Björk's voice is the organ, which is operated by the game controller using MIDI technology. In terms of Western music harmony, the song "Dark Matter" is an exploration of dissonance. The organ tones shift between long sustained chords whose notes draw from different world music scales. This dissonance may not have been as easily created trying to play these

\textsuperscript{34} See Dibben's analysis in the Biophilia app (Björk, Scott Snibbe 2012).

\textsuperscript{35} Ibid.
scales on an acoustic organ. In this sense, the technology aided in the process of creating the various dissonances. The harmonies might be seen as consonant in a given chord, or as representing a given world music scale at a specific point in time, but the harmonies shift between scales from so many different cultures that no one culture could identify with the consonance for more than a few seconds. The lack of specific musical cultural identification creates another metaphor of "dark matter." The dissonance in this song generates an image of pollution or a confusion of cultures. When too many different scales are utilized in one song, the result is the musical equivalent of a "Tower of Babel" in which all languages are mutually incomprehensible. This song strongly represents Björk's alien identity, but it does not represent a fusion of the natural and the technological. More accurately, it represents a fusion of technology and the otherworldly.

**The Biophilia App Suite**

*Biphilia* not only challenges the way listeners have passively listened to an album in the past, but it also introduces a touchscreen, which many non-musicians already own, as something that may control a musical instrument. The use of the "Thunderbolt" app to control the Tesla Coil musical instrument is a showcase for the capabilities of a musical touchscreen app. Musicians have released apps before, such as Brian Eno who released the "Bloom" app, which allows users to create music by manipulating colorful bubbles. Other music artists who have made apps
are Trent Reznor, Weezer, Coldplay, Death Cab for Cutie, Bruce Springsteen, Lady Gaga, and Soulja Boy. Before the advent of the app in 1993, Todd Rundgren created an interactive software application in which users could manipulate sound snippets on a CD-ROM platform called CD-i. Biophilia, in contrast, is the first music album to be released as an app suite called an app album. Sometimes this new format of the app album works at expressing the idea of a fusion between nature and technology, and sometimes it falls short.

The Biophilia app has ten sub-apps (or interactive sub-applications) each titled after one of the songs on Björk’s Biophilia audio album which was released simultaneously with the app album. The main menu for the sub-apps are depicted by "Cosmogony" whose graphics display an intricate three-dimensional illustration of a revolving galaxy in which each constellation in the galaxy is a song, or sub-app. The galaxy defaults to slowly revolving around a single axis, but the user also has the option to swipe the screen to rotate the galaxy around any axis, depending upon the direction of the swipe. The lead developer for the apps, Scott Snibbe, states that each app has a natural, a musical, and an interactive element. Exploring further, one can find that each sub-app has an interactive game represented by the word "play," an "animation" that plays each song accompanied by graphics and real-time

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36 The audio album was released with the Náttúra single, but Náttúra is omitted from the Biophilia app suite.

lyrics, a moving score, a musicological analysis by Nicola Dibben listed under a short description of the song with the prompt to "show more," a listing of the "lyrics" in paragraph format (except for "Dark Matter " whose lyrics are vocables), and credits for the developers of the sub-app. The app works as a discovery process as it mostly is not accompanied by instructions. An Internet search for instructions produces some YouTube tutorials for each individual sub-app. The song "Cosmogony" that serves as the main menu of the app is located in a different menu hidden behind a logo in the upper left hand corner shaped as the letter "b," or a musical note depending upon its rotation, and ambiguously stands for either "Biophilia" or "Björk"; the app developer identifies it as neither and instead calls it "the compass icon." In place of a game for "Cosmogony" the app lists "intro." This is the voiceover introduction by Attenborough that appears the first time one launches the app, and also is found online as a YouTube video. Cosmogony is defined as the branch of science that deals with the origins of the universe, especially the solar system.\textsuperscript{38} The \textit{Biophilia} app suite reflects an exploration of the universe and the solar system primarily through its subjects of the moon, dark matter, and the solstice. The subjects of crystals and a thunderbolt are more earthly matters. The subjects of DNA and a virus are more related to humans and medical science.

\textsuperscript{38} Oxford Dictionaries, s.v. "cosmogony," accessed October 11, 2015,
The Scores

For a musicologist, the idea of the scores created as an app can be fascinating because a traditional score is a significant tool that musicologists use to analyze music and therefore it is of interest to learn whether the iPad format provides an advantage over the paper format, and if not how it may function in a different way. Normally a score is static forcing a viewer's eyes to move from note to note particularly if one is following along with a performance or a real-time recording. In contrast to a traditional score, using the digital technology of the app format, the score-apps move in conjunction with a recorded version of the song. A viewer may pause and play the score and recording and also rewind or fast-forward to another part. The song that accompanies the score is not the same song as the track on the Biophilia music album; instead it is a MIDI sound representation of a transcription of it. Composers can recognize this because when they program their compositions into a software program such as Finale or Sibelius they have the option to play back their compositions, and what is played back is a digitized version of the notes they have input into the program. From a musicological viewpoint, it would have been more desirable to follow a score with the finished track rather than a MIDI sound representation of a transcription of the song because the score could be helpful in understanding the studio version of the song and offer insight to aspects that are not immediately apparent through listening. Music artists often go to great lengths to create their studio recordings, and a score can help provide insight into that process and achievement. A few errors in the notes lead me to believe that the score
was "descriptive," rather than "prescriptive," or in other words a transcription, rather than a representation of the original composition that was used in the aiding of its creation, along with knowing that Björk does not compose her electronic music by writing scores and then performing from those scores. There are a few discrepancies between the lyrics in the score and the lyrics in paragraph format in a different location of the app, which is a small point, but nonetheless causes confusion and a lack of faith in the accuracy of the transcription. For example, in the Thunderbolt app, the paragraph format show the lyrics as "stirring at waters edge" while the score version shows "staring at waters edge." Hoping to compare the score to the studio version of the song I conducted an experiment: I turned off the volume on the score app and played the studio version, and then tried to hit play of the moving score at the same time the studio version began. The moving score did not move at the same time as the studio version which proved that the score app is not an accurate representation of the studio version. In this experiment, I was looking at the score for the song "Dark Matter" which is in free meter. Initially the moving score notes that the song is in free meter, but then shows a 4/4 time signature and is written with bar lines, bringing me to the conclusion that the moving score was generated with a software program that does not allow for free meter. Several of the songs on Biophilia operate in free meter, so this problem

39 The exception is her work with Eumir Deodato (Brazilian composer who has worked with Antonio Carlos Jobim, Milton Nascimento, Mardcos Valle, Astrud Gilberto, George Benson, Stanley Turrentine, Bob James, Freddie Hubbard, and Chicago), who wrote the string arrangements for "Hyper-ballad," "Isobel," and "You've Been Flirting Again" on Post (Björk and Sjón 1995).
repeats itself in several of the score apps. The scores lack dynamic markings and only being able to view several measures at a time makes analyzing the harmony or form of the composition challenging.

This brings us to the questions, what is the purpose of the moving score and what audience is it trying to reach? Is it an educational tool? Is its purpose to entertain instead of teach? Is it interactive? Is Björk using musicology to validate her work? Since the score shows pitches on a staff represented rhythmically in traditional Western music notation format, its primary audience may be one who would like to play the song on a piano or keyboard presenting her or him with the challenge of playing the notes in time with the moving score. For those who are not able to read notation or play the piano, the moving score is colorful and engaging, and the way it moves along with a recording might attract someone's attention, particularly a child's, more than the traditional format of a black-and-white printout. Björk said in an interview regarding her educational program at the Miraikan museum in Tokyo that she intended for the apps to be an educational tool for children (Biophilia Live: + Bonus DVD 2014). Perhaps the scores would also appeal to a Björk fanatic who must hear every version of the song and would enjoy a new, MIDI interpretation of the song. The scores are interactive in that they allow one to pause and play portions at will, and to navigate forward and backward, which may excite those looking for an interactive experience. However, these scores do not lend themselves to musical analysis because when looking at a score most people wish to be able to view as much of the score as possible on a single page and
also have the representation depict as accurately as possible the details of the composition. As a depiction of sound, the visual imagery of the moving scores more accurately represent what occurs in the MIDI-version accompanying sound files than the studio versions of the songs. In the recording, the notes of Björk's voice are represented by a digital sound, which takes away the aspect that her voice is often the most dominant element in the studio versions. Overall, the moving score app is an example of an instance where technology has a distancing effect, and obscures meaning rather than providing access to it.

The Apps

Thunderbolt

This app harnesses the power of modern technology in its mission to manipulate the element that powers it, electricity, and reduce it to its most basic naturally occurring phenomenon: a thunderbolt. The app is not only a game, it is also a MIDI-controller that when used adeptly allows its user to play a musical instrument by manipulating an image of a lightning bolt, a naturally occurring process in nature. The app itself resembles a drawing program, but rather than drawing lines, it was designed to draw lightning bolts. Scott Snibbe, the Biophilia project's lead app developer calls the "Thunderbolt" app "probably the most mysterious one because it begins with a completely black screen." As soon as a

player begins touching the black screen, a spark appears. By clicking and dragging with one finger, the player can draw a lightning bolt. The app changes from a drawing program to a musical instrument when the player depresses two fingers at once. With two fingers depressed closely together, a single note is sounded repeating in rapid succession. By spreading two fingers apart, more than one note is sounded. The further a player spreads apart her or his fingers, the more notes are sounded. The notes ascend in an arpeggio and loop until the user gives a new instruction. A lightning bolt drawn higher on the screen produces a higher-pitched range of notes. Once an arpeggio range has been established, a player may change the tempo of the arpeggio by dragging both fingers up or down; an up motion increases the tempo and a down motion decreases it. If the player keeps a right finger stationary and moves a left finger farther left, the program adds additional lower notes to the arpeggio. If the player keeps a left finger stationary and moves the right finger farther right, the program adds additional higher notes to the arpeggio. When a player depresses three fingers, the rhythmic emphasis of the arpeggio changes and so does the order in which the notes sound. While an arpeggio is sounding, a player may depress a single finger once to make the sound fade away.

While an iPad may be a satisfying way to listen to the arpeggios, a player may connect the iPad to a MIDI device and use the app as a MIDI controller to enhance the app's potential for sound creation. A player with a MIDI instrument or the computer application GarageBand may pick up the MIDI signal from this app over wireless and use the app to drive other electronic musical instruments. The
"Biophilia" app developers built this "MIDI-over-wireless" feature into most of the apps for user convenience. Björk used the "Thunderbolt" app in her song of the same name to create the bass line for it. In Biophilia Live, one camera angle shows Manu Delago, a percussionist and the only other electronic musician to perform onstage in addition to the project's musical director Matt Robertson, using the app as a MIDI controller in the 4-up iPads rig described in the Tesla Coil section. The viewer can see Delago manipulating lightning bolts on the iPads, and can hear how he generates the bass line for the song with his finger manipulations.

The "Thunderbolt" app is an entity that is shared by both fans and the creators of Björk's music. It functions as both a game for novices and a controller for a professional musician in Björk's live show. The nature in the app is metaphoric (the thunderbolt), and the technology is real and functions to serve electronic musicians of all ages and experience levels.

**Mutual Core**

The "Mutual Core" app relates a process that occurs in nature to the creation of triads in music that operate within a C locrian scale. Björk states that this app is about taking the tectonic plates and pushing them together with effort until a mutual core is created beneath them and that the object of the app is to teach about chords.41 She says that the tectonic plates work like an accordion in that the app-

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user can depress the strata inside the plates and push the plates together using fingers in a swiping motion to create chords. Each individual strata of the tectonic plates symbolizes a single pitch and when the plates, or pitches, come together they form chords, or in terms of geothermal energy, a mutual core or hot spot where the earth reaches its highest temperature. Each tectonic plate functions as a kind of piano that starts on the C of a C locrian scale and ranges from C4 to A-flat-5 with each note represented by a strata. If one tries to play each tectonic plate individually without the other, no chords are sounded. The game is a bit difficult to learn as the instructions in the online tutorial are minimal. When the game begins as a default, one can see two identical triads on each of the two plates denoted by three black strata on each plate. If one drags the plates together, the default triad is sounded. The triad can be changed by moving the black strata to different strata or notes. So the game is one of coordination where the player must hold the plates together in order to make a sound, and one must drag one's fingers to various strata to play a particular chord. If one so chooses the challenge, one could play the verse of the studio song version using the game.

When the tectonic plates are separated they do not glow or flash, but when pushed together, the plates do begin to glow and flash. The player has the option to change the resistance to make it easier or more difficult to push the tectonic plates together. The game operates in various modes. The mode described above is instrument mode. In "play every chord" mode, the user gains a better understanding of how the strata on the tectonic plates work through a
demonstration. The black notes on the strata depict notes in the octave range of F5, G-flat-5, and A-flat-5 on a pipe organ and sound this trichord. Then the demo takes the bottom note of the triad down one step in the C locrian scale to show and sound E-flat-5, G-flat-5 and A-flat-5. The next triad is D-flat-5, G-flat-5, and A-flat-5. Once the bottom or bass note of the triad reaches the lowest strata of the plate at C4, G-flat-5, and A-flat-5, the descending pattern begins by lowering the middle note. So after C4, G-flat-5, and A-flat-5 is E-flat-5, F5, and A-flat-5, then D-flat-5, F5, and A-flat-5, and so on and so forth. Sixty-five total possible chords, therefore, are demonstrated sequentially in "play every chord" mode.

In "song" mode, the studio version of the song is played and depicts the proper fingering on the strata in the plates for the verse. Once the song changes to the chorus, the graphics depict spheres of different sizes representing different cores. If the player is able to touch the small red core, the player returns to the next verse, or the tectonic plates section of the game, somehow "beating" the chorus. Thus the app in "song mode" is not really a song, but rather a competition between the user and the program itself. If one enjoys the chorus part of the game more than the strata part of the game, the "enter cores" option allow one to skip directly to the chorus part of the game. The player is therefore allowed to manipulate the form of the recorded version of the song in this game similarly to the way Todd Rundgren allowed users to manipulate the form of his songs in his interactive song-snippets called "flavors" released in 1993 as No World Order on the Philips interactive CD-
ROM platform called CD-i. Björk further expands this idea of song structure manipulation in her game for the song "Crystalline." In the "Crystalline" game, a user can recombine the song into numerous different versions by stringing together its sections in a different order. The "Mutual Core" app and the "Crystalline" app are similar in two ways: in both apps, 1. nature is metaphoric, and 2. Björk surrenders control over her music to her fans and she uses technology to accomplish this.

Dark Matter

The "Dark Matter" app speaks mostly once-again to Björk’s world music identity. As Mark Bell and Björk wrote this song together exploring different musical scales, the app teaches different scales found in popular and world music based on notes chosen by the user. It is rare to see such an exploration of different world music scales in a single pop song, and the app takes the song one step further by allowing the user to manipulate the world-music scales used in the song "Dark Matter." Björk says in her "Dark Matter" YouTube tutorial, "There are about ninety-nine scales including the minor and the major scales of the Europeans and the Indonesian scales and the Japanese scales" and that she wanted to teach about the different scales by "jumping on little stepping stones . . . in a ‘Simon Says’ kind


of way."\textsuperscript{44} The graphics for the "stepping stones" are actually orbs pictured in outer space that look like glowing stars. In the "Dark Matter" game, one can arrive at the possibilities of any of the predetermined scales by depressing different combinations of orbs. The orbs are aligned in two rows with six orbs in the top row and seven in the bottom. Each glowing orb represents a pitch of the chromatic scale. The scale has a total of thirteen pitches, the first of which is C\textsuperscript{4} and the last of which is C\textsuperscript{5}, representing a total of one octave. The game may confuse pianists because the layout is similar to a piano but the F, G, A and B are on the top row while the F-sharp, G-sharp, and A-sharp are on the bottom row, making it difficult to transfer music theory skills learned by visualizing a keyboard. Some of the scale names that appear as one depresses different combinations of orbs (pitches) are the 4 semitone, 3 semitone, pentatonic, pelog (Balinese), Balinese, iwato (Japanese), hirajoshi (Japanese), Japanese, Kumoi, Chinese, chromatic, Locrian natural second, major Locrian, Ultra, Locrian, Super Locrian, major, minor (natural), Aeolian, harmonic minor, mohammedan, melodic minor, Hawaiian, augmented, ravel, Hungarian major, Hungarian gypsy, gypsy, Lydian sharp 2nd, Spanish 8 tone, flamenco, Persian, Egyptian, oriental, Phrygian, major Phrygian (dom), Lydian minor, Lydian dominant, overtone, Jewish, double harmonic, Byzantine, chahargah, Arabian, chahargah, Hindu, Ethiopian, whole tone, double harmonic, pentatonic major,

\textsuperscript{44} Simon Says was a popular electronic game of memory during the late 1970's where the object of the game was to repeat the sound patterns and light flashes emitted by a flying saucer-like orb.
From a technological standpoint, "Dark Matter" was one of the first tracks Björk created by improvising using a Nintendo game controller that allows the user to play with magnetic currents. Visually, when the user touches an orb, it attracts light particles which enter from the sides and swirl around the orbs to form different patterns. The app has two "modes" to it: "instrument mode" which teaches the names of the scales, and "song-mode" which teaches interval recognition and recall. Playing Level 1 of Dark Matter in "song-mode" also shows the steps in which the song was composed. When the player replicates a pattern correctly, one may hear Björk sing a phrase of vocables in the order that they appear in the recorded version of the song. When she finishes singing the whole song, then the player has completed the level. "Song" mode provides four levels of difficulty for one who may be interested in ear training and memory games.

The natural element of "Dark Matter" is the depiction of outer space. The white orbs are set against a black background in the same way that stars are set against the night sky. On the surface, and similarly to the song of the same name, the metaphor of outer space functions as an expression of Björk's alien identity and also appears to express nature through its association with the universe. But on a deeper level, the song and the app are different from one another. Through technology, the app allows the user to reorganize and make sense of the numerous scales that evoke confusion in the song. The song is dark, mysterious, and highly
dissonant. The app is educational, fun, and provides a game that allows the user to advance to the next level and feel a sense of accomplishment. Any nature in the app is purely metaphoric while the technology of the app is not only real, but also the driving force behind its implementation. This app is an example of how the experience of the app is disconnected from the experience of listening to the song, and represents another gap that occurs in the overall work.

The Remixes: Nature Tamed By Technology

As she has done for many other of her albums, Björk gave her raw tracks for *Biophilia* to DJs and Producers to remix and release with their own artistic vision and interpretation. It is in these collaborations that we can view the subjugation of nature to technology. While nature is still the core subject matter of each of the songs, each song presents itself as unabashedly technological. But how do these remixes function for the original artist, the remix artists, and their audiences? The remixes most likely reach their audience through digital media means such as streaming music services, file-sharing services, mp3 or AAC online music stores, or trading amongst friends and acquaintances. Aimed at a more niche audience, the remixes rarely gain the popularity of the original releases on which the tracks are based. However, they do allow Björk to broaden her audience by reaching a

45 Licensing occurs as a part of these collaborations, but the legal details are released usually only during a lawsuit.
different audience than her singles will reach. Remixes are unique in the way artists, by giving their work to other artists to manipulate, surrender a certain amount of artistic control, and yet they broaden their influence at the same time. Even though the end result of the remix is not as marketable as the studio pop song, Björk succeeds at reaching a different niche. While other artists are being invited to participate in the creative process, the final product will eventually be referenced back to the original artist's music. The result is a kind of solidifying of Björk’s role as a leader, even though the compromise for her may be surrendering artistic control. A remix also demonstrates a kind of respect or reverence by the remix artist for the original artist. Remix artists could be making and promoting their own original music, yet they spend time, money, and effort remixing the music of a different artist. However, the name recognition of working with an international pop star is a path to bolstering a "smaller" artist's career, so remixing a "bigger" artist's work in a way works as a marketing technique for the "smaller" artist with the hope of generating further career success.

Björk's collaborators are a group of artists with significant technological music achievements, and licensing her music to these electronic musicians, DJs, and producers gives each album she creates an extended life beyond its commercial release. Each of the remix artists applies her or his own technological styles and techniques to the tracks using signature software on computers and other electronic signal processors. In the Biophilia Remix Series, the artists Björk chose to remix her
work were 16-bit, Death Grips, Matthew Herbert, King Cannibal, Alva Noto, Current Value, Pablo Diaz-Reixa, and Hudson Mohawke.
CONCLUSION

I began this dissertation with three questions that are significant issues in the relatively new subfield of ecomusicology: (1) How does nature inform music? (2) What can the study of music tell us about the natural world, humans, the built environment, constructed ‘nature,’ and their connections? and (3) Is the environmental crisis relevant to music? My analysis demonstrates that people who care passionately about nature and who also care passionately about music use music as a platform to accomplish four things: (1) express artistic ideas about nature, (2) communicate their passion for nature, (3) attempt to protect nature from human destruction, and (4) bond with other humans who share similar passions for both nature and music.

Popular music artists express ideas about nature in their work in many ways, and I have used Björk as an example. Björk's albums represent an evolution of the way she has accomplished this. On Post and Homogenic, Björk recorded sounds directly from nature and ultimately used these recordings on her final product in two different ways. When she was making Post, she crawled into a cave in the Bahamas to record the sounds of bats but ultimately scrapped the original recording and created an electronic representation of these bats in the studio to represent what she heard in the cave. When she was making Homogenic, she ventured into the Iceland highlands to record sounds of volcanic activity and mixed these sounds into her songs on the album. In these two instances, the sounds that occur in nature, therefore, did not appear in their original form on the final product, but rather in an
altered or metaphoric way. The nature sounds were either manipulated or created anew through technology so that the artist could achieve ultimately a different effect. In the *Biophilia* project, Björk used musical structure, newly-created musical instruments, and interactive technology to depict nature. While other composers have accomplished each of these tasks before with a single song, composition, or app, Björk amalgamated these three ideas in a single project, and applied the ideas throughout the entire album. For example, the musical structure of her song "Thunderbolt" represents the unfolding of an electrical storm, and the song structure of "Crystalline" represents the way crystals grow. "Thunderbolt" uses a complex, MIDI-controlled tesla coil musical instrument to create a human-made version of lightning that sounds specific pitches, and the Pendulum Harps test laws of friction and gravity, evoking ideas about outer space. Her "Crystalline" app provides an interactive video game for a user to manipulate the structure of the song, and the "Mutual Core" app allows one to interact with tectonic plates to create chords.

Having established that nature is represented in Björk's work, we can look at her music to answer our second important question of ecomusicology: what can the study of music tell us about the natural world, humans, the built environment, constructed 'nature' and their connections? To answer this question, I set out to explore whether the "fusion" or "intersection" of nature and technology succeeds in *Biophilia* in terms of both authorial intention and audience reception. Whereas Björk claims that the *Biophilia* project unites nature and technology, that is not
really the case. Many gaps exists between nature and technology that convey a Surrealism, or an illusion rather than a reality. Although she called the lightning coming from the tesla coil "real lightning," it was actually a representation of lightning generated by a human-made electronic instrument. The Pendulum Harps resemble natural pendulums that are affected by laws of friction and gravity, but instead are controlled by mechanics and electronics. The sounds the Pendulum Harps make are also pre-determined by the composer through computer programs as opposed to being created by the natural swinging of pendulum as was demonstrated in Reich’s "Pendulum Music," for example. The lyrics for the songs "Thunderbolt," "Mutual Core," and "Dark Matter," contain metaphors of the natural while the music is made by technological means, leaving a gap between words and music. Björk's voice exhibits both qualities and metaphors of the natural and unnatural and it is more important to determine the cultural and personal constructions of the term "nature" as it is used to describe a human singing voice than to try to define a singing voice as exclusively natural or unnatural. The scores within the Biophilia app suite do not fuse nature and technology; they are purely technological. A more relevant question for the scores is: are they musicological? As Björk has expressed a recent interest in musicology during the Biophilia project,¹

¹ That Björk commissioned the musicologist Nicola Dibben to write musical analyses for the Biophilia iPad app suite and that she uses the word musicology in her online app tutorials indicate Björk's interest in musicology. That she uses the word incorrectly in the Mutual Core app tutorial indicates that she does not have a full understanding of the field. See "björk: biophilia: mutual core
one might call the authorial intention for the scores "musicological" but its reception is not musicological in the strict academic sense of the term. The execution of the apps is purely technological, but the apps are based on themes of nature (the "Thunderbolt" app is based on lightening, the "Mutual Core" app is based on shifting tectonic plates, the "Dark Matter" app is based on outer-space) leaving a gap between theme and execution.

This leads us to another debate. Is the use of electronic devices a natural or a technological activity? People who do not enjoy using electronic devices have trouble seeing a naturalness in their use. On the other hand, Max Weisel, one of Björk's iApp developers, argues that an iPad performance is a more natural experience than a laptop performance because it allows the performer to move her or his body more freely than when confined behind a laptop, and therefore conveys a more natural and escalated energy to both the other musicians on stage and the audience.² Björk suggested that composing using an iPad was a more natural experience for her than the traditional compositional process of sitting down at a piano with manuscript paper and pencil or even more modern compositional processes like using a computerized scoring program such as Finale or Sibelius, or programming music in a computer language or environment such as SuperCollider.

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or MaxMSP. Professor Oliver Sachs, a neurologist and a pianist, argues that the iPad apps are less intimidating than both a piano and Western Music notation, and that a beginner is more likely to enjoy an attempt to play music using one of the Biophilia apps than to try to use a piano and a traditional score (When Björk Met Attenborough 2014). Here the gap lies between approach, attempt, or process and execution. While learning or composing may seem to be a natural activity, the tools and execution of the approach are always technological, even in their more traditional sense. While composers and learners who enjoy the iPad compositional process might describe their experience as a harmonious "fusion" of nature and technology, the thought process which makes one attracted to an iPad rather than a piano and manuscript paper exhibits an individual's gravitation towards electronic equipment.

Additionally, there is a cultural gap between a love of technology and the desire to preserve nature. I have demonstrated that this gap creates a conflict within young Icelanders, and argue that it is representative of cultures all over the world that embrace both technology and the natural environment. On the one hand young electronic musicians are concerned about the environment but on the other they lead a life that leaves a carbon footprint. This leads me to my third significant question of ecomusicology: is the environmental crisis relevant to music? The answer to this question is a resounding YES! The majority of young Icelanders do

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not live in the countryside nor are they interested in traditional Icelandic folk music, but instead they live in the city or suburbs of Reykjavík and they listen to or play electronic dance, electronic rock, or electronic pop music. Many young Icelanders are activists and seek to preserve Iceland's beauty and Iceland's natural environment and yet at the same time they engage in music that involves buying imported, technologically-manufactured equipment that works against environmental preservation. Young Icelanders express the desire to participate in the modern world, but participating in the modern world means flying on jet airplanes, and purchasing computers, smartphones, and tablets whose inception and end is often a Chinese sweatshop and landfill. Young people are hopeful for their future but at the same time they express feelings of dissonance. They do not wish to sacrifice dance parties, or use of modern-day technology that gives them access to social media sites and connects them with friends, family, and work. Yet, the technology they use every day to promote their music and communicate with others also creates a carbon footprint. While they try to save Iceland from the pollution and environmental destruction that newly-built aluminum factories in Iceland could potentially bring, this same computer and music technology they use everyday is built with aluminum. Herein lies the tension or dissonance. Young Icelanders are not alone in experiencing this tension. This problem occurs in youth culture everywhere in the world where environmental concern and technological sophistication is part of the culture.
The idea of a fusion of nature and technology works on an artistic level because it creates a kind of utopia or bliss, but that does not reflect the reality of the situation in which computer and electronic device manufacturing has created humanitarian and environmental problems. Pop music is often an escape from the harsh realities of life and this artistic expression of fusion succeeds in creating hope and a utopian vision for young people. Through her music and activism, Björk expresses a utopian vision in which humans can unite digital technology with environmental preservation. Webb and Lynch refer to this phenomenon as a belief in the potential of the carnivalesque as a site for excitement, ecstasy, and action that carries traces of the anticipatory, and can serve as a link between the now and the future: to go from the “what-is-here-now” to the “what-might-be” (2010). Art in all sense is a transformation of the "real" into the "ideal" or "imagined," so to ignore the utopia or dissonance in art is to misunderstand its essence.

However, from a global economic and political perspective, digital technology and environmental preservation prove to be mutually exclusive. The underlying ideology of a harmonious fusion is problematic because so far technological innovation has outpaced our ability to preserve the pristine nature of our environment and has caused problems such as air pollution, toxic waste dumping, climate change, and ice-cap melting, which has disrupted the feeding, breeding, and migratory patterns of wild animals and has caused the extinction of certain animal species. An increase in extreme weather including extreme heat, frigid temperatures, and storms has caused humans to lose their homes, and some their
lives. The humanitarian issue of how electronic equipment is being produced goes largely ignored; digital music is created on digital instruments and computers that for the most part are produced in Chinese sweatshops. Chinese women and men and child laborers work long hours in unsafe and unsanitary conditions while they are underpaid for their work (Guttman, Wang, and Brown 2008). When electronic devices become outdated, they end up in landfills or once again in China where they are picked apart by Chinese laborers and the materials are smelted together for sale as raw materials to a company that will begin the manufacturing cycle again (Huang, Guo, and Xu 2009). Eradicating industry might allow the earth to renew itself to a pristine state, but that would also be problematic to human survival because industry creates employment and commodities and aids in the process of solving global health epidemics. One might call this our global dilemma.

The use of technology, including music technology, affects climate change which is a cultural problem rarely addressed when musicians use iPads and other electronic instruments to create their art. Should the artists or the technology manufacturers be held accountable? And if so, how might one measure the accountability? Looking at the manufacturers, it is unclear how much of a carbon footprint large corporations like Apple, for instance, are creating as in most countries carbon emissions are not regulated and therefore corporations are not held accountable by their governments or any regulating body. Nonetheless,

recently large international companies have felt the political pressure to go green, and some have been taking steps toward responding to that pressure. On May 11th, 2015, Apple Inc. announced it is funding a five year project, which will be overseen by the global charity World Wildlife Fund, to manage approximately one million acres of forests across China and make an effort to plant trees and implement environmental standards that use less land and water and produce less pollution.\(^5\) Apple said its goal was to achieve a net-zero impact on the world's supply of sustainable virgin fiber and power all of its operations worldwide on 100% renewable energy. The company claimed that currently 87% of its global operations run on renewable energy leaving only 13% of its operators to create a carbon footprint. However, 13% of operations for a company this large could be significant. Apple's most recent project involves a partnership with Leshan Electric Power, Sichuan Development Holding, Tianjin Tsinlien Investment Holding, Tianjin Zhonghuan Semiconductor and SunPower to build two 20-megawatt solar farms that generate up to eighty million kilowatt hours per year of clean energy. CEO Tim Cook said in a statement,

> We've set an example by greening our data centers, retail stores and corporate offices, and we're ready to start leading the way toward reducing carbon emissions from manufacturing. . . . This won't happen overnight — in fact it will take years — but it's important work that has to happen, and

\(^5\) Tim Culpan, "Apple Working With WWF China To Manage Sustainable Forests," *Bloomberg Business*, May 11, 2015, accessed May 12, 2015,

Apple is in a unique position to take the initiative toward this ambitious goal.\(^6\)

The unique position to which he refers is Apple's market capitalization amounting to $194 billion in cash and equivalents, which sits overseas because if it were repatriated would be subject to a 35% U.S. tax.\(^7\)

On the same day that Apple released news of its implementation of green initiatives, the Obama administration gave conditional approval to allow international oil company Shell Inc. to begin drilling for oil off the Alaskan coast in the coming summer, which proved to be a major victory for the petroleum industry and a devastating blow to environmentalists.\(^8\) Two ironies unfold here: 1. a president who ran on a green platform of wilderness preservation and fighting climate change defeats environmental protection legislation while 2. a corporation in the business of manufacturing computers, which directly conflicts with environmental preservation, emerges as a hero combatting climate change. Here we

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can see an international corporation with enough financial resources to make a significant contribution to fight climate change instead makes a small pledge while evoking a public guise of championing environmentalism. Both of these events occurring in the same day indicates the wide spectrum of political rhetoric buried in the conundrum of environmental protection. While international corporations and politicians have the power to make significant contributions to positive environmental change, their agendas lie elsewhere.

Therefore, in the twenty-first century, as music, technology, and nature unite, Björk has become an international symbol and ultimately a representative of a utopian ideal that many people want to believe but that only sheathes what has proved to be thus far an unsolvable problem. We all belong to a cause-and-effect society in which, not only in Iceland, but globally, an information-driven society, powered by fossil fuel-burning energy and manufacturing plants and polluting vehicle and jet emissions, takes its toll on human, animal and plant life. While we live our lives ensconced in technology and pollution, at the same time, we express a desire to keep our environment pure.

Björk’s musical vision may be described by what psychologists call cognitive dissonance, or a belief in two competing agendas. She demonstrates that she believes people should protect the natural environment but she also believes in realizing a career as an electronic pop star. How does she resolve this cognitive dissonance? She does it through her art. Her fans experience the same cognitive dissonance; for them it is between protecting the environment and following an
electronic pop star either through attending her concerts and buying her releases or attempting to become pop stars themselves. While young people organize outdoor music festivals to raise money for environmental causes, in the meantime they communicate using electronic devices, travel in air-polluting jets, and tread on the land where music festivals occur.

As much as art may attempt to bridge the gap of cognitive dissonance, the real problems remain. While Björk succeeds at raising money for Icelandic environmental causes and petitioning the Icelandic government to protect Iceland's natural beauty, the environmental problem proves to be larger than her efforts. The environmental problem is larger than most people who engage in a modern, urban lifestyle and culture that is at odds with the environment. More simply, everyone who uses a cell phone or a computer or who drives a car is implicated; even if the car is electric and more efficient than a gasoline-powered car, chances are that it uses energy that was created by burning fossil fuels. In the case of internationally-touring musicians, it is impossible to travel by jet or generate a way for fans to attend shows in a way that does not leave a carbon footprint. In Iceland, Björk may be able to perform using renewable energy, but elsewhere this is rarely possible. The instruments that have been manufactured for her use have not been made in an environmentally conscientious manner because they have been created in countries that do not use renewable power as their main source of energy, and where governments do not regulate carbon emissions.

In spite of the global climate crisis and Iceland's local environmental crisis,
Björk maintains her relevance in pop music because of her innovations that serve as a contribution to her field. She has commissioned new instruments, licensed her music to remix artists, and through the iApp suite, created a way for her fans to interact with her music other than listening to her recordings, watching her videos, and attending her concerts. The popular music industry has changed dramatically in the last decade in the way that artists make music and the way they earn money from it. Popular musicians struggle financially today because recordings are something that consumers may download or stream from the Internet for free or very low cost. "Innovation for survival" has become the new mantra for composers and musicians in a digital age that has drastically changed the music business. In recent times, the environment is not the only thing in jeopardy; the careers of popular music artists are also on the line as their outlets to sell music have become greatly reduced.

Björk's pop career reveals a carefully constructed and complex identity. In her case, she creates an Icelandic identity for herself to which local Icelanders relate and which outsiders find exotic, and she markets her work through the idea of a fusion of nature and technology, an embrace of Icelandic nationalism, an allegiance to an outer-space counter-culture, and a celebration of globalization, in order to connect with her fans and sell her music. The construction of an identity for Björk functions in two ways. First, it helps her establish an identity within popular music that makes the fans and consumers of her music believe she is authentic. Secondly, this construction of an Icelandic identity creates the situation where, for better or
worse, Björk represents Iceland. While Icelandic conservatives may be opposed to Björk's eccentric and modernized ways, many Icelanders have rejoiced in the international attention and prosperity that Björk's fame has returned to Iceland. Björk's fame has also allowed her to advocate for Iceland's environmental causes.

Björk's environmental activism has transpired in many ways. She performed at the 2006 Hætta! (Stop the Dams!) concert, spearheaded the 2008 Náttúra concert, staging a 2011 "Karaoke Marathon for Nature," and partnered with two Icelandic nature conservation associations, a Hollywood director, and American punk-rocker Patti Smith to promote and perform at the "Stopp - Gætum Garðsins!" ("Stop - Let's Protect the Park!") benefit concert to raise twenty-four million Icelandic króna for the cause of protecting Iceland's highlands. She also wrote the introduction to Snær Magnason's bestseller Dreamland, wrote a letter to The Times (London) denouncing the Icelandic government's recent policy decisions regarding environmental issues, and wrote a letter to the Reykjavík Grapevine challenging the Icelandic government to revoke the contracts with Magma Energy which were to entitle the Canadian firm to own completely Iceland's geothermal power company, HS Orka. She organized a press conference and spoke and performed at another to address issues surrounding Iceland's energy sources. She criticized the government for making harmful decisions without consulting the Icelandic people and proposed a change to the legal system that would allow local Icelanders to be more involved in shaping environmental policy. While Björk is primarily an artist, she has found it necessary to intervene in political matters during times when she felt passionately that what
was happening would provide an unfortunate outcome for Iceland and that she could possibly use her status to influence local political heavyweights.

Through all of this Björk demonstrates that she is an artist who possesses multiple identities. This possession of multiple identities is an example of what Keith Negus describes as

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\ldots \text{a shift from essentialist ideas about cultural identity - the notion that individuals of a particular social type possess certain essential characteristics and that these are found expressed in particular cultural practices} \quad \text{towards the idea that cultural identities are not fixed in any essential way but are actively created through particular communication processes, social practices and 'articulations' within specific circumstances. (1996, 100)}
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Negus further proposes the concept of ‘articulation’ as a way of thinking about the connections that link production and consumption. He thus follows Hall (1986), who spoke of it in two senses: 1. we articulate to communicate (as an expression of ourselves using language, and other cultural codes such as non-linguistic expressions and bodily gestures), and 2. articulations are directed towards others; we do not simply articulate in a vacuum. In popular music, an artist articulates via various intermediaries, to audiences who are always part of the process of articulating cultural meaning (Negus 1996). Björk in particular articulates through her singing style, her performance style, costumes and sets, music videos, electronic compositions, creation of musical instruments, her collaboration with remix artists, the creation of an iOS app suite, and environmental activism.

While I have argued that a technological orientation is a new element of a young Icelandic identity, it is clear that Icelandic ideology is still divided through viewpoints of nature and technology. Björk touched on this when she argued her
case in front of a governmental committee and acknowledged that different views regarding methods to preserve nature are causing local political friction. Vigsø and Dibben both acknowledged the ideological divide in their articles. Vigsø argued that Nordic peoples claim to have a rural identity denying that they work in cities and that their lives are ensconced in modern-day technology (1995). Dibben (2009a) took this idea a step further comparing ideas about a fusion of nature and technology to an internal conflict of contemporary Icelandic consciousness, but unlike Vigsø argued that the two competing ideals are compatible. The ideals of which she wrote are the historical foundations of Iceland's claim to its land, language, and literature and its situation at the turn of the twenty-first century as an independent nation-state with an urban, and increasingly industrial economy, trying to position itself on an equal basis with other nations in a globalized world.

While fishing is still a major part of the economy in Iceland, and Icelanders still possess a rural identity from centuries of agricultural life, it is events like Iceland Airwaves that bring foreign attention to the drastic modernization of the city of Reykjavík. The quota system for fishing introduced in the twenty-first century reduced the number of men working as fishermen, and made those who formerly made their living from fishing available for other jobs. Many of these fisherman turned to fields such as investment banking and information technology. Musicians traded in their acoustic instruments for electronic ones. The modernization of Reykjavík along with the drastic changes to the Icelandic fishing industry brought about a shift in Icelandic identity for young people. While Iceland
was once an isolated nation, it is now a product of globalization. While Icelanders once had a rural identity, they now have an identity that combines a rural identity and a technological one. The electronic nature of Björk's music and her *Biophilia* app suite in particular succeed in representing the new Icelandic identity, for better or worse, that encompasses both a rural and technological viewpoint. While these traits manifest themselves in different ways and project themselves differently through the various Icelandic popular music acts, these specific traits are still recognizable in young Icelanders. For those who have not fused technology into their identity, many at least recognize that Iceland has made a dramatic shift and they must choose whether to be a part of it, reject it, or find a balance between these two identities. Some who live in the countryside still deny the modernization. Most who live in the city do not display signs of denial but nonetheless strongly connect with Iceland's rural identity that had been established over hundreds of years.

Björk is an example of a music artist who is changing music culture, both within Iceland and internationally. The promotional videos about the *Biophilia* app suite inspired Björk fans who did not own an iPad already to comment online that Björk's new app would be reason enough to purchase one. While other electronic composers such as Pierre Schaffer and Pierre Henry invented *Musique Concrete*, and American composer John Cage invented new signal processing techniques, Björk has invented new giant-scale electronic instruments and a new medium for releasing electronic music, the app album. Her simultaneous release of the *Biophilia* film, the *Remix Series*, and her embarking on a world tour to support the
film, app album, and two sound recording releases demonstrate her commitment to achievement in electronic music.

While Björk's construction of identity may be a commercial ploy, in terms of audience reception, many fans and critics find her construction of identity to be sincere. While much of her musical output is heavily technology-driven, she often appears at large festivals with an Eco- or Environmental theme, and youth claiming to be "environmentalists" hold her in esteem and buy her music and apps. While Iceland's industrialization has occurred relatively recently compared to other countries, and Iceland still has an abundance of pristine landscape, industrialization poses the same threat of destruction to the environment as it does in other parts of the world. Therefore some may argue that a harmonious fusion of nature and technology may never be possible. But with Björk's constructed, globalized identity, she manages to find a utopia in the technology and natural beauty that surround her and convince her fans of their worth. While Björk depicts herself as merging completely with nature, what appears to be happening instead is the individual's triumph over nature, or the subjugation of nature to technology. Björk cannot physically embrace lightning or tectonic plates, nor can she master gamelan or all the world's music, but she can use technology to try to overcome the divide between humans and nature, and between humans and other humans.

This dissertation is significant because it has suggested answers to some important questions in ecomusicology: how does nature inform music?; what can the study of music tell us about the natural world, humans, the built environment,
constructed ‘nature,’ and their connections?; and is the environmental crisis relevant to music? The following are some suggestions for further research:

1. Conduct a scientific study about how certain pop stars and the ways fans follow them impact the environment.

2. Devise a way in which the environmental activism of pop stars and music fans could effect positive environmental change.

3. Examine the way global corporations that sell music, such as Spotify and Apple, contribute positively or negatively to environmental change.

4. Analyze present-day electronic music that is made in Reykjavík and divide the findings into authorial intention versus listener perception.
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*Sagazaskapur* [Icelandic epic song]. Iceland: Mál og mynd.


**Filmography**


Sound Recordings

Björk


Interactive (iPad Application)

Björk, Scott Snibbe, and M/M (Paris). 2012. Biophilia Developed by Scott Snibbe and M/M (Paris). Mode of access: iPhone 3GS, iPhone 4, iPhone 4S, iPod touch (3rd generation), iPod touch (4th generation) and iPad. Requires iOS 4.1 or later.