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Dynamics and Geographical Diffusion in the Global Metal Music Network

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Abstract

Dynamics and Geographical Diffusion in the Global Metal Music Network

By

Trent M. Ryan

Media sociology has tended to focus on production of content in corporate creative industries, examining large-scale production and consumption dynamics in those settings. Yet, previous scholarship has largely ignored industries that, in the near or complete absence of corporate actors, are organized and run by grassroots individuals and organizations. This study examines the case of one such industry, namely that of metal music, using insights from network theory, population ecology, and scenes perspectives. Data on 105,284 albums released between 1968 and 2016 are analyzed using social network analysis, blockmodeling, and regression models to map the structure of the network and identify the hierarchical relations between 130 metal-producing nations around the globe. The results indicate that metal scene activity is most vigorous in nations that score higher on political globalization and share closer cultural ties. Contrary to the findings of previous research, metal activity is more visible in countries with higher unemployment rates and lower welfare generosity. The findings from the other chapters suggest that the diffusion of metal music occurred earlier than the digital capacity hypothesis proposed in previous literature, primarily through country-level network ties in a three-tiered global production system. The study contributes to the literature on cultural globalization and social networks by shedding light on the extent to which hegemon nations dominate, yet also facilitate, aesthetic production in DIY industries.

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CHAPTER ONE:

NETWORKS IN THE MUSIC WORLD

Swedish band Amon Amarth was formed in Tumba, Sweden in 1992. Like many others before them, the band initially played to a mere handful of fans in small venues in and around Sweden. Yet, by 2017, Amon Amarth had become one of the most successful metal bands of all time, regularly playing at sold-out concert venues worldwide. What factors caused the meteoric rise of this band? How did a group of five musicians conquer the global metal scene? Is their career trajectory a happy accident or indicative of a larger mechanism of cultural diffusion? The motivation for this project can be summed up in one fundamental yet simple question: why do some artists "make it" while others fail? I answer that question by attending to the respective nations in which metal artists are located and how those artists, in turn, are connected to record labels that are likewise located in particular nations.[1]

As is the case with most research projects, my personal history played a big role in my desire to pursue this line of questioning. I am a fan of metal music. I spent much of my teens and twenties playing, writing, and recording metal music solo and in a number of bands. While none of those projects turned into anything serious, they did ignite in me a fire to want to find out more about the career trajectories of metal musicians. I didn't know at the time that I would have the opportunity to do just that

[1] "Record labels" are those entities which are responsible for the production and release of musical recordings. Multinational media corporations are noted for having a host of record labels operating under their auspices. My primary focus in this dissertation, however, is on the relatively small record firms that operate without the resources and power of their corporate counterparts. The latter (which are known as "independents") are key actors in underground scenes (Dowd 2004; Dowd et al. 2019).

many years later as a graduate student. My dissertation, in particular, focuses not on metal music merely as an object but rather as an activity that connects people all over the world—an activity frequently described in the literature as "musicking" (Roy and Dowd 2010).

Musicking is a collective endeavor that takes place in a tight-knit network of producers, consumers, and organizations (Becker 1982; Bottero and Crossley 2011; Schmutz and Dowd 2017). There have been a number of theoretical approaches that have been used to examine this collective nature of production: most notably Bourdieu's field-theory (e.g., Bourdieu 1993), Becker's art-worlds (e.g., Becker 1982), and the music-scenes approach developed by Straw, Bennett and others (e.g., Bennett & Peterson 2004; Straw 1991). While all of these approaches emphasize to different degrees the networks of connections that enable music (e.g., connections between organizations in field-theory, interaction among creators in art-worlds, and connections between genres and their fans in music-scenes), these approaches tend not to address two key components: the dynamism and geographic diffusion that networks allow in the production of music. While drawing upon these three approaches, I also draw upon some other approaches that are less connected with typical music scholarship—such as organizational ecology (e.g., van Venrooij 2005), cultural globalization (e.g., Schmutz and Dowd 2017), and social network analysis (e.g., Crossley 2005).

In this dissertation, I use the case of metal music to: (1) examine the role that ecological and globalization processes play in the vibrancy of the global scene; (2) map the geographic diffusion of metal across the globe; and (3) explore the extent to which the "hegemons"—those countries that dominate production in the metal scene—control the flow of metal music globally. I do so by utilizing approaches mentioned in the

previous paragraph as well as by drawing upon cutting-edge methods (both computational and digital) in my analysis of the producers (e.g., bands), content (e.g., genres), and record labels (e.g., organizations). This dissertation thus builds on and extends my earlier collaborative work that likewise employs a variety of digital research methods (Dowd et al. 2019; Dowd, Ryan, and Tai 2016).

In the remaining pages of this chapter, I outline the structure of my dissertation and provide and overview of the relevant theories and methods that will be used. I begin with a survey of the relevant literatures dealing with music scenes and cultural production, cultural globalization, and metal music studies. I follow with a discussion of my analytical approach and research questions. I then introduce methodology to be used in the analysis. In the last section, I provide a synopsis of the three chapters that comprise the bulk of this dissertation.

Cultural Production and Music Scenes: The Importance of Networks

Sociological research on music scenes has generally focused on three broad theoretical approaches to cultural production: field-theory, art-worlds, and music-scenes. Bourdieu's (1992) field-theory, Becker's (1982) art-worlds, and Bennett and company's scenes approach (Bennett and Peterson 2004). All three approaches emphasize the network characteristics of cultural production (i.e., musical creation) to differing degrees. For example, Bourdieu distinguishes between structure and interaction in his field-theory, if not favors the structural aspect, when describing a field as "a space of objective relations between positions defined by their rank in the distribution of competing powers or species of capital" (Bourdieu and Wacquant 1992: 113). Bourdieu's underlying objective relations are those pertaining to the various forms

of symbolic capital (i.e., prestige), cultural capital (i.e., valued knowledge), and economic capital (i.e., financial resources). Actors in a given field (e.g., musicians) are situated relative one to other by the amount and type of capitals that each possesses. In the "game" of culture, including musical production, these relations structure social relationships and the networks arising in those relationships. Moreover, this approach emphasizes the competitive nature of this game, with actors vying to improve their positions (Bottero and Crossley 2011; Bourdieu 1993).

The other two approaches are notable for their emphasizing cooperation more than competition that Bourdieu (1993) touts. Becker's (1982) central concern is intrinsically network-oriented, albeit he and his approach primarily focuses on interaction and collective activity occurring at the micro (among individuals) and meso (among organizations) levels. Notably, Becker diverges from Bourdieu in terms of favoring the interactions, and especially the cooperation, that make possible networks of rather than the structure of positions involved in those networks (Bottero and Crossley 2011). Proponents of the scenes approach take music scenes to be cooperative networks of fans, genres, and communities, but they disagree on the extent to which these networks can transcend geographical boundaries (e.g., a particular city) and the extent to which these networks are dynamic and evolving (Bennett 1999; Shank 1994; Thornton 1996).

Recent work developed by Crossley takes a more direct approach to music scenes and the networks upon which they are based. Scenes, as defined by Crossley (2014: 57), "are always, among other things, networks." This definition is flexible and dynamic; scenes can be local or global, overlapping or distinct, and thus an ideal unit of analysis for mapping and exploration (Becker 1982; Bennett and Peterson 2004; Crossley 2014;

Crossley et al., 2015). Moreover, viewing scenes as networks makes it possible to analyze two homologous concepts at once—namely the division of labor among the key actors in the network structure and the relationships between the actors that make musical diffusion possible across time and space (Crossley et al. 2015).

Networks inform cultural production in music scenes in two related ways: through mapping (1) the formation of scene dynamics, and (2) the formation of networks themselves (Crossley 2009). But, how are such networks formed? Scholars have attempted to answer this question by pointing out the crucial role that scenic institutions such as record shops, fanzines, flyers, labels, and underground networks of fans and band members play in forming important and lasting network ties (Becker 1982; Crossley 2008, 2009, 2015; Feld 1981; Kahn-Harris 2007; Patterson 2013; Weinstein 2000). A common thread across all of these studies is their focus on micro- and meso-level human interactions. For example, Crossley's analysis of the Manchester punk scene includes macro-level players like record labels that can operate in many locales (if not globally) reduced down to a few key individual players. This scaling-down of actors to the individual level is ideal for several reasons. First, most bands in a given scene are signed to independent labels where the key players are easily identifiable. Second, corporate-level actors often emerge as a direct result of network formation and cannot always be accounted for in the early stages of scene formation (Crossley 2009).

Third, many of the important players (e.g., fanzine editors and band managers) are involved in other scenic activity and operate within a small geographical boundary, which makes them easily accessible for analysis. It is important to note here that all of these scene studies have benefited from the availability of a multitude of historical and archival data sources that make it possible to study micro-level interactions between

scene members (e.g., Crossley 2008/2009). However, in the absence of such data, or in cases where key scene individuals are not easily identified or accessible, it is still possible to explore network ties between key scene actors in a given scene. This, in turn, allows us to avoid reducing the global to the local, and in turn, to analyze the dynamic diffusion of metal production around the world. In subsequent chapters, I outline how this can be achieved by elevating the position of ties to account for corporate-level actors for whom such scaling-down is not feasible.

Globalization and Global Diffusion

Globalization can be defined as a set of processes that lead to the integration of individuals and institutions across the globe (Giddens 1990, 2002; Lechner and Boli 2007; Mayer and Timberlake 2015). While research on the topic has often focused on the economic aspects of production and distribution, a flurry of recent scholarship in cultural sociology (Kuipers, 2011, 2015) and in music sociology have emphasized the processes that lead to the global diffusion of cultural goods and content (Kahn-Harris 2007; Lena 2012; Mayer Timberlake 2015; Schmutz and Dowd 2017). Elsewhere, the world polity literature has pointed to the important role played by large-scale institutions (e.g., national policies) and INGOs (i.e., international non-governmental organizations) in the global diffusion of standards and norms but little is known about the impact that small organizations (e.g., independent record labels) have on the global diffusion of culture (Boli and Thomas 1997; Meyer 1980). Yet, qualitative evidence and historical accounts of the development of the early metal scene suggest that both large (e.g., economy, trade, government policies) and small (e.g., entrepreneurial record stores, independent labels and distributors) institutions played an influential role in the

formation and diffusion of local metal scenes (Kahn Harris 2007; Patterson 2013; Weinstein 2000).

In this dissertation, I argue that the most comprehensive way to understand the global diffusion of metal music is through an investigation of the three key aspects of its production: the bands, subgenres, and record labels. Focusing on the producers, content, and organizations in the scene adds to the current literature on diffusing systems in two key ways. First, it fuses the literature on the two primary types of diffusion (centralized vs. decentralized) by taking into account relationships between the power players and hegemons (i.e., early-adopter nations), on the one hand, and the mechanisms of diffusion via small-scale institutions (e.g., independent record labels), on the other. Second, doing so merges the secondary types of diffusion (e.g., economic and political-cultural) by making the case that the global diffusion of metal music includes economic and cultural innovations that are intended to produce economic as well as cultural returns. In Chapter Two, I pay particular attention to the different types of diffusion and globalization mentioned above.

Analytical Approach and Research Questions

Until recently, metal music studies have relied exclusively on qualitative and historical data to theorize the diffusion and globalization of the scene (e.g., Kahn Harris 2007; Olsen 2011; Patterson 2013; Purcell 2003; Weinstein 2000). As a result, there is an overabundance of untested theories and hypotheses in the current literature. Given the quantitative nature of my data and analysis, and my focus on issues of "how"—the *processes* of diffusion and globalization— I take a longitudinal approach throughout this dissertation, as well as an approach that adjudicates between various hypotheses. I pose

the research questions below that are drawn to inform my analysis in each chapter:

1. What factors led to the globalization of metal music?
2. To what extent do political, economic, and social globalization predict metal activity in the global scene?
3. To what extent do social welfare policies impact the proliferation of bands in OECD countries versus the rest of the globe?
4. What is the structure of the global metal scene and how does it facilitate content production over time?
5. Is the global metal scene localized in production, dominated by a few "hegemons," or entrenched in reciprocal processes of globalization?
6. Will those bands and labels that operate in key countries hold dominance and become more dominant over time?
7. What are the mechanisms of diffusion and how can they be explained in terms of concentration?
8. To what extent are the global diffusion patterns of the national socialist black metal subgenre similar to or different from the rest of the metal scene?

Dissertation Roadmap

I answer the above questions in the following three chapters by focusing on the global scene and comparing the findings to a micro-scene. In Chapter Two, I map the global scene dynamics by paying special attention to band foundings. Next, I test the qualitative claims made in previous literature using a merged data set of globalization index scores. In Chapter Three, I turn my attention from band foundings to album releases in the global scene. I use network theory to map the global connections between

metal-producing nations and to examine the structure of the global scene and the extent to which hegemon nations spur or hinder production. In Chapter Four, I use a similar approach to uncover the dynamics in the national socialist black metal scene and draw parallels between it and the global scene. Here, my emphasis remains on the hierarchy of relations between nations.

The methodology of choice for the first chapter is predictive modeling using negative binomial regression. This is in line with the organizational ecology literature and includes nested negative binomial models predicting band and genre foundings (Dowd 2004; van Venrooij 2015). There are two distinct advantages to using this methodology. First, organizational ecology is primarily concerned with change over time and thus fits nicely with the scene-dynamics approach, which is a key contribution of this research project. Second, there have been very few ecological studies examining music scenes (see van Venrooij 2015), so this chapter advances the literature in that realm. In the next two chapters, I use social network analysis methods with a particular emphasis on descriptive findings to map the band-to-label country ties. Doing so sets the stage for the first large-scale and longitudinal analysis of the global metal music scene.

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CHAPTER TWO:

GLOBAL SCENE DYNAMICS IN EXTREME METAL[2]

Media sociology often emphasizes and interrogates the *production* of content (see Peterson and Anand 2004; Roy and Dowd 2010). However, there are instances in which it is difficult to map and assess production, particularly when it occurs in underground scenes. Nevertheless, some scholarship points to how we can understand a particular case like the production occurring in the global metal scene. Kahn-Harris (2007) argues that metal scenes are particularly vibrant in countries that, among other things, have stronger economies, generous unemployment benefits, and are globally central. In contrast, Mayer and Timberlake (2014) find that metal scenes proliferated around the globe mainly through access to high-speed Internet. While these scholars offer competing hypotheses regarding the underground production of media content, both are silent about another important dynamic: the extent to which ecological processes (e.g., the founding and dissolution of bands) play a role in the vibrancy of scenes around the world. What factors led to the globalization of metal music? To what extent do social welfare policies impact the proliferation of bands in OECD countries versus the rest of the globe?

While there are many ways to answer the above questions, here I do so by examining over 38,500 band foundings from 123 countries between 1964 and 2015. I use data from the *KOF Index of Globalization*, *World Bank* and *Metal Archives* to chart music scene dynamics around the globe, paying particular attention to which scenes

[2] Following previous research, I use the terms "metal" and "extreme metal" interchangeably to refer to metal music throughout this chapter.

become more vigorous. I also construct a data set with many explanatory variables including those addressing previous hypotheses (e.g., GDP, adequacy of unemployment and welfare benefits, globalization, and Internet access). The negative binomial regression of global foundings provides partial support for previous findings. In the OECD-only case, the results illustrate the positive impact of rising unemployment rates on metal production on the one hand, and the negative relationship between benefit generosity and scenic activity, on the other. While I have detailed general aspects of relevant literatures in Chapter One, I turn now to specific aspects that are relevant for this chapter.

Background

The Institutional Context of Metal Music

One particularly understudied media industry is the global metal scene and its infrastructure.[3] Labeled the music of social outcasts, metal music rose from relative obscurity in the 1970s to become a global form of popular music by the 1990s. Yet, very little is known about how this transformation took shape on the global scale. Previous research has identified the institutions of extreme metal as tape-trading, distribution networks, record companies, bands and musicians, gigs and gig promotion, magazines, fanzines, and recording technology (Kahn-Harris 2007). Perhaps the most important institution of the early extreme metal scene was the network of correspondence between the artists and fans through mail. Later aided by the establishment of magazines like *Kerrang!* and *Metal Hammer*, the early extreme metal scene consisted of a tightknit

[3] See the "References and Resources" section at the end of this chapter for a listing of works that inform my discussion of metal music and its scholarship.

global network of scene members writing about and trading demo tapes and information about bands from various local sources.

Shortly thereafter, distribution networks became the first type of institutions to engage in the metal music business. These networks originally began as “distros” that carried catalogues for trading demos and recordings by local metal bands. After the formation of early record labels, these networks began stocking and selling extreme metal albums, gradually increasing their stock as extreme metal became more global. These networks continued to engage in trading and disseminating information through email after the Internet revolution of the early 1990s.

Bands and musicians form another part of the infrastructure of extreme metal by producing music and forming networks of relationships between themselves and other mediators like producers and labels (Kahn-Harris 2007). These mediators are often involved in booking and promoting gigs and festivals for metal bands. Similarly, magazines, fanzines, and promoters have continued to play an important role in the globalization of the scene in the absence of mainstream media attention (Kahn-Harris 2007; Moynihan and Søderlind 2003: Purcell 2003; Weinstein 2000). From the mid-1990s onwards, music videos, cable TV, and the Internet have facilitated the growth and diffusion of metal music all over the globe (Kahn-Harris 2007; Mayer and Timberlake 2014). Since the proliferation of extreme metal in the early 1990s, the institutions of the scene have multiplied and led to greater globalization of the scene.

From Subculture to Underground Scenes

Sociological studies of music worlds have often turned to the subcultural theory of the Birmingham Center for Contemporary Cultural Studies (BCCCS) or the neotribes

perspective developed by Bennett (1999) to explain the proliferation of music scenes. While useful in a certain light, these theoretical perspectives are limited in that they view musical communities as fixed and static subcultures, or dynamic but localized tribes (Bennett 1999; Kahn-Harris 2007). Recent studies have pointed to a more holistic approach based on the scenes perspective (Bennett 2008; Burkhalter 2012; Crossley 2019; Kahn-Harris, 2007; Kotarba and LaLone 2014). These studies rely heavily on historical-comparative methods and theorize about the development and current state of extreme metal production and consumption. This scenes perspective holds that extreme metal practices take place in a constantly changing global world. This view emphasizes the space in which social interaction—extreme metal activity—is actively ongoing on the local and translocal levels. The holistic aspect of the scenes perspective deals with the macro-sociological aspects of the global scene by viewing extreme metal not simply as practices in one sphere (a metal concert for example), but as a network of interrelated practices, beliefs, texts, and institutions. Thus, the holistic-spatial perspective is dynamic and multi-faceted without being too restrictive or deterministic.

One distinct advantage of the scene perspective is its treatment of extreme metal as a global phenomenon compared to the micro- and meso-level analyses posited by other scholars. For example, the subcultures and neotribes perspectives ignore the impact of globalization on extreme metal. Thus, while subcultures and neotribes make cross-comparison difficult, the scenes perspective offers a way to compare and contrasts individual metal scenes with each other and the larger global scene. Scenes also emphasize grassroots activity and Do-It-Yourself (DIY) ethics where insiders handle the day-to-day operations of the scene (Bennett and Peterson 2004). In the absence of major corporations, DIY entrepreneurs help maintain and popularize scenes (Kahn-

Harris 2004, 2007; Patterson 2013).

How Environmental Selection Informs Scene Dynamics in Global Metal

Organizational theory has paid particular attention to the proliferation of media production in recent years. From studies of art museums and newspaper publishers to radio broadcasters, sociologists have attempted to understand the process of globalization of media industries (Blau 1995; Carroll and Hannan 1995; Lippmann 2007). Among the many theories available to organizational sociologists, environmental selection holds the most promise to explain the phenomenon of proliferation in the metal scene. This theory posits that the life course of an industry can be explained in terms of the founding and mortality rates of individual organizations (Carroll and Hannan 1995). Here, the emphasis is on founding rates of new organizational forms, which are subject to historical shifts (Scott 2014; Stinchcombe 1965). Using this perspective, I broaden the definition of organizational forms to include individual bands in the global scene (see also Dowd 2004).

From its beginning, the global scene has been dominated by two distinct organizational forms: bands and labels. However, in the absence of reliable data on label foundings, bands provide an ideal unit of analysis for the study of scene dynamics. This approach makes it possible to examine the historical impact that cultural, political, and economic globalization have had on founding rates of metal bands from across the globe, and test the extent to which structural factors like social welfare policies and unemployment may have had on scene formation. An added benefit of this approach is that it can directly test previous claims made by scholars and map the globalization of metal music over time.

Data and Measures

The Metal Archives

The data for this study come from *The Metal Archives*[4] (*MA*), *KOF Globalization Index, Quality of Government*, and the *World Bank*. The *MA* site contains information on the year of founding, disbanding, hiatus, album release, band origin, location, and metal subgenre. The website includes only those bands that have released a physical album and excludes those that have Internet-only releases. I used R's *rvest* package to scrape the data from the *MA* in the spring of 2015. Scraping is a relatively new and innovative digital data technique that allows the researcher to extract large amounts of data from the web in an automated fashion. The *KOF* dataset includes country-level globalization and economic indicators while the *QOG* data capture unemployment and benefit generosity characteristics.

There were several challenges that arose in the data-cleaning process that are worth a mention. First, in direct contrast to Mayer and Timberlake (2014) who mark foundings as the year of first album release, I define a founding as the year in which a band is officially formed. This approach allows for a more robust analysis of the socioeconomic and global factors that influence scene dynamics. It also accounts for those bands whose first album release came a number of years after their founding. Taking the year of formation over that of the first album release acknowledges the presence of artistic activity around the socioeconomic and global sphere above all else. Only in cases of missing values for year of formation did I use the year of first album release as a proxy for foundings.

[4] https://www.metal-archives.com/

Second, the user-generated nature of the *MA* allows members to add band information to the site pending a final verification and approval by the site moderators. While such a system is prone to mistakes, the *MA* is currently the most comprehensive archive dedicated to metal music (Mayer and Timberlake 2014). Moreover, the final scraped data set yielded a total of 102,060 bands of which only 38,815 were signed. To avoid potentially including unverified bands, I only focus on the signed bands in the final dataset. Once the *MA* data was organized in a country-year format, I merged them with the *KOF Globalization Index* and the *Quality of Government* data sets to form the final data sets for the global foundings and OECD analyses consisting of 2,688 country-year observations spanning the years 1972-2010, and 175 observations for the time period between 2002 and 2010 respectively.

Dependent Variable

As mentioned in the previous discussion, I define a metal band founding as the total number of bands founded per country-year except for when this information is missing on the *MA* site; in which case, I use the year of first album release as a proxy for founding year. Mayer and Timberlake (2014: 36) note that using the first album release date "avoids ambiguity in determining when a particular band was founded, given that a musician could claim to have started a band at any point in time if he or she simply intended to make music." I take the opposite view and argue that the year of formation is the more accurate basis for the dependent variable in a study that aims to explore the impact of globalization on the actors' intent to found a band. Focusing on the year of first album release ignores the number of years a band has to work in order to secure the personnel and logistics necessary to form a following, get recognized, and gather the

cultural and economic capital to put out a record. Neglecting the complex histories of bands prior to their first official releases fails to explain the complex global socioeconomic factors that were present at the time of formation.

Key Independent Variables

Previous research on metal music points at the globalized nature of the metal scene by highlighting the role of cultural and capital flows from both local and translocal scenes (Kahn-Harris, 2007). However, very little has been said about how globalization impacts the field of metal production. Similarly, studies focusing on technology as the main agent of diffusion of metal fail to take into account the various forms of globalization and how they play a role in the diffusion process. To test these claims I use a more nuanced approach to the issue of globalization and use a number of micro-globalization measures discussed below.

Political Globalization. Kahn-Harris (2007) posits the role of globalization in the proliferation of the global metal scene. One important element of globalization that has been largely ignored in studies of metal music is that of the political dimension of globalization. To test the impact of political globalization of scene dynamics, I use the index for political globalization from the 2014 *KOF Globalization Index*. Political globalization is measured as the number of foreign embassies in a country, its international organization memberships, UN peace missions, and the number of bilateral and multilateral agreements it has concluded since 1945.

Social Globalization. I use two specific elements from the *KOF Index* social globalization measure: personal contact and cultural proximity. The personal contact index is measured in terms of telephone traffic, transfers as percent of GDP,

international tourism, foreign population as percent of total population, and international letters per capita of each country and therefore provides an interesting measure of the social reach of global citizens. Cultural proximity index consists of the number of McDonald's and Ikeas per capita and the total trade in books as percent of GDP of a country.

Economic Globalization. To get at the economic dimension of globalization, I use the actual flows index measured by through trade as percent of GDP, foreign direct investment of stocks, portfolio investment, and income payments to foreign nationals.

Male Unemployment Rate. Following Kahn-Harris's (2007) hypothesis, I test the impact of male unemployment rate on metal band foundings in OECD countries. I focus on male unemployment because the vast majority of metal bands employ male musicians.

Unemployment Generosity. Similarly, Kahn-Harris (2007) posits that higher unemployment benefits are likely to contribute to more scenic activity on OECD countries. To test this hypothesis, I regress foundings on benefit generosity in the OECD model. Welfare benefit generosity is an index that measures the extent to which unemployment benefits are considered to be generous in a given nation. Those nations with higher scores provide larger sums of welfare benefits to their citizens.

Secondary Enrollment Rate. Kahn-Harris (2007) speculates on the increased metal production in OECD countries as a function of secondary music education. In the absence of a variable that directly measures the number of years of secondary music, I use the secondary enrollment indicator found in the QOG dataset as a proxy to examine the extent to which this variable may explain scenic activity.

Control Variables

GNI per Capita. The production of metal music requires expensive equipment such as electric guitars, amplifiers, effects pedals, recording software, powerful computers, drums, bass guitars, and high quality microphones and PA systems. In addition, being a metal fan is a relatively expensive endeavor with concert, merchandise and CD purchases driving up the cost of being part of the scene. To test the relationship between income and metal band foundings, I control for the Gross National Income per capita in US Dollars.

Density. As is the norm in population ecology (Carroll and Hannan 1995), I control for the market size by introducing a density variable, which I calculate by subtracting the total number of disbandings from foundings in each country-year. The resulting variable provides an indication of how density-dependence acts on metal at the industry level. As is customary in population ecology research, I created a density-squared measure. However, this variable was eliminated from the final analysis due to issues with model convergence.

Regime Type. Metal music is inherently oppositional and has met with moral and religious backlash in more conservative societies (Kahn-Harris, 2007). Following in the footsteps of Mayer and Timberlake (2014), I control for regime type to account for the impact of political freedom on metal music production.

Colonial Origin. Closely related to the previous measure, I expect that metal music will be more popular in countries with histories of colonialism and oppression. I control for this by introducing a dummy variable for countries with a colonial past.

OECD Member, *Year*, and *Region*. In line with the previous hypothesis, I include a

binary indicator for OECD membership to test whether high income and welfare state status positively impacts the production of metal music. Year and region are further controls included to get at the time and regional variations in band foundings. Media Content Freedom and Political Pressure on Media Content. These two are included in the second regression to test the impact of political pressure on content production in the metal scene.

It is important to mention here that the above measures have a number of limitations. First, political, social, and cultural globalization tend to have overlapping definitions and are therefore difficult to differentiate. While the individual components used to measure them are far from perfect, the globalization indicators used in this chapter represent the most accurate variables available for researchers at this time. Second, secondary enrollment rate and male unemployment rate are used as proxy measures for secondary music education and overall musical activity of males in OECD countries. In the absence of data on music education and male unemployment in the arts, these proxy measures were the most appropriate to use in this study. However, as I note in the conclusion of this chapter, the effect of these variables on the dependent variable should be read with caution. Finally, there are missing observations in the globalization data for a number of countries. After trying a number of imputation methods, I opted for a listwise deletion method to exclude the missing observations.

Model Selection

The flow chart on page 27 illustrates the model selection process. The first set of models are aimed at testing the theoretical claims of Kahn-Harris (2007) by examining the impact of globalization, economic, and ecological patterns on extreme metal

production. I use a similar set of control variables to Mayer and Timberlake (2014) in the first set of nested models to see if their results can be replicated. Due to the count nature of the dependent variable, I use negative binomial regression to estimate the effects of globalization on band foundings. My decision to run negative binomial models instead of Poisson regression was influenced by overdispersion in the data (Dowd 2004).

Despite this, I ran the identical models using Poisson regression and was able to replicate similar results. There are two sets of nested models presented in this chapter. The first set of models tests the globalization hypothesis using the entire spectrum of the global scene. The second set of nested models test the welfare and unemployment hypothesis in OECD countries only. The logic behind using an OECD-only model arose out of both necessity and data limitations. OECD countries feature prominently in previous literature; Scandinavian and Western European nations produce the most metal albums per annum. In addition, previous research points to welfare generosity in Scandinavian and Western European countries as one possible explanation for the above phenomenon. Most welfare generosity data exist for OECD nations only. Therefore it made sense to include a separate set of models and restrict the outcome variable to OECD nations.

Results

Table 2-A provides the descriptive statistics for the key independent variables in the globalization models and Table 2-B shows the regression output for the global model. The global-level nested models test the impact of the various dimensions of globalization, economic, and ecological factors on band foundings. In the sociopolitical

model, political globalization and cultural proximity have a positive and statistically significant effect on new band foundings (B=0.058 p<.001, B =0.036 p<.001). Personal contact and capital flows both have a negative and statistically significant impact on new band foundings (B=-0.017 p<.001, B =-0.013 p<.001). In the economic model, per capita GNI has a positive effect on new band foundings in addition to the sociopolitical model (B=0.000 p<.001).

In the full model, all previous effects remain constant while the impact of GNI per capita is no longer significant. It also appears that a multi-party political system is the only type of government that has a positive and statistically significant effect on band foundings with full democracy being the reference group (B=0.464 p<.080). Market density (B=0.001 p<.001), Eastern European origin (B=0.355 p<.01), OECD status (B=1.421 p<.001), and year of formation (B=0.062 p<.001) all have a positive and significant impact on new band foundings.

Table 2-C shows the descriptive statistics for band foundlings in OECD countries while Table 2-D illustrates the regression output for the effects of welfare policy, unemployment, and media freedom. In the first set of nested models, higher male unemployment rates are associated with an increase in band foundings between 2002 and 2010 (B=0.101 p<.001) while unemployment generosity has a negative impact on scenic activity (B=-0.068 p<.05). In the educational model, higher rates of secondary school enrollment, used as a proxy for music education in secondary schools, are associated with decreased scenic activity. However, this relationship is not statistically significant.

In the media model, freedom of media content is positively associated with band foundings (B=0.149 p<.001) and political pressure on content does not have a

statistically significant effect on the outcome variable. In the final model, unemployment and welfare generosity remain significant (B=0.050 p<.05, B=-0.076 p<.05). Interestingly, secondary education and political pressure on media content have a positive impact on band foundings (B=20.502 p<.01; B=0.080 p<.01). Year and North American origin are negatively and positively associated with band foundings respectively (B=-0.063 p<.01; B=1.538 p<.202).

Discussion and Conclusion

The findings from the negative binomial analysis can be summed up in the following way: (1) global metal production takes place largely through mechanisms of political, cultural, and economic globalization; (2) OECD scenic activity increases in countries with higher male unemployment rates and lower welfare generosity; (3) secondary education and potential exposure to musical education curricula significantly increase band foundings; (4) and political pressure on media content increases extreme metal production in OECD countries. The first finding emphasizes the important role that political and cultural exchange play in the diffusion of media content globally. These results provide general support for earlier findings. Diffusion of cultural goods and symbols increases cultural activity in the form of underground music production (Kahn-Harris 2007; Weinstein 2000). Perhaps more importantly, the findings suggest that the role of digital capacity in the globalization of metal music is overstated. Instead, it may be more accurate to say that a country's relative position on the globalization index is a better determinant of its scenic activity and, by extension, impact on the globalization and diffusion of metal music. This is especially true in the period before the advent of broadband Internet, when tape-trading and band promotions took place

through the postal system.

The relationship between unemployment and band foundings, and benefit generosity and band foundings, is more complex to decipher. While it is plausible to expect higher unemployment to positively impact musical activity, it is unclear whether the desire to make music or a lack of employment opportunities outside of the music industry are responsible for this finding. In either case, this finding casts doubt on previous theories on the impact of unemployment on creative careers. Do musicians in OECD countries turn to music because of a lack of employment opportunities elsewhere? Or, does the pursuit of musical careers negatively impact their employment chances? The findings presented here do not provide a clear answer to these questions.

Moreover, the negative relationship between benefit generosity and musical activity suggests that, contrary to previous theories, OECD scene actors do not necessarily rely on unemployment benefits to make music. A more plausible explanation may be that musicians in OECD countries with lower unemployment benefits are more likely to view their musical careers and entry into a risky music market as a serious career decision due to the lack of a strong social safety net to fall back on. While those in high-benefit countries can afford to fail, actors from low-benefit countries have to find alternative ways to negotiate the high-risk music environment. Historical accounts suggest a plethora of possibilities for musicians in OECD countries. However, these findings do not explain why high-benefit countries like Finland and Norway produce more bands per capita than other OECD countries.

Secondary enrollment rates also predict more musical activity in OECD member states perhaps due to the presence of more vigorous musical curricula. While no reliable data on formal musical education in secondary schools exist, it is plausible to expect that

higher secondary enrollment would potentially expose students to more rigorous music education. Such exposure is likely to lead to more musical careers in young adulthood (Kahn-Harris 2007). Finally, political pressure on media content has a surprisingly positive effect on extreme metal production. Although political pressure on the media is significantly lower in OECD countries compared to the rest of the world, it has a significant impact on scenic activity in the OECD data set. One possible explanation is that extreme metal music thrives on an ethos of rebellion and opposition (Weinstein 2000; Walser 1993; Patterson 2013). As such, scene members and musicians often produce oppositional music underground and away from the direct gaze of the existing political structures. However, the extent to which media content is monitored by political institutions in OECD countries is not as clear as in authoritarian countries.

The current study suffers from several limitations. First, the mechanisms mediating the effect of unemployment and social safety nets on extreme metal careers are not properly understood in the literature. Second, data limitations and missing information about years of musical education in secondary school and beyond further limit one's ability to accurately portray the relationship between education and creative careers in the extreme metal scene. Similarly, the findings relating to unemployment benefits do not adequately answer why some Scandinavian countries with high benefits produce disproportionately large scenes. Moreover, the chapter's two-way focus on testing existing theory and adding a new labor studies dimension to the debate means that the a much more comprehensive and systematic body of work is required to address all of the complexities of the extreme metal scene dynamics. One potential remedy to the above problems is to create survey dedicated to creative careers in metal music. Such a

survey would include direct questions on the impact of welfare policies and musical education on musical careers of the respondents.

Table 2-A. Descriptive Statistics for Global Foundings, 1972-2010

	Mean	**SD**	**Median**	**Min.**	**Max.**
Dependent variable					
Foundings	11.01	32.14	1	0	451
Independent variables					
Political globalization	67.27	20.01	67.6	8.66	98.16
Personal contact	52.49	21.93	52.325	7.91	94.83
Cultural proximity	36.82	31.6	36.785	1	97.23
Capital flows	54.68	22.03	54.1	3.42	100
GNI per capita	9226.79	12753.02	3455	80	88430
Market size (density)	84.18	269.16	5	0	4294

Table 2-B. Negative Binomial Results of Socio-political, Economic, and Ecological Effects on Global Band Foundings, 1972-2010

	Sociopolitical Model			Economic Model			Full Model		
Variables	**B**	**SE**	**p**	**B**	**SE**	**p**	**B**	**SE**	**p**
Political globalization	0.058	0.002	***	0.056	0.002	***	0.031	0.002	***
Personal contact	0.017	0.002	***	0.022	0.002	***	-0.022	0.003	***
Cultural proximity	0.036	0.001	***	0.032	0.001	***	0.016	0.001	***
Capital flows	0.013	0.002	***	0.011	0.002	***	-0.018	0.002	***
GNI per capita				0.000	0.000	***	0.000	0.000	
Market size (density)							0.001	0.000	***
Regime type (Ref: *Democracy*)									
Military							-0.566	0.129	***
Monarchy							-1.196	0.288	***
Multi-party							0.464	0.080	***
One-party							-0.330	0.194	
Other							0.795	0.243	**
Colonial origin (*Yes*)							0.311	0.159	
OECD member							1.421	0.091	***
Year							0.062	0.004	***
Region (Ref: *Northern Europe*)									
Caribbean							-2.566	0.476	***
Central America							-0.986	0.217	***
Central Asia							-2.977	0.610	***
Eastern Africa							-4.171	0.537	***
Eastern Asia							-0.928	0.153	***
Eastern Europe							0.355	0.117	**
Middle Africa							-3.002	1.109	**
Northern Africa							-2.978	0.294	***

Northern America							0.249	0.132	
Oceania							-0.394	0.148	**
South America							-0.240	0.211	
South-Eastern Asia							0.159	0.201	
Southern Africa							-1.013	0.297	***
Southern Asia							-2.078	0.255	***
Southern Europe							0.001	0.096	
Western Asia							-1.291	0.151	***
Western Europe							-0.030	0.086	
Constant	-2.713	0.155	***	-2.405	0.159	***	-122.996	7.688	***
LL	-6224			-6205			-5531		
Pseudo R^2	0.147			0.149			0.242		
Wald				***			***		
N	2688			2688			2688		

*** p <.001. **p <.01. *p <.05, two-tailed tests.

Table 2-C. Descriptive Statistics for OECD Country Foundings, 2002-2010

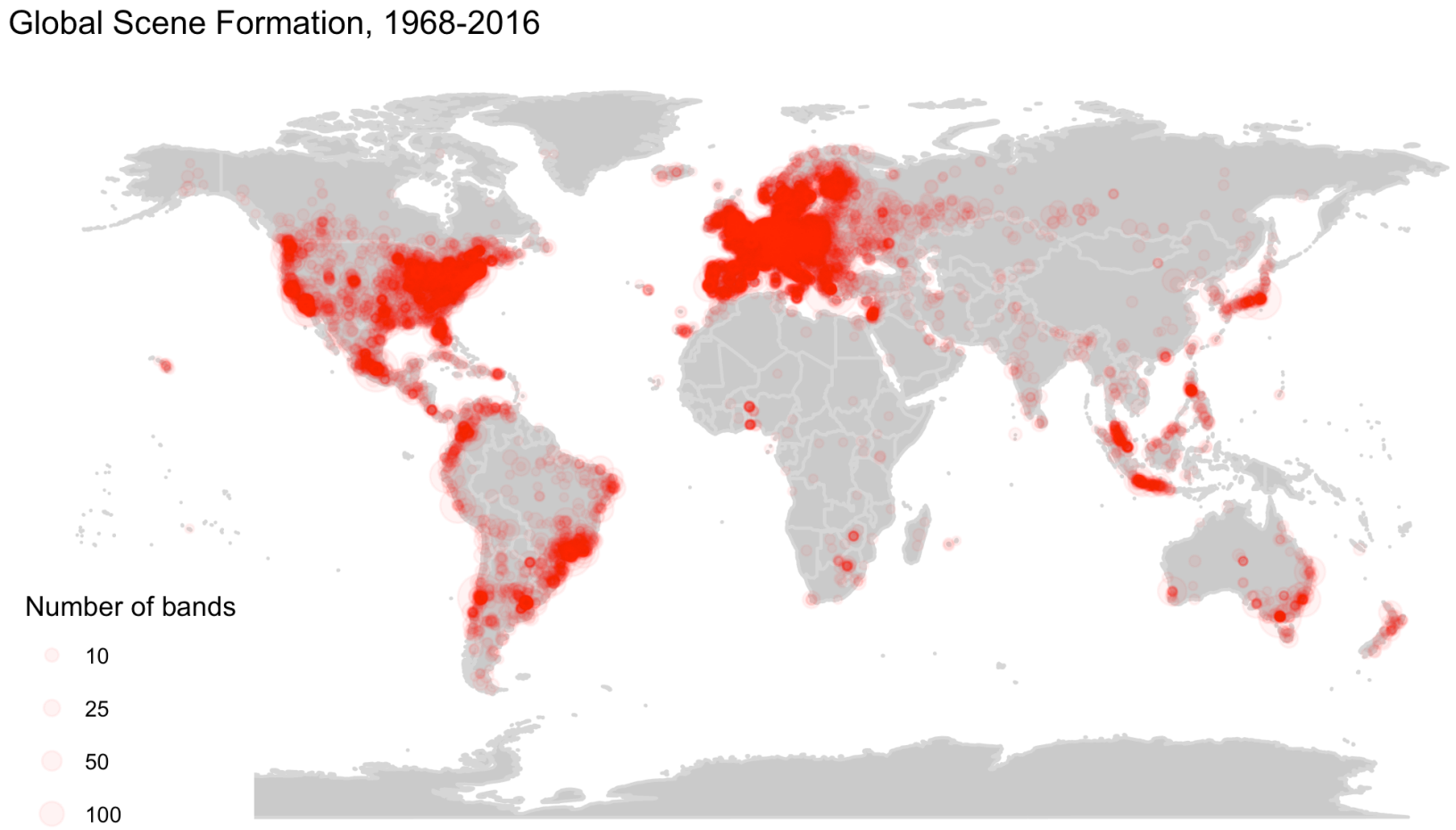
	Mean	SD	Median	Min.	Max.
Dependent variable					
Foundings	57.67	82.68	31	1	451
Independent variables					
Male unemployment rate	6.11	2.55	5.8	2.3	19.9
Unemployment generosity	9.95	2.52	10.4	5.1	14.2
Secondary enrollment rate	0.08	0.02	0.08	0.06	0.13
Media content freedom	4.19	2.52	3	1	14
Political pressure on media content	6.75	3.41	6	1	15

Table 2-D. Negative Binomial Results of Unemployment, Welfare and Content Regulation on Band Foundings in OECD Countries, 2002-2010

	Unemployment Model			Educational Model			Media Model			Full Model		
Variables	**B**	**SE**	**p**	**B**	**SE**	**p**	**B**	**SE**	**p**	**B**	**SE**	**p**
Male unemployment rate	0.101	0.029	***	0.098	0.030	**	0.110	0.030	***	0.050	0.023	*
Unemployment generosity	-0.068	0.030	*	0.066	0.030	*	0.015	0.036		-0.076	0.039	*
Secondary enrollment rate				4.156	4.860		3.877	5.269		20.502	7.677	**
Media content freedom							0.149	0.034	***	0.039	0.031	
Political pressure on media content							0.025	0.032		0.080	0.026	**
Year										-0.063	0.023	**
Region (Ref: Northern Europe)												
Eastern Asia										-0.890	0.426	*
Northern America										1.538	0.202	***
Oceania										-1.642	0.322	***
Southern Europe										-0.442	0.235	
Western Europe										-0.490	0.170	**
Constant	4.079	0.355	***	4.437	0.585	***	3.334	0.795	***	129.4	45.569	**
LL	-880.7			-880.5			-873.8			-799.7		
Pseudo R^2	0.010			0.010			0.010			0.097		
Wald							***			***		
N	175			175			175			175		

*** p <.001. ** p <.01. * p <.05, two-tailed tests.

Figure 2-A. Relative Size of Local Scenes Measured as the Number of Bands per City of Origin, 1968-2016



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CHAPTER THREE:

NETWORK STRUCTURE AND DIFFUSION IN THE GLOBAL METAL SCENE

Organizational sociologists have long reminded us that in order to understand a given industry or field, we need to analyze both large and small organizations (Carroll and Hannan 1995). This is because, as they have empirically demonstrated, these two types of organizations tend also to operate by different logics (Thornton and Ocasio 2008). Moreover, while large organizations may be more viable in terms of their impact, small organizations can have consequential impact despite their limited visibility (Carroll and Hannan 2000). This chapter takes the wisdom of organizational ecologists one step further: when studying a given field such as the global field for recorded music, large sectors and small sectors alike should be considered. While the global flow of music shaped by multinational corporations has garnered much attention (see Christianen 1995; Peterson and Berger 1975), I turn here to the global diffusion of recorded music made possible by underground scenes (Dowd et al. 2019). Indeed, I show that such underground scenes can be consequential for the rise and spread of new musical genres, but the manner in which they operate is very different from the mainstream industry of multinational corporations.

A comparison of scholarship on both the mainstream music industry and underground music scenes reveals the difference between them in terms of the key actors. As already noted, multinational corporations have a prominent if not outsized role in the mainstream music field (Hesmondhalgh 1998). Yet in underground music scenes, the key "actor" arguably is not an individual organization but rather the network of those operating at the grassroots level. In past studies for example, Crossley (2015)

has demonstrated how networks of individuals and retail establishments spurred the rise of punk and post-punk in the UK. More recently Crossley and Emms (2016) have also demonstrated the importance of networks spanning locales in terms of the field for UK music festivals. Their findings illustrate the advantages of using social network analysis to map the connectivity of different musical genres across the globe.

Inspired by these studies, I continue this line of inquiry by looking at the networks between small establishments (e.g., record companies) and musicians that span, not between cities as in Crossley's studies, but rather across nations. Although the underground can be small in numbers of participants, it is often large in terms of the geographical territory covered (Kahn-Harris 2007). In fact I demonstrate that very point by tending to how such cross-national networks play key roles in the global diffusion of metal music across 130 nations over a 50-year period. Crossley (2014) also makes a radical claim: that we can understand the global diffusion of underground music genres by tending to the networks themselves. That stands in stark contrast to more traditional arguments regarding cultural globalization, which stress the impact of multinational corporations (DiMaggio 1977). Yet, given that scenes are often cast in opposition to multinational corporations (see Bennett and Peterson 2004), and given that underground scenes operate by logics different to highly visible industries studied by other globalization scholars, I find Crossley's claim not only radical but also analytically insightful. Hence, in this chapter, I take a very specific path when navigating the emphasis on "networks" that spans the three theoretical approaches discussed in Chapter One.

This chapter also deals with the dynamism of networks—and issue I previously raised in Chapter One. Traditionally, social networks scholars have tended to focus on

static networks, or networks that do not have a time-varying component (Perry-Smith and Shalley 2003). Nodes in static networks typically do not change over time. Static networks also tend to be based on cross-sectional data. However, there is an emerging area within social network analysis that considers the case of time-varying relationships between nodes. This new type of social network is referred to as dynamic social network analysis (Greene, Doyle, and Cunningham 2010; Krivitsky and Handcock 2014). One key element that sets dynamic and static networks apart is the type of data required to assess them. While static networks rely on cross-sectional data gathered at a single time point, dynamic networks require more expansive data to facilitate for the entry and exit of nodes into the network at any given time. Such data are often in time-series format and include network entry and exit information. Time-series data also make it possible to map the evolution of network ties over time and space; a quality unique to dynamic network analysis.

This chapters thus argues that recasting scenes as dynamic networks is crucial for elucidating the puzzle of cultural globalization and geographic diffusion of the underground. To that end, it takes a dynamic approach to understand the network processes influencing the production of metal music by asking: What is the structure of the global metal network and how does it facilitate content production over time? Is the global metal network localized in production, dominated by a few “hegemons”, or entrenched in reciprocal processes of globalization? Will those bands and labels that operate in key countries hold dominance and become more dominant over time? What are the mechanisms of diffusion and how can they be explained in terms of concentration?

I answer these questions by focusing on a particular type of network, the network

that occurs between the nationality of a metal band and the nationality of the record company at which it is based. Using data on 105,284 albums released between 1968 and 2016, I map the evolution of the global metal network using centrality measures to account for rates of change in production. I then employ regular equivalence and blockmodeling methods to generalize about the structure of the metal network. This simple network reveals some fundamental differences between how the underground operates versus how the mainstream does.

First, while there are nations that have an outsized presence in the underground scene (what I call the "hegemons"), those hegemons actually facilitate the viability of other nations as they enter the global music scene; hence these hegemons do not constrain production as they do in the mainstream industry, but rather spur it. Second, the entry of nations into the global music scene occurred well before the rise of Web 2.0, with the Internet only further facilitating but not the cause of this global diffusion. Finally, even within this underground scene, there is still a variety of positions with hegemons at the core as well as nations that play roles in the semicore and the periphery. Yet what is striking is the flow of music and musicians across those three groups. In other words, unlike the mainstream industry, this underground scene is marked by low barriers to entry and considerable cross-national pollination.

Background

Production of musical content has been an enduring feature of sociological inquiry—especially since the early 1970s (Roy & Dowd 2010). Seminal works in the field initially tended to the divergent impact of market concentration on diversity of products and innovation by focusing on the role of large recording firms in the field of popular

music (Dowd 2004). Proponents of the mass culture model developed by Peterson and Berger argued that heightened concentration led to low diversity of products as centralized oligopolists exerted power on the market (Peterson and Berger 1975; Rothenbuhler and Dimmick 1982). This literature proposed that popular music markets were subject to oscillating cycles of production during which the emergence of niche firms led to periods of heightened innovation before the oligopolists regained their control. A second stream of scholarship recognized that high levels of concentration could also lead to high diversity in markets where large firms followed a decentralized mode of production (DiMaggio 1977). The class culture model pointed to niche labels as innovators, whose presence mitigated the negative impact of concentration on diversity (Dowd 2007).

At their core, these perspectives point to tug of war between the hegemonic influencers (i.e., large recording firms that control centralized production) and smaller niche firms. In particular, Peterson and Berger's study points to the way in which larger firms maintained status quo and limited the success of smaller firms. However, these efforts were limited: historical developments allowed smaller firms to gain access to consumers, which led to the rise of rock 'n roll and R&B. In the era following Peterson and Berger's study, large firms began emulating the success of smaller firms by establishing in-house labels and forming distribution agreements with small firms, thereby regaining their control of the recording industry (Dowd 2007).

Among the central contributions of the above body of work was the theoretical focus on and measurement of popular music as an established industry in which the processes of organizational adaptation and market concentration could be assessed through rich sources of data on firm vital rates, *Billboard* charts, hit singles, and album

sales figures. But how can these frameworks be mapped onto restricted fields such as metal music where production dynamics are embedded in underground scenic activity rather than large corporate processes?

Of the two literatures mentioned above, the former has the most effective way of measuring the influence of big firms by making use of the Herfindahl-Hirschman Index (HHI), which measures concentration in a given market (Dowd 2004). HHI methodologically maps onto the conceptualization of high concentration as the opposite of high competition. I draw on this measure in a slightly different fashion later in the chapter to answer these questions. I now turn to the recent developments in literature that provide a framework for understanding how the above can be applied to underground fields where corporate processes are minimal.

DIY Entrepreneurship in Underground Scenes: The Case of Metal Music

Metal music rose out of the rock movement of the 1950s and 1960s, with UK acts like Black Sabbath, Led Zeppelin, and Deep Purple among its first practitioners (Weinstein 2000). The genre was relatively obscure and received no support from local radio, television, and media. However, by the mid-1980, the popularity of the genre had spread to the US and a handful of European and South American countries. On the global front, the period between 1984 and 1988 saw the establishment of heavy metal fanzines and magazines. On the American front, this period also coincided with MTV's launch of Headbanger's Ball in 1986. By the 1990s, Headbanger's Ball had become MTV's most-watched show (Walser 1993; Weinstein 2000).

In the last two decades, the growth of the scene has resulted in considerable innovation of new genres leading to a compact underground network of actors and

transnational flows despite limited economic capital. The recent development of the genre into a transnational art form begs the question: in the absence of large corporate actors, how did metal music globalize and diffuse across time and space? Scenes literature developed by Bennett and Peterson (2004) points to a "Do-It-Yourself" (DIY) and entrepreneurial ethos in decentralized music production as one explanation. Scenes differ from mass-produced music industries described by Peterson and Berger (1975), and DiMaggio (1977) in two key ways.

First, in the absence of corporate actors, scenes rely on informal networks of DIY entrepreneurs to handle the day-to-day operations of musical production. For instance, such networks are heavily involved in tape-trading, gig and festival promotion, booking, and recording of music globally (Bennett and Peterson 2004; Kahn-Harris 2004, 2007; Patterson 2013). The main diffusing agent in music scenes are young entrepreneurs who, in the absence of interest from large labels and media corporations, invest their own capital in maintaining their local scenes.

Second, scenes can be local, translocal (i.e., many local scenes spread across the globe), or virtual (i.e., online) opening the door to a multitude of national and global contexts for music to take shape. As Bennett and Peterson (2004) note, underground scenes historically grew as a response to hegemons in the recording industry (i.e., large recording firms) and infrastructural hegemons in decentralized music scenes (e.g., UK and US). Moreover, in contrast to the literatures that emphasize the impact of big firms, scenes literature focuses not on competition but rather upon cooperation between the key actors. This is not surprising as they are often addressing cases that are purposefully operating either in opposition to corporate dominance or as a response to corporate neglect (Dowd et al. 2019; Hesmondhalgh 1998).

Cultural Hegemons and Networks

Another potential response to the questions above has come from a relatively recent line of inquiry on cultural diffusion, which focuses on country-level actors, rather than firms, to examine the impact of concentration on transnational flows of aesthetic products, actors, and processes that facilitate the diffusion of cultural products across the globe via national institutions and cultural intermediaries (Kuipers 2011, 2015). Cultural globalization aims to uncover the diffusion of cultural goods like film (Baumann 2007), music (Mayer and Timberlake 2014; Mitchell 1996), and poetry (Sapiro 2008) in a global context. One prominent feature of the cultural globalization literature is its emphasis on infrastructural hegemons (i.e., dominant nations) that expedite the flow of cultural goods across the globe (Schmutz and Dowd 2018). Hegemons emerge in a national context as originators of an art form (e.g., punk music) and dominate that field as it proliferates transnationally.

Indeed, there are several examples of how hegemons have emerged and controlled the recording industry in the field of popular music: take, for example, the emergence of Anglo-American firms in the early 1970s and their subsequent control of the Dutch poplar music scene (Christianen 1995), and early jazz music and its subsequent proliferation through American majors, and later, independent labels. In each case, the recording market was dominated by firms from a few countries that facilitated the popularization of the genre through their national infrastructure (e.g., organizational practices, human capital, promotion, recording) in local geographies. Once the music proved to be profitable, they turned to transnational markets, acting as gatekeepers of the genre in Europe and elsewhere. The last decade has seen two major

changes in the way the majors have responded to music production: (1) a shift to more decentralized production (i.e., buying out independent specialist labels), and (2) to online promotion (i.e., moving away from manufacturing). Both logics have an emphasis on networks.

Yet previous research has largely neglected the formal network ties present in music scenes. As noted in Chapter One, both Bourdieu's "fields" and Becker's "art worlds," despite their emphases on structure and interaction, stopped short of examining network ties. Similarly, other scholars have used the term "networks" as metaphors for connections and relationships between individuals in a shared space (see Emirbayer and Goodwin 1994; Kahn-Harris 2007). However, others have successfully used network theory to analyze the punk and metal music scenes in the past decade (Crossley and Emms 2016). Drawing on the gap in fields and worlds literature, these scholars have examined the interactions between musicians and venues in the UK punk and metal scenes using Social Network Analysis (SNA). For example, Crossley's analysis of the Manchester punk scene tracks musicians and venues and extracts the structure of the network of relations between them. Crossley et al. (2014) have also shown how processes of diffusion can be traced using network maps of local and translocal scenes. Despite these insights, there is a continued lack of interest in studying scenes as networks using SNA (Bottero and Crossley 2011).

In the following section, I provide a framework for illustrating how network structure of the global metal network evolved over time. SNA is a suitable tool to study underground scenes because it shines light on the diffusion of cultural products from one actor to another as an internal process. Moreover, network theory can illustrate the extent of hegemonization in a given scene by exposing the powerful actors and

illustrating the nature of their relations with others. The rest of my analytic strategy relies heavily on previous research on networks of locales developed by Alderson and Beckfield (2004), where they map the power relations of cities in a global system network.

Data and Methods

The Metal Archives

The data for this study come from the *Encyclopedia Metallum: The Metal Archives* (*MA*) website. The *MA* has been the most comprehensive archival source for metal music on the Internet and elsewhere since it was created in 2002 (Mayer and Timerlake 2014). The site is maintained by a dedicated team of webmasters and moderators, and has over 330,205 registered users currently. There are several points of salience to be noted about the *MA*. First, the website archives all metal releases by type (e.g., demo, full-length, extended play) release date, catalog ID, label, and format. Second, the MA contains data on all metal bands founded since the first metal band was formed in 1968 until the present. Each band has a dedicated page that includes information on country of origin, city/state location, activity status (e.g., active, split-up, on hiatus), year of formation, subgenre, lyrical themes, current label, and years active. Third, the *MA* archives data on country, status, and genre specialty for over 30,000 record labels.

However, despite being a goldmine of archival information, there are some questions that need to be answered: Is the *MA* a reliable source of data? And, what criteria, if any, does it take into account before labeling an album or band as “metal”? Answers to these questions are addressed by the webmasters in the Frequently Asked

Questions section of the site. The *MA* functions much like Wikipedia in that member users are able to contribute content and edit band, label, and album pages at any time. This user-generated content can sometimes produce duplicate entries and is prone to human error. The webmasters have addressed such issues by employing teams of users to fix factual errors. For example, the "Contribute/TO DO" link on the welcome page asks users to report, fix, and monitor flagged entries as soon as possible. A number of high priority site maintenance tasks are posted on a weekly basis to ensure that the information is correct and up to date.

The *MA* also has strict rules for which bands and albums should be archived. For example, to be included on the MA, bands need to employ metal aesthetics in their compositions (e.g., palm-muted and distorted guitar riffs), have audio samples that can be verified (e.g., songs on Bandcamp and Facebook), and have at least one official album that falls under the metal genre label. Taken together, the *MA* has proven to be a reliable source in several studies published in peer-reviewed sociology journals. Its reliance on user-generated entries has allowed for fans from all over the globe to submit data on lesser-known bands and albums, which has made the website the premier destination for scholarly research.

The band, label, and album pages were scraped using the *rvest* package in the R statistical software program. To cross-verify the content of the scraped files, raw data files from the *MA* servers were obtained after communicating with the webmasters via email. The scraped files were then cleaned and merged together. Independent, demo, single, and compilation releases were excluded from the analysis for several reasons.

First, due to the methodological focus of the chapter on country ties, it made little sense to keep independent releases in the final data set. Traditionally, getting signed by

a label is a symbol of success in metal music, thus, those albums that are released independently play no part in a global network. Second, demos and singles are often one-off releases that appear on a subsequent full-length or EP (extended play) and therefore are excluded from the data set. Moreover, compilation albums are a poor indicator of country ties because they are often released years after the original albums and by different labels. The final data set included 105,284 albums spanning 1968 to 2016.

Band-to-label Country Ties

In order to map the network relations among countries in the metal scene, a weighted edgelist of country relations per album was created. An edgelist has the advantage of reducing a large relational data set to a matrix of directed ties where each album is an instance of transnational flow of music from country actor band *i* (i.e., "sender") to country actor label *j* (i.e., "receiver"). This analytic strategy has two distinct advantages. First, in this framework, globalization and diffusion processes are embedded in internal network structure; they emerge and evolve over time independent of any exogenous explanatory variables. Second, network metrics can be used to construct multiple indices that inform scene dynamics on an annual and aggregate level (e.g., concentration and import-export of metal music). To assess the extent to which the hegemons exert power over the metal network, I use Freeman's (1978) definition of indegree and outdegree centrality measures.

Indegree centrality. Consider the network diagram in figure 3-A as an example. Nodes A-D represent the countries in the network and the edges capture the process of album flows from band to label country of origin. In this hypothetical network, country

A occupies an advantageous position because it receives the most ties (i.e., its labels release albums by bands from B, C, and D). It is therefore in a position of authority due to its high indegree centrality score. Countries with high indegree centrality exercise authority over the global metal network due to their strong scene infrastructure. Given the sort of relations explored in this chapter, high indegree scores are indicative of prestigious labels who act as trendsetters. Country A also has mutual ties with country D, indicating reciprocal flows of production between the two countries.

Outdegree centrality. Similarly, outdegree centrality, as perceived in this study, indicates prestige. Country B in figure 3-A has more options to send ties to (e.g., A and C) and is thus highly sought after. Outgoing ties can indicate a stronger local scene producing successful bands.

Aggregate Market Concentration

I use the Herfindahl–Hirschman Index (HHI) to map the concentration of the metal market over time. The HHI is derived by the sum of the squares of market share for firm *i* in a market with N firms.

$$H = \sum_{i=1}^{N} s_i^2$$

HHI ranges in value from 0 to 10,000 with higher values indicating increased concentration and lower values signaling increased competition. To calculate this measure, I turn to the sum of indegree and outdegree centrality of each country for each year in the metal network. To better grasp the manner in which the market concentration was measured, consider the following example. US band Metallica's 1988 album *...And Justice For All* was released through US-based label Elektra Records. This

is an instance of a self-reflexive tie for the US in 1988 (e.g., country C in figure 3-A). If this album was the only one to be released globally in 1988, it would indicate perfect concentration (e.g., score of 10,000) by the US for that year. Now consider the case of Norwegian band Mayhem's 2014 release via French label Season of Mist. In this case (and assuming this was the only album released in the world for that year), France and Norway would each have a 50% share of the metal market in 2014.

There are two powerful properties of HHI that make it especially useful in this context. First, limiting the concept of market concentration to firms only runs the risk of minimizing the impact of musicians and national infrastructures of their countries of origin. The HHI approach ensures that a more accurate picture of network relations is captured. Figure 3-B illustrates the market concentration and number of countries in the network for each year spanning the period 1968 and 2016. Second, classical studies on market trends use the number of firms in a given market as their primary measure of concentration. However, HHI fits nicely with an alternative measure of concentration for scenes with many underground labels where very scarce data on firm founding dates exists. Furthermore, many of the large corporations in the metal market today (e.g., Sony Music Entertainment subsidiary Century Media, or Nuclear Blast) entered the global network after the popularization of metal music. Thus, focusing on label countries of origin, instead of founding years, is a logical choice.

Structure of the Global Metal Network

Identifying the hierarchical relationships in the global network of bands and labels is one of the central concerns of this chapter. Having operationalized a definition of market concentration, I map tie direction and strength for the countries in the

aggregate network using blockmodeling techniques. Blockmodeling captures the sociological concept of social roles and brings to light the hierarchical nature of network ties by identifying blocks of positions based on tie similarity and how they interact with one another. Previous studies have used blockmodeling methods to extrapolate about the world-city system in multinational corporations (Alderson and Beckfield 2004) and group membership (Lazega, Jourda, Mounier, and Stofer 2008). Figure 3-C illustrates tie similarity and places countries in three blocks based on mutual ties. Figure 3-D shows the direction and cumulative impact of ties between the three blocks of countries. Blockmodeling allows for the grouping of countries into distinct blocks based on their tie similarity.

Results

From Concentration to Competition

As figure 3-B shows, the metal market went from high concentration to competition, especially after the early 1980s, when competition was coupled with the entrance of new countries (i.e., new bands and new labels) into the global network. Figure 3-B further suggests that decentralization occurred earlier than both 1995 and 2005, indicating that the role of digital capacity (i.e., Global Internet and Web 2.0) may have been overstated in previous literature. While an influx of countries into the network after the advent of the Internet is generally supported, the metal network was headed towards competition far earlier than such technological advances.

The equivalence clustering method initially revealed 87 distinct blocks based on tie similarity. A blockmodel with three clusters was run to further delineate the structure of the aggregate metal network depicted in figure 3-C. Figure 3-D illustrates the scaled-

down network in three blocks, where block 3 represents the core countries (i.e., countries with the highest centrality scores) and blocks 2 and 1 the semicore and periphery, respectively. The findings from blockmodeling analysis reveal three distinct patterns of relationships. First, the metal network has a low entry barrier where core-periphery mutual ties are stronger than semicore-periphery mutual ties. Second, the nature of ties between the blocks in the network are such that the core countries in block 3, while few in number, reap the benefits of having developed metal infrastructures, illustrated by the largest volume of self-loops indicative of local production. Compared with blocks 2 and 1, core countries are responsible for the largest share of metal albums produced. Relative to block 1, countries in block 2 are responsible for the next largest share of metal albums and local production (as indicated by the weight of self-ties). Block 1 represents the peripheral countries with the lowest output of metal music per country. Despite their weaker self-ties (and local production), countries in block 1 are involved in transnational flows of music, either as country of origin for bands or labels, with countries in both blocks.

Authority, Prestige, and the Shifting Role of the Infrastructural Hegemons

Table 3-A also illustrates the percent of local production. The cumulative effect of the core block relative to the rest of the blocks is staggering: the hegemons exert wide-ranging control on the aggregate metal network. However, when spread over time, the decentralization of the metal network becomes visible. At the aggregate level, there are two important historical trends that shed light on the shifting role of the hegemons. First, countries with the highest indegree centrality enjoy a unique position of authority over the rest of the network for one primary reason: they are the infrastructural

hegemons who own the largest and most popular labels and scenes. The two largest countries in this respect are the US and Germany.

Conversely, those countries with the highest outdegree centrality produce the most desirable music: bands from those countries enjoy a certain degree of prestige as they are highly sought after by large and prestigious labels. The US and Germany lead the pack in this category as well. Second, each country's share of local production indicates that local production is especially pronounced in countries with little authority or prestige in the global scene. For instance, late-adopters with extremely small local scenes like Angola, Albania, Kenya, and Mozambique produce all metal locally. However, domestic production is also pronounced in early-adopters like the US (57.5%) and core countries like Brazil (61.8%) and Russia (56.7%).

Discussion and Conclusion

The present study set out to test the extent to which infrastructural hegemons dominate global production, and the impact of their domination on the diffusion of metal music as an underground cultural product. The findings suggest that, similar to popular music fields, production and diffusion dynamics in the metal music scene were hegemonic in the early stages. However, as time wore on and metal music became more popular, DIY labels and local scenes proliferated, leading to a steady increase in the number of bands and labels entering the global network. This trend led to the decentralization of the market as production ties extended from the hegemons to late-adopters. The decentralization associated with the scene from the 1980s onward (marked by the subsequent entrance of new countries into the network) has transformed the role of the hegemons.

Contrary to popular music fields, the hegemons facilitate the entrance of late-adopters into the network through their scenic institutions. Countries in the core have a leveraged position as their labels sign the best talent from semicore and periphery countries. But they also produce a number of bands that find interested labels in semicore and periphery markets. Hence these hegemons do not constrain production as they do in the mainstream industry, but rather spur it. Moreover, these production dynamics also benefit periphery countries by creating a merit-based system of promotion based on musical talent (i.e., bands) and DIY entrepreneurship (e.g., labels).

This chapter also has a number of limitations. First, the present study restricts network membership to those bands that are signed to a record label. Yet, there are many unsigned bands in the global metal scene. Given the study's focus on dyadic ties, all independent albums were excluded. Future studies should aim to incorporate unsigned artists into the global network and test the extent to which the findings presented here are supported. Second, from a theoretical perspective, debates over what is and is not "underground" are far from settled. While this chapter proposes that metal music is essentially a form of underground music, the genre's relationship with capital remains highly contested. Despite its relative distance from other fields of popular music, many bands and labels engage in various types of DIY entrepreneurship, most notably directly controlling merchandise sales, marketing, and online promotions.

Future work in the field should compare and contrast the nature of capitalism in popular music and DIY scenes. Finally, due to the relatively large data, the present study takes a descriptive approach to illustrate the diffusion dynamics of cultural products. A related paper that uses temporal network regression models to examine the effect of cultural, social, and economic globalization on tie formation is currently in progress.

Future work will add to the descriptive analysis presented here and contribute further to the networks and globalization literatures.

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Figure 3-A. Example of Directed Network Ties

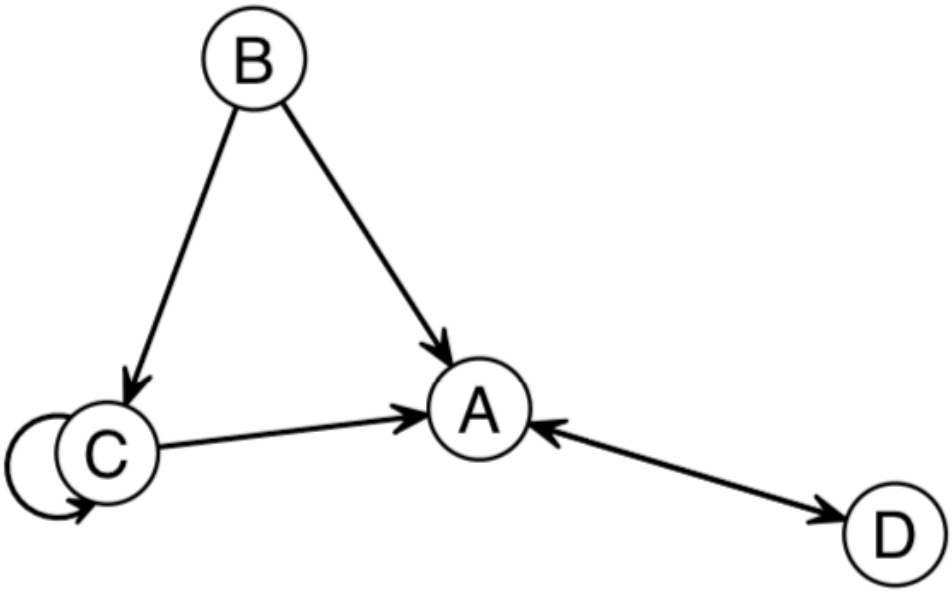


Figure 3-B. Metal Market Concentration

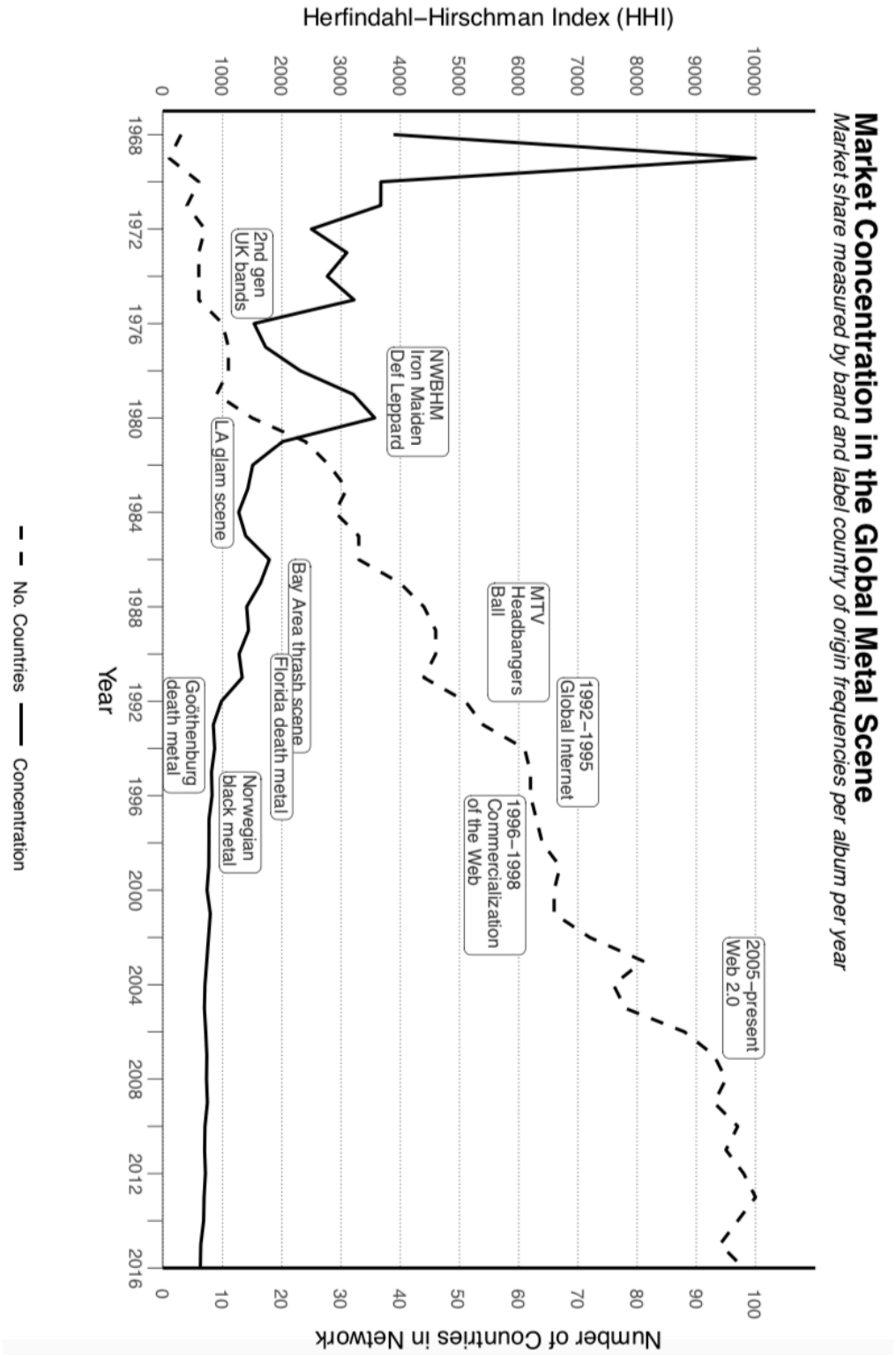


Figure 3-C. Equivalence Cluster Dendrogram for Tie Similarity

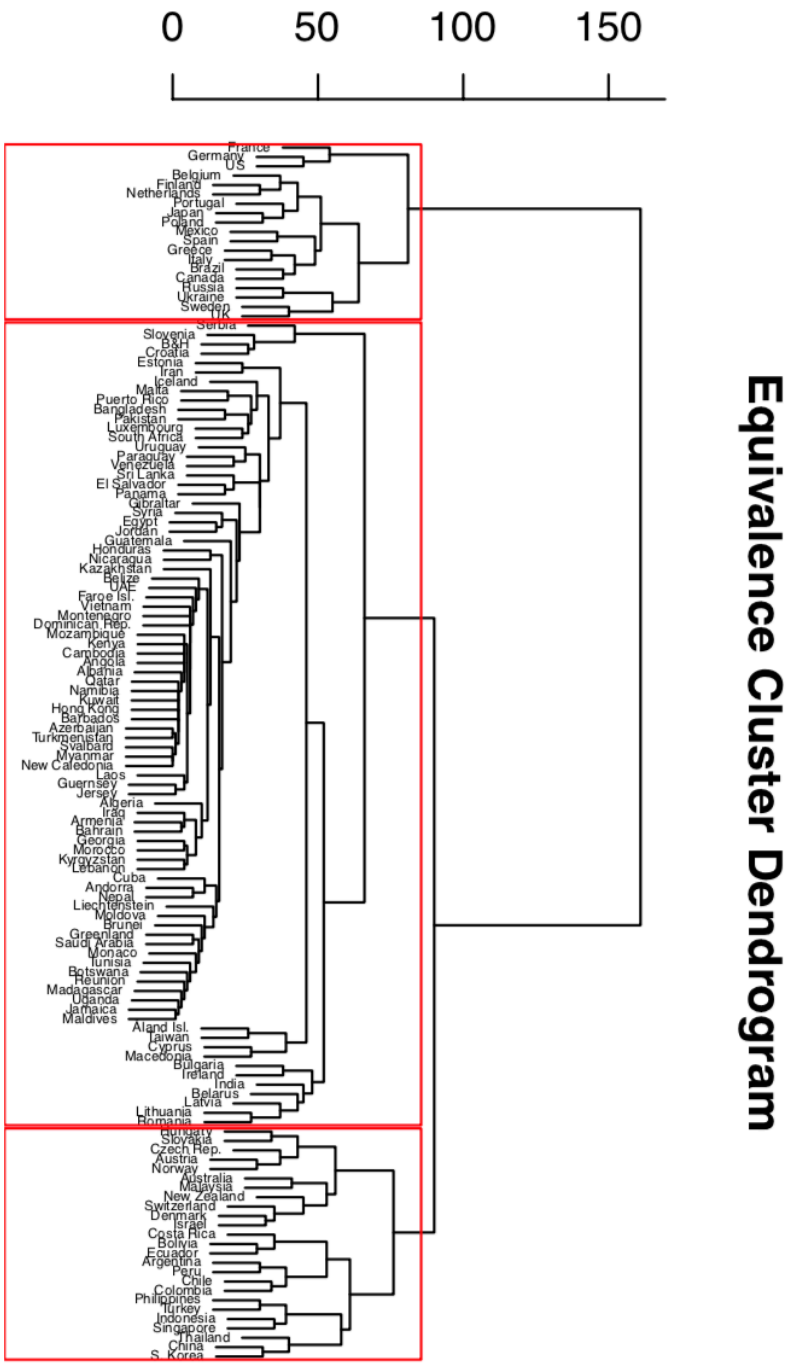
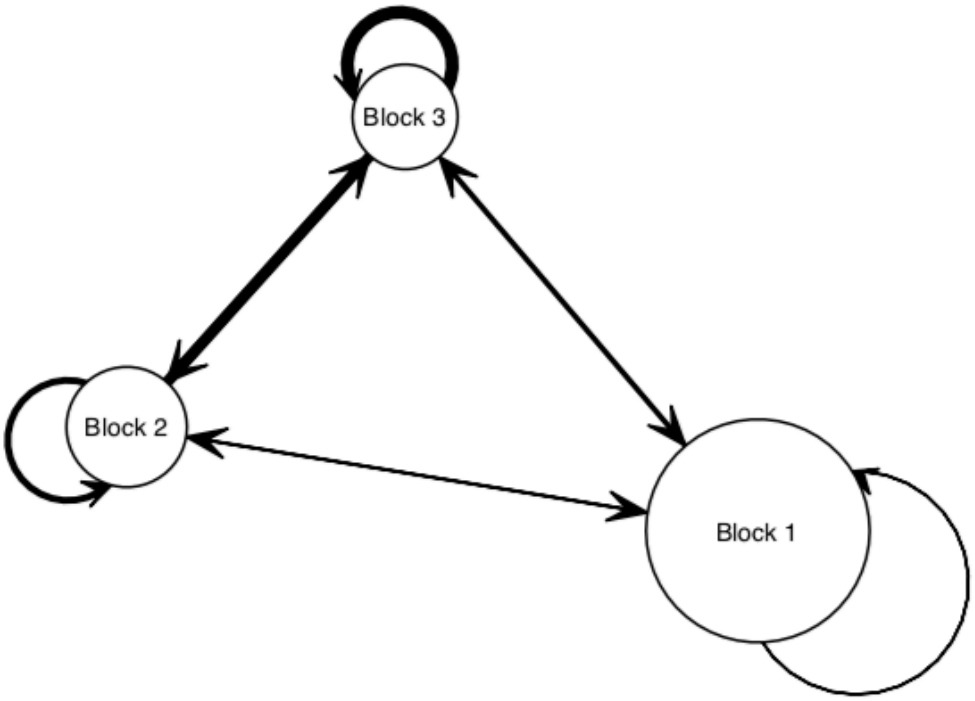


Figure 3-D. Production Ties in the Global Metal Network



CHAPTER FOUR:

NETWORK DYNAMICS IN NATIONAL SOCIALIST BLACK METAL

National Socialist Black Metal[5] (NSBM) came into existence in the mid-1990s as a distinctly political and ideological form of extreme metal. Since then, scholarly research on the topic has placed NSBM within the broader spectrum of global metal, and focused on constructions of whiteness and the various ways in which scene actors negotiate racial, gender, and sexuality boundaries through discourses of identity, authenticity, masculinity, and anti-globalization (Heesch 2010; Lucas, Deeks, and Spracklen, 2011; Sarelin 2010; Taylor 2010). While these studies offer excellent analytical frameworks for understanding the construction of racialized music, they offer little in the way of mapping the production dynamics of the global NSBM scene—a core analytical concern of this dissertation.

In this chapter, I continue the task that I undertook in the previous chapter by applying the network diffusion perspective to that of a niche scene within the broader spectrum of global metal. I contribute to the growing body of sociology of music literature described in Chapter One by mapping the network structure of NSBM. I argue that social network analysis provides a particularly useful framework for studying the NSBM as a music world—thereby continuing arguments made in Chapters One and Three. Focusing on network ties between NSBM bands and labels, I illustrate that, contrary to wide-held myths of heritage and anti-globalization, NSBM is produced and

[5] I use "NSBM" to refer to all bands that are classified under the National Socialist (NS) label. Contrary to popular belief, not all NS bands practice black metal. See the "References and Resources" section at chapter's end to see the scholarship that informs my approach.

diffused through a complex global network of bands, key individuals, and mediators in the form of generalist and specialist labels.

The pattern and nature of network ties show that despite its small size relative to the global counterpart, the NSBM scene relies on a few key hegemons and a large number of periphery nations in order to stay alive. These results suggest that the implications of far-right movements and political mobilization on the emergence of NSBM in Europe and elsewhere may be less relevant today than they were in the 1990s. In the next sections, I provide a brief history of NSBM music and outline its ideological origins. I do so to draw attention to two distinct periods of osmosis in the history of NSBM: the emergence of Scandinavian black metal in the mid-1980s and the fragmentation of a small portion of it into NSBM. Next, I map the structure of the NSBM scene in five time periods spanning 1988-2016.[6] I conclude by comparing and contrasting the nature of tie formation in both the global and NSBM scenes.

A Brief History of Metal Music and Subgenres

Classical Heavy Metal

The history of metal music is heavily contested by fans and scholars alike (Kahn-Harris 2007; Patterson 2013; Walser 1993; Weinstein 2000). While most researchers agree that it became a distinct genre sometime in the period spanning the late 1960s to early 1970s, the social mechanisms of its birth are still being debated (Walser 1993).

[6] The dates on the illustrations presented in this chapter may appear contradictory at first glance. This is due to the discrepancies between band founding album founding dates. For example, the first NSBM bands were formed in 1988. However, the first year of network entry in the data is 1991. Similarly, 1993 marks the first year in which a self-reflexive tie (i.e., same band and label country of origin) appears in the data. Given the fuzzy nature of genre boundaries, it made sense to include graphs for all relevant data.

Most scholars hail Black Sabbath, Led Zeppelin, and Deep Purple as the first truly heavy metal bands in history (Kahn Harris 2007; Patterson 2013; Moynihan and Søderlind 2003; Walser 1993; Weinstein 2000). These bands formed the first generation of metal bands that codified the genre revolving around loud drums, distorted guitars, heavy bass, and virtuoso-style electric guitar leads. The genre became more established in the 1970s as bands began to attract larger crowds and putting on more theatrical.

The New Wave of British Heavy Metal (NWBHM) became a huge success in the 1980s. Bands like Iron Maiden and Def Leppard wrote and played genre-defining songs, used better recording and production techniques, and carved out a global following (Walser 1993). Los Angeles became a hotbed of glam-metal bands, with the likes of Motley Crue, Quiet Riot, and Guns 'N Roses drawing a new wave of metal fans to their shows. These bands were flashy; band members wore make-up and big hair. More importantly, LA glam appealed to the casual metal fans among them many women. Glam was about women, drugs, and having a good time on the beach. But elsewhere in California, there was a more sinister-sounding subgenre brewing, and it was soon to take over the globe.

Thrash, Death, and Metal's Turn Towards the Extreme

Thrash metal made an immediate impact on the global metal scene with its emphasis on extremity of sound and style. Starting in the mid-1980s, thrash bands took a grassroots approach to gigging with a strong ethos of playing smaller clubs and staying authentic to the fundamental aspects of the genre (Kahn-Harris 2007; Purcell 2003; Weinstein 2000). What became known as the Bay area thrash scene consisted of bands such as Metallica, Megadeth, and Exodus. Also known as speed metal, thrash fused

punk with heavy metal to form a fast and furious sound that relied heavily on palm-muting, syncopation, and double-bass drums. As Kahn-Harris (2007) notes, contrary to glam metal, thrash had no mainstream appeal and had to rely on live shows for its growth in the absence of other institutions. However, this emphasis on pure musicianship propelled thrash to the top of the metal scene by the end of the 1980s (Walser 1993). MTV's launch of *Headbanger's Ball* in 1986 coincided with the rise of thrash and made it a universal phenomenon.

The Bay area thrash scene's success soon inspired the birth of two more extreme subgenres: death metal scenes in Tampa, Florida and Stockholm, Sweden respectively. Influenced by the unique sound pioneered by the band Death's 1986 release *Scream Bloody Gore*, Florida bands such as Morbid Angel, Deicide, and Obituary formed the core of a more extreme type of metal characterized by clearer production, down-tuned guitars, growly vocals, and blast beats (Moynihan and Søderlind 2003; Purcell 2003). In Sweden, bands like Entombed and Hypocrisy helped establish a death metal scene between 1988 and 1990 (Purcell 2003).

Regarding the central ethos of the genre, Moynihan and Søderlind (2003: 29) note death metal's "unbridled sonic brutality and lyrical glorification of all things morbid and decaying" as the focal point of its aesthetic goals. While the Swedish bands were similar to their American counterparts stylistically, they helped pioneer a very different type of music known as Swedish melodic[7] death metal in the early 1990s. Some of the earliest melodic death metal bands like At the Gates and In Flames took the fundamental elements of death metal and introduced melody and harmony into their song-writing. Combined with a much higher production quality and more intricate

[7] Also referred to as "melodeath"

attention to detail, the Swedish melodeath sound developed into one of the most active scenes in the world (Purcell 2003). The final frontier in the extreme metal landscape arrived in the late 1980s to early 1990s in Norway and became known as black metal. Black metal relied heavily on anti-Christianity and Satanist symbolism. It was also more extreme aesthetically, combining low-fi production, tremolo picking, and blast beats with shrieking vocals. Black metal became known for its theatrics on and off the stage and a highly controversial period in which scene members were involved in murder, arson cases. The scene also had an undeniable influence on the national socialist black metal scene, which I discuss in detail in chapter four.

Black Metal and Social Conservatism

In the mid-1980s, Venom, Bathory, Merciful Fate, Hellhammer, and Celtic Frost formed what became known as the first wave of black metal. These bands practiced a raw and unabashed form of extreme metal characterized by low-budget production, fast tempos, thinly-distorted guitars, and shrieking vocals espousing Satanic and occult themes. Such themes were easily accessible in black metal album covers, lyrics, and band names. For example, the cover of Bathory's seminal album *Blood Fire Death* featured a Romantic depiction of the mythic Norse wild hunt, in which a group of ghostly horsemen ride through the night sky and abduct a living human from a crowd on the ground. The first track on the album is also titled *Odens Ride Over Nordland* and symbolizes the nativism, occultism, heathenism, paganism, and mysticism central to most forms of extreme metal.

The 1990s also bore witness to the birth of the second wave of black metal, or Norwegian black metal, pioneered by bands like Mayhem, Darkthrone, Burzum,

Immortal and Emperor. This newer form of black metal was characterized by shrieking vocals, crisp guitars, blast beats, and vocals dealing with Satanism. Most black metal band members wore "corpse paint" and heavy leather stage clothes with spikes (Kahn-Harris 2007). The black metal scene soon became notorious for its transgressive practices including occult rituals, arson, and murder.

Starting in the 1990s, the scene became embroiled in a number of violent scandals involving some of the most well-known musicians and bands (Kahn-Harris 2007; Moynihan and Søderlind 2003). In line with the scene's anti-Christian credo, a number of scene members were convicted and jailed for arson attacks on churches in Norway. Some of the bands even depicted photos from arson attacks on their CD covers. In 1991, Mayhem, which is widely credited as the most successful Norwegian black metal band, made headlines for the horrific suicide of its vocalist. Varg Vikernes, another scene member, later murdered Mayhem's guitarist. Other instances of such violent transgressions included the targeting of gay men by scene members.

In addition to the above, the black metal scene was engaged in various forms of racism, fascism, and Satanism. For example, Norwegian black metal artist Fenriz of Darkthrone famously wrote in the liner notes of their *Transylvanian Hunger* album that "if any man should attempt to criticize this LP, he should be thoroughly patronized for his obvious Jewish behavior" (Kahn-Harris 2007). Similarly, in the documentary *Until the Light Takes Us*, the drummer of Norwegian black metal band Mayhem stated that, "…when I was told that Faust actually killed this fucking faggot back in Lillehammer, I was quite surprised because, I mean, I didn't think that he had the guts to do such a thing, but…I really honor him for that" (Hellhammer 2009). In addition to being the most extreme form of metal music, the black metal scene soon became an

arena for ideological and political extremism. Previous research has identified the major demographic group in the black metal scene as predominantly white, working-class, male, individualistic, and anti-conformist (Kahn-Harris 2007, 2010; Spracklen 2010; Chaker 2010).

NSBM splintered off from the black metal scene and came into existence in the early 1990s. Stylistically, NSBM is a form of black metal that advocates national socialist ideology and is characterized by trebly electric guitar riffs, fast drumming, and a shrieking vocal style with low production quality. The vocals typically explore Nazi, Aryan, and anti-Semitic themes and glorify national socialism and White nationalism harking back to the victory of Nazism in Germany (Olson 2011a, 2011b). Interestingly, those black metal fans who dabble in NSBM are often conflicted about their opinions of NSBM.

Observational studies in both physical and cyber space suggest that most black metal fans are ambivalent about the ideological content of NSBM and view it as being too provocative (Sparcklen 2010). Moreover, NSBM is not a monolithic phenomenon; individuals choose to listen to NSBM for a variety of reasons, including but not limited to, aesthetic quality, feelings of anti-conformity, and anti-globalization, while simultaneously opposing its message of racial homogeneity. Black metal, and by extension NSBM, occupy a contested social space in the music world; they are anti-commercial yet encompass an international network of musicians, fans, and labels (Olson 2011a, 2011b; Spracklen 2010).

Political Actors and Capital

Historical accounts suggest that the proliferation of global network ties among

national socialist groups paved the way for the institutionalization of the NSBM scene in the 1990s (Davisson 2010; Gardell 2003; Olson 2011a, 2011b). During this time, individuals engaged with various national socialist organizations founded a number of independent NSBM labels; most notably the prolific Detroit-based Resistance Records. Headed by George Eric Hawthorne of NSBM band Rahowa (or Racial Holy War), Resistance Records made contact with a wide network of labels in many European countries as well as Japan and Australia to promote NSBM and other forms of racial music. Such international ties were not unique to Resistence Records however, and within a matter of a few years, more labels emerged. Some were NSBM specialist labels and operated on a local basis by releasing local band albums. Others operated following a commercial structure of releasing NSBM through their sublabels, or more frequently, acting as generalists that dabbled in NSBM releases as well as working with bands categorized as black metal. By the late 1990s, the international network of NSBM had grown to such an extent that European NBSM was available in some record stores around the globe.

Information on influencers like Hawthorne is extremely scarce due to the fact that many of them operate underground due to fears of legal action where NSBM is illegal (Olson 2011a, 2011b). Therefore, I posit that the NSBM network can be explored instead by focusing on where ample data do exist: bands and labels. Doing so necessitates a shift from micro interactions between individuals to macro ties between bands and labels (and nations) in a global space. Much of my analysis in this scheme relies on two specific types of interactions: (1) bands as producers and labels as diffusing agents of NSBM, and (2) bands and labels as exporters and importers of NSBM. Within this schematic, I focus on band-country and label-country ties to explain which

countries dominate the NSBM scene, and the directions between the ties to show the positions that each country occupies in the NSBM world. Below, I outline the empirical framework that makes this analysis possible.

Data and Methods

The Metal Archives

The data for this chapter come from *The Metal Archives* website[8] (*MA*). The *MA* contains in-depth information on over 100,000 metal artists from around the globe that have released at least one physical album. For each archived band, the website includes data on country and city of origin, genre, status, year of formation, lyrical themes, and current label. Moreover, the site lists label information for each album in a band's discography. The case for using the *MA* as a data source for sociological research has been made elsewhere in more detail (see Mayer and Timberlake 2014).

In short, the data found on the *MA* is user-generated, meaning that individuals submit information about bands to the Webmaster pending a final verification and approval before they are posted on the site. This user-generated nature of the *MA* is advantageous for two specific reasons. First, it allows for a greater network of users from across the globe to submit verifiable information to the site. This is especially important in the case of NSBM bands because information on underground scenes is not openly publicized and requires individuals with intimate knowledge of the scene to submit band and label data. Second, following Mayer and Timberlake (2014), I propose that the *MA* is currently the most comprehensive and systematic source of data on the global metal scene, including NSBM, and far superior to alternative sources such as

[8] http://www.metal-archives.com/

Allmusic.com (Mayer and Timberlake 2014).

I used R's *rvest* package to extract the data from the *MA* in the fall of 2016 by searching for bands that were classified as "National Socialist" under the "Lyrical themes" field of the search engine.[9] After the data extraction was completed, I created three data set to reflect the different levels of analysis that are presented in this chapter. The band-level data set includes country of origin, city or state, status, year of formation and genre information for 551 bands. The album-level data set contains label, year of release, country of origin, country of label, label type, and label status information for 2,224 album releases by the 551 NSBM bands in the band-level data set spanning the period from 1988 to 2016. And finally, the label-level data set has label, country, type, status, and founding year data for all 511 labels associated with the NS bands in the data set.

Descriptive Social Network Analysis and Positional Analysis

Similar to the previous chapter, I use descriptive social network analysis to map the geographical diffusion of the global NSBM scene. SNA has been used extensively to highlight network structures and formation in the punk and progressive rock music scenes (Crossley 2015; Crossley and Emms 2016; Crossley, McAndrew, and Widdop 2014; Dowd, Ryan, and Tai 2015). Some of the central elements of SNA as they pertain to the statistical analysis are represented below.

Nodes. Nodes are the central actors that are connected to each other in a network (Borgatti, Everett, and Johnson 2012; Crossley, McAndrew, and Widdop 2014). In this case, I take advantage of the flexibility afforded by SNA to define nodes as all of the

[9] Scraping is a relatively new and innovative digital data technique that allows the researcher to extract large amounts of data from the web in an automated fashion.

bands that are classified as NSBM.

Ties. Ties represent the connections between the nodes in a network structure. I define them here as country of origin of NSBM bands and the country of origin of the label for each album release. The final analysis is focused on non-reflexive ties (ties from one country to another), however I do provide some visual network graphs showing reflexive ties in cases where the country of origin for band and label are the same. The emphasis on non-reflexive ties is an empirical choice guided by the belief that non-reflexive ties are conceptually more important and meaningful in a study that attempts to map a global music scene.

Tie similarity. In addition to the above, I use a blockmodeling technique to map NSBM nations based on tie similarity (see previous chapter for a detailed explanation of blockmodeling). I use a k-clustering algorithm (k=3) to extract each nation's position in a three-tiered production hierarchy. The blockmodeling analysis makes for easy comparison of the global and NSBM scenes respectively.

Results and Discussion

As figure 4-A illustrates, the NSBM scene grew substantially in size from 1991 until a period of heightened band foundings in 2000. Since then, the number of new band foundings has decreased markedly. Figures 4-B through 4-F show the network ties present in the NSBM scene at five-year intervals, spanning the period from 1991 to 2016. In the first five-year period, there were relatively few NSBM ties and nations in the global network. Hungary, Poland, Germany, Canada, and US were the first nations to make contact and co-create NSBM albums between 1991-1995. Between 1996 and 2000, the US, Poland, and Germany slowly emerged as key nations in the NSBM scene, with

global hegemons like Finland, Norway, Italy, and France making their way into the network. Between 2001 and 2005, Greece became a major hub of NSBM with Japan, Austria, Albania, and Bulgaria making their entry into the network. The period between 2006 and 2010 saw Ecuador, Brazil, Mexico, Colombia, and Argentina appear on the scene. Finally, a compact network of nations emerged between 2011 and 2016 resembling a microcosm of the global network depicted in chapter three.

Moreover, figures 4-G through 4-J depict the hotspots of NSBM production around the globe. The plots show that Midwestern US, and central cities in Germany, Russia, France, Brazil, Greece, and Poland are the leading locations in the production of NSBM at the aggregate level. Finally the hamming distance, which is a measure of tie similarity here, indicates how countries with similar ties are grouped together (see figure 4-K).

Figure 4-L clusters all of the countries in the NSBM scene based on tie similarity. A k=3 cluster yielded a production system with the hegemons from the previous chapter at the top, followed by a similar group of countries from the semicore, and periphery. Table 4-A shows the frequency distribution of national socialist bands and labels per country and Table 4-B includes the top 10 labels that have released national socialist black metal albums, and their country of origin and specialty status.

The findings from the descriptive analysis can be summed up in three ways: (1) similar to the global scene, core and semicore nations in the national socialist black metal network share strong mutual ties as seen in figure 4-L; (2) the entry of new nations into the network follows a similar timeline to the global scene; and (3) with the exception of a few core countries (most notably Norway), the hegemons appear in their traditional global roles in the NSBM scene. In other words, NSBM appears to mimic the

same hierarchy found in the global scene.

Although the NSBM scene became a subgenre in its own right from the very early days of the second wave of black metal, its ideological origins were laid in place far earlier. Before the advent of NSBM in the late 1980s, right-wing ideology was present in some corners of the punk and rock scenes, most notably through the use of Nazi imagery and lyrical themes praising White nationalism and Nazism. Nazi skinhead Oi! punk and Rock Against Communism (RAC) bands came to relative prominence in the 1970s and led to the development of a periphery network of musicians and fans with ties to far-right groups including the National Front (Davisson 2010).

These ties extended beyond local scenes; they spread across the globe with the help of political organizations like Blood and Honour, which deemed political ideology as inseparable from everyday life. Blood and Honour aimed to spread its message of White power, National Socialism, and white supremacy through a vast network of publications promoting National Socialism, including music. Since then, NSBM has been saturated by individuals with a multitude of political and ideological interests that often go beyond those of music. As with Resistence Records, it is plausible to conclude that political ideology mixed with racism are perhaps the biggest driving force behind the NSBM scene today as they were in the early 1990s.

However, the results from the descriptive analysis pose more questions than they answer. For example, how can one explain the presence of ties among NSBM musicians and labels from the Philippines and Sweden? What could Mexican labels and bands possibly have to do with their Korean counterparts? And more importantly, what type of ideology could bring them together artistically?

Olson (2011b: 145) provides one potential answer when he notes that:

> Russia and Ukraine have seen an explosion of fascist, racist and ultra-nationalist activity since the fall of the Soviet Union, with metal, and more recently black metal, playing an important role in the now thriving far-right movement. Black metal in Eastern Europe has taken on a fanatic, genocidal tone that is reminiscent of the bombastic proclamations of the early Norwegian scene, but with decidedly neo-Nazi overtones. The political chaos, poverty, corruption, and organized crime of the former Soviet Union has created a volatile and fanatic NSBM underground across Eastern Europe.

The same case could be made for Brazil, Argentina, and Mexico where NSBM has tended to be more about nationalism than national socialist ideology. Although NSBM discourse has centered on racial supremacy, its transgressive nature makes it an ideal genre for airing grievances in semicore and periphery nations.

Conclusion

This study aimed to compare and contrast the growth of NSBM to the global metal scene and examine the similarities and differences between the two. The findings suggest that NSBM operates similarly to its larger counterpart, with a number of the global hegemons controlling the production dynamics within it. The findings also show that, despite the relative scarcity of semicore nations, the majority of NSBM is produced as a result of ties between the core and semicore nations. As in the global scene, periphery nations play an identical role: they rely mostly on ties to each other. However, there are a number of cases in which periphery nations exchange ties with core and semicore nations as well.

While these findings confirm the results from previous chapters, they fail to explain the motivations behind what drives NSBM production. Previous research highlights the political upheaval and social problems in post-Soviet societies as one

possible explanation for the relative centrality of Eastern European nations in the NSBM network. However, there are very few, if any, plausible explanations for why there are flourishing NSBM scenes in Asian and South American nations. One major limitation of this study is the lack of qualitative data to substantiate the quantitative findings. Gathering qualitative data from scene insiders and institutions is extremely difficult due to the highly controversial and illegal nature of NSBM music in many countries. While *Metal Archives* can be a rich source of data in the case of the global scene, it is limited in scope and fails to provide the type of data that is necessary to answer some of the more pressing questions raised in the discussion section. Future papers on this topic should examine how racial attitudes, anti-immigrant sentiment, and far-right politics impact the growth and decline of national NSBM scenes.

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Figure 4-A. National Socialist Band Foundings, 1988-2010

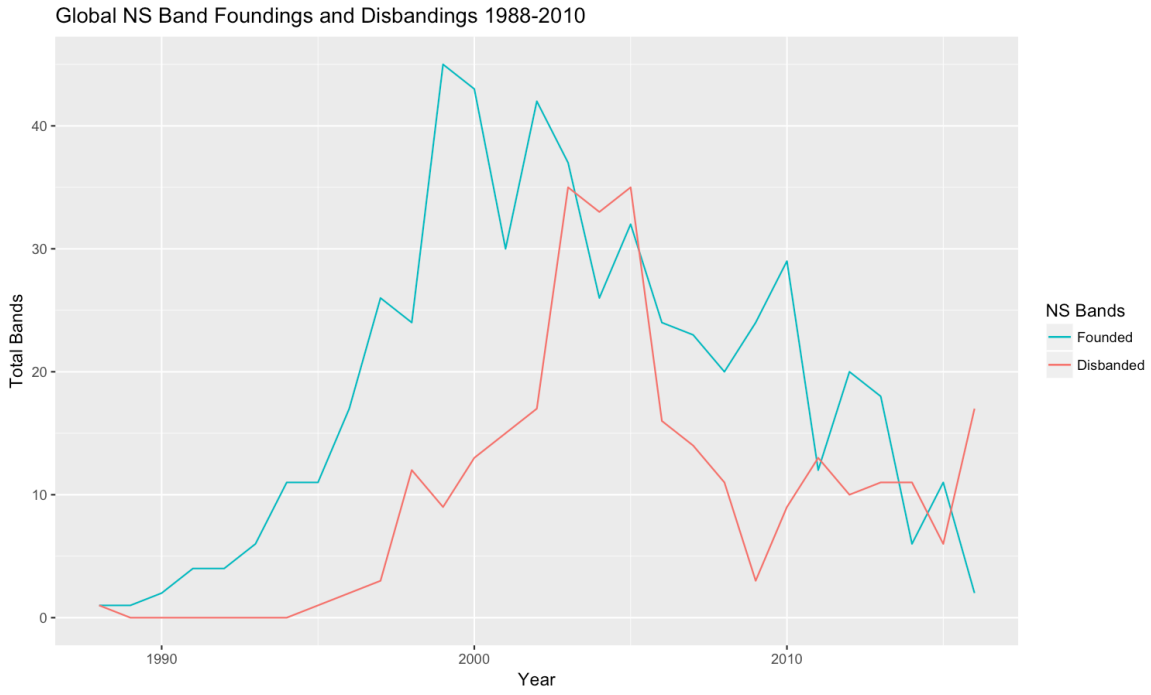

Figure 4-B. National Socialist Country Ties, 1991-1995

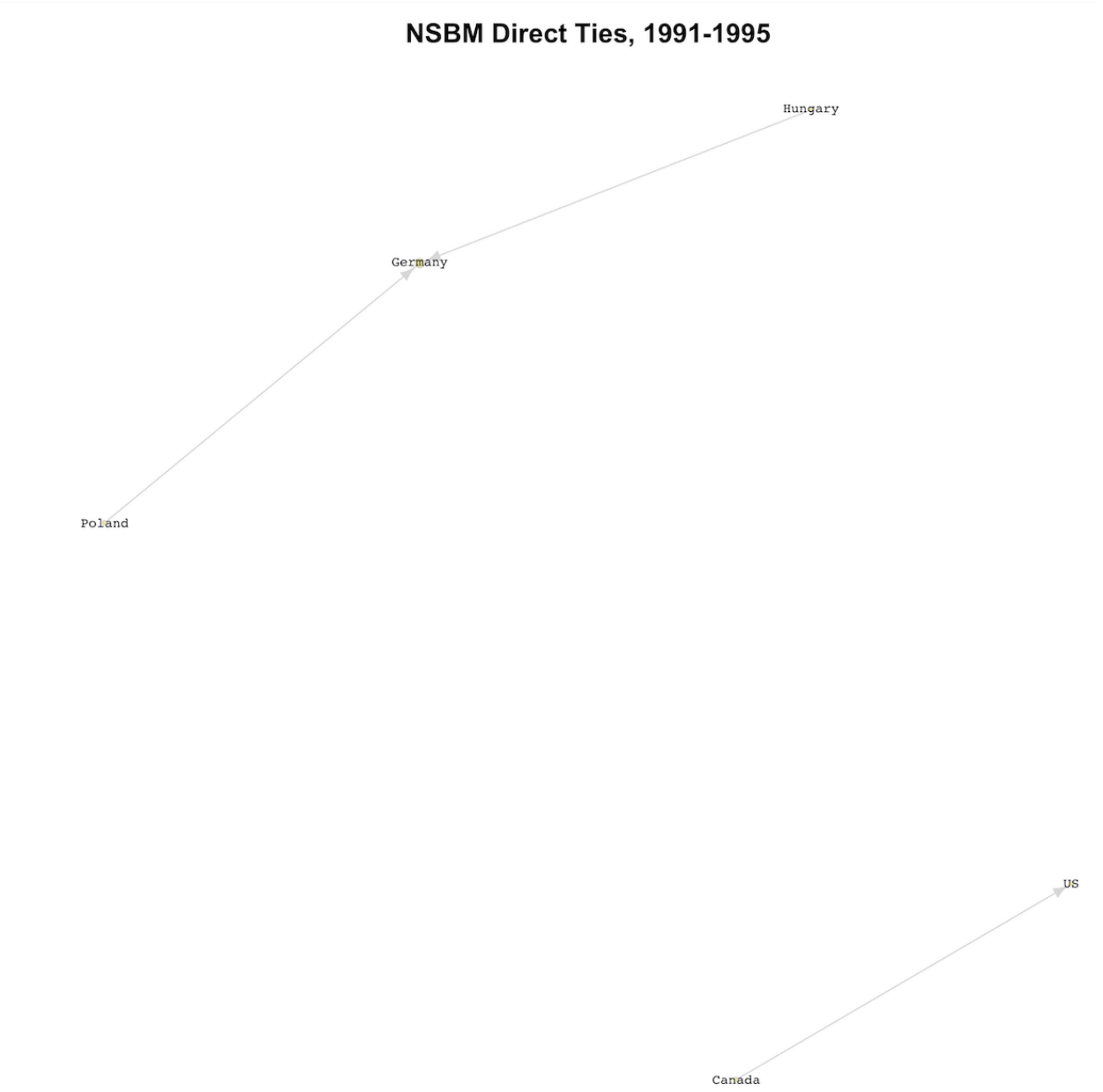

Figure 4-C. National Socialist Country Ties, 1996-2000

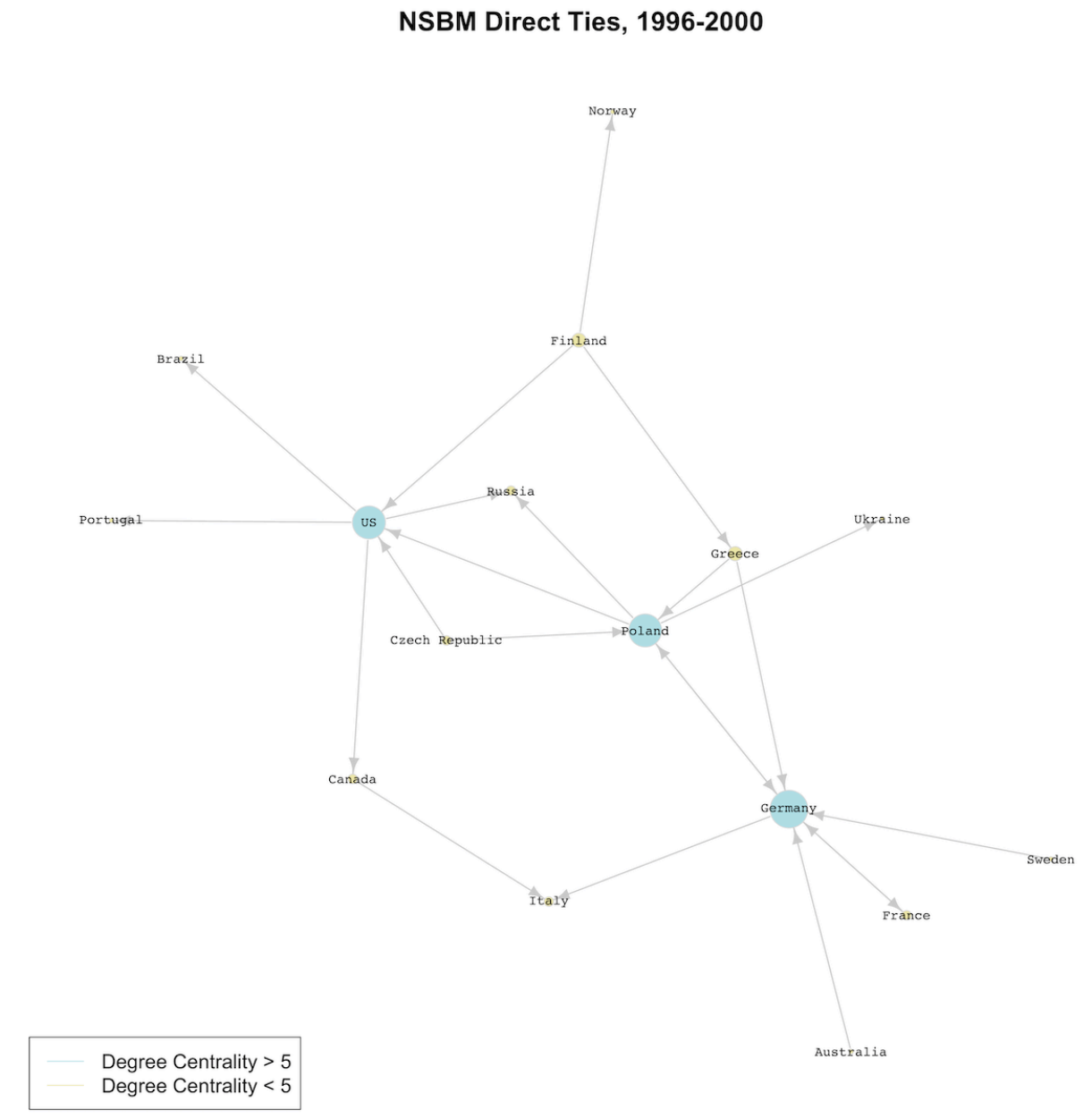

Figure 4-D. National Socialist Country Ties, 2001-2005

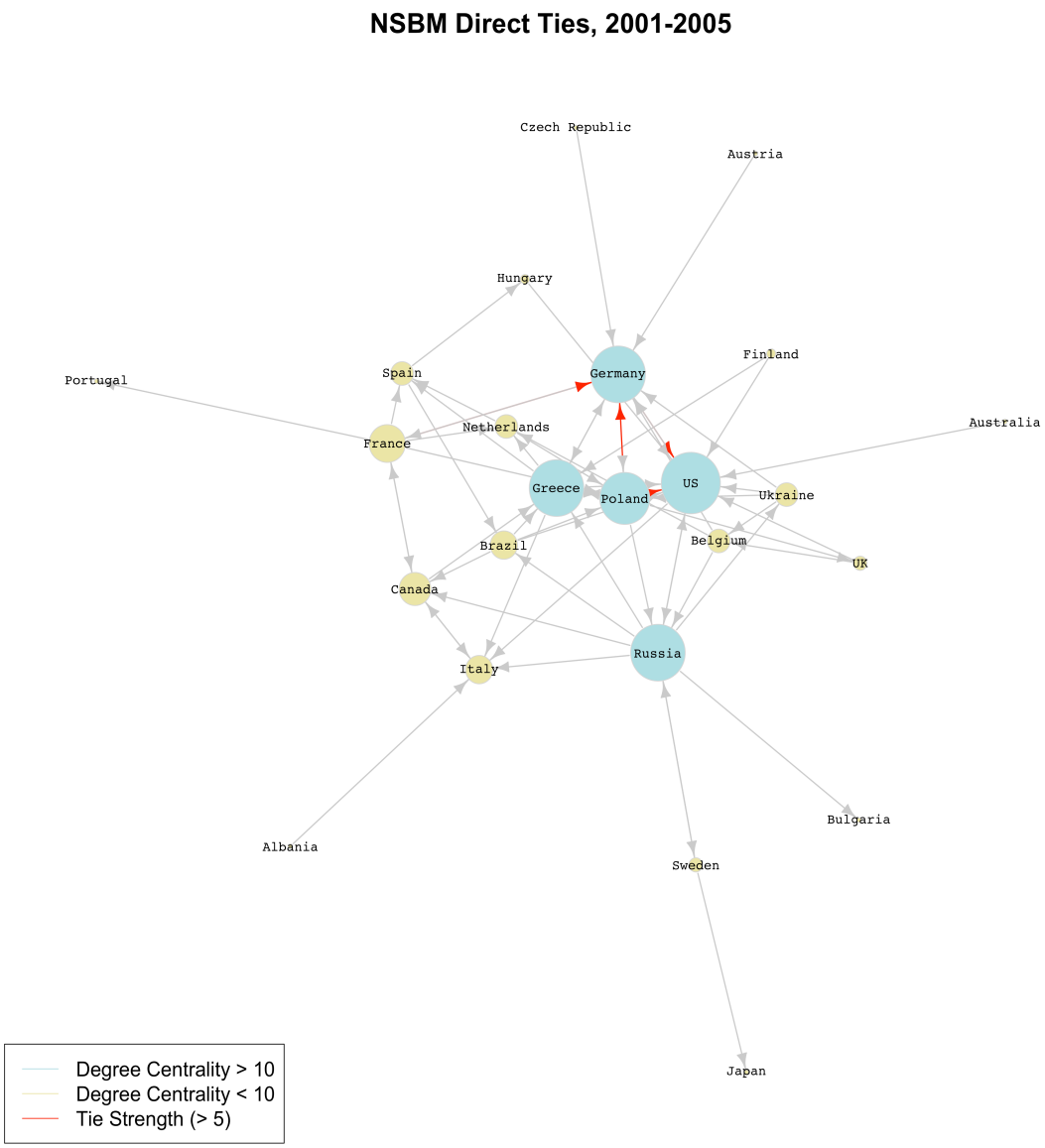

Figure 4-E. National Socialist Country Ties, 2006-2010

Figure 4-F. National Socialist Country Ties, 2011-2016

Figure 4-G. Heat Map of NSBM Band Frequencies, North America

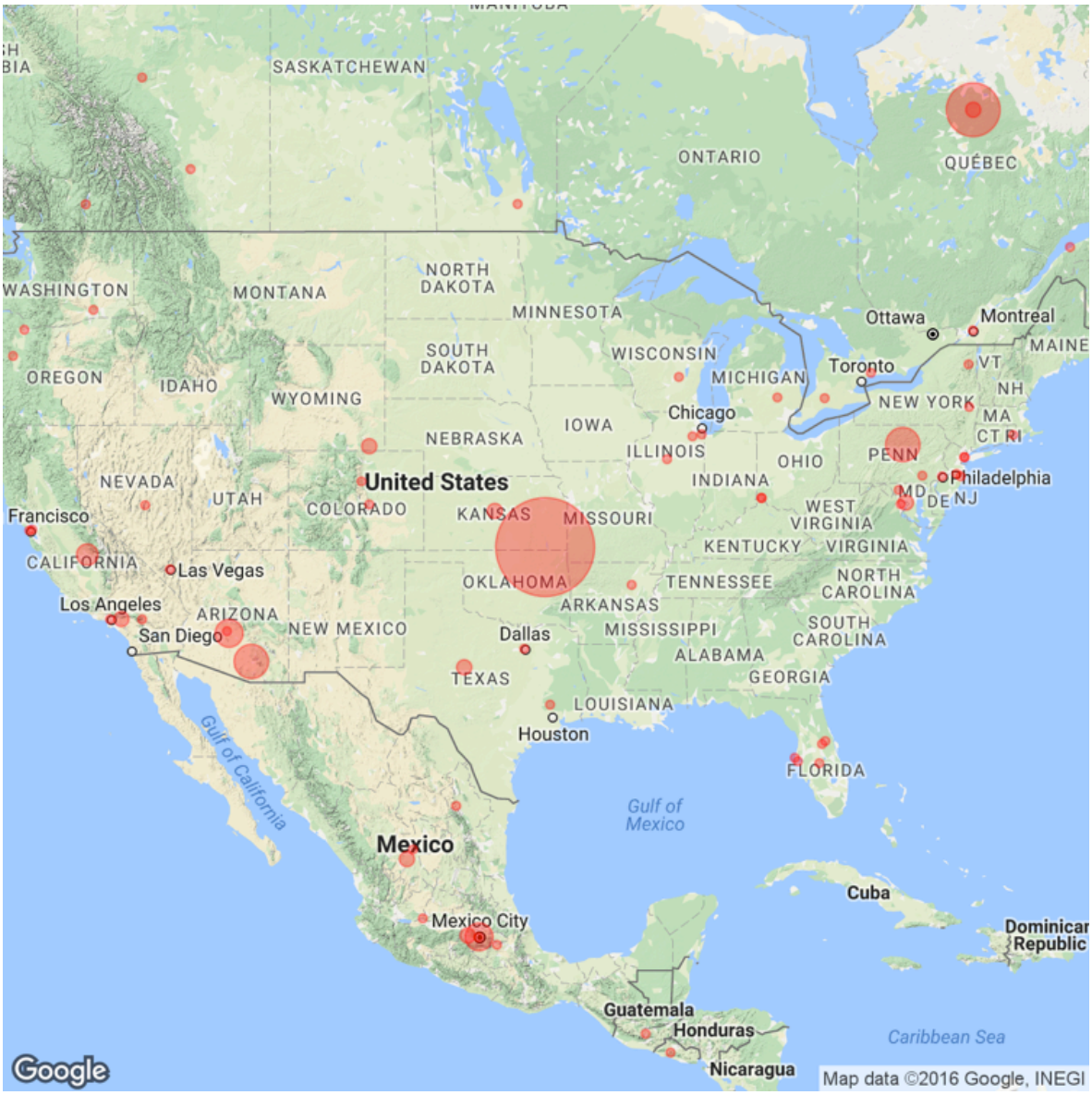

Figure 4-H. Heat Map of NSBM Band Frequencies, Europe

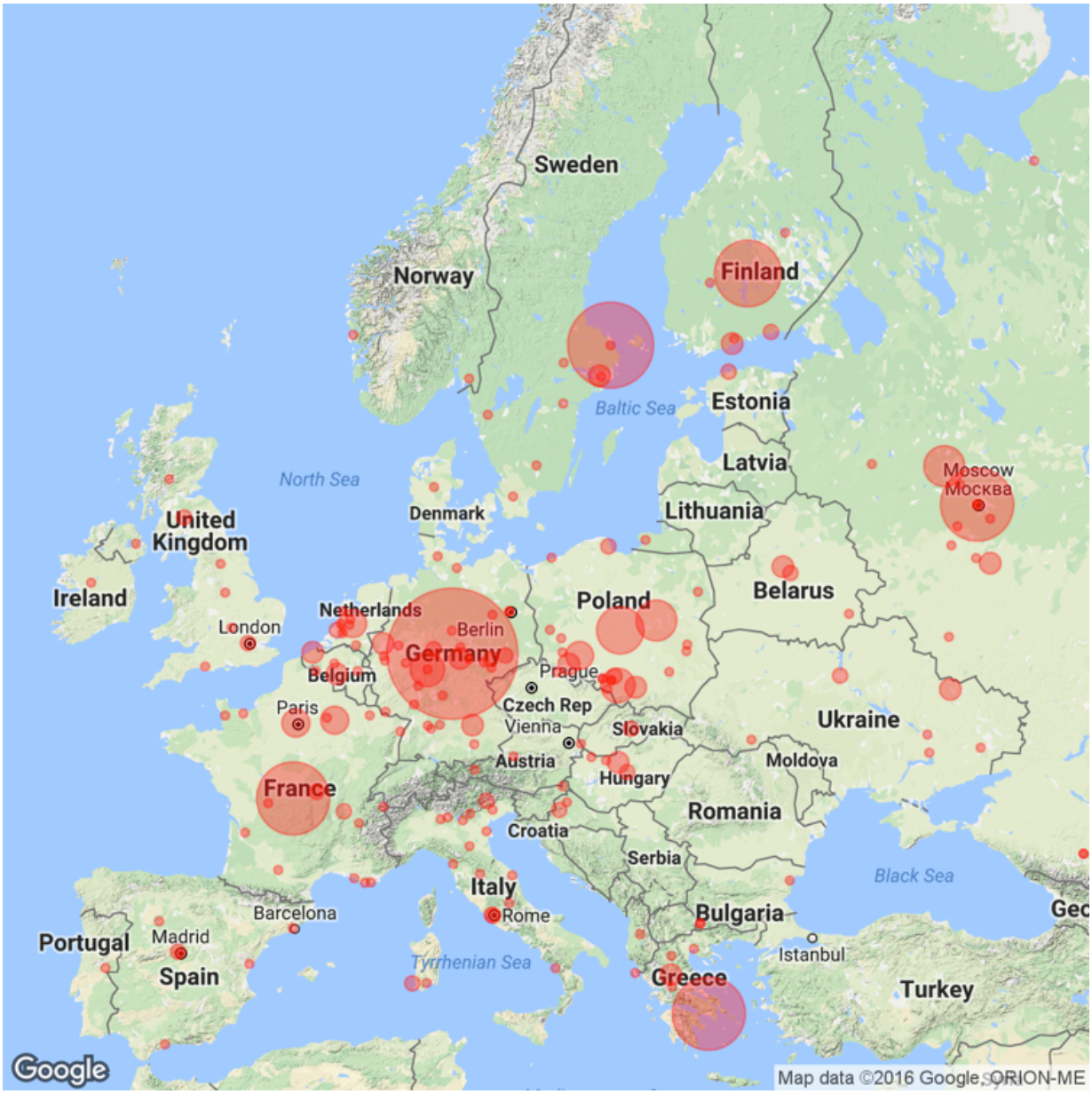

Figure 4-I. Heat Map of NSBM Band Frequencies, South America

Figure 4-J. Heat Map of NSBM Band Frequencies, Asia

Figure 4-K. Hamming Distance Map Based on Mutual Tie Similarity

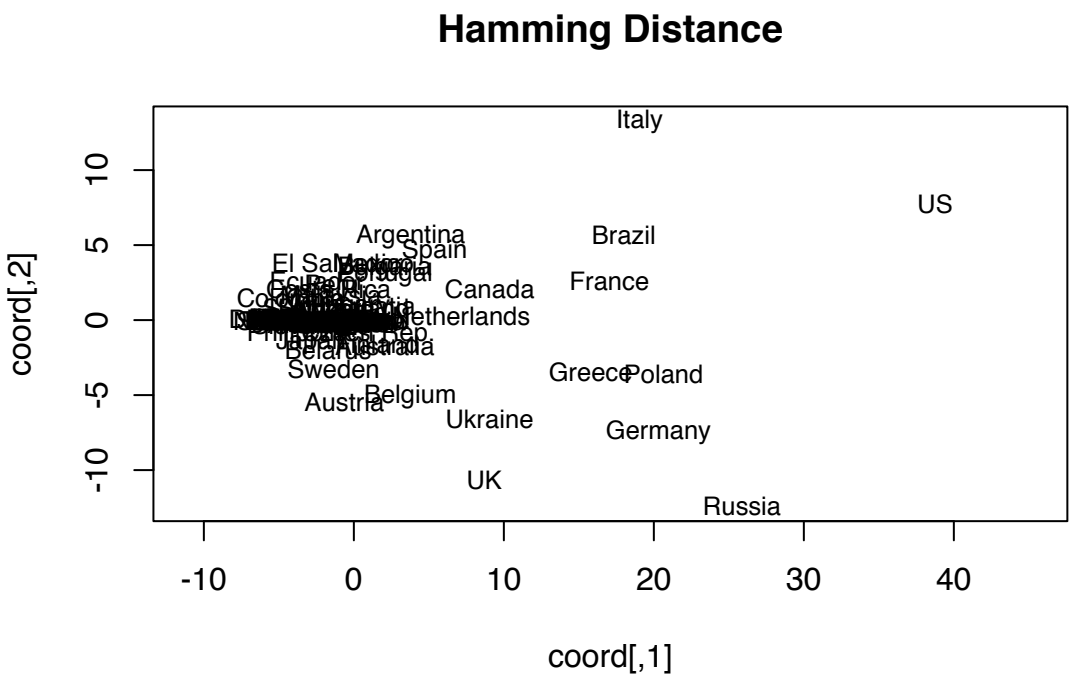

Figure 4-L. Production Ties in National Socialist Black Metal

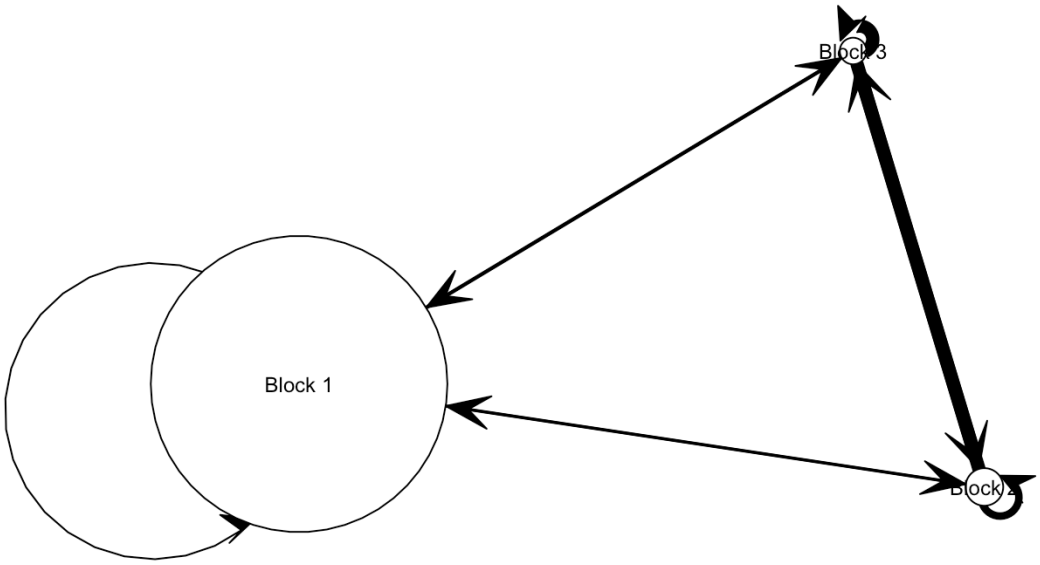

Table 4-A. Number of National Socialist Bands and Labels per Country, 1988-2016

Country	Bands	Labels
United States	72	49
Russia	66	43
Germany	61	62
Poland	44	48
France	40	27
Brazil	24	19
Sweden	23	10
Canada	22	12
Italy	21	22
Finland	18	8
Greece	18	14
Argentina	14	7
Netherlands	14	7
Mexico	13	9
Belgium	9	4
Ukraine	9	8
United Kingdom	9	7
Australia	8	3
Hungary	7	7
Spain	7	11
Belarus	6	3
Malaysia	6	4
Austria	3	2
Colombia	3	3
Croatia	3	0
Norway	3	1

Peru	3	1
Slovakia	3	2
Bulgaria	2	1
Estonia	2	0
Philippines	2	0
Albania	1	0
Chile	1	1
China	1	1
Costa Rica	1	0
Czech Republic	1	0
Denmark	1	0
Ecuador	1	3
El Salvador	1	1
Guatemala	1	0
Iceland	1	0
Ireland	1	0
Portugal	1	6
Slovenia	1	1
Switzerland	0	2
Japan	0	1
Korea, South	0	1
New Zealand	0	1
Serbia	0	1
Total	551	413

Table 4-B. Top Labels by Country, Type, and Status

Label	NS Bands	Origin	Type	Status
Depressive Illusions	68	Ukraine	Generalist	Active
War Kommand	55	Italy	Generalist	Active
Winter Solace	42	United States	Specialist	Active
Strong Survive Records	27	United States	Specialist	Closed
Barbatos Productions	20	Russia	Specialist	Active
F.P.T.	20	Germany	Specialist	Closed
Stellar Winter Records	20	Russia	Specialist	Active
Infernal Kommando	16	France	Generalist	Unknown
O.N.S.P.	16	Mexico	Specialist	Active
Darker Than Black	19	Germany	Specialist	Active
Total Labels	511			

CHAPTER FIVE:

CONCLUSION

The preceding chapters examined the dynamics and geographical diffusion of an understudied field of cultural production—the global metal underground. Evidence from Chapter Two shows that globalization of underground music scenes is shaped by macro factors that impact social, cultural, and political globalization at the national level. As noted in Chapter One, a number of scene proponents interrogate and understand various scenes by attending to the richness of their particular local settings. Yet, Chapter Two reveals that these proponents should heed also the importance of the national and global context in which those locales and their scenes are embedded. In Chapter Three, I show that cultural diffusion in underground scenes can be assessed by examining the network structure and patterns of exchange between scene institutions. While my approach in that chapter was partly dictated by the limited sources of data available systematically over time and place (and, hence, the turn to *Metal Archives*), it was also dictated by my goal of capturing networks in dynamic fashion. In the process, whereas Chapter Two excels as showing the impact of the macro context on global metal, Chapter Three excels at showing the evolving coherence and connectedness of the global metal underground. In Chapter Four, I illustrate how the dynamics of small scenes are similar to those of the global scene using a similar network diffusion model. Yet, with this illustration, I show the analytical advantages of treating scenes as networks, which includes the ability to compare network dynamics across scenes.

A recurring theme throughout this dissertation is the link between hegemonic

power and scene infrastructure. As noted in Chapters Two and Three, previous research alluded to the relationship between economic power and metal scene activity by noting that the early-adopters (i.e., UK, US, Germany) were also more centrally located in the global economy, and that metal scene activity was likely higher in nations that were more technologically advanced. Indeed, early on metal music spread around the globe via tape-trading and the postal system. Shows were promoted and advertised using Xerox machines. A combination of word of mouth and pre-Internet technology helped popularize the music in both early- and late-adopter countries. Later on, high-speed Internet played a similar role in the spread of metal music to parts of the Middle East and Africa. However, the overall effect of the Internet and its digital capacity on the diffusion of metal may have been overstated in previous research. As figure 3-B shows, the diffusion process began around 1980, and the number of new countries entering the network has stayed constant since then.

In Chapter Three, hegemonic power becomes even more apparent when network relations between nations are taken into account. This chapter represents the first attempt to move beyond scene-level actors individually and places greater importance on network ties between nations. Examining network relations places even more emphasis on the power dynamics in the global scene and exposes the full force that the metal hegemons (i.e., early adopters) exert on the rest of the scene.

In Chapter Four, things are not so clear-cut. The hegemons from the previous chapter are still there (the global scene), but the motivations for the existing network ties in the NSBM scene are unknown. Is the national socialist black metal scene first and foremost nationalistic or national socialist? If nationalistic, how does one explain the Nazi symbolism and rhetoric in its discourse? If national socialist, where do the likes of

Chinese and Colombian NSBM scenes fit in the greater narrative of white nationalism? As my findings suggest, NSBM ties are a microcosm of global ties; they evolved and diffused in a similar manner. But ties alone cannot explain why NSBM has managed to become a global, albeit small, scene.

Taken together, the findings presented in this dissertation can be summed up in the following way: (1) the global metal scene is dominated by a few hegemons who control the global flow of music due to their strong degree of political, social, and cultural globalization; (2) the cultural element of globalization also means that the hegemons are early-adopters who enjoy far greater levels of scene infrastructure—such as record labels, studios, live music venues, and a dedicated music media—than the semicore and periphery nations; (3) both labels and bands in hegemon nations have an advantage when signing top metal artists and exporting their own bands to labels in semicore and periphery nations; (4) yet, despite this leveraged position, they also help spur the production of metal music in periphery nations by sending and receiving production ties to them.

I close this dissertation by emphasizing three broad implications that it offers. The first has to do with the concept of network. As noted in Chapters One and Three, some scholarly approaches use that concept in more a metaphorical fashion than a measured one. That is, some field theory and art works proponents acknowledge the importance of connections but are rudimentary in their empirical assessment of those networks. Yet, as also discussed in those chapters, the scholarship of Nick Crossley stands out in contrast given that he calls for a more rigorous approach to networks—going as far as to define music scenes as networks in action. This dissertation shows the utility and benefits of heeding Crossley's call, but it also extends his approach by shifting

the analytical and empirical focus on the local scene and the ties within to the global scenes and the ties within and across nations. Second, as noted in Chapters One and Two, scholarship on globalization has increasingly focused on the spread of particular cultural goods across national boundaries. The three empirical chapters in this dissertation contribute to that focus; they show how national context shapes and facilitates the diffusion of metal over time and place, as well as how intra-national and cross-national ties among key actors likewise shape and facilitate the global circulation of metal. The hegemonic nations at the center of this circulation—while possessing power—also play a helpful role that fosters more than quashes the flow of music from the global margins of metal. Thus, the global metal underground, although not devoid of competition emphasized by Bourdieu and his field theory, is more in keeping with the cooperative imagery stressed by proponents of the art worlds and music scenes approaches.

Finally, when returning to this dissertation's opening question of why do bands like Amon Amarth "make it" and others do not, my answer is ultimately a sociological one. While talent, work, and motivation matter for the success of particular metal bands, this dissertation also starkly reveals that metal bands are situated in particular times and place—some of which are much more conducive to their success than are others. Simply arguing that "the cream rises to the top" misses the considerable importance of global metal underground's expanding infrastructure and the connections (i.e., the social capital) that, say, allowed Amon Amarth to go from a small audience in Sweden to sold-out venues around the globe.