

THE WIKIPEDIA GLOBAL CONSCIOUSNESS INDEX: A MEASUREMENT OF THE
AWARENESS AND MEANING OF THE WORLD-AS-A-WHOLE

by

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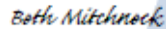
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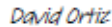
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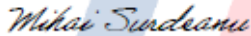
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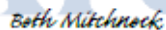
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Abstract

To supplement current globalization indexes, I propose a new index, the Wikipedia Global Consciousness Index (WikiGCI). Available indexes that measure globalization rely on network definitions for their theoretical frameworks and count objects crossing borders. The WikiGCI, defined as a measure of awareness and meaning of the world-as-a-whole, is founded on Robertson's (1992, 2009, 2011) suggestion of global consciousness. The first research objective is to construct the new index as an empirical assessment of global consciousness by applying the top 100 global articles as the empirical units. Global articles are the Wikipedia articles edited in the most countries, identified by geolocating the IP address edits. Furthermore, I discursively analyze how these Wikipedia articles express global consciousness by statements of global wholeness in their narratives. I also apply Steger and James' (2013, 2019) analysis of global social meaning to the global articles to identify how editors express ideology, imaginaries, and categories of the being-in-the-world. The second research objective is to discursively analyze regional patterns in Wikipedia's global and local articles. I performed a mixed method, multilingual discursive analysis to examine how four globalizing discourses (references to the countries in the world's economic core, the use of English in citations, references to international media institutions, and the monetization of commodities) can distinguish place representations between two groups of articles. One group of articles edited only in Peru, Russia and the U.S. were local articles with local representations. The other group consisted of the global articles edited in those three countries as well as the rest of the world that contained the widest, shared representation of the world. This discourse analysis reveals that the representation of the world is not strictly determined by the core. While the socio-economic power in the core creates the globalizing discourses, non-core editors engage with the discourses to depict the world based on the socio-historic conditions of their countries.

1. Introduction

1.1 Background

When Christopher Columbus set foot on the Western Hemisphere in 1492, European expansion into the Americas, Africa, and Asia created new connections among the continents, thus commencing the historic development of modern globalization (Hopkins, 2003; Pomeranz, 2009; Pomeranz & Topik, 1999; Stearns, 2008). Globalization, or the interconnections of places on a worldwide level, began through global trade and colonialism. These connections were fostered among places by the trade of spices from Asia, slaves from Africa, and agricultural goods from the Americas. Objects and goods were being transported from distant points around the world. Colonialism, furthermore, produced military and governmental networks linking the European metropolises and their colonies, dispersing Western normative standards in education, law, and religion to peoples planet-wide. With the outset of industrialization in the late 18th century, mass production of goods increased global integration by connecting markets and industry among countries. New resources (e.g., rubber and oil) were transported from developing countries to the industrial core in the West and Japan. New forms of technology were developed that decreased the distances or travel time among places. Railroads, telegraphs, telephones, televisions, and airplanes all exponentially increased the flow of objects, people, and ideas worldwide into the 20th century.

Since the 1990s, globalization has taken on new significance. The interconnectivity of places on a world level has dramatically increased. By 1991, the fall of the communist bloc permitted hundreds of millions of people in Eastern Europe and the former Soviet Union to freely interact with the world through trade, travel, and mass media. In 2001, China became a member

of the World Trade Organization (WTO), a crucial moment in its transition from a closed command economy to the practical factory of the world. Since that year, its percentage of global GDP rose from three percent to 14 percent in 2018 (China: Percent of World GDP, 2021). Culture is likewise increasingly an international event. One out of seven people in the world watched the globally broadcast 2018 FIFA World Cup Final, which was the final match of the International Federation of Association Football (Richter, 2021). Communication among the residents of the world has expanded exponentially as well. As of January 2021, nearly 60 percent of the world's population (4.66 billion people) were active users of the Internet, or the connection of computers in an international network (Johnson, 2021). This computer network allows people to communicate with others, obtain news or order online on a global level. Through different means of interconnectivity (e.g., the Internet and trade), people and places throughout the world are increasingly interacting with one another. It is no exaggeration to state that humanity has never been so interconnected on a planet-wide scale.

For the discipline of geography, interconnection or integration are leading concepts in the understanding of globalization (Butt, 2017; Chen, Gunter, & Zhang, 2012; Hall, 2015; Harvey, 1995; Sparke, 2009; Van Hamme & Pion, 2012). Globalization is mainly theorized and defined as the combining of parts of the world into a global whole. It can be considered the integration of information, culture, and trade (Butt, 2017). Globalization is often understood in terms of economic geography, where commercial, financial, and trade flows connect different regions (Van Hamme and Pion, 2012). Even within cultural geography, the “interconnectedness” of people and places by cultural flows frames our understanding (Chen, Gunter, and Zhang, 2012).

Since the beginning of the new millennium, globalization indexes have been constructed to analyze and measure the integration of the world, which rely on flows and networks (Gygli,

Haelg, & Sturm, 2018; The Globalization Index, 2007; Figge & Martens, 2014; Vujakovic, 2009; Lockwood & Redoano, 2005; Kluver & Fu, 2004). The leading globalization indexes, such as the KOF Globalisation Index, are theoretically founded on flows connecting places in network systems (Gygli et al., 2018). The KOF Globalisation Index divides its measurement into dimensions, each of which focuses on flows of objects in networks. For example, the economic dimension counts import/export flows and foreign direct investment (FDI). The social dimension counts the number of migrants and Internet users per 1000. The political dimension counts flows in the form of the number of personnel sent abroad as part of United Nations Security Council missions. These indexes count objects (e.g., persons or commodities) crossing borders. They have a quantitative material understanding of the interconnecting of places at a global level.

While indexes that solely rely on counting objects in flows successfully capture globalization as a process, they leave the thinking of the wholeness of the world unexplored. That is, the meaning and awareness of a shared global whole in the form of ideas, concepts, and opinions is not easily captured in contemporary indexes constructed for globalization. For example, with these indexes, one can identify statistics concerning films that are traded across borders, but they do not explicitly indicate how the films are experienced (e.g., criticized because of content) or their type (e.g., American action). The indexes can indicate to what extent countries are participating in U.N. peacekeeping missions, yet they do not reveal global thinking on important issues at a global level (e.g., terrorism or global warming).

1.2 Statement of Problem

My research seeks to construct a measure that is more analytically relevant to the expression of global consciousness, or the thinking of the shared global whole. Robertson (1983, 1992, 2009, 2011) proposed more investigation of this feature of the global human condition. Global consciousness is an awareness and meaning given to the world-as-a-whole. It is a psycho-social understanding of our world, and not a purely materialistic understanding. Global consciousness predates modern capitalism. For example, world religions have since time primordial claimed a universal nature of existence for people and places worldwide. Ancient Greeks and Romans, furthermore, believed in a cosmopolitan view of the world where the brotherhood of man shared the world. One-worldness has historically been expressed cartographically as well, with world maps expanding with new places encountered during the Age of Discovery. Modern globalization has only amplified global consciousness, as increased trade and communication have compressed the world and increased the awareness of the world-as-a-whole.

By exchanging the theoretical basis of the index from one that is centered on globalization as a material process of flows in networks that integrates the world to Robertson's proposition of global consciousness, this dissertation proposes an analytical tool to measure and investigate how the world's denizens think of the world-as-a-whole – with, importantly, attention to both similarities and differences across space in how important issues are narrated. Instead of quantifying objects such as cars or migrants crossing borders, an index based on degrees of global consciousness requires a new unit of measurement that more accurately represents meaning: a global idea. Global consciousness scholars (Robertson, 1992, 2009, 2011; Steger & James, 2013, 2019) proposed an ideational foundation of global awareness. For example, subjects such as HIV/AIDs, global warming and weapons of mass destruction are easily recognizable worldwide

because they affect not only the place where one lives but also various other places. These global concerns have taken on worldwide relevance because people realize that they pertain to people and places around the globe, providing a shared global meaning.

Wikipedia, the international, multilingual online encyclopedia, offers a rich dataset with which to identify the geography of global ideas. With its mission of being a compendium of information on all branches of knowledge (Wikipedia contributors, 2020e), volunteer editors called Wikipedians create, debate, and edit all content free from any organizational control. Wikipedians produce knowledge in a bottom-up format, which can, I contend, validly represent the spread and differentiation of global ideas worldwide. These authors produce knowledge at an astounding pace. Wikipedia expanded in 2007 to become the world's largest encyclopedia, outpacing the *Yongle Encyclopedia* which had held the distinction for more than 400 years (Wikipedia contributors, 2021d). In 2016, the year when the data for this dissertation were collected, there were more than 146 million edits in the 42 million articles contained in Wikipedia. Collectively called Wikipedia, the online encyclopedia was in fact then comprised of 285 different language Wikipedias edited in 222 countries and territories on every inhabited continent. Since then, Wikipedia has continued to grow. In 2021, it contains greater than 56 million articles in 308 language Wikipedias. It is truly global in scope.

Wikipedia's structure, furthermore, allows systematic investigation. Each Wikipedia article contains the history of the editing performed on it. With this editing history, algorithms can process the time and place of edits performed by unregistered editors through their IP addresses, or the number assigned to the computer in the Internet network. This allows a systematic geolocating of article edits and enables the quantitative and qualitative analyses of the ideas they contain. I propose, simply, that global ideas are those ideas in global articles, that is, articles edited

in the most countries worldwide. These ideas can be contrasted to local ideas, or only in one country. The availability of Wikipedia's editing history permits the systematic mapping and analysis of ideas written by a community of editors worldwide.

1.3 Relevance of Study

Because of the ability to examine knowledge production on a global level in Wikipedia, my research contributes to our understanding of the socio-economic construct of the representation of the world, global consciousness scholarship and globalization indexes.

First, I expand upon world-system theory (Wallerstein, 2004, 2011) to examine how Wikipedians, guided by the socio-historic uniqueness of their countries, utilize global ideas shaped by the socio-economic power of the core region to create an understanding of the world. Specifically, world-systems analysis divides the world into regions based on the division of capital and labor. Being the most powerful and influential region, I hypothesize that the core – that is, developed countries such as the U.S. and those in Western Europe – have a disproportionate effect on the spread of global ideas. This is because the socio-economic power of the core influences worldwide educational standards, language, and markets, which in turn construct ideas on a global level. At the same time, individual regions and countries have unique interactions with other places in the world as well (e.g., culture and trade), which produce a distinctive understanding of the world (Massey, 1991). My research contributes to our understanding of how regional dynamics and uniqueness of place combine in the modern world-systems to structure the understanding of the shared global whole.

Second, I construct a global consciousness index that supplements globalization indexes that are theoretically based on the process of interconnecting places on a world level through flows

in networks (Gygli et al., 2018; The Globalization Index, 2007). This new index contributes to the available indexes by providing a qualitative alternative understanding of the world. By mapping the editing of Wikipedia global articles, the ideational basis of the expression of the world-as-a-whole can be analyzed at a country and regional level. Historical, social, and economic factors can help explain how some ideas are regionally constrained, or not. What is more, the global consciousness index proposed here can be correlated with existing globalization indexes (e.g., KOF Globalisation Index) to identify relationships between connectivity and ideationally based approaches.

Third, the new global consciousness index identifies global articles (global ideas) in Wikipedia with which to perform an applied analysis of global consciousness (Robertson, 1992, 2009, 2011; Steger & James 2013, 2019). The index is comprised of ideas that are produced by editors worldwide in real-time and can expand on the mostly theoretical writings in global consciousness scholarship. The articles' narratives can reveal how global ideas exhibit an awareness of the world-as-a-whole (e.g., through global markets) and how they represent meaning given to that wholeness (e.g., the controversy concerning neo-liberalization of global trade).

1.4 Research Questions and Objectives

In this section, I present each research question and its objectives. My dissertation primarily focuses on two research questions. First, I investigate the extent to which global articles represent global consciousness, and from that, I propose a method for constructing an index to measure global consciousness. Second, by considering the written knowledge in Wikipedia as a landscape, I analyze how the socio-economic power stemming from the core region in the modern world-system discursively shapes global articles to differently represent the world.

The first objective (presented in Chapter 5) is to construct a new index that I call the Wikipedia Global Consciousness Index (WikiGCI), which is an empirical assessment of Robertson's (1992, 2009, 2011) proposal that something like global consciousness defines globalization. For the WikiGCI, global articles serve as the empirical units to understand global consciousness. By geolocating IP address edits to Wikipedia articles, I identified the top 100 global articles edited in the most countries. With this index, I first discursively analyze how global articles affirm a global consciousness by statements of global wholeness in their narratives. I also apply Steger and James' (2013, 2019) analysis of global social meaning to the global articles to identify how editors express ideology, imaginaries, and categories of the being-in-the-world. This analysis can reveal how controversies narrated in global articles indicate issues with global meaning and evolving meaning for global consciousness (e.g., changing attitudes towards same-sex marriage on a worldwide level). I analyze how global consciousness signifies awareness of the world-as-a-whole, but not uniformity of opinion. Second, I examine the index scores by country to detect regional patterns. By using percentile ranks per country, I establish a ratio/ratio index (Chetty, Hendren, Kline, & Saez, 2014) to measure the extent to which the unregistered editors (i.e., displaying their IP addresses) edit global articles in each country compared to other countries: $\text{WikiGCI} = \text{percentile rank of global articles} / \text{percentile rank of the number of unique IP addresses editing Wikipedia}$. These patterns can indicate potential socio-economic and historical influences on the participation in global conversations that constitute the global consciousness.

The second objective of this dissertation is to discursively analyze regional patterns in Wikipedia's global and local articles (presented in Chapter 6). Discourses are sets of texts, images and speeches that create "a framework for understanding the world" (Barnes & Duncan, 1992, p. 8). The discipline of geography is well suited for this endeavor because there is an established

scholarship of analyzing the discursive structure of place representation in written knowledge (Barnes & Duncan, 1992; Duncan & Duncan, 1988; Johnston, Biro, & MacKendri, 2009). For this endeavor, I apply critical discursive analysis (Fairclough, 1995, 2001; Wodak & Meyer, 2009), which critically interprets and explains how discourses construct and maintain social inequalities. My goal is to explore how socio-economic powers originating in the core region construct globalizing discourses to form the representation of the world.

By using the metaphor of a landscape, which I call the Wikipedia Worldscape, I frame the understanding of the world in Wikipedia content as a world-system socio-economic mediated view of the world. The metaphoric analytical tool assists in understanding the construct of the world-as-a-whole. I selected four dimensions of globalization based on the socio-economic power of the core that condition globalizing discourses to analyze the view of the world in Wikipedia global articles. These dimensions are identified in the Wikipedia articles as references to core region countries, the use of English in citations, references to core region media institutions and the monetization of commodities. I performed a mixed method, multilingual discursive analysis to examine how these discourses can distinguish place views between two groups of Wikipedia articles from the three regions in the modern world-system. For one group of articles edited only in one country from the three regions in the modern world-system (Wallerstein, 2004, 2011), I sampled articles edited in Peru (periphery), Russia (semi-periphery), and the U.S. (core) were local articles with local views. The other group consisted of global articles edited in those three countries as well as the rest of the world that contained shared views of the world. This discursive comparison of local and global articles by region highlights the potential regional differences in how editors engage globalizing discourses based on core socio-economic power to structure the global ideas and world representation. These regional samples reveal not only local-to-global

dynamics but also how the uniqueness of place of each country (e.g., colonial legacy in Peru) affects how editors engage in globalizing discourses to represent the world. The Wikipedia Worldscape establishes the socio-economic construct of global ideas. The results reveal how the core region's socio-economic power and uniqueness of place interact to shape global consciousness.

1.5 Organization of the Study

This dissertation is divided into seven chapters. After this introduction, in Chapter 2, I present the case for the online encyclopedia as a research site for the examination of global consciousness. The chapter begins with a discussion of the evolution of Wikipedia into an encyclopedia of a global scope by analyzing its history, demographic and geographic composition of editing, and content and editing policies. Then it surveys the insight gained from previous research in the discipline of geography employing Wikipedia that can benefit this dissertation. The chapter continues by examining Wikipedia as a data source to establish the parameters of the investigation of this research project.

Chapter 3 positions this dissertation in the pertinent theoretical framework. I first analyze the predominant understanding of globalization in the discipline of geography as the process of interconnecting places and this understanding's central role in constructing globalization indexes. Second, I present global consciousness as an alternative – ideational – understanding of the world with which to construct a new index. Third, globalizing discourses are presented as the discursive foundation of global ideas and global consciousness. The chapter concludes with a detailed outline of the research questions and objectives.

In Chapter 4, I discuss the methods deployed in this research. First, my overarching methodology for querying and processing the Wikipedia data is presented, including preparation of the data for the sampling and analyses relevant to the two research objectives. Second, the methodology for the construct of the new index, the WikiGCI, is discussed. This methodology includes the critical discursive analysis of global ideas and their relation to global consciousness. Third, the chapter presents both the qualitative and quantitative research methodologies specifically for the research objectives concerning the discursive investigation of the Wikipedia Worldscape. The qualitative component is comprised of critical discourse analysis (CDA), which analyzes how regional relations in the modern world-system reinforce power through the discourses found in the articles. The quantitative component consists of content analysis and regression analysis to determine how globalizing discourses differentiate global from local articles.

The results of the new global consciousness index are analyzed in Chapter 5. This chapter first affirms global consciousness by examining how the awareness of the wholeness of the world is expressed in global articles. It also analyzes sample global articles for the global social meaning in terms of ideologies, imaginaries, and categories of being-in-the-world (Steger & James 2013, 2019). Second, it investigates the country and regional level differences in the index scores specifically by applying a world-systems regional structure to the editing patterns.

Chapter 6 presents the results for the second research objective. It first outlines the results of the critical discourse analysis of the global articles compared to local articles from the sample countries (Peru, Russia, and the U.S.) in the three regions of the modern world-system (periphery, semi-periphery, and core). By highlighting discursive differences in three themes (soccer players, films, and holidays), the chapter demonstrates how core region socio-economic power structures global ideas. Second, it presents the content and regression analyses of these articles to discern the

discursive structure of the view of the world. The quantitative analyses indicate how the uniqueness of place in countries outside the core intersects with globalizing discourses to represent the world within the socio-historic particularities of the countries. Chapter 7 concludes the dissertation with a discussion of its contributions. Finally, in Chapter 8, I discuss methods with which to address the concerns of potential implicit bias in the selection of articles for this research project.

2. Wikipedia: Site Validation for Discursive Research into Global Consciousness

Wikipedia is an exemplary data source for the Web 2.0 philosophy of user-generated knowledge. Moreover, since Wikipedians across the world perform millions of edits on its articles annually, it offers bottom-up insights into global knowledge production.

This chapter is organized into three sections. First, I discuss the meteoric evolution of Wikipedia into the compendium of knowledge with worldwide representation by examining its history, the demography and geography of the participation of its editors, and the platform's content editing policy. Second, I survey the literature in Geography employing Wikipedia as a research site or data source. For example, geographers researched how place representation is shaped by language and place characteristics in Wikipedia articles (Ballatore & Sabbata, 2020; Graham et al., 2014, 2015; Hu, 2018; Keßler, 2017; Levin, Lechner, & Brown, 2017; Osborne, Graham, & Dittus, 2020; Salvin & Fabrikant 2016; Santos, Anastácio, & Martins, 2015). Geographers have also supplemented existing indexes with editing patterns in Wikipedia to expand our understanding of the world (Ojanperä et al., 2019). In addition, geographic research has raised methodological issues indicating that only applying geotags and algorithms to identify place limits the focus of study from all presentations of place (Graham et al., 2014; Ballatore & De Sabbata, 2020), and linking articles to one another increases our understanding of the discursive construct of place (Salvini & Fabrikant, 2016). Third, I examine the structure of Wikipedia as data, specifically discussing its relevance to quantitative and qualitative research on global consciousness.

2. 1 Wikipedia's Evolution to Global Encyclopedia

Since its emergence in 2001, Wikipedia, the online international, multilingual compendium of knowledge, has evolved into the largest encyclopedia in history through its structure of allowing editors worldwide to create and edit its content. By examining Wikipedia's history, the demography and geography of the participation of its editors and its content editing policy, I examine the strengths and limitations of the online encyclopedia for investigating world representation and global consciousness.

2.1.1 History

Since the beginning of the new millennium, Wikipedia has become one of the most important websites for user participation on the Internet, which has created a new forum for the investigation of global consciousness. While the Internet at its inception in the 1990s was mainly a forum for many users to consume content, it changed into a medium where users create content and express their thoughts and opinions worldwide. Tim O'Reilly, a computer book publisher and open software activist, coined a new phrase for this new era in 2004, Web 2.0 (Han, 2011). Instead of the Web being a platform where things are published or sold (Web 1.0), it is now a forum for participation (Web 2.0). Han (2011) discussed this new use of the Internet was considered a conversion of the Web into a place of radical inclusion, a digital democracy. From Twitter, a social network that enables users to send and read "tweets" (short text messages), to Flickr, which hosts photographs and videos, users online are no longer passive viewers (Lunden, 2012; Parfeni, 2011). Instead, they can now cooperate and interact on Web 2.0 sites, which are Internet-based applications where they create data or information. Wikipedia, the focus of this dissertation, is

considered the symbolic beginning of Web 2.0, a place where Internet users globally can express their opinions and thoughts on all matter of subjects.

Wikipedia's purpose is to be the world's encyclopedia entirely created by volunteer users. The encyclopedia declared its mission "to benefit readers by acting as an encyclopedia, a comprehensive written compendium that contains information on all branches of knowledge" (Wikipedia contributors, 2020e). As an encyclopedia, Wikipedia aims to present information in an accurate, comprehensive manner with a neutral tone supported by reliable sources (Wikipedia contributors, 2021k). Wikipedians collaborate to write all of its content, and in line with its democratizing potential, there are no requirements to become an editor. It is a forum for individuals with Internet access from all countries to create and edit knowledge in an international, cooperative effort. As such, Wikipedia has become one of the best-known examples of crowdsourcing, whereby large groups of people create open information. This effort to create an encyclopedia is global in scope and voice because articles in any language and on any topic can be written collaboratively by volunteers in different countries.

Wikipedia's founders, Jimmy Wales and Larry Sanger, have worked since its inception to ensure that Wikipedia's organizational structure of user-generated knowledge remains free from organizational control, thus permitting unfettered expression of global ideas. It was originally devised to be complementary to Nupedia, an online English-language encyclopedia that contained articles written and reviewed by experts (Wikipedia contributors; 2021l). However, in 2003, all Nupedia's content was merged into the user-generated version. That same year, Jimmy Wales established the Wikimedia Foundation, Inc., a non-profit parent organization that operates Wikipedia and other offshoot Meta-Wiki collaborative projects (e.g., Wikiquote, Wiktionary, and Wikibooks). In 2007, the Foundation established its headquarters and operations in the San

Francisco Bay Area, citing proximity to like-minded organizations as one of the reasons for selecting that location (Wikipedia contributors, 2016).

The Wikimedia Foundation has maintained all content as open-source and free of charge to the public. Its mission is “to bring a free and accurate encyclopedia to every single person on the planet” (Wikimedia Foundation, n.d.). Because it is a non-profit, it is dependent on donations, and, to a lesser extent, grants, and scholarships, to operate all its infrastructure, mainframe computers, and personnel. In 2016, the year of study for this research project, the Wikimedia Foundation maintained its entire operation with a budget of \$81.9 million and approximately 280 paid staff and contractors (Wikipedia contributors, 2016). No advertisement revenue supports Wikipedia. To encourage volunteers to participate, Wales changed the domain for Wikipedia from *wikipedia.com* (“.com” denoting businesses) to *wikipedia.org* (“.org” denoting non-profit organizations) to avoid any confusion with commercially financed websites. The Wikimedia Foundation sustains the physical structure for the online encyclopedia so that volunteers worldwide generate all the content in Wikipedia without any control from the Foundation. Even though its budget is limited for the size of its operation, the Wikimedia Foundation has endeavored to establish a global forum whereby editors can express themselves at no cost.

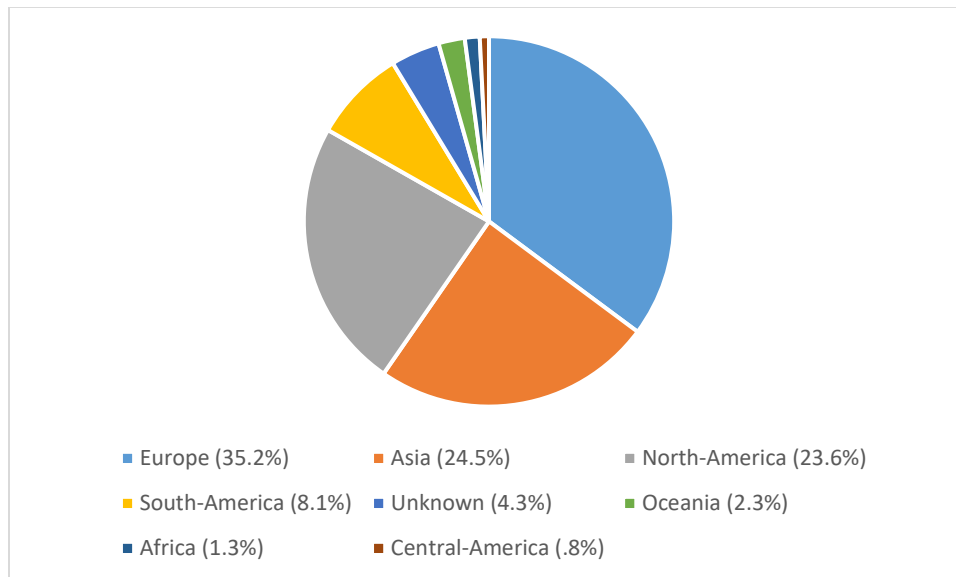
Since the first edit performed on an article on January 15, 2001, supposedly by Jimmy Wales (Wikipedia contributors, 2021d), Wikipedia has grown exponentially in scope to cover the world. By the end of 2004, there were more than one million articles written in over 100 languages worldwide. On September 9, 2007, the English Wikipedia surpassed the two millionth article mark, obtaining the global record of the largest encyclopedia compiled in history. The *Yongle Encyclopedia*, which was started in 1408 during the Ming Dynasty in China, had held the record for nearly 600 years. Wikipedia required only six years to break the record for encyclopedic

knowledge production that had not changed for hundreds of years. Within its short history, Wikipedia has been the standard-bearer of Web 2.0, which facilitates the creation, editing, and debate of knowledge online.

2. 1. 2 Demography and Geography of Participation

Even though certain areas of the world (developed countries) and certain demographic groups (males) create a large share of the articles in the online encyclopedia, Wikipedians are located on every continent in nearly every country in the world. Because editors are located in nearly every country, the global scope of the online encyclopedia permits views of the world with the greatest geographic expanse. The last published data (October – December 2014) reporting locations for all edits before the period of my study (Oct. – Dec. 2016) indicated that editing took place on every populated continent (Figure 2.1). Editors in 222 countries and territories edited content in the online encyclopedia. Some places, however, edited the encyclopedia in greater proportions than others. Percentages of total editing ranged from only 1.3 percent located in Africa to 58 percent (870,000 edits) in Europe and North America. During 2016, the year of my data collection, there were more than 146 million edits performed on 42 million articles. The forum is arguably the most repository of knowledge production in the world.

Figure 2.1 Percentage of Total Edits by Continent Oct. – Dec. 2014 (Approximate Total: 1.5 Million)

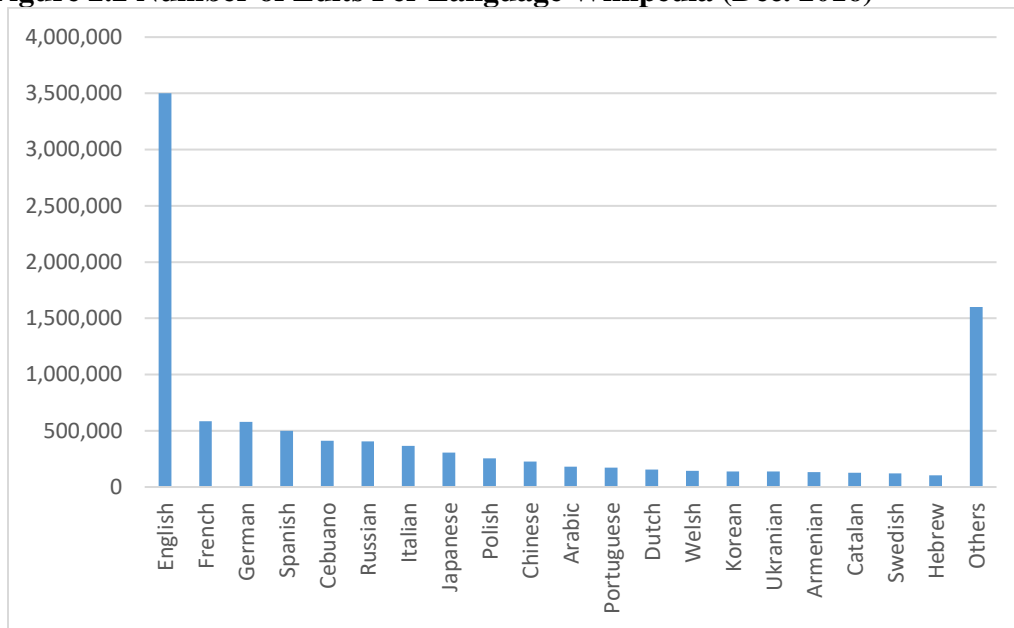


Data Source:

<https://stats.wikimedia.org/wikimedia/squids/SquidReportPageEditsPerCountryOverview2014Q4.htm> (accessed January 7, 2021). These are the last published statistics reporting the location of all edits (registered and unregistered editors).

Linguistically, Wikipedia also has a wide global scope. In December 2016, editors performed greater than 10.1 million edits in 285 individual language Wikipedias (Figure 2.2). Editing to the English Wikipedia (3.5 million edits) was considerably more voluminous than in other language Wikipedias. French, the second most edited language, had many fewer edits, approximately 585,000. Of the 20 most edited languages, 11 originated or are spoken in the core region of the world. In sum, even though a large percentage of all editing occurs in the global core region and in languages spoken there, Wikipedia nevertheless has a worldwide scope, with editing in hundreds of different languages on all populated continents. This global editing permits an analysis of the globally-oriented knowledge production throughout Wikipedia’s content.

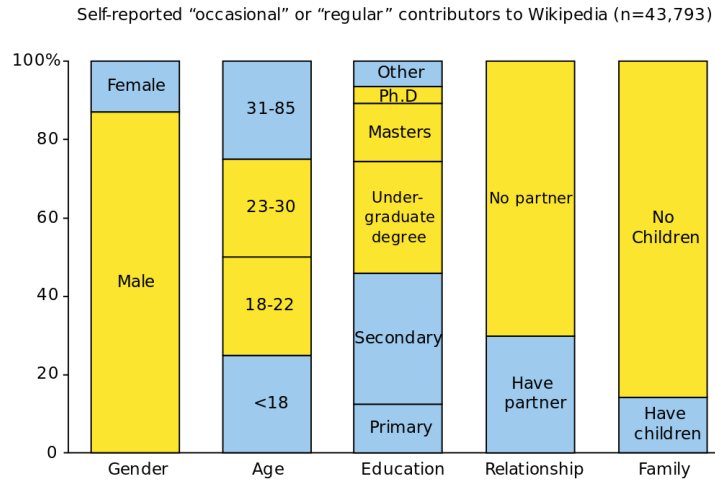
Figure 2.2 Number of Edits Per Language Wikipedia (Dec. 2016)



Data Source: <https://stats.wikimedia.org/EN/TablesDatabaseEdits.htm> (accessed January 7, 2021).

Demographically, some groups (e.g., young males) edit Wikipedia in greater numbers than other groups (Figure 2.3). In 2008, the most comprehensive survey of editors and readers was conducted in 20 languages, receiving more than 170,000 responses from 231 countries (Wikipedia contributors, 2019b). This survey reported, in summary statistics, that the average Wikipedian age was 26 years old, and that less than 16 percent of Wikipedians were female. The majority of editors have a secondary or undergraduate education. The vast majority of respondents expressed the wish to share knowledge and the desire to fix errors when asked for their motivations to participate in editing Wikipedia. This survey suggested a profile for Wikipedians, where editors worldwide tended to be young males wanting to participate in knowledge construction online. Other surveys have reported similar profiles for Wikipedia editors (Hill & Shaw, 2013; Wikimedia Foundation, 2011). For example, the Wikimedia Foundation's Wikipedia Editors Study (2011) found that only nine percent of editors were female and that greater than half of the editors resided in seven global

Figure 2.3: Demographic Breakdown of Sampled Editors in 2008.



Source: <https://en.wikipedia.org/w/index.php?title=Wikipedia&oldid=757338685> (accessed January 7, 2021).

core countries (U.S., Germany, U.K., Italy, France, Spain, Canada). In general, the average Wikipedian worldwide is a young, educated male.

To mitigate against underrepresentation, the Wikimedia Foundation has organized edit-a-thons, which are special gatherings to edit Wikipedia articles according to themes aimed at closing the gender gap (e.g., women’s painting and literature), as well as world conferences to encourage more participation from the Global South (Gender gap/Initiatives, 2020). These efforts have had success, with an average 8.5 percent annual growth in the number of female editors (Wikimedia Foundation, 2011). This diversification in participation is reflected in content as well. The percentage of articles concerning biographies of women in the English Wikipedia increased from 15 percent to 18.5 percent in six years. There are active movements to increase their representation worldwide.

However, the fact that the overwhelming majority of editors worldwide are cis males skews the content towards that gender identity (Gardner, 2011; Schmahl, Viering, Makrodimitris, Jahfari,

Tax, & Loog, 2020; Wikipedia contributors, 2021b). For example, in 2017 only 17 percent of biographies in the online encyclopedia concerned women, but 41 percent of the biographies tagged for deletion (i.e., considered insufficiently important to include in the encyclopedia) were about women. Textual analysis, furthermore, found more gendered-specific language concerning women, such as “female scientist” compared to the gender-neutral term “scientist” for males. In 2011, former Wikimedia Foundation executive director Sue Gardner reported (Gardner, 2011) nine reasons to explain why women do not edit often from surveys of women editors. These included 1) lack of user-friendliness in the editing interface, 2) lack of free time, 3) lack of self-confidence, 4) unwillingness to participate in lengthy edit wars, 5) belief their contributions will be deleted, 6) finding the atmosphere misogynistic, 7) Wikipedia culture is off-puttingly sexual, 8) being addressed as male in languages that have grammatical gender, and 9) fewer opportunities for social relationships. I analyze the results bearing in mind that they overrepresent the gendered perspective.

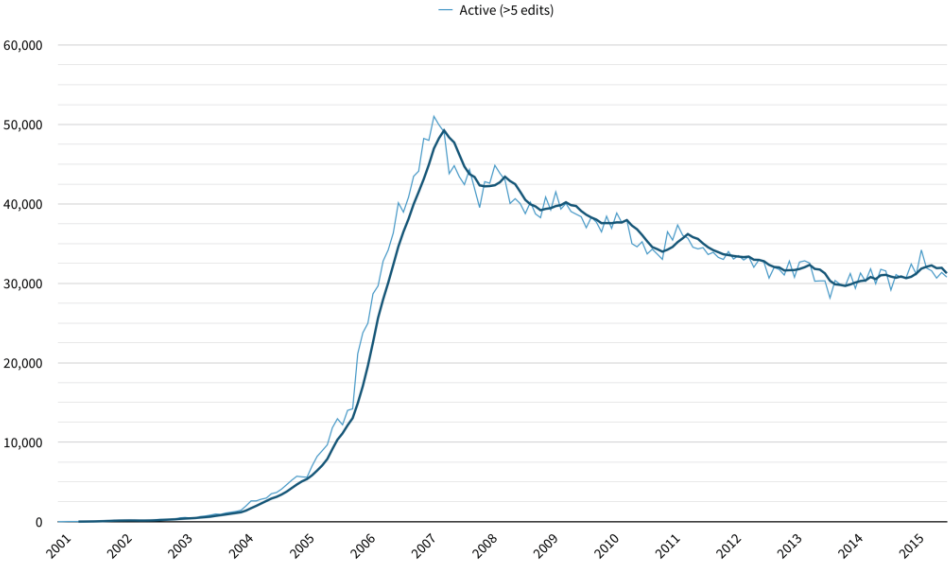
2.1.3 Content and Editing Policy

Content in Wikipedia concerns a multitude of different subjects (e.g., geography, culture, and science). Editors worldwide have different statuses (e.g., administrator) within the encyclopedia to create knowledge. These editor statuses can influence what content is permitted. The number of editors and subject matters has matured into a worldwide forum that can be employed to examine global consciousness.

With the maturation of Wikipedia, the initial numbers of editors decreased but remain consistently high. Erhart and Halfaker’s (2015) study of registered editors to the English Wikipedia

indicated that after an initial surge of interest, Wikipedia appears to have maintained a steady number of over 30,000 very active editors in 2007 (Figure 2.4). A similar analysis (Ortega, 2009) of the top 10 most edited language Wikipedias concluded that the number of editors has plateaued in each language. As Wikipedia evolved, it has become a website where a relatively stable number of individuals are producing and editing most of the content.

Figure 2.4. Active Editor Numbers (>5 Edits per Month) since the Beginning of the English Wikipedia



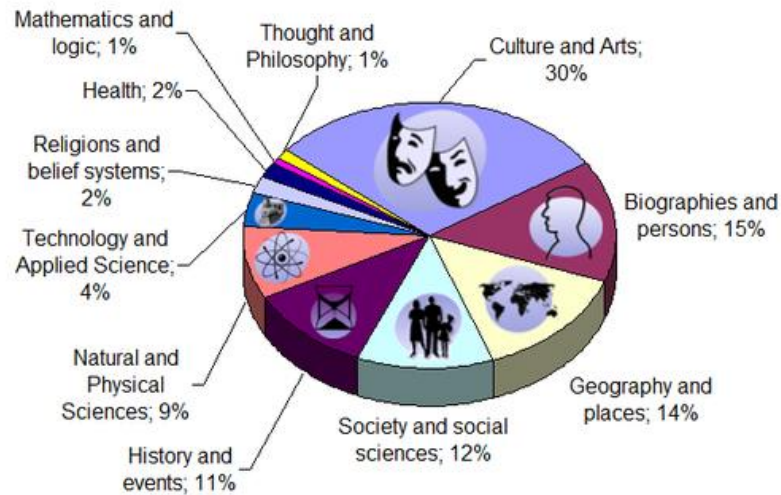
Source: <https://diff.wikimedia.org/2015/09/25/wikipedia-editor-numbers/> (accessed January 14, 2021).

Volunteer editors can obtain special editing status called administrator status, which influences the type of content that can be posted. This position for Wikipedians permits specialized functions, for example, the ability to block other editors and protect articles from editing. For the English Wikipedia, the number of editors granted administrator status has declined from dozens a month in the mid-2000s to a mere few at the beginning of 2012¹ (Meyer, 2012). This decrease has been accredited to the arduous promotion process. Wikipedians seeking the position need to write essays on their philosophy concerning the relevance of articles and face the critical examination of their editing history of articles. Wikipedians normally receive administrator status by consensus, the boundary for which is 75 percent favorable reviews from other editors (Wikipedia contributors, 2021f). This special status for administrators is important because they can lock articles against editing, which can shape the way the world is viewed.

Studies have demonstrated that editors worldwide have created information on numerous branches of knowledge in the online encyclopedia (Kittur, Chi, & Suh 2009; Wikipedia contributors, 2021f). Because of the terabytes of disk space, Wikipedia's servers can house content and topics in amounts greater than any printed encyclopedia can contain (Wikipedia contributors, 2021f). In a 2008 study, Kittur, Chi, and Suh identified cultural themes as having the greatest percentage of articles in the encyclopedia. The largest themes are (Figure 2.5) culture and the arts (30 percent), biographies and persons (15 percent), geography and places (14 percent), and society and the social sciences (12 percent). These themes also experienced exponential growth in the number of articles. Culture and the arts grew at a rate of 210 percent, nature and the physical sciences at 213 percent, and thought and philosophy at 160 percent. Only one theme, technology

¹ Like editors, administrators are not obliged to publish their gender. Meyer's (2012) research did not state statistics on the gender of the administrators. Iosub, Laniado, Castillo, Fuster Morell, and Kaltenbrunner (2014) reported that from a sample of 4,226 administrators, 97 reported as female, 1,526 as male, and 2,603 did not state their gender.

Figure 2.5 Wikipedia by Subject, 2008.



Source: <https://en.wikipedia.org/wiki/Wikipedia> (accessed January 7, 2021).

and sciences, decreased at a rate of six percent. In Wikipedia, there is a wide breadth of knowledge created worldwide.

Wikipedians maintain policies worldwide aimed at ensuring that editors can write articles that validly represent ideas and places regardless of controversy. When creating content in any subject matter, Wikipedia maintains a policy that does not permit self-censorship in a manner that would suppress what the editors write. Content deemed objectionable by some is not reason enough for it to be removed from articles. Editors may include disputed material that is presented in an encyclopedic, neutral manner and does not violate U.S. law (the country hosting Wikipedia servers) or Wikipedia policies (e.g., no claims without reliable resources) (Wikipedia contributors, 2021i). This open policy of knowledge production at times creates controversy with material considered offensive or pornographic. For example, many Muslims protested the inclusion of the image of Muhammed in the English Wikipedia because Islamic teaching forbids his visual

depiction. The Wikipedia editing community permitted the use of the images, stating, “Wikipedia does not censor itself for the benefit of any one group” (Wikipedia contributors, 2021). Furthermore, some Wikipedia articles openly discuss conflicting opinions concerning the article’s main idea; for example, the disputes concerning the images of Muhammed, are part of the Wikipedia article. This candid discussion of disagreements about ideas and meanings in Wikipedia articles edited worldwide permits a rich data source with which to analyze evolving and conflicting ideas with global significance.

Wikipedia articles represent the “notability” (significance) of ideas determined by local Wikipedians. That is, editors use local norms to decide whether to create a separate article for an idea. When conflict arises whether an idea merits its own article, Wikipedians consider the “notability” of the idea covered by the article. That is, the idea or subject should have “significant coverage in reliable sources that are independent of the subject” (Wikipedia contributors, 2020d). Any idea is a candidate for its own article if it receives more than trivial mention (i.e., passing mention in a source devoted to another subject) in sources that are independent of the idea (i.e., no self-promotion or advertisements). Wikipedians consider dictionary (simple definitions) or directory (lists of quotes) information inappropriate for independent articles (Broughton, 2008). Within the editing community, “deletionists” argue for the exclusion of material that is poorly defended or insignificant. They maintain that the encyclopedia is not Google or a “junkyard of facts” (Sarno, 2007). “Inclusionists” advocate for broad retention of material because there is no limit to space provided by Wikipedia. They also believe that the encyclopedia should include idiosyncratic articles. Each language Wikipedia, furthermore, sets its own standards of notability. As a result of these differences in standards, there appear to be linguistic (and hence national) distinctions in content oversight. For example, many have argued that the German Wikipedians

tend to be exclusionist, while the English Wikipedian are more inclusionist (Wikipedia contributors 2021a). Thus, editors decide if articles are created based on local cultural norms. This can result in differing representations of global ideas that are conditioned by the culture of various groups and places throughout the world.

Governments worldwide rarely censor content in Wikipedia, but any level of censorship can influence efforts to understand global consciousness. As of June 2016, investigations (Clark et al., 2017; Wikipedia Contributors, 2020) discovered that the Chinese government had restricted access to the Chinese Wikipedia, but did not block other language versions. Uzbekistan and Thailand also intermittently blocked the Uzbek and Yiddish Wikipedias, respectively. Thailand's blocking of the Yiddish Wikipedia was deemed an accident by the researchers. However, the investigations indicated that globally there was relatively little censorship of the encyclopedia. I consider this suppression of editing as part of the Wikipedia Global Consciousness. China's one-party state, for example, establishes for its population the meaning of the world according to its national ideology, which is reflected in the suppression of edits. Furthermore, Miller (2019) reported how Wikipedians controlled governmental attempts to manipulate content by deleting questionably edited material or locking the articles to IP editing. Wikipedians decide how to manage government interference with articles.

Global popularity in consulting Wikipedia is tremendous and can itself reflect a form of global consciousness. Wikipedia reported greater than 16 billion article visits from October to December 2016 (Zache, 2017). This placed Wikipedia as the fifth most visited site globally, only trailing behind Google, YouTube, Facebook, and the Chinese internet website, Baidu (as reported by Alexa Internet, Inc., which analyzes commercial web traffic; Wikipedia contributors, 2017b). Furthermore, global events often spur people to consult Wikipedia – often as the first source of

information consulted. For example, the Wikimedia Foundation claimed that, following Michael Jackson's death in 2009, nearly a million visitors consulted his Wikipedia biography within the first hour of its announcement. The number of article views was so enormous that Wikipedia temporarily crashed because its system could not maintain the heavy strain (Wikipedia contributors, 2021d). Like its production of content, the scale of consulting Wikipedia articles is global and can represent world events and interests.

While Wikipedia aims for neutrality, it is not surprising that government leaders can become interested in the debates enacted in articles. For example, the debate concerning same-sex marriage has spread to many countries and become a point of contention politically. When Canada's government changed its laws to permit these marriages, it referred Internet users to Wikipedia's article concerning this subject for better comprehension (LEGISinfo – House Government Bill C-38 [38–1]). The U.S. Office of the Director of National Intelligence used Wikipedia information to understand political leaders in India, thus shaping U.S. policy regarding that country (Aftergood, 2007). Furthermore, Italian politicians debated how images in Wikipedia affected the perception of place. They argued that Italian laws needed to be changed so that tourism is not damaged because copyright laws forced the removal of specific images of Italian buildings from Wikipedia (Wikipedia contributors, 2021).

In sum, there are caveats to analyzing representation in the content of the encyclopedia (e.g., the overrepresentation of cis male editors). Because of the large participation of male editors, I analyze the results bearing in mind that there may be a strong focus on certain types of culture (e.g., sports). The WikiGCI offers a limited insight to cis females, especially of color from the rural environment in the Global South. Global consciousness as represented in Wikipedia disproportionately represents cis males worldwide. I also discuss possible future research to

investigate the differences in expressions of global consciousness and the use of globalizing discourses due to explicit and implicit bias.

These qualifications notwithstanding, Wikipedia is a forum of tremendous knowledge production from around the world. The Wikimedia Foundation sets no requirements for becoming an editor, which allows anyone with Internet access to edit content. Wikipedians in nearly every country participated in knowledge production in 285 languages in 2016, demonstrating a genuine global scope. Every year there are millions of edits to the articles in the encyclopedia, covering an extensive variety of different subjects and ideas. There are few restrictions as to what kind of knowledge can be created, permitting the authentic and relatively unfettered representation of people, ideas, and places – all according to the culture and mores of the editors. Wikipedia’s non-profit organization allows debate in writing articles, which grants a forum of expression of awareness of and meaning given to the world. Wikipedia’s history as a website for global knowledge production suggests that it is a valuable source for the investigation of global consciousness.

For the discipline of geography, this online forum of knowledge production provides an online source of data with which to analyze the representation of global consciousness in national, regional, and international contexts. In the next section, I analyze the research aims and methodologies of previous geographic studies using content in Wikipedia and their relevance to this research project.

2.2 Geographic Literature Review on Wikipedia

In the past decade, scholars have increasingly employed Wikipedia as a dataset to undertake geographic research. This research is pertinent to my dissertation in terms of place representation, the construction of indexes, and methodology. First, researchers in geography have researched how language, place characteristics, and themes shape representations of various places in Wikipedia articles (e.g., the world and cities) (Ballatore & Sabbata, 2020; Graham, et al. 2014, 2015; Hu, 2018; Keßler, 2017; Levin, Lechner & Brown, 2017; Osborne, Graham & Dittus, 2020; Salvin & Fabrikant, 2016; Santos, Anastácio, & Martins, 2015). Second, geographers have also supplemented indexes that provide an understanding of the world with editing patterns in Wikipedia (Ojanperä et al., 2019). Third, geographic research employing Wikipedia has raised methodological issues concerning how to identify the place as narrated in the article (Graham et al., 2014; Ballatore & De Sabbata, 2020) and the use of themes in the article to analyze place (Salvini & Fabrikant, 2016).

2.2.1 Place Representation

For geographers, Wikipedia has been a rich dataset for the investigation of spatial patterns in knowledge production and place representation. Real, offline qualities of places can influence their online representations in Wikipedia. For example, the socio-economic and cultural power of a place may cause it to attract more attention than less powerful places. Notably, these differences in the content will be reflected in differences in the discourses people use to invoke – or understand – the qualities of places.

In alignment with the data presented in Figure 2.1, Graham et al. (2014, 2015) investigated the extent to which editors in different regions participate in the representation of the world in Wikipedia articles. They too found uneven participation levels among Wikipedia articles. Forty-five percent of edits originated in five developed, high-income countries. Editors in the developed countries had higher broadband access to the Internet and dominated in producing knowledge that represented those countries that had lower broadband (developing countries). The global economic core highly influenced the representation of all regions. However, this research was limited because it emphasized editing in the English language Wikipedia. Even though it investigated the directionality of editing in 44 language Wikipedias (i.e., editors from which countries edited articles concerning which countries), the researchers investigated the profiles of registered editors only in the English Wikipedia. They concluded that these registered Wikipedians edited more outside their regions because of their senior status. However, these Wikipedians were editing in English, the global lingua franca, which could be more conducive to interregional editing than smaller local languages that have fewer resources and are less networked.

Scholars have also investigated thematic information in Wikipedia to understand the basis of place representation (e.g., cities), with findings that are relevant to the construction of views of the world (Ballatore & Sabbata, 2020; Hu, 2018; Osborne, Graham & Dittus, 2020; Salvin & Fabrikant 2016). Geographers Osborne et al. (2020) focused on Wikipedia articles related to Berlin, Germany and discovered different thematic constructions of the place representation depending on the language version of the Wikipedia article. Articles about Berlin were geotagged (i.e., geographic coordinates embedded in the articles) in 73 language versions, and edits were geolocated by the IP addresses posted by unregistered editors of the articles. Osborne et al. discovered that the articles mostly concerned the city's center, particularly buildings such as

museums and landmarks. Berlin's outer districts were rendered nearly invisible by the lack of editing. Furthermore, by investigating the German and English language versions, the researchers recognized spatial patterns in the editing of the subject matter. While articles concerning the Nazi past of the city were edited more in English-speaking countries, articles concerning the controversial aspect of the history of communist East Berlin were edited in Germany. Cities, as represented in Wikipedia, can be constructed thematically, with different groups employing different themes to narrate the same city. This thematic analysis of place representation applies to views of the world as well. Editors in different regions may employ different themes (discourses) to construct how the world is represented.

Thematic information has also been used to examine how cities related to each other (Salvini & Fabrikant, 2016). In their study of edits to Wikipedia articles concerning cities, Salvini and Fabrikant employed world-city network theory. The researchers identified the articles that had shared links to city articles and discovered which cities contained the most links globally. These were arguably the most important cities in worldwide knowledge production. Salvini and Fabrikant then employed computer algorithms to analyze the vocabulary in these connecting articles to understand how these cities are semantically connected. They concluded that cities such as New York and London were central cities in semantic networks regarding politics, while Hong Kong was central in economy/technology semantic networks. Thus, the positionality of places and regions vis-à-vis each other can be identified by the vocabulary and themes used in Wikipedia articles.

This thematic approach to analyze place representation as conducted to examine cities (Osborne, Graham, & Dittus, 2020; Levin, Lechner, & Brown, 2017; Salvini & Fabrikant, 2016) is a fitting method to analyze the representation of the world. For instance, by identifying which

types of themes Wikipedia editors use to construct Berlin discursively (i.e., editors in English more often narrated historical Berlin in terms of the Nazi period, while editors in German narrated it more in terms of the communist period), one gains an understanding of how themes construct the story of the place. Preference to narrate certain subjects that are frequently part of a place can reveal what editors from certain areas deem important. German-language editors' focus on the communist era of Berlin may indicate the continuing socio-economic contention and nostalgia of former East Germany within united Germany. This thematic investigation is equally important for the examination of the world-as-a-whole that I apply in my research. On the one hand, editors who edit articles worldwide can demonstrate the global level importance of that theme. Themes that are identified as being edited in the most countries in the world can indicate what socio-economic and historical subjects are debated by editors and construct meaning for the wholeness of the world, or the sense that the world is more than separate countries and regions. On the other hand, different themes could also be used by Wikipedians in different regions to construct an understanding of the world as well. The world narrated thematically (e.g., historic themes such as a war or ideology) can identify how some themes are used universally to represent the world, while other themes are used regionally because of the socio-historic particularities of the place where the editors are located.

Furthermore, real, offline qualities of places influence their online representations in Wikipedia (e.g., local amenities and qualitative traits). Ballatore and De Sabbata (2020) studied how socio-economic factors in census districts affected how Wikipedia articles represented districts in Los Angeles. Demographic variables such as ethnicity had low correlations in general. Infrastructure variables, such as communication and transportation, had moderate correlations with the number of edits. For Los Angeles, Wikipedians edited articles concerning places based more

on the places' physical structures than their demographics. In addition, Levin, Lechner and Brown (2017) utilized edits to Wikipedia articles regarding protected areas in Victoria, Australia as an alternative measure of the social importance of these places, which was normally gauged by visitor counts to the areas. They discovered that there was a strong, positive correlation ($r = .773$) between the two measures. The number of Wikipedia edits also positively correlated with qualitative aspects of the protected areas (e.g., scenic and recreation values of the areas), such that article edits corresponded to the attraction of the place. This is globally relevant, as regions with certain traits (e.g., socio-economic power) could command more attention from Wikipedians worldwide.

Even though previous geographic researchers working on Wikipedia have encountered some limitations, they have been successful in identifying spatial patterns in knowledge production and place representation. Many studies researched crowdsourced editing, a form of editing that is open to all on the Internet, to investigate how place is represented online (Ballatore & Sabbata, 2020; Osborne et al., 2020; Salvin & Fabrikant, 2016). By focusing on Wikipedia articles that discuss cities (e.g., Los Angeles, London, and New York), geographers have indicated that Wikipedians edit with higher frequency places that have greater socio-economic importance (e.g., New York), while different Wikipedians employ dissimilar themes to represent the city (e.g., communist or Nazi era themes to narrate Berlin). This type of data generation could lend itself to the research of other representations of place, such as the representation of the world. For example, countries that have socio-economic power may attract greater attention in representing the world, while Wikipedians in different countries may engage different themes to represent the view of the world because of local values or conditions.

2.2.2 Indexes

Geographers have used editing data available in the online encyclopedia to construct an indicator of participation in global knowledge production, supplementing existing indexes. Ojanperä et al. (2019) utilized Wikipedia articles to construct global indexes that complement indexes representing the global digital knowledge economy. Available indexes such as the World Bank's Knowledge Economy Index (KEI) measure structural level conditions but do not include indicators of digital content creation and participation. Ojanperä et al. expanded on KEI's four structural sub-indexes (education, innovation, information and communication technologies, and the economic institutional regime) by including three indicators of participation, one of which was the number of edits to Wikipedia articles. The investigators argued that this novel addition more accurately reflects participation in the global digital knowledge economy. As a result, most countries in sub-Saharan Africa scored lower on the new index. Wikipedia edits as a variable demonstrated that the digital divide appears even more challenging than structural measures suggest.

The successful supplementation of indexes by Ojanperä et al. (2019) suggests that Wikipedia can be deployed to complement existing indexes of globalization. By recognizing Wikipedia edits as a reflection of worldwide participation in digital knowledge production, Ojanperä et al. effectively combined them as an additional dimension to indexes measuring the global digital knowledge economy that previously depended on structural measures. Like the Knowledge Economy Index (KEI) that Ojanperä et al. supplemented with their Wikipedia indicator, globalization indexes such as the KOF Globalisation Index depend on structural indicators to measure the interconnectivity of places on a global level (e.g., import/export trade and embassy networks per country). These indexes can be supplemented with thematic and socio-

economic conditioned editing that takes place in Wikipedia. This suggests that Wikipedia editing can be used for indexes to understand how editors perceive the world.

2.2.3 Methodology

The discipline of geography has encountered methodological strengths and limits to using Wikipedia for investigation (Salvini & Fabrikant, 2016; Graham et al., 2014, 2015; Keßler, 2017; Ballatore & De Sabbata, 2020). While only applying geotags and algorithms for examining knowledge production and place representation limits the focus of study, linking articles to one another provides insight into the discursive construction of places.

Although the geographic investigation of place in Wikipedia tends to identify place as depicted in the articles by geotags (Graham et al., 2014, Ballatore & De Sabbata, 2020), additionally information revealing the distribution of global ideas can be obtained by identifying places within the narrative of articles (e.g., an article concerning a U.S. film). Previous research projects in the past decade indicate that there are methodological limits to geographic research applying Wikipedia data. Graham et al. (2014) recognized the country discussed in the articles by the coordinates provided. This reduced their data set to only one-sixth of Wikipedia articles. Ballatore and De Sabbata (2020) also utilized geotags in articles concerning places in the city of Los Angeles. While this method is easy to apply because coordinates can be systematically geolocated, it does leave place as represented in articles that do not explicitly offer geotags unexplored. Wikipedia articles concerning various topics such as film or holidays discuss place by stating the country of origin of the subject or to which countries the subject diffused. Place

identified in the narrative can exhibit world representation that is not captured by articles with geotags.

Algorithm-driven investigations, furthermore, can limit the scope of the investigation. Salvini and Fabrikant (2016) applied software (topic modeling) that clusters vocabulary in articles to derive socio-economic meaning in the connection of global cities. While this algorithmic approach can identify words most used together, it does not necessarily recognize a priori themes. Even though the software generates lists of words that it can detect in the texts, there might be more subtle expressions of themes. For example, the software used does not look at the narrative structure of the articles. The software is unable to analyze how the reference sources construct the narrative (i.e., whether references cited to construct the narrative are predominantly in one language or concerning one subject area). More qualitative approaches such as critical discourse analysis can detect expressions of power and place that are potentially overlooked by software.

However, geographic research utilizing links among articles is a robust method to analyze place. Keßler (2017) investigated the relationship between the linking of Wikipedia articles and the hierarchy of central places in Germany. He used the linking of articles to identify those cities that had the most links in Wikipedia. This linking structure corresponded with how the German government designated places. For example, articles regarding central places high in the hierarchy with comparatively large populations and specialized services such as museums contained the most links compared to places lower in the hierarchy. Keßler concluded that the “results indicate that real-world relationships are in fact reflected in the link structure on the web in the case of Wikipedia” (p. 488). The edits and links to Wikipedia articles correspond closely with how people perceive places in the real world. For example, people offline associate large cities with museums, and this association is reflected online by the linking of city and museum articles. This method of

examining links can be used to study the global whole as well. Wikipedians link articles to other Wikipedia articles for supporting information (e.g., sponsors of sports figures). We can therefore gain insight into the production of global ideas and places according to which articles and websites editors decide to link in Wikipedia articles.

3.2.4 Summary

With this dissertation project, I further our understanding of world representation and global consciousness. First, I expand geography's research of place representation (Ballatore & Sabbata, 2020; Hu, 2018; Osborne, Graham, & Dittus, 2020; Salvin & Fabrikant, 2016) by examining the discursive construction of the world compared to local places to identify what socio-economic conditions are associated with global discourses (e.g., the commodification of ideas) and how they are applied differently according to the uniqueness of place. That is, what globalizing discourses are applied universally to represent the world compared to only regionally because of the particularities of the region. Second, I further geography's use of indexes to understand the world by constructing an index to measure and understand global consciousness, or the awareness of the world-as-a-whole. As opposed to indexes that focus strictly on participation, I construct an index to measure the ideational underpinning of global awareness. Third, I develop geography's methodological understanding of world representation in the online encyclopedia by examining the articles' structure to identify place and the resources cited instead of strictly relying on geotags embedded in the articles that designation place. As Obsourne et al. (2020) have succinctly concluded, Wikipedia serves as a "global memory place" (p. 89) where researchers can analyze the construct of place by editors throughout the world. The encyclopedia contains global

representations. In the next section, I discuss how the particularities of the data structure in Wikipedia permit a discursive investigation of global consciousness.

2.3 Wikipedia as Data

Systematically structuring the content that Wikipedians write has facilitated Wikipedia's goal of being the world's encyclopedia. Because knowledge in Wikipedia is structured data, or data with a predefined (fixed) schema (What is Structured Data?, n.d.), individuals in any language can create and share knowledge throughout the world through its similar structure. This structuring of the data also affects the quantitative and qualitative analysis of global consciousness in terms of edit locations, article narration, and locking of articles against editing.

To accomplish Wikipedia's goal of permitting any Internet user to create and edit knowledge in the online forum, Larry Sanger, who along with Jimmy Wales co-founded the encyclopedia, proposed a wiki format because of its technical flexibility. A wiki is a "hypertext publication collaboratively edited and managed by its own audience directly using a web browser" (Wikipedia contributors, 2021e). Wiki software is a type of content management system that does not require a specific owner of the content. It allows the structure to be created by the users, who create, for example, paragraph divisions and links to supporting information. Therefore, Internet users can use an interface in their web browser to establish a Wikipedia article and populate it with information. Wikipedians usually use a simplified markup language (i.e., tags to format text) to create links and bold text. In addition to written content, Wikipedians can include an array of other material in any article (e.g., images, geographic coordinates, and maps). Wikipedia has become the most famous site using this wiki content management system, containing greater than 44 million articles in 2016. This editing structure reflects a genuine bottom-

up, crowdsourced writing of knowledge, where editors worldwide can express awareness and meaning of the world as they view it.

2.3.1 Edit Location

Of the three types of editors who can change the content in Wikipedia articles (registered editors, unregistered editors, and bots), unregistered editors are the only ones that permit a systematic investigation of the location and time of the editing process because they alone are required to reveal their Internet locations. Bots, which are registered software programs that perform automatic editing, are not associated with any one location in the world and are not suitable for the investigation of edit locations. These programs execute mundane tasks (e.g., automatically linking articles), but they compose only a tiny group of all editors, less than one percent (Hardy, 2008). Registered editors, on the other hand, are volunteers who establish a user name with Wikipedia, but are not obliged to reveal their location. With this status, the Wikipedians can also create a profile, sharing as much or as little information about themselves as desired. Some Wikipedians establish profiles with extensive personal information (e.g., residence, hobbies, and categories edited in Wikipedia), while others disclose no information (Wikipedia contributors, 2020f). Registered users often do not publicly state their location or residence. While unregistered editors provide no personal information, they do disclose the IP address from which they are accessing the Internet. An IP (Internet Protocol) address is a series of numbers assigned to a computer to locate its position in computer networks worldwide (WPBeginner, 2021; users' personal information remains anonymous). Hardy's study has shown that unregistered users outnumber registered ones by a ratio of four-to-one, but they are less active than registered Wikipedians. This

difference between registered and unregistered editors is similar in the ten-language Wikipedias that Hardy investigated.

Geolocating of the country location of editors across the 285-language Wikipedia is only feasible by employing IP addresses of unregistered users. Because Wikipedia does not require registered users to disclose their location, no systematic analysis can be performed on their locations. Even though unregistered editors generate only a minority of edits, they still perform millions of edits in nearly every country on all populated continents. These editors represent a community in every country that can be analyzed globally. These millions of IP addresses can easily be geolocated using algorithms. The timestamps of the edits show the time of editing, permitting analysis of how ideas reflecting a meaning of the world can evolve. The exact difference by country in the contribution of unlocated registered users compared to unregistered users displaying their locations with IP addresses remains unknown for the study year (2016) because Wikipedia does not publish the location of all users. The number of edits performed by IP addresses is counted by language, which varies from four percent (Slovenian) to 37 percent (Japanese) (Yasseri, Sumi, & Kertesz, 2012). However, because unregistered users always display the time and the location of the computer from which they are editing the article, they offer a community of editors in every country with which to analyze the narration of the representation and awareness of the wholeness of the world.

2.3.2 Narration

The narrative in the article follows the same basic format in every language version, which allows for a systematic investigation across languages promoting global consciousness (Broughton, 2008;

Wikipedia contributors, 2021h). Wikipedia's structure of linking articles by the titles across the different language Wikipedias, called interlanguage links, offers the opportunity to perform an investigation of the social meaning of the world-as-a-whole in the same article title edited in the most countries in the world. The online encyclopedia standardizes concepts in the form of the article title. Wikipedians or bots link the articles across languages by the title, so the article title *Love* in the English Wikipedia is connected to its equivalent title in the German Wikipedia (*Liebe*), in the French Wikipedia (*Amour*), and so on (Wikipedia contributors, 2017a). The titles are therefore interlanguage linked among the different language versions of Wikipedia if the concept exists in other language Wikipedias. Each article in every language Wikipedia maintains a record of the edits performed on it. These publicly available data list the article's previous versions, the date and time of each edit in UTC (Coordinated Universal Time, which is the primary time standard for the world), and the registered username or IP address of the person who performed the edit (Figure 2.6) (Wikipedia contributors, 2021c). This linking provides the means to examine the editing history of the same article title in each of its language versions, which permits the discursive examination of ideas according to where they are edited. Thus, the analysis can examine how discourses are deployed – differently or similarly – according to the place of editing. For example, editors in the core could perhaps associate monetary values to an idea more than editors in other regions. Wikipedia permits a multi-language analysis of the narratives whereby the difference in the socio-economic construct of the idea can be spatially examined, potentially indicating any place-dependent composition of the narratives or universal use of identical discourses to construct ideas.

Figure 2.6. Wikipedia’s Publicly Available Editing History

Zinedine Zidane: Difference between revisions

From Wikipedia, the free encyclopedia

Browse history interactively

Revision as of 13:43, 24 August 2019 (view source)
79.106.1.16 (talk)
(--Player)
(Tags: Mobile edit, Mobile web edit)
← Previous edit

Revision as of 13:44, 24 August 2019 (view source)
Kante4 (talk | contribs)
(Reverted 1 edit by 79.106.1.16 (talk) (TW))
(Tag: Undo)
Next edit →

Line 424:

*[[Serie A]]: [[1996-97 Serie A|1996-97]], [[1997-98 Serie A|1997-98]]

*[[Supercoppa Italiana]]: [[1997 Supercoppa Italiana|1997]]

- *[[Uefa Champions League]]: [[1995-96]]

*[[UEFA Super Cup]]: [[1996 UEFA Super Cup|1996]]

*[[Intercontinental Cup (football)|Intercontinental Cup]]: [[1996 Intercontinental Cup|1996]]

Line 424:

*[[Serie A]]: [[1996-97 Serie A|1996-97]], [[1997-98 Serie A|1997-98]]

*[[Supercoppa Italiana]]: [[1997 Supercoppa Italiana|1997]]

*[[UEFA Super Cup]]: [[1996 UEFA Super Cup|1996]]


*[[Intercontinental Cup (football)|Intercontinental Cup]]: [[1996 Intercontinental Cup|1996]]

Revision as of 13:44, 24 August 2019

"Zidane" redirects here. For other people named Zidane, see Zidane (name).

Zinedine Yazid Zidane (French pronunciation: [zinedin jazid zidan]; born 23 June 1972), nicknamed **"Zizou"** (pronounced [zizu]), is a French former professional football player and current manager of Real Madrid. Widely regarded as one of the greatest players of all time,^{[4][9]} Zidane was an elite playmaker, renowned for his elegance, vision, ball control and technique, and played as an attacking midfielder for Cannes, Bordeaux, Juventus and Real Madrid.^{[7][8]} At club level, Zidane won two Serie A league titles with Juventus, before he moved to Real Madrid for a world record fee of €77.5 million in 2001, which remained unmatched for the next eight years. In Spain, Zidane won the La Liga title and the UEFA Champions League, with his left-foot volleyed winner in the 2002 UEFA

Zinedine Zidane



Wikipedia publishes editing history, which contains place information (IP addresses) and the time of the edit (at top of figure) along with details of the changes.

Source: https://en.wikipedia.org/w/index.php?title=Zinedine_Zidane&type=revision&diff=912285235&oldid=912285108

After the title of the article, there are usually three sections, which facilitate a systematic investigation of the information across all the languages. First, there is the lead section of a few sentences that contains a summary of the main idea and the context and importance of the idea. This section is the equivalent of an introduction. This part can be analyzed as to whether any place is pertinent to the main idea of the article (e.g., with which country the ideas are associated). Second, the body of the article contains most of the content describing and discussing the main idea. Wikipedians can divide it into sub-sections if there is sufficient information that merits the separation. This section can contain information relevant to the socio-economic composition of the global idea (e.g., monetary sums associated with the idea). Third, there is a reference section. In this section, Wikipedians are instructed to provide information that verifies the content of the

article. This can range from published paper resources (e.g., books and textbooks) to online resources (e.g., pertinent websites). This last section can provide insight into the construct of the global ideas as well, for example, if editors tend to cite powerful core region media institutions (e.g., The BBC) to support the main idea of the article. Analysis of the references can reveal what language (e.g., references written in a lingua franca or the local vernacular) are important for the construction of knowledge. This identical formatting of the articles in each language Wikipedia establishes a set structure for the narrative of the article with which to examine the identical idea multi-lingually.

2.3.3 Locking Articles

Wikipedia articles are the product of a group effort by editors to narrate ideas. However, sometimes Wikipedia's collaborative ideal is unattainable because of disputes among editors and vandalism, which causes administrator Wikipedians to lock Wikipedia articles against editing conducted by unregistered users. This presents challenges to the systemic geolocating of IP edits and the analysis of global ideas.

Group editing is part of Wikipedia's crowdsourcing, where groups of editors write articles. Editors are told to "be bold" (Wikipedia contributors, 2020c), which means the editing community encourages everyone to fix mistakes (e.g., spelling errors or add facts). No individual owns an article. Edits can be minor edits, ranging from correcting spelling mistakes to reorganizing the text without changing the content. In contrast, major editing could change meanings in the article and usually calls for discussion among the editors. The editing community promotes reaching consensus when editors substantially change each other's writing. For example, the "BOLD, revert, discuss cycle (BRD)" is a process by which Wikipedians try to reach consensus (Wikipedia

contributors, 2020b). In this method, editors can revert the change, which means revert the text to the version before the change if they consider it not to be an improvement. Editors are not supposed to engage in back-and-forth reverting. On a separate but linked “talk” page, the editors ought to discuss the concerns of those who are trying to change the article and find solutions. Wikipedia articles are representations of opinions and ideas of groups of editors.

However, crowdsourcing sometimes encounters difficulties that lead to articles being locked against editing, which may affect certain kinds of global ideas more than others and skew the narration of the awareness and meaning of the world. In general, the editing community strives to avoid locking articles because the online encyclopedia’s goal is to be “open to all” (Wikipedia contributors, 2019a), a compendium of knowledge created by people throughout the world. If protection against editing is required, editors attempt to lock the articles for only short periods. There are different types of locking. They can range from semi-protection (short-term locking of the article) to full protection (only administrator Wikipedians can edit the article). However, all types of locking articles forbid unregistered users (anonymous editors displaying only their IP addresses) from editing the article.

For the final analysis in this dissertation, the subject matter of articles that are consistently locked must be examined to determine if it impacts the depiction of the wholeness of the world. There are two general types of editing behavior that lead editors to lock articles: editing wars and vandalism. First, editors sometimes become involved in editing wars when they cannot agree on an article’s narrative or content. They repeatedly override each other’s edits. The editing community’s policy (Wikipedia contributors, 2021g) states that editors who revert the same material more than three times in 24 hours are engaging in an editing war. If editing wars continue unabated, administrators may lock the entire article, allowing only registered users to edit. Second,

editors may lock articles to protect against vandalism, which the editing community defines as “editing (or other behavior) deliberately intended to obstruct or defeat the project's purpose” (Wikipedia contributors, 2021j). That is, editors maliciously remove material or deliberately attempt to damage the content (e.g., adding obscenities that have no relevance to the main idea). Reverted content is not considered vandalism if the content was added in good faith, or with the intent to improve the article. Thus, the ability to lock articles causes difficulties in this investigation. Locking articles hinders the analysis of edit locations based on IP addresses. Locking only permits registered users to edit the articles, which permits no systematic procedure to locate all of the edits. This may skew content and representation of the world, as certain types of articles may attract unresolvable conflict among editors or vandalism (e.g., certain subject areas or controversial persons).

2.3.4 Summary

There are many advantages of employing Wikipedia content as data to the study of the thinking of the world-as-a-whole and global consciousness, even though it does present some challenges. The limits that locking of some articles against editing and the inability to geolocate all edits (e.g., those conducted by registered users) pose challenges to systematically analyzing the online encyclopedia. However, the structure of Wikipedia data facilitates both qualitative and quantitative investigation across all languages and places worldwide. Millions of edits performed by unregistered editors can be geolocated by their IP addresses. Wikipedia articles as structured narratives also enable systematic analysis because Wikipedians in every language follow the same format when writing articles (e.g., interlanguage linking of titles and use of references to support the narratives). Identically structured narration in Wikipedia articles regardless of language and

location of the edits permits a standardized analysis of how editors worldwide are aware and give meaning to the world. In the next chapter, I situate my research of Wikipedia articles within globalization theories in the discipline of geography to understand global consciousness.

3. Globalization, Global Consciousness, and Discourses

For this chapter, I position the global consciousness index theoretically and detail the research objectives for my analysis of these articles. First, I discuss globalization and how networks and flows form the basis for understanding this phenomenon. I survey the theories and research that are critical in geography to highlight how globally structured imagination in flows and the uniqueness of place help construct how people think of the global whole (Appadurai, 1996; Castells, 1996, 1997; Massey, 1991; Marston et al., 2005, 2007; Sassen, 2001, 2002). After surveying the literature, I examine available globalization indexes and critique how their preoccupation with material networks and flows does not sufficiently capture information on global thinking, which is arguably ideational. Second, I propose global consciousness (Robertson, 1992, 2009, 2011) as an alternative theoretical basis to construct indexes. While most globalization indexes (e.g., KOF) theoretically base the measurement on flows and networks to mostly understand globalization as a process, global consciousness provides the basis for the new index by its concentration of thinking of the world-as-a-whole. Third, I examine the discursive foundation of ideas that form the analytical foundation for understanding both the socio-economic construct of Wikipedia global articles and how the global ideas they contain express global awareness. Fourth, I present the two main research objectives of this dissertation. In the first objective, I present the Wikipedia Global Consciousness Index (the WikiGCI). By exchanging the theoretical foundation from connectivity to awareness, this new index utilizes the global ideas in Wikipedia global articles to measure the thinking of the global whole. The second objective is to introduce a metaphorical landscape, the Wikipedia Worldscape, to gain insight into how the shared

view of the world in the online encyclopedia's articles is a discursive construct heavily shaped by the socio-economic power of the core region.

3.1 Globalization

In this section, I examine the major theories and research concerning globalization that are pertinent to the discipline of geography. First, I define globalization and its fundamental components that are conventionally ascribed to its function (e.g., nodes, networks, and flows). Second, I survey major theories concerning globalization that pertain to my research in thinking of the world-as-a-whole in Wikipedia. Specifically, I discuss how understanding globally structured imagination in flows and uniqueness of place shape the global ideas which produce awareness and meaning of the shared global whole (Appadurai, 1996; Castells, 1996, 1997; Marston et al., 2005, 2007; Massey, 1991; Sassen, 2001, 2002).

3.1.1 Definition and Theories

For the discipline of geography, interconnection or integration are leading concepts in the understanding of globalization (Butt, 2017; Chen, Gunter, & Zhang, 2012; Hall, 2015; Harvey, 1995; Herod, Tuathail, & Roberts, 1998; Sparke, 2009; Van Hamme & Pion, 2012). Globalization is mainly theorized and defined as the combining of parts of the world into a global whole. For example, Butt (2017) defined globalization as the “integration of culture, trade, information, ideas, movement and networks at the global scale” (p. 11). For integration to occur, various parts of the world combine into a whole within different dimensions (e.g., information, culture, and trade). There is often a strong economic influence on the understanding of worldwide integration. Van Hamme and Pion (2012) have defined globalization as “the growing integration of the world

economy” (p. 65) when they investigated how basic economic flows connect different regions of the globe. Even within other subfields of geography, globalization is frequently understood as the interconnection of places in the world. For example, in cultural geography, Chen, Gunter, and Zhang (2012) studied the globalization of American baseball by the participation of non-American players in the U.S. The researchers framed globalization as an “interconnectedness” of people and places by cultural, economic, and social processes (p. 430). Regardless of the geographic sub-discipline focus (e.g., economic or cultural), leading definitions of globalization consider world integration and interconnect as central to the concept.

To understand how global integration operates, geographers have investigated how networks consisting of flows interconnect places at a global level. First, globalization is supported by networks, defined as a “particular kind of spatial arrangement that consists of a collection of linked elements” (Johnston, 2009, p. 498). Networks are the framework with which to connect places in the world. Geographers have commonly analyzed networks in terms of infrastructure (e.g., telecommunications systems, roads, and rail) and models of organization (e.g. social networks, both locally and globally). For example, trade routes and computer networks interconnect people and places worldwide. Second, flows of objects within networks cross borders and connect places. Sparke (2009) defined flows as “movements between relatively fixed nodes in networks” (p. 257). For instance, cities are nodes in transportation networks. Within networks, flows can consist of the movement of different objects (e.g., commodities, money, people, energy, and ideas). For globalization to occur, objects must flow among fixed nodes in global networks (e.g., import/export and email).

In this framework of theorizing globalization from which indexes are structured, the interconnection of places on a global level is a process. That is, many geographers investigate how

networks and flows are actions that result in the integration of places at a global level (Cassi, Morrison, & Ter Wal, 2012; Chen, Gunter, & Zhang, 2012; Harvey, 1995; Short, Boniche, Kim, & Li, 2001). For example, geographers Short, Boniche, Kim, and Li (2001) researched how many people worldwide are learning English as the global lingua franca to communicate internationally and participate in global organizations. This competence in English accelerates the flow of ideas and information between places. The process of globalization occurs in sports as well. Chen, Gunter, and Zhang (2012) researched how the American Major League Baseball (MLB) organization encouraged the diffusion of American baseball worldwide. Information transmitted through radio and television as well as global flows of labor after World War II assisted in the diffusion of the sport. Furthermore, Cassi, Morrison, and Ter Wal (2012) applied network and flow methods to study the globalization of scientific collaboration and trade in the wine industry. They discovered that the interdependence of science and trade strongly affects the dynamics of the interconnections of the Old and New World wine markets and producers. In theorizing globalization, David Harvey (1995) suggested that we view it “as a *process*, and not as a political-economic condition” (p. 2). This process-based definition focuses on how the interconnection occurs.

For my research, I wish to expand upon two aspects of globalization theories that shape the understanding of the world: the globally structured imagination in flows and the uniqueness of place (Appadurai, 1996; Castells, 1996, 1997; Marston et al., 2005, 2007; Massey, 1991; Sassen, 2001, 2002). First, flows in networks shape how people understand the world by transmitting not only objects, but also standards, images, and values. Second, places have unique interactions with other places in the world (e.g., trade and culture), thus producing a distinct understanding of the world.

For example, Appadurai's *Modernity at Large* (1996) proposed *scapes* or flows as a way to understand cultural globalization. He suggested five dimensions of global cultural flows (Appadurai, 1996, p. 33). First, *ethnoscapes* are people who move throughout the world, such as immigrants. Second, *technoscapes* are flows carried by technology (e.g., the Internet). Third, *financescapes* are the flows of global capital. Fourth, *mediascapes* refer to the distribution of information by electronic means (e.g., television). Finally, *ideoscapes* are concatenations of ideological images. For Appadurai, the social practice of flows was the process to interconnect places at the world level. Evrard (2017) has accredited Appadurai's work as having an immense impact on the discipline of geography's understanding of globalization because of his unique approach. Instead of focusing on only economic flows to understand the interconnection of places, Appadurai used cultural flows as the basis of investigation.

Appadurai (1996) proposed that these flows (*scapes*) shape contemporary imagined worlds. Global imagination is structured in flows. Multiple worlds are imagined while people and objects transcend and cross boundaries due to the *scapes* (e.g., belief in democracy and exporting of films). For example, ideas of democracy transmitted to different countries can foster images of global human democracy, while films in *mediascapes* contain images of the world (e.g., U.S. images of a violent world seen in theaters worldwide). Imaginations of the world is a social practice of the *scapes*. In this social practice, the individual negotiates with globally defined fields of possibility in the form of films and digital media.

Castells (1996, 1997), another leading theorist of globalization, focused on how networks and flows interconnect places. To understand networked modern societies, Castells proposed the idea of the *space of flows*. This new form of the spatial organization of power is "the material organization of time-sharing social practices that work through flows" (1996, p. 412). Exchange

occurs within a material infrastructure among social actors in various positions. He argued that globalization is “organized in interactive networks of performance that function on a planetary scale in real time” (Castells, 1997, p. 198). For Castells, globalization has economic, political, cultural, and symbolic dimensions. Networks can be observed in each dimension because of new information technologies and socio-economic restructuring. Capital, labor, and products flow throughout the world in unprecedented volumes. Multinational corporations function through networks to manufacture specific products for markets. Different forms of flows (e.g., flows of capital, images, and technology) construct societies worldwide. They are processes that command our lives. Space of flows is the most powerful process that constructs our societies and globalized world.

Space of flows suggests an understanding of wholeness to the world. The Internet, for example, connects people and places worldwide into simultaneous flows. “The space of flows is a material infrastructure that enables functional units to be organized into a single whole, operating in real time, independent of their geographical location” (Stalder, 2006). Because the Internet creates a shared system of communication, it suggests a wholeness to the world and the flow of ideas. Globalization ideologically suggests *space of flows* in that there is closer and deeper interconnecting among places globally. Places are linked by shared meanings and functions. However, this does not invalidate individual places. Castells discussed (1996) that there is a dialectic process between the *space of flows*, which organizes power, and place, which organizes experience. Flows and places affect and shape one another.

Other globalization theorists (Sassen, 2001, 2002; Smith, 2003; Taylor, 2001) also employed networks and flows as a method to comprehend the process, but with the city as the unit of analysis. Sassen’s (2002) first step in analyzing the geography of globalization is the

examination of cross-border capital flows. She argued that these flows concentrate more in certain areas, e.g., the North Atlantic, while avoiding the less developed parts of the world. Globalizing networks are fostered by the concentration of technology, business transactions and airline travel in global cities. Because of these networks, global cities are integrating more closely with each other than with the region where they are located. Capital markets depend on a network of financial centers that are integrated globally. Although the divisions of labor have been steadily changing over the past few decades, manufacturing regions of the world are still connected to Western service-oriented cities through corporate networks. She reasoned that “a focus on cities makes it possible to recognize the anchoring of multiple cross-border dynamics in a network of places, prominent among which are cities, particularly global cities” (Sassen, 2002, p. 9).

Using the global city for an analysis of globalization strongly emphasizes not only the global economy, but also networked cross-border dynamics in the political, cultural, and social domains (Sassen, 2004). As Sassen observed, “the global materializes by necessity in specific places” (2004, p. 32). Examining place, in this instance global cities, within transnational economic activities reveals how necessary resources are embedded in place. Along with corporate headquarters, these cities contain agglomeration economics (e.g., financial and service industries in close proximity) that are necessary for economic activities. This focus on global cities within networks also reveals immigration communities and identities, which often clash with global capital for political power and space. Power and inequality issues unfold in global cities. Global cities are embedded in a particular, unique location and are also transnational in their networks.

The uniqueness of place also plays an important role in how the world is understood. For Doreen Massey (1991; Massey & Massey, 2005), her concept of a global sense of place entails a place’s unique connections with other places helps define that place. For her, different social

groups are at different ends of flows and movements. “Some initiate flows and movement, others don’t; some are more on the receiving end of it than others” (Massey, 1991 pg. 26). She lists forms of flows of power such as films, news, investment, and currency. It is these global interconnections that provide a sense of place. Place is comprised of distinct connections with other places in the world. Globalization’s connections are another source that produces a place’s uniqueness. Each place is a mixture of connections locally and with more distant places in the world. Indeed, each place must be understood within the history of accumulated layers of connections with different places. Massey gave the history of Corsica with its centuries of connections to the French, Romans, and Greeks as an example of the mixture of different layers of connections that constitute the island’s character. Therefore, a global sense of place is the understanding of how a place is connected with other places in the world.

A global sense of place maintains the uniqueness of place and consequently a unique understanding of the world. A place is distinct because of its particular connections with other places. This can also have consequences on how denizens of a particular place view the world. To follow Massey’s (1991) example of Corsica, that island’s population most likely understands the world based on European and Christian worldviews due to the connections it has with that region, while the population of the island of Sri Lanka has a more Buddhist and Muslim understanding of the world due to the island’s connections with South Asia. Unique connections produce a unique understanding of the world.

Marston et al. (2005, 2007) argued for a flat ontological approach to the understanding of place and the world, where a site (place) is a situated, mutable singularity and not simply a repetition of globalization. A site is constituted by its particular collection of material relations with other sites. It assembles unique arrangements of entities that possess particular meanings. For

example, even though the name mimics its U.S. counterpart (Hollywood), Nollywood, the nickname of the film industry in Nigeria, consists of singularities, or unique processes of production, consumption, and circulation of films. It has its own form of distribution (e.g., direct sale as videotapes instead of theatre releases) and particular connections with markets in Africa and Europe. This suggests that sites maintain a sense of uniqueness while connecting with and being influenced by other sites. Inhabitants of a site understand the world by intermeshed links with other sites.

In sum, for my research on global consciousness in Wikipedia, I draw on the importance of globally structured imagination in flows and the uniqueness of place in the study of globalization to analyze the thinking of the world. First, globally structured imagination in flows shape the thinking of the global. Material practices (e.g., trade, immigration) with other places and digital transactions on the Internet assist in defining how a place's inhabitants think of the world. For example, Apparudai (1996) demonstrated how flows shape contemporary images of the contemporary world. Refugees in ethnoscapas can imagine a homeland as they cross borders and mediascapas can forge imaginations of future dystopic worlds brought by pollution (e.g., U.S. sci-fi). Castells (1996, 1997), furthermore, proposed *space of flows* in which planetary connections are understood in real-time. A sense of a global whole is created by the Internet's connections of places worldwide and the nearly instantaneous communication that it offers for people globally.

Second, place (site) plays a significant role in shaping the thinking of global consciousness. Each place is unique and engages other places within in the sum of its particularities (e.g. history and economics). For example, Massey's (1991; Massey & Massey, 2005) global sense of place postulates that the unique interactions a place has with other places produce a unique understanding of the world for its inhabitants. A place's historical connections through colonialism

and immigration along with contemporary trade with other places can help foster particular views of the world not shared by residents of other places. In addition, Sassen (2004) indicated that global cities have unique situations within international networks and flows. Specific economic transactions and demographic compositions can influence how people in a global city understand the world.

These two aspects of globalization, globally structured imagination in flows and the uniqueness of place, can help formulate my analysis of the thinking of the world-as-a-whole as expressed in Wikipedia articles. Flows among places, for example in terms of ideology or mass media, can shape how people understand the global whole. Residents of some places may have specific connections (e.g., trade or films) that can foster a certain understanding or image of the world. The uniqueness of place, furthermore, may fashion certain views of other places and the world. For some places in the world, colonialism established a certain worldview based on the customs and norms of the colonial power. For other places, labor and capital power permits dominance over other places. This supremacy can construct an understanding of the global whole based on its local values.

3.1.2 Globalization Indexes

Theoretical frameworks of flows and networks establish the basis for the leading globalization indexes (Gygli, Haelg, & Sturm, 2018; The Globalization Index, 2007; Figge & Martens, 2014; Vujakovic, 2009; Lockwood & Redoano, 2005). For example, the KOF Index of Globalization is issued yearly by a Swiss think tank, ETH Zurich, and is one of the most cited indexes in the study of globalization (Caselli, 2012). It defines globalization as “creating networks of connections among actors at intra- or multi-continental distances, mediated through a variety of flows” (Gygli

et al, 2018, p. 5). The three dimensions of this index are economic, political, and social. These dimensions operationalize their constructs by measuring flows. The economic dimension, for instance, counts trade and financial flows (e.g., inflows and outflows of foreign direct investment (FDI) as a percent of the GDP). The social dimension counts cultural and informational flows (e.g., international trade in cultural goods as a percent of population, migration, and number of Internet users per 1000). The political dimension captures flows by measuring the political interactions of governments in the world (e.g., personnel contributions to United Nations Security Council missions as a percent of the population). These dimensions measure the intensity of interacting in global networks at a country level. They are usually calculated in proportion to the population with no minimum participation required.

In addition to the KOF Globalisation Index, more recent globalization indexes maintain the convention of framing measures by counting objects in flows. For instance, the Maastricht Globalisation Index (MGI) counts flows to measure global interconnectedness (Figge & Martens, 2014). Based on five domains (political, economic, social and cultural, technological, and environmental), this index also maintains common flow indicators. Economic indicators include imports and exports of goods and services. Social and cultural indicators are comprised of international arrivals and departures of tourists. Vujakovic (2009) likewise endeavored to move beyond simple economic indicators to capture the multidimensionality of globalization by including new variables and incorporating distance among the countries into the trade variable. Although the trade in goods variable is weighted by geographic distance, it continues to count imports and exports. The new variable, Outbound Student Mobility, measures the number of students that flow out of the country. Even attempts to focus more significantly on the cultural aspect of globalization cannot escape counting objects in flows as its theoretical foundation.

Kluver and Fu (2004) proposed that culture is one of the fundamental aspects of the interlinking of countries. To this end, they utilized the importation of films, television programs, and printed material to construct their indicators in their composite index.

Available globalization indexes are nearly exclusively founded on flows and networks. While this successfully measures the process and structure of interconnecting places, it does not adequately capture thinking of global ideas. For example, the KOF Globalisation Index provides summary statistics of films that are traded across borders but does not explicitly indicate their type (e.g., American or action) or how the movies are experienced (e.g., criticized because of content). Political dimensions are also constrained by a structural approach. While the KOF counts the number of embassies operating in different countries, it does not include any issues (e.g., trade disputes) that are salient to the world. The index is not composed of a wide variety of indicators that express deep global social meaning, such as poverty and violence. Rather, its indicators influence these global social meanings. For example, Potrafke (2014) investigated how 100 studies that employed the KOF Globalisation Index correlated or regressed the globalization index with other measurements (e.g., governmental expenditures, GDP, and International Country Risk Guide) to obtain the consequences of globalization (e.g., increased wealth inequality or interethnic violence). The KOF was used in relation to other measures to obtain global social meaning. Present globalization indexes also limit the subject matter under investigation by establishing a priori categories. However, the WikiGCI sets no categories and permits latitude for Wikipedia editors worldwide to edit any article deemed important. By analyzing Wikipedia articles that are edited in the most countries, the WikiGCI's flexibility captures a bottom-up construction of ideas that are significant at a global level that none of the predefined indexes can.

3.1.3 Summary

Geography defines globalization as the integration or interconnection of places at a global level. This globalization as a process forms the theoretical basis for major globalization indexes (e.g. the KOF Globalisation Index). These indexes focus on counting objects (e.g., televisions and tourists) crossing borders in flows and networks. In the next section, I explore theories that critique the quantifiable materiality of globalization indexes. Global consciousness, or the awareness and meaning of the global whole, along with aspects of globalization such as flows and networks and the uniqueness of place (Appadurai, 1996; Castells, 1996, 1997; Massey's (1991; Massey & Massey, 2005) offer the potential to examine and measure the thinking of the world-as-a-whole.

3.2 Global Consciousness

Globalization theorization relying exclusively on the materiality of networks and flows to understand the interconnection of places in the world and its measurement is not without its critics. Instead of viewing globalization solely as a process, scholars have also called for the consideration of thinking of the world-as-a-whole (Robertson, 1992, 2011; Giddens, 1991; Sklair, 1999, Steger & James, 2019; Martens, Caselli, De Lombaerde, Figge, & Scholte, 2015). It is necessary to analyze and measure the awareness of the global whole, or global consciousness.

3.2.1. Definition and Theories

Robertson (1992, 2009, 2011), a critic of globalization theories that exclusively center on networks, argued that research ought to investigate not only connectivity but also the scope of global consciousness. He argued for more consideration of this feature of the human condition,

which he defined as “consciousness of the concrete world *as a whole*” (2009, p. 121; emphasis added). This global consciousness is the awareness and meaning given to the world-as-a-whole. It is a reflexive state where we are aware of being a part of one “worldness,” or the shared global whole. While he acknowledged the processes that connect the world, Robertson focused more on psycho-social and phenomenological understandings of globalization rather than merely on materialistic ones. Nation-states, self-identities, common humanity, and a world system of societies are the components of the global-human condition, or the “global field,” through which one can understand the global consciousness. Robertson (1983, 1994) proposed how global consciousness is a cognitive phenomenon concerning the reflection on issues that affect all of humanity. Ideas and conversations play a crucial role in coalescing global awareness. He highlighted how the discussion of “global warming, the extinction of many species of animals, the alarming spread of AIDS, or the expansion of various means of mass destruction makes us increasingly conscious of *the world as a whole*” (p. 129). Ideas provide a cognizance of being part of the wholeness of the world because these ideas influence us as well as the rest of the planet. Ideas can establish a connection with others from other parts of the world.

For Robertson, globalization increases the awareness of the wholeness of the world. He states that globalization “refers both to the compression of the world and the intensification of consciousness of the world as a whole” (Robertson, 1992, p. 8). Connectivity, the process of interconnecting places in the world, heightens the perception of a shared world. Robertson and Inglis (2004) chronicled how global consciousness predated the beginning of modern globalization. For instance, religions held the belief of a planetary whole within their sense of religious metaphysics. All of the inhabitants of the planet shared one world. Embracing the cosmopolitan beliefs that humanity was a single brotherhood, ancient Greeks wrote histories of

the whole world, not just of their city-states or regions. Roman philosophers, furthermore, adopted this belief from the Greeks and often equated the Roman Empire with the sense of the whole world, or *orbis terrarum*. Roman ships and roads connected the world, and gladiators from far and wide fought in Roman arenas. Western colonialism also fostered the sense of a shared global whole by instituting the norm of Western-style states to represent nations throughout the colonized world. In addition, the advances in technology, communications, and transportation brought by the Industrial Revolution have radically increased relations across borders. This augmented connectivity has consequentially increased global consciousness. An outcome of the process of globalization is the increased sense of the world-as-a-whole.

For my research, I define Wikipedia global consciousness as the awareness and meaning of the world-as-a-whole as expressed in the online encyclopedia. It is a cognitive process, a “thinking of the world-as-a-whole,” not simply of separate places or regions (Buhari-Gulmez, 2017). It is thinking that there is a shared global whole. This awareness is manifested in events or phenomena (e.g., war, film, or disease) that can affect people and places worldwide, which produces an awareness that there is a shared global whole. Global ideas form the basis of global consciousness. A global idea is the mental representation or concept of the event or phenomenon that affects people and places worldwide. The global idea is not restricted to one place or one region but is discussed worldwide.

Let me be clear about what Wikipedia global consciousness is not. It does not mean a politically unified world. Nor does it mean there is a uniformity of opinion or interpretation. Editors of the online encyclopedia can disagree and have strong antagonistic feelings about ideas affecting the world. There is a diversity of opinions and thoughts in the world. For Robertson (1992, 2009, 2011), conflicting opinions do not invalidate the awareness of the world-as-a-whole,

but can strengthen or elaborate it. People in different places can quarrel with each other concerning a phenomenon or idea, producing an awareness that the phenomenon affects them all. For example, as people debate the causes and implications of global warming, they realize it affects them all. Because an individual realizes the global idea affects people and places worldwide, it produces the awareness that there is a shared world beyond their locale. Global consciousness is that realization and awareness of the world-as-a-whole.

The Wikipedia global consciousness's basis is ideational. Ideas, the unit of analysis for my research, are representational images or concepts, for example, the mental image or concept of anything from a horse to infinite quantity (Pappas, 1999). Steger and James (2019) discussed how mental images or concepts are socially constructed and form the building blocks of social meaning. Even though ideas such as AIDS, global warming, and weapons of mass destruction may be contentious among people of contrasting ideologies and from different places, they are ideas that have a worldwide scope. People from different countries can recognize the idea and engage in conversation about them. A global idea has relevance to disparate places worldwide. In contrast, local ideas are known only in one place. They cannot provide awareness or meaning to the wholeness of the world that global ideas can.

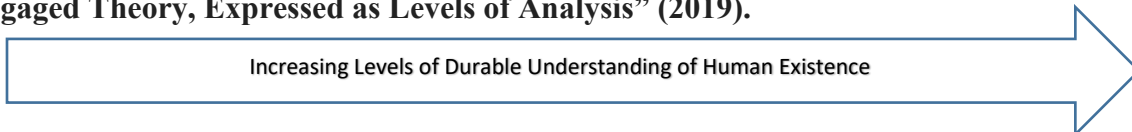
Examples of this lack of global awareness in local ideas compared to global ideas are personal experiences I had with two ideas while studying the Hindi language in India: the local idea लापसी (*laapsi*) and the global idea HIV/AIDS. The local idea *Laapsi* (Chaturvedi, 2014) is a dessert made mostly in villages in the northern Indian states Gujarat, Uttar Pradesh, and Rajasthan, where I lived. This dessert is part of the social practices of that area, for example, served at weddings and festive occasions. Not only did I have no idea what this dessert was, but many Indians do not know as well. The idea of *laapsi*, as a mental image or concept, has little

significance outside that particular area. On the other hand, HIV/AIDS is a global idea because it relates to people and places worldwide. While I lived in India, I engaged in a conversation in Hindi with a man from a village about the disease HIV/AIDS. Even though India is a country that is considerably different from the U.S., and we spoke in a language in which I am not fluent, we both could relatively easily converse about the idea. Regardless of our countries of origin, both of us could interact with one another because of the global scope of the idea. The disease had been transmitted to millions of people in both of our countries and the rest of the world. News reports discuss the disease. The global idea provided awareness and meaning to the world-as-a-whole because people of various places worldwide discussed it. Contrary to a local idea (e.g., *laapsi*) which is closely associated with only a certain place, a global idea (e.g., HIV/AIDS) is recognizable in different places and possesses meaning globally.

To analyze the ideational base of global consciousness, Steger and James (2013, 2019; James & Steger, 2016) proposed that ideas are the first of four levels of global social meaning with which to analyze the lived meanings of world wholeness (Table 3.1). At this empirical level of analysis, individuals utter ideas (e.g., global market), which become units of analysis. Events, networks, and institutions shape ideas. For example, tariffs can curtail trade networks, which influences the idea of global markets. The second level, ideologies, is imbued with power relations. At this level, ideas are patterned clusters of normativity. For example, proponents of neoliberal policies use ideas such as comparative advantage to argue for unfettered global markets. The third level, imaginaries, evokes a social whole. At this level, ideologies are embedded in the common sense of place or time that provides discursive power for ideologies. For many, the imaginary of a global market has taken on a common sense meaning of inevitability in an ever-interconnecting world. The fourth level is an understanding of “categories of being-in-the-world” (Steger & James,

2019, p. 97). The researcher can analyze categories of human existence (e.g., temporality, spatiality, corporeality, and performativity). For example, being-in-the-world associated with global markets is a spatiality of freedom of movement because of open borders. Being-in-the-world can be categorized more abstractly, such as modernity (e.g., linear time) and traditionalism (e.g., religious cosmetology). Each successive analytical level permits a more durable understanding of global human existence. That is, while ideas can be transient (e.g., wars or tariffs), beings-in-the-world are more long-lasting (e.g., modern era)².

Table 3.1: Levels of Global Social Meaning Based on Steger & James’ “An Overview of Engaged Theory, Expressed as Levels of Analysis” (2019).



LEVEL OF GLOBAL SOCIAL MEANING	IDEAS	IDEOLOGIES	IMAGINARIES	CATEGORIES OF BEING-IN-THE-WORLD
Levels of Social Relations	Regimes of Social Activity <ul style="list-style-type: none"> • Groups • Communities • Networks • Institutions • Events • Assemblages 	Modes of Social Practice <ul style="list-style-type: none"> • Production • Consumption • Exchange • Communication • Mobility • Organization 	Themes of Social Integration <ul style="list-style-type: none"> • Accumulation - Distribution • Identity – Difference • Inclusion – Exclusion • Freedom – Authority 	Categories of Social Being <ul style="list-style-type: none"> • Temporality • Spatiality • Embodiment • Performativity • Objectivity • Subjectivity

² While geographers (Buttimer, 1976; Pickles, 1985; Relph, 1985) might traditionally have conceptualized Heidegger’s (2010) being-in-the-world solely in terms of involvement with the world (e.g., temporality and spatiality), Steger and James (2013) aggregate these categories into more abstract ontologies such as modernity and traditionalism. For example, they aggregate socially dominant modalities of space (e.g., genealogical placement and kinship), time (e.g., mythological time connecting past and present), and embodiment (e.g., relations of embodied reciprocity between persons) to define the ontology of tribalism. These beings-in-the-world combined can create more durable senses of global human existence.

In Geography, the study of the representation of the world revealed insight into the understanding of the world-as-a-whole. Cosgrove (1994, 2001) discussed how representation of the world as a whole has deep historical and cultural roots in the Western imagination. For example, Christians used world maps to understand biblical passages and their meanings for global discourses in their religion. The understanding of the world-as-a-whole was again transformed by the Age of Discovery. As Europeans expanded globally to trade and economically exploit people and places, representation of the world on maps changed as well. Maps acquired new locations and linear extensions that were only possible through expanding contact with places worldwide. In the 20th century, representation of the world in photographs taken from space also affected contrasting understandings of the world. Images of the planet earth, seen as a whole, influenced concepts such as Whole-earth, which understands the world as organic bonds of humanity and the entire globe, and One-world, which sees socio-economic expansion across the globe (e.g., European or Christian ideology). Representation and imagery of the world can have different meanings for the world-as-a-whole.

In addition to the whole-as-a-whole and geographic representation, research in Geography has more recently focused on the connection between global consciousness and tourism (Galvani, Lew, & Perez, 2020; Lew, 2018; Short, Boniche, Kim & Li, 2001). Lew (2018) understood global consciousness not simply as awareness of the world, but also knowledge, engagement, and experience of being in the world. As he stated, global consciousness is how “we relate to other people and other places as physical and psychological beings” (Lew, 2018, p. 745). For Lew, travel was a global consciousness altering experience for an individual. Arriving in different places compels one to interact with unknown content and form new understanding and links. These

interactions with new places enhance one's awareness of the wholeness of the world along with increasing factual knowledge and the personal emotional meaning of other places for the individual. Galvani, Lew, and Perez (2020) have suggested that global consciousness is not in sync with the shrinking world that is caused by technology. The travel and communication technology that connects the world has outpaced our awareness of the global whole. Even though these geographers have not directly cited Robertson's work, they have defined and situated their work theoretically within the same domain as Robertson's proposition of global consciousness.

3.2.2 Previous Global Consciousness Indexes

In analyzing existing globalization indexes, researchers (Martens, Caselli, De Lombaerde, Figge, & Scholte, 2015; Caselli, 2012; Buchan, Grimalda, Wilson, Brewer, Fatas, & Foddy 2009) have noted how difficult it is to measure a sense of global consciousness. Indicators that could be employed to quantitatively represent this awareness are highly problematic. Caselli (2012) considered that measurements of this understanding of the world are significantly underdeveloped compared to measures of globalization (e.g., economic and cultural). When performing research on groups to measure globalization, he suggested indicators that gauge the agreement that participants have with statements regarding interdependence with different areas of the globe. Furthermore, Buchan et al. (2009) created a questionnaire to examine how an individual interacts economically, socially, and culturally with distant others. The questions dealt with possession of foreign currency, trips or communications abroad, exposure to foreign cuisine and so forth. This questionnaire was then converted into an individual-level globalization index to ascertain how the participants from six countries cooperate with others on a world level in hypothetical simulations. However, this research was essentially behavioral in structure. Much like the KOF Globalisation

Index, Buchan et al. depend on international actions (e.g. trips) and materiality (e.g., currency) to represent global consciousness.

3.2.3 Summary

Global consciousness remains a little investigated understanding of the world in the discipline of geography. Robertson's (1992, 2009, 2011) suggestion of the awareness and meaning of the world-as-a-whole offers an expression of the world as an alternative to the material process of interconnecting places on the world level. Global consciousness also remains exceedingly difficult to measure, with previous global consciousness indexes being limited to behavioral measurements. Global consciousness, however, can be understood ideationally (Steger & James, 2013, 2019; James & Steger, 2016), making Wikipedia a rich data source for investigation. In the next section, I expand upon the discussion of the ideational base of understanding our world examining how discourses can be used to understand global ideas and global consciousness.

3.3 Discourses

For this research, I investigate how discourses construct global ideas that express global consciousness. Discourses are important for two points of the investigation. First, the global articles form the base of the global consciousness and the Wikipedia Global Consciousness Index (WikiGCI). This part investigates how global ideas discursively express the awareness and meaning of the global whole. Second, by applying the discipline of geography's framework of a metaphorical landscape to Wikipedia written knowledge (Wikipedia Worldscape), I identify and analyze how globalizing discourses originating in the core region's socio-economic power structure the global articles (global ideas). This part investigates the construct of global ideas.

3.3.1 Discourses and the Wikipedia Global Consciousness

World representation in written knowledge is a discursive construction, not simply an imitation of the real world. This representation or understanding is dependent on discourse, or a set of texts, speeches, and images that provides signification and “a framework for understanding the world” (Barnes & Duncan, 1992, p. 8). Interdiscursivity (the connection of discourses with different social meanings) and intertextuality (references to other texts) are critical for the analysis of power in written knowledge. The representation of place in writing is constitutive, not merely reflective. The text, in this instance a Wikipedia article with a representation of the world, refers to other texts (e.g., a BBC report) to construct the representation. The article does not simply mirror the place. Place representation, which emerges through the relationship of different discourses and texts, is not a neutral mimesis of the world. Rather, it promotes a naturalized ideology in service to hegemony and authority (e.g., news reports). The representation, furthermore, also reveals the positionality of the author. Analysis of discourses must consider the institutional settings, political position of the author as well as historical and social context of how the knowledge and representation were produced.

Discourses in the narratives of the global articles also form the expression of the Wikipedia Global Consciousness. The global articles form the empirical units with which we can understand awareness and meaning of the wholeness of the world. Global ideas in the form of global articles are conducive to Steger and James’s (2013, 2019; James & Steger, 2016) proposition that ideas are the first level of analysis of global consciousness. Narratives, such as those in Wikipedia articles, can contain global social meanings that construct the meaning of the world. People in different places in the world can use ideas to dispute various ideologies, imaginaries, and being-

in-the-world that create global social meaning. Ideologies and imaginaries become part of the “discursive networks enveloping our planet” (Steger & James, 2013, pg. 20). For example, populists and neo-liberals disagree about the meaning of global markets. Ideological clashes over ideas such as free trade shape the way one thinks of the meaning of the world. These disputes about how to define global ideas and the world can be included in the articles’ narratives. While some global ideas are not exceptionally controversial, disputes concerning other global ideas provide an effective means to track contradictory and changing social meanings that comprise the evolving global consciousness. Wikipedia global articles reflect the global social meaning and disputes in their narratives. They can demonstrate that global ideas provide awareness of the world-as-a-whole, but not uniformity of opinions.

3.3.2 Discourses and the Wikipedia Worldscape

Discourses frame our representation of the world through metaphors, which are rhetorical devices that equate one word with another unrelated word to show similarities (Rickards, 2015). Barnes and James (1992) stated that metaphors shape and grant authority to discourses. I employ the discipline of geography’s understanding of metaphors to construct the analytical tool with which to identify and analyze the globalizing discourses with world representation in Wikipedia content. Metaphors are heuristic devices and frameworks to guide knowledge (Barnes & Duncan, 1992; Graham, 2013; Tuan, 1978). They can structure our understanding of reality by building a shared understanding.

Tuan (1978) discussed how there are two structures for a metaphor: the diaphor and the epiphor. The diaphor metaphor creates meaning through juxtaposition, for example, Shakespeare's "all the world is a stage." From the amalgam of two ideas (i.e., life and stage), we understand that life is like playing an actor's role. On the other hand, the epiphor metaphor has two parts: the semantic vehicle, which extends meaning, and the semantic tenor, which receives the additional meaning. For example, Tuan parsed the metaphor, "A mighty fortress is our God" (1978, p. 366). God, a nebulous idea, is the semantic tenor that is conceptually solidified by the semantic vehicle, the fortress. This metaphor suggests that like a fortress, God is protection.

For Wikipedia Worldscape metaphor, I draw on geographic analysis that investigates how landscape representations are socio-economic constructs (Barnes & Duncan, 1992; Duncan & Duncan, 1988; Davis, Hayes-Conroy, & Jones, 2007; Johnston et al., 2009). Geographers have investigated how landscapes are discursive views of the world constructed by power (Barnes & Duncan, 1992; Duncan & Duncan, 1988). Landscape can be represented in different forms of written knowledge. For example, newspaper descriptions of metaphorical landscapes produced an understanding of Niagara Falls for tourists, while depictions in literature of backward "Oriental" landscapes supported the Western ideology of Asian inferiority and justification of its colonialization in the continent. Landscape views are a social construct inextricably linked to socio-economic and institutional power.

I propose the construction of the Wikipedia Worldscape as a discursive account of the world created by globalizing socio-economic powers that are reflected in Wikipedia articles edited in the most countries (global articles). My investigation draws particularly on the research of Johnston et al. (2009), who applied the social construct of a landscape to examine place representation contained in written knowledge on websites. They utilized the construct of a

landscape as a view that has a mediated, indirect relationship to a place based on materiality, social relations and ideology. By applying the metaphor of a *foodscape*, the researchers applied the socially constructed mediated view of place (*scape*) to analyze food production and consumption. Corporations acquiring small, organic farms connected the ideology of socially responsible agriculture with the local place to narrate the farms' websites. For example, the large food corporations incorporated food democracy themes (discourses), such as specific local geographic references and connections to family farms, to depict a connection between the food and local places. In the place metaphor, the representation was mediated by socio-economic powers.

I construct the metaphor of the Wikipedia Worldscape to understand the socio-economically mediated view of the world depicted in the knowledge in Wikipedia articles. This view of the world in Wikipedia is like a *scape* because Wikipedia editors produce articles worldwide, connecting them with hyperlinks that create knowledge and a representation of the world available on the Internet. Visits to Wikipedia articles are called "views." Following Tuan's (1978) model of metaphors, the understanding of the world in online knowledge is the semantic tenor, a nebulous concept. The *scape* serves as the semantic vehicle, which extends the understanding of a socio-economic mediated view of the world to Wikipedia. This new Internet spatial metaphor indicates how core region socio-economic power and institutions condition the production of knowledge with a discursive depiction of the world within Wikipedia.

3.4 Research Objectives

In this section I elaborate on the research questions/objectives first presented in Section 1.4, dealing with the creation of the WikiGCI and the Wikipedia Worldscape.

3.4.1 The Wikipedia Global Consciousness Index (WikiGCI)

Objective 1: To construct a new index called the Wikipedia Global Consciousness Index (WikiGCI), which is an empirical measurement of the expression of global consciousness (Robertson, 1992, 2009, 2011).

For the first research objective, I employ global articles (global ideas) as the base of global consciousness as expressed in Wikipedia. I utilize these global articles to 1) examine the awareness and meaning of the world-as-a-whole and 2) measure editing by country to construct the Wikipedia Global Consciousness Index. First, global articles that are edited in the most countries can express global consciousness as an awareness of the wholeness of the world by their subject matter and narratives (e.g., discussions of globalization or shared global thoughts) and global social meaning in terms of Steger and James' (2019) ideologies, imaginaries, and being-in-the-world. Second, by identifying the top 100 global articles edited in the most countries, I construct an index that indicates how much a country's editing community participated in the global conversations to edit the articles and what regional socio-economic and historical patterns influences this editing (e.g., colonialism and positionality in the modern world-system).

First, I analyze the global articles for awareness and global social meaning of the wholeness of the world. Having been edited in the most countries in the world, these articles represent ideas with the farthest geographic extent in Wikipedia. The articles contain expressions of the awareness of the world-as-a-whole and global social meaning in their narratives and article structure (e.g., citations). Expressions of awareness indicate the relevance of the idea for many people and places worldwide. For example, articles can discuss how HIV/AIDS has spread to nearly all countries worldwide. Expressions of global social meaning, furthermore, follow Steger and James' (2019) utilization of ideas as the empirical unit to investigate ideologies (patterned

clusters of normativity), imaginaries (common sense of place or time), and categories of being-in-the-world (categories of human existence). For example, the articles can discuss ideological or religious conflicts among different groups of people and places on a global level (e.g., secular Western and conservative Islamic countries) concerning HIV/AIDS. In Wikipedia, these expressions of awareness and global social meaning affirm global consciousness as manifested in the article titles edited with the greatest geographic expanse in the world.

The second goal is to construct the Wikipedia Global Consciousness Index. Indexes are numbers founded on observations to measure a phenomenon. They are based on theory. There are three essential components to creating indexes: 1) theory, 2) dimensions, and 3) unit of analysis (Babbie, 2012). To overcome the difficulties in constructing a global consciousness index, I employ a new unit of analysis: a global idea. By exchanging the theoretical base of the index from a process to awareness, the new measure can focus on the ideational base of the world-as-a-whole, not the flow and networks that connect places as globalization indexes do (e.g., the KOF Globalisation Index). It also avoids the pitfall of previous global consciousness indexes (Buchan et al., 2009) because the unit of analysis is the global idea edited worldwide, not individual behavior or materiality (e.g., amount of foreign currency or trips taken to other countries). This new unit of analysis permits the measurement of the meaning of the shared global whole.

New research provided by the ideational unit of analysis can reveal insight into the country- and regional-level engagement with global conversations that constitute global consciousness and how this relates to international connectivity (e.g., globalization indexes). The global articles represent how editors worldwide discuss, debate, and edit ideas that have meaning for people and places at a global level. First, the index can measure the intensity with which the Wikipedia editing community in each country participates in the global conversations that create global

consciousness. That is, how many of the global articles are edited in the country given the size of its editing community. This can demonstrate patterns in how regions participate in editing. For example, regions in the world-system (e.g., core, semi-periphery, and periphery) can exhibit different rates of editing global articles. This can indicate the role that capital, labor, and institutions play in the intensity of editing global consciousness in Wikipedia. Second, the index provides a means to analyze the relationship between awareness of the wholeness of the world and international connectivity. Correlation of the index's scores by country with the scores on the KOF Globalisation Index can show whether the awareness of the global whole in Wikipedia increases with the intensity of objects flowing internationally in networks. The global consciousness index can supplement the knowledge gained from globalization indexes.

3.4.2 The Wikipedia Worldscape

Objective 2: To discursively analyze regional patterns in Wikipedia's global and local articles by treating written knowledge in Wikipedia as a metaphorical landscape (Wikipedia Worldscape). Discourses are sets of texts, images and speeches that create "a framework for understanding the world" (Barnes & Duncan, 1992, p. 8).

For the second research objective, I examine the how the socio-economic power of the core region construct global article (global ideas) in Wikipedia that form an understanding of the world. I analyze four dimensions of globalization (Adams, 1999; Dicken, 2015; Skutnabb-Kangas & Phillipson, 2010; Wallerstein, 2004, 2011) for my research of Wikipedia. Each globalizing dimension is not mutually exclusive or independent of each other. Rather, each captures an aspect of globalization that contributes to or reflects a globalizing discourse in describing the world. These four discourses are the association of the main idea of the article with core countries (Core Countries), the commodification of the main idea (Commodification), the use of English in

citations (Use of English), and references to core region media institutions (Media Institutions). From each globalizing discourse, I establish a discursive indicator that reflects the engagement of the globalizing discourse within the structure of the narrative of the article (e.g., by citing resources or including information pertinent to the globalization of knowledge). These indicators indicate the presence or absence of the hypothesized globalizing discourses in the article. I hypothesize that the indicators are more present in global articles. This suggests that editors are engaging in globalizing discourses to construct global articles, or articles edited in the most countries with the widest, shared view of the world. In contrast, local articles are articles edited in only one country. They reflect a local view, a view only depicting the country of origin of the edit.

Though critiqued as treating regions in a generalized manner, world-systems analysis is a useful starting point for understanding how globalizing discourses shape views and understandings of the world in Wikipedia. The discipline of geography has applied world-system analysis (Mbatu, 2010; Van Hamme & Pion, 2012; Selwyn, 2015) to examine globalization and how global world regions are socio-economically dependent on the core (“developed”) region. This dependence is also reflected in the knowledge and views of the world in Wikipedia.

In world-system analysis (Wallerstein, 2004, 2011), the core is the most influential region among the world’s three regions (core, semi-periphery, and periphery). The entire world is the unit of analysis, and countries are grouped into regions by labor in the world economy. In this regional approach, core countries (e.g., U.S., France, and Germany) have capital-intensive and highly skilled production. Governments and institutions in core countries are stronger and more stable compared to those in other regions. Core countries are relatively independent of outside influence. In contrast, periphery countries (e.g., Peru, Ghana, and Myanmar) are dependent on the core for capital, and their economies rely on agriculture and raw materials. Governments and institutions

in the periphery are relatively weak. Periphery countries are easily influenced by core countries' military and international corporations, which maintain trade and economic structure that is more beneficial for the core. Finally, semi-periphery countries (e.g., Russia, Brazil, and China) have qualities of both the core and periphery. These countries are industrializing but still depend heavily on agriculture and raw materials. They are also sufficiently powerful to have political and cultural influence over periphery countries. In the modern world-system, the core region exerts the most influence in the world because of its advantages in capital and labor.

Because of its socio-economic dominance, the core region strongly shapes the four dimensions of globalization (Core Countries, Commodification, Use of English, and Media Institutions) that discursively construct global articles in Wikipedia.

3.4.2.1 Core Country

The global influence of the core in terms of capital and labor is also reflected in the knowledge and views of the world in Wikipedia. The core has leveraged its economic and military power to strongly influence the representation of the world. Since the sixteenth century, core countries have been the most influential in producing different kinds of knowledge on a global level through capitalism and colonialism. For example, sports on a global level (e.g., soccer) have been constructed by core companies (e.g., Nike) and European colonization in the periphery (Jarvie & Maguire, 2002). Because of colonial legacy, periphery educational systems are highly influenced by theories, textbooks, and curricula produced by the educational centers of the core (Alemu, 2014). Furthermore, global ideas of beauty associated with the wealthier core and transmitted through television programs have led many non-core women to imitate Western thinner body norms (Rohter, 2007). Knowledge with views of the world is mostly associated with core

countries. This leads to the establishment of the first discursive indicator in an article's narrative – the relevance of the knowledge is associated with the core (U.K., Europe, U.S., Canada, Australia/N.Z., Japan) in the introduction of the Wikipedia global article (e.g., U.S. film).

3.4.2.2 Commodification

Strongly influenced by the core, commodification, or the conversion of goods and services into objects bought and sold in a market (Maloney, 2015), is a forceful engine in interconnecting places and creating knowledge with worldviews. Dicken (2015) argued that the consumption of commodities is becoming increasingly important in the global economy. The core region determines the global demand and characteristics for many types of commodities (e.g., fashion). Commodities possess social and cultural meaning, denoting attitudes and global positionality. For example, the U.S. fast food chain McDonald's has opened thousands of stores overseas, accumulating billions of dollars in sales. Because of its extensive global market penetration, its commodified food and advertisement (e.g., the Golden Arches) have become synonymous with Americanization and acculturation for many (Schlosser, 2012). In fact, of the 100 most successful brands worldwide in 2016 (\$1.8 trillion in value), 94 were produced by core firms (Brands, B.G., 2017). When commodification occurs, economic value is given to the object for exchange (e.g., a product or labor). Monetization is used to define objects. This leads to the establishment of the second discursive indicator in an article's narrative – monetary value is assigned to the knowledge in Wikipedia global articles (e.g., financial sums stated in contracts and budgets).

3.4.2.3 Use of English

Global knowledge with a view of the world is often transmitted through the world's lingua franca, the English language, which attained this status by the socio-economic power of core countries (i.e., the U.S. and U.K.). English expanded through colonialism, trade, and conquest to become a worldwide language. By 1922, one-fifth of the world's population was under English speakers' rule. The language continued to grow in importance after World War II, with the U.S. gaining preeminence in trade, culture, and military (de la Dehesa, 2006; Murray, 2006). Skutnabb-Kangas and Phillipson (2010) have observed how speakers of other languages designated English as the language of communication for many institutions to gain the advantages that are offered by communicating internationally in the neo-imperialist language of the world. English is the institutional language for aviation, academia, commerce, and diplomacy. American exports of billions of dollars of English language cultural products (e.g., films and music) are a leading entertainment staple worldwide. As opposed to languages with more regional statuses (e.g., Russian), it has been estimated that one out of four people worldwide can communicate in the English language (Seidlhofer, 2013). Students studying English expressed the need to learn the language to "communicate and get on in the new age of global knowledge and business" (de la Dehesa, 2006, p. 171). This leads to the establishment of the third discursive indicator in an article's narrative – Wikipedia global articles contain one or more citations of resources in the English language to construct the knowledge and view of the world.

3.4.2.4 Media Institutions

Because of their extended global networks, core region mass media institutions convey knowledge worldwide that constructs views of the world (Adams, 1999). Mass media, or communication

supported by media technologies to a large audience, regularly provide the means to convey knowledge globally (Open Textbook Library, 2016; Potter, 2012). Thompson (1995) characterized mass media as having institutional methods of mass production and commodification. Media are comprised of broadcast media (e.g., film and television), social media (e.g., Facebook and YouTube), and print media (e.g., books and newspapers). Global mass media convey cultural products (e.g., U.S. television programs and twitter announcements from French soccer players) with views of the world. The top ten global media institutions are from core countries (Jan, 2009). They select and shape knowledge that is distributed worldwide, influencing global opinions and standards concerning subjects from entertainment to sports. This leads to the establishment of the fourth discursive indicator in an article's narrative – Wikipedia global articles reference one or more core region media institutions (e.g., a Disney production). These institutions are identified from 1) the world's 10 largest media companies (Jan, 2009), most popular television channels (Elena, 2018; Mediaweek, 2017), newspapers with the highest circulation (WAN-IFRA, 2016) and top 10 social media outlets (Sparks, 2017).

3.4.3 *Summary*

As illustrated in Table 3.2, the first research objective investigates how global articles (global ideas) are the base of global consciousness as in Wikipedia. With these global articles, I discursively examine the awareness and world-as-a-whole and global social meaning (Steger and James, 2019). I also use the top 100 global articles to construct the index, which measures what regional socio-economic and historical conditions affect how much a country's editing community participated in the global conversations to edit the articles.

The second research objective forms the framework with which to examine how core region socio-economic power changes an idea into one that is edited throughout the world. Like in a landscape, four dimensions (Core Country, Commodification, Use of English, and Media Institutions) that are shaped by the core region are hypothesized to structure views and understandings of the world in Wikipedia (The Wikipedia Worldscape). Because of the discursive support of the use of English language resources, commodification, association with core countries and/or core region media institutions, ideas are transformed from local ideas contained in one place to global ideas that are edited, discussed, and debated by Wikipedians worldwide and have a view of the world. I hypothesize that the use of discursive indicators that represent globalizing discourses in articles can statistically predict the articles that are global, or edited in the most countries in the world. In the next chapter, I discuss the methodology by which I process Wikipedia data and analyze the results.

Table 3.2: Discursive Construct of the Wikipedia Worldscape and the Wikipedia Global Consciousness Index (WikiGCI).

Research Objective 2			Research Objectives 1 & 2	Research Objective 1
Globalizing Dimensions→	Globalizing Discourses→	Discursive Indicator→	Global Ideas →	Global Consciousness
Core Countries	Global Knowledge is constructed by the positionality of core countries within a thought system relying upon a hierarchy of nations.	Knowledge associated with Core (U.K., Western Europe, U.S., Canada, Australia/N.Z., Japan)	Global articles (Global Ideas) form views of the world (Worldscape) and are the base of Global Consciousness	1. Awareness of World-as-a-whole 2. Global Social Meaning (Ideologies, Imaginaries and Being-in-the-World)
Use of English	The use of English language resources indicates the language's socio-historic position within global conversations.	Citations of resources in the English language in the article's references		
Commodification	Monetization of knowledge and the commodification of the objects of discussion.	Monetary values are attached to the objects of discussion (e.g., contracts, receipts)		
Media Institutions	Core country media with the ability to impact globally how millions of people structure global knowledge.	BBC, YouTube, New York Times and other large media institutions are referenced.		

4. Methodology

This dissertation uses a mixed methods approach to data mining and analysis. The methodology was divided into three consecutive steps of data processing and analyses for the completion of the research: 1) Data Methodology for Wikipedia, 2) Methodology for the WikiGCI, and 3) Methodology for the Worldscape. In this chapter, I present each step in a separate section.

First, Data Methodology for Wikipedia was the general methodology for the data mining and massaging of Wikipedia data for the dissertation research. This multiple-step methodology included the selection of the Wikipedia databases, querying, and downloading the data, geolocating the article edits, cleaning the data, establishing the English-language primary key and managing hardware difficulties.

Second, Methodology for the WikiGCI was the methodology for the first research objective concerning the construction of the WikiGCI, or the index created to understand and measure global consciousness as represented in Wikipedia. I utilized global articles, or articles edited in the most countries, to construct the index. For research object 1, I also applied a mixed method qualitative and quantitative approach to examine global consciousness. I qualitatively analyzed the articles' narratives to discursively study the expressions of awareness of the global whole and global social meaning. Quantitatively, I constructed the new index to measure global consciousness. The country-level scores on the WikiGCI permit a regional analysis and correlation with a globalization index (KOF Globalisation Index) to examine global conversations that generate the consciousness of the wholeness of the world.

Third, Methodology for the Worldscape was the methodology for the second research objective which focused on how globalizing discourses established the Wikipedia Worldscape, or

the view of the world in Wikipedia content. This mixed method quantitative and qualitative methodological step analyzed how socio-economic core regional power discursively constructed the global ideas that contained views of the world. The principal methodologies were critical discourse analysis, which analyzed how power structures the views of the world in written knowledge, and content analysis, which quantifies and investigates the meanings and relationships of words and discourses in texts. To identify how these discourses constructed views of the world, I contrasted views in the global articles (articles edited in the most countries) with local views in local articles (articles edited in only one country). I employed both qualitative (e.g., subject matter) and quantitative analyses (e.g., regression analysis) for the discursive analysis.

4.1 Data Methodology for Wikipedia

For this research project, data mining was first conducted on Wikipedia content to prepare the data for the analysis of the socio-economic construct of global articles and the global consciousness that these articles expressed. This elaborate process included selecting the language Wikipedias and time periods, querying and downloading the appropriate data tables, geolocating IP addresses, and identifying the English language title version for all of the articles to establish the primary key for querying.

I first selected and downloaded data from 270 language Wikipedias which were edited from October to December 2016. At the time of this study, there were 285 different language Wikipedias. However, I excluded some languages (e.g., Kanuri), which had established Wikipedias with no active editing. Furthermore, to best capture the common representation of place and the world, certain languages were excluded because they are learned languages not

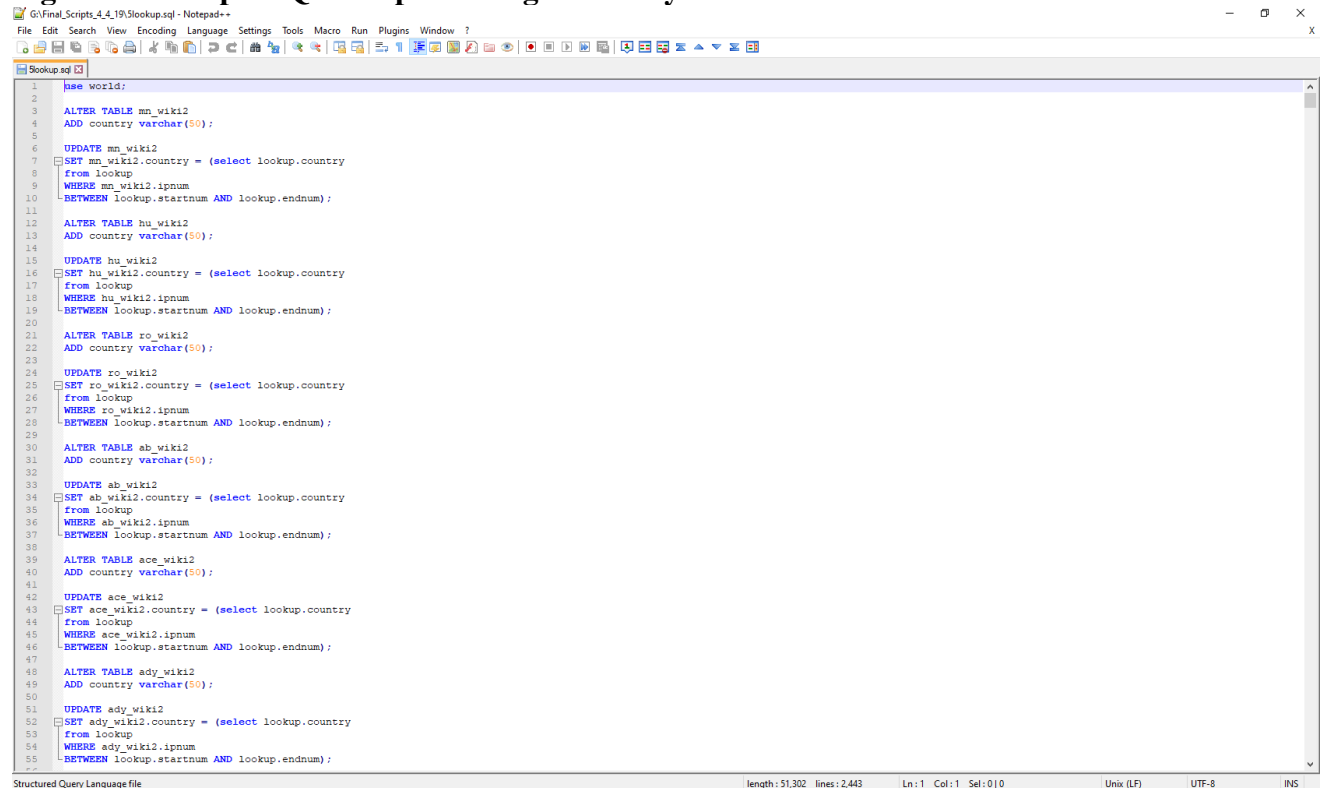
commonly spoken. Examples of these excluded languages are Latin, which is learned mostly for religious reasons, and Esperanto, which is a planned language. These exclusions resulted in 270 language Wikipedias under investigation. I selected three months (October to December 2016) with the fewest edits for analysis, which produced a total of 4,301,558 separate articles from the combined 270 languages. Because of the MySQL query language and nature of the data in Wikipedia, I downloaded all edits performed by usernames with one or more integers. This captured all edits committed by IP addresses as well as registered usernames containing digits, which were later excluded. The time period proved to be representative of a wide breadth of global meaning and awareness for my research goals and was not skewed towards any specific events. For example, although the U.S. presidential election occurred at this time, only one global article that was analyzed for the Wikipedia Worldscope related to this event and did not dominate the analysis. As will be discussed in detail in Chapters 5 and 6, this time period provided data that were sufficient for quantitative and discursive analyses of global consciousness.

For the initial data processing, I obtained the data from the publicly available Wikipedia cloud services (https://meta.wikimedia.org/wiki/Research:Labs2/Getting_started_with_Toolforge). This service allows access to a master-slave replication of Wikipedia's data, whereby Wikipedia copies and updates its data into a server that is open to querying and downloading for research. This service is run on SQL, a computer language used for querying and managing data in relational database management systems (RDMS). Wikipedia's RDMS stores data concerning the articles in different tables that can be queried and downloaded. Using batch scripts, I queried each language Wikipedia's "Revision" and "Page" (article) tables to download data concerning each Wikipedia article that had one or more unique IP address editing it. The downloaded data contained information regarding the article title, the IP address of the edit, page ID (the unique

identifier for the article), and the timestamp (time and date) of the edit. In addition to downloading article data, I queried and downloaded tables that contained the interlanguage links connecting each title in each language Wikipedia to the equivalent title in all other language Wikipedias.

Upon downloading the data, I ran scripts to locate the IP addresses by country. I wrote scripts in both Python 3.6, a common programming language for data mining, and MySQL Workbench 8.3, a database management system for maintaining and querying large data sets using a variation of SQL scripts (Figure 4.1). To geolocate the IP addresses by country, I followed Graham, Straumann and Hogan's (2015) similar research by applying the lookup table provided by Maxmind, a mapping company that provides locations for IP addresses (<https://www.maxmind.com/en/home>). This geolocated the IPv4 types of IP addresses, the most common type of IP addresses. IPv6 types are less common and were excluded. In this procedure, a new column is added to the downloaded Wikipedia data table in which the country of origin of the IP address is assigned to each edit. I defined countries with designations in the KOF Globalisation Index and Maxmind IP lookup tables, which resulted in a total of 203 countries.

Figure 4.1 Sample SQL Script to Assign Country Name to IP Address.



```
1 use world;
2
3 ALTER TABLE mn_wiki2
4 ADD country varchar(50);
5
6 UPDATE mn_wiki2
7 SET mn_wiki2.country = (select lookup.country
8 from lookup
9 WHERE mn_wiki2.ipnum
10 BETWEEN lookup.startnum AND lookup.endnum);
11
12 ALTER TABLE hu_wiki2
13 ADD country varchar(50);
14
15 UPDATE hu_wiki2
16 SET hu_wiki2.country = (select lookup.country
17 from lookup
18 WHERE hu_wiki2.ipnum
19 BETWEEN lookup.startnum AND lookup.endnum);
20
21 ALTER TABLE ro_wiki2
22 ADD country varchar(50);
23
24 UPDATE ro_wiki2
25 SET ro_wiki2.country = (select lookup.country
26 from lookup
27 WHERE ro_wiki2.ipnum
28 BETWEEN lookup.startnum AND lookup.endnum);
29
30 ALTER TABLE ab_wiki2
31 ADD country varchar(50);
32
33 UPDATE ab_wiki2
34 SET ab_wiki2.country = (select lookup.country
35 from lookup
36 WHERE ab_wiki2.ipnum
37 BETWEEN lookup.startnum AND lookup.endnum);
38
39 ALTER TABLE ace_wiki2
40 ADD country varchar(50);
41
42 UPDATE ace_wiki2
43 SET ace_wiki2.country = (select lookup.country
44 from lookup
45 WHERE ace_wiki2.ipnum
46 BETWEEN lookup.startnum AND lookup.endnum);
47
48 ALTER TABLE ady_wiki2
49 ADD country varchar(50);
50
51 UPDATE ady_wiki2
52 SET ady_wiki2.country = (select lookup.country
53 from lookup
54 WHERE ady_wiki2.ipnum
55 BETWEEN lookup.startnum AND lookup.endnum);
56
```

Proxy server IPs that can mask the true country locations of the editors and skew the results of the editing locations were excluded from the analysis. Even though similar studies (Graham et al., 2015) which analyzed spatial patterns by geolocating IP edits in Wikipedia did not specifically address proxy servers, I excluded these proxy servers IP due to the necessity of accurate mapping of editing by country. Proxies are used for various reasons, from filtering content at work or school to providing privacy online (Wikipedia Contributors, 2020a). Internet users often utilize proxy IPs indicating the same country as the user, but sometimes they obtain IPs located in different countries. Although proxy IP address repositories cannot maintain historical data for legal reasons, current IPs can be used to identify prior IP locations with high accuracy (personal communication with the representative of <https://www.ipqualityscore.com/>). There is a 90–95 percent accuracy rate in geolocating 2016 IPs with a high probability of masking the true country location using a database of proxy IP addresses from 2020 because most ranges of IP addresses remain static over

time. Approximately two percent of the 2016 IPs were flagged as potentially masking the true country location. After excluding these IPs, there were 1,568,743 unique IPs editing globally.

Furthermore, I excluded titles that were locked against IP edits to avoid underrepresenting editing in countries with single, majority languages. Administrator Wikipedians can lock articles because of extensive vandalism and edit disputes, which prohibits IP addresses from editing articles. I queried and downloaded “Logging” tables, which maintain administrative information regarding the locked status against editing for Wikipedia articles. “Logging” tables contain the timestamp and locked status of each article title. There was no similar approach across all Wikipedias to locking articles, however. Some articles that were permanently locked in this period were clearly controversial, such as the article *Vladimir Putin* in 12 language Wikipedias, while others were perhaps only contentious to a particular group, such as the *Portugal national football team* in the Japanese Wikipedia. For my research, if Wikipedians in at least one language version locked an article title for the entire research period, the article title was excluded from analysis in all languages. This mitigates against potential bias because some countries have majority languages (e.g., Japanese in Japan) and may not be equitably represented if the language in which most people communicate is locked. Patterns of locking articles by the subject matter and their impact on the Wikipedia Global Consciousness Index are analyzed in Chapters 5 and 6.

Each language Wikipedia title was linked to the extant English equivalent, which served as the primary key to identify the title across all the language versions. In RDMS, a primary key contains a unique identifier for every record with which to query and organize data. The English language version of the title was chosen because it was the most widely used language in Wikipedia and the world. As stated in Chapter 2, the English edition was by far the largest and most edited Wikipedia, with greater than 5.5 million articles and an average of 3.5 million edits

per month in 2016. This language is also one of the most widely spoken languages in the world, serving as the global lingua franca for billions of people. By using the interlanguage links tables, I joined the English language title version if extant to each title in each language Wikipedia. If a title in any language version was edited with one or more IPs in a country, that title was considered edited in that country. With interlanguage linkage, the total number of countries participating in the editing of each article title with its extant language versions was calculated (e.g., the article title *Love* with all its linked language versions of the title was edited in a total number of countries). Editors in multiple countries that spoke the same language commonly edited the same language version of a title.

As a pilot study, I processed the data in their entirety in five language Wikipedias. I also tested sample records to confirm that they were handled correctly at each step during the main data processing for quality control. Finally, I checked 1,500 articles to confirm that their interlanguage links and IP addresses were the same online as in my processed results. No errors were encountered during the quality control.

Geolocation of the country location of the IP addresses performing edits provided the most advantageous method to map active knowledge creation during the research period. Other possible analytics, such as counting interlanguage links per title, does not reflect active knowledge creation in a country during a specific time. As stated in Chapter 2, counting edits performed by registered users with profiles is limited because these users are not required to display their locations. On the other hand, articles in all languages can be edited by unregistered users, which displays their IP addresses. Geolocation of IP edits provides the time and location of the edits. It offers the additional advantage of comparing editing by country with globalization indexes that employ the same geography, e.g. the KOF Index, to understand if connectivity increases global consciousness.

However, there are limitations to analyzing IP addresses. IP addresses may not directly correspond to individual Wikipedians because IPs can be shared within a household or dynamically allocated to a computer. I bear these potential over- and underrepresentations in mind when analyzing results.

This data procedure produced the final database with which I investigated the socio-economic context of global articles and the global consciousness that the global articles expressed. This database had a table for each of the 270 language Wikipedias. Every table had a record for each unique IP address that indicated the time of the edit, the country location of the IP, the title of the article in the original Wikipedia language and the equivalent title in English if one existed (4.2 and 4.3)³. From these 270 separately processed tables, Wikipedia articles that were edited only in one country (local articles) and those that were edited in the most countries (global articles) were easily identifiable with additional querying.

³ Note: The column `ipnum` was a column generated during the geolocation process that converted the IP address into one integer that was used to find the country location of the IP address in the lookup table.

Figure 4.2 Armenian Wikipedia Article Table Imported in MySQL Workbench 8.3 after Downloading from Wikipedia.

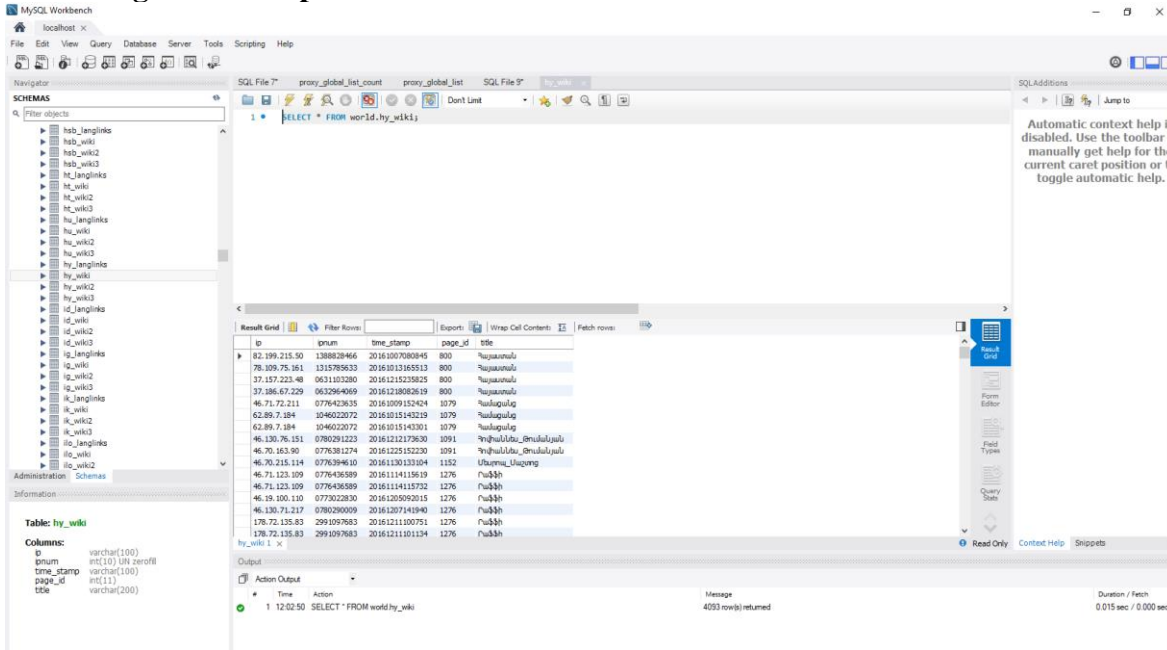
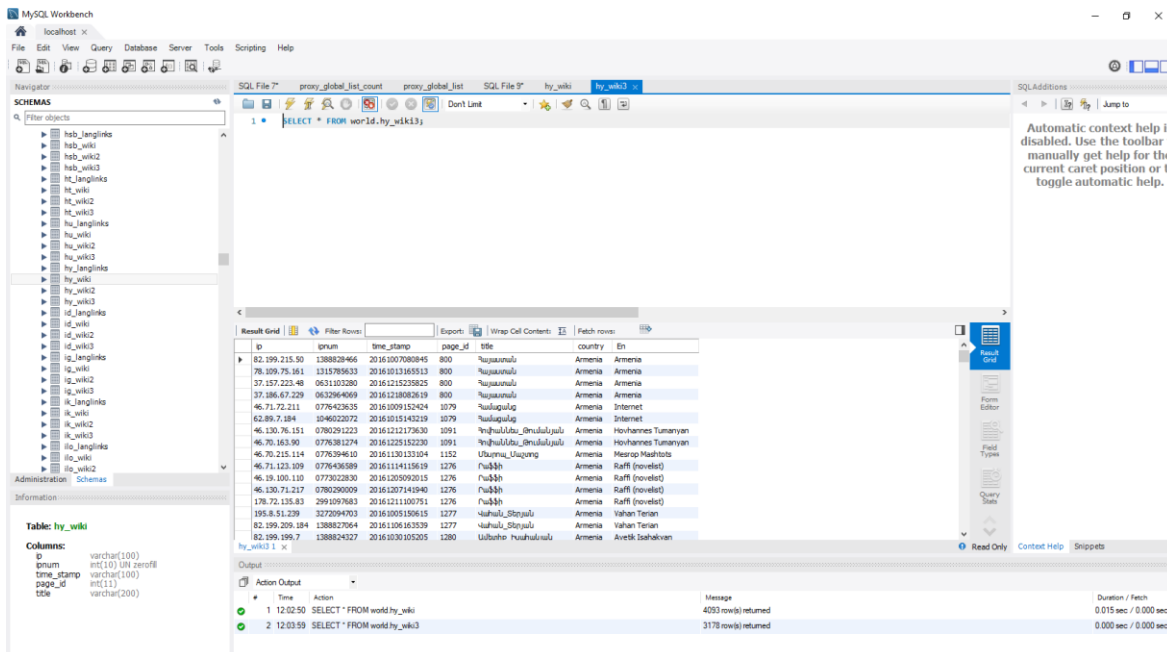


Figure 4.3 The Armenian Wikipedia Article Table with Added Columns Containing the Geolocated Country of the IP Edit (“country”) and English Title Version (“En”).



4.2 Methodology for the WikiGCI

The second part of the methodology concerned the construction of the WikiGCI, or the index created to measure and understand global consciousness as represented in the online encyclopedia. Although editing in Wikipedia does not necessarily reflect the consensus of a country's entire population, it does represent the ideational form of global consciousness of Wikipedians in every country. To construct the index, I identified the top 100 articles edited in the most countries (global articles) to use as the units of analysis. With the WikiGCI, I accomplished two research goals. First, I discursively analyzed the awareness of the world-as-a-whole and global social meaning in the narratives of the global articles to affirm global consciousness in the online encyclopedia. Second, I utilized the new index to measure global consciousness. With the country-level scores on the WikiGCI, I analyzed the results by region and correlated the new index with a globalization index (KOF Globalisation Index) to understand how participation in global conversations produces the consciousness of the global whole.

To establish the data for the analysis of the WikiGCI, I generated a list of the top 100 articles edited in the most countries (global articles) in Wikipedia from October to December 2016 to become the units of analysis to the index. Following Barbie's (2012) outline for constructing indexes, I chose the global articles to represent the phenomenon being measured because these articles reflect ideas that are debated and edited with the farthest geographic expanse. They represent ideas that form the base of awareness and meaning of the world-as-a-whole. I also allowed variance in the data because I imposed no a priori selection criteria on subject matter for the article sample set. One hundred articles sufficed to capture a variety of ideas expressing the wholeness of the world. This bottom-up creation of the index's items by the Wikipedians reflected the variance and validity of articles edited by Wikipedians worldwide.

By focusing on online edits, the index gauges not only the same forum of knowledge production globally but also the global consciousness in one of the most used forms of interconnectivity in the world (i.e., the Internet). Utilizing communication technology to construct globalization indexes is not unusual. For example, the KOF Globalisation Index applies Internet indicators in its index. Due to its immense international popularity as an encyclopedia (Zache, 2017), Wikipedia's articles can serve as one indicator for global ideas.

After identifying the 100 global articles, the first part of the analysis for the WikiGCI consisted of discursively analyzing the global articles for expressions of awareness of the world-as-a-whole and global social meaning as discussed earlier. For expressions that represent awareness of the global whole, I analyzed the articles' narratives for indications that the idea impacted people and places planet-wide in the Spanish, Russian, and English versions if extant. This could be in the form of issues affecting many places or connections of many places on a global scale (e.g., trade wars or global markets). That is, the narratives demonstrated a sense of one world. There is a sense of wholeness to the world, not just individual countries or regions. For expressions of global social meaning, I applied Steger and James' (2019) use of ideas as the empirical unit to investigate three levels of global social meaning: ideologies, imaginaries and categories of being-in-the-world (Table 4.1). First, for ideologies, or patterned clusters of normativity, I analyzed the articles for expressions of political, economic or religious belief systems. This generally took the form of belief statements in the narratives (e.g., utterances of anti-globalism or neoliberalism). Second, I analyzed the articles for imaginaries, or the common sense of place or time. These are sets of values, laws, or institutions with which groups of people imagine the social whole (e.g., the inevitable growth of global markets). Third, for categories of being-in-the-world, or categories of human existence, I analyzed the articles for a durable understanding of

Table 4.1 Global Social Meaning

	Global Idea	Ideology	Imaginary	Being-in-World
Definition	Article title edited in the most countries	Expressions of political, economic or religious belief systems	Common sense of place or time	Durable understanding of global human existence
Example in Narratives	“Global Market”	Utterances of anti-globalism	The inevitability growth of global markets	Increasingly open borders and unfettered movement

global human existence. This level of analysis represents the profound meaning of global social existence, for example, how time and space are perceived in an interconnected world (e.g., increasingly open borders and unfettered movement).

The analysis focused on the discourse- and article-level to detect global consciousness, not the individual edits. Individual edits were not analyzed per se because they were often discursively inconsequential (e.g. punctuation changes or adding music information to a film). Instead, article narratives in the different language versions of the same title sufficiently demonstrated global awareness and global social meaning in different countries. I also discursively analyzed the global articles for expressions of conflict (Steger & James, 2013, pg. 20). Conflict, or contention concerning the meaning and impact of the idea in the narratives, suggested the evolution of the idea in the world. For example, an article can report how the idea of global markets was originally conceived in open borders but has been criticized recently by anti-globalization politicians. These conflicts consequently indicated changes in global consciousness. (Steger & James, 2013, pg. 20). Examination of statements of conflict additionally showed how global ideas can form an awareness of the global whole, but not uniformity of opinion.

The second part of the analysis of the WikiGCI was the construction of the Wikipedia Global Consciousness Index. The final index (4.1) was a rank-rank ratio of the percentile rank of

the editing of the top 100 Wikipedia articles edited in the most countries (global articles) normalized by the percentile rank of the number of IP addresses per country. The individual country measure is calculated as:

(4.1)

WikiGCI = percentile rank of global articles / percentile rank of the number of unique IP addresses editing Wikipedia

A rank-rank relationship (Chetty, Hendren, Kline, & Saez, 2014) provided the proper index relationship while avoiding mathematical misrepresentations. For example, a conventional per capita index was inappropriate because the number of global articles edited in the most countries was a delimited set of the top one hundred from the list of all Wikipedia titles. This subjective limit produced unstable results due to large outliers. For example, even though nearly all of the global articles were edited in the U.S., the score normalized by the number of unique U.S. IPs was infinitesimally small because the U.S. had an enormous editing community. For the index to accurately represent the editing of global ideas, the critical component for the numerator was the world ranking of the number of global articles edited in a country. This needed to be normalized by a denominator indicating the rank of the country by the size of its editing community. Calculating Z-scores for both parts was impractical because the division of negative numbers produced distorted results. For example, North Korea would have negative Z-scores on the number of global articles and the number of unique IP addresses editing Wikipedia, thus producing a positive number upon division. In addition, three countries with no editing activity were assigned zero.

A WikiGCI score greater than one represents a rank of Wikipedia global titles edited greater than the rank of the number of unique IP addresses, indicating a higher attention to global ideas in relation to the size of its editing community. The WikiGCI of one indicates an equilibrium between the two ranks. A number less than one indicates a lower rank of Wikipedia global title editing than the rank of the number of unique IP addresses editing the encyclopedia, representing a lower consideration of global ideas proportional to the rank-size of its editing community.

These WikiGCI scores were then regionally analyzed by applying a computerized geographic information system (GIS), world-systems analysis, and correlation. First, by using ArcMap 10.6.1 for GIS, I mapped the number of IP edits, number of global articles and the scores on the WikiGCI per country. I then applied world-systems analysis to the spatial pattern of the WikiGCI to identify any significant regional differences in the index scores. In addition to world-systems analysis, I applied a socio-historic analysis to the regional results to understand spatial patterns. I researched how historical, economic, and societal forces influenced the results, for example, if former European colonialism potentially influenced the WikiGCI scores of a country. Finally, I conducted a correlation analysis on the scores of the WikiCGI scores and the KOF Globalisation Index per country to determine the strength and direction of the linear relationship between the two indexes (Illowsky, 2013). I hypothesized that there was a positive correlation between the WikiCGI and KOF Globalisation Index. That is, the more a country engaged in global networks (e.g, the Internet, immigration, and import/export), the higher the score on the WikiGCI (i.e., the more global articles are edited relative to the size of its editing community).

The methodology for the WikiGCI constructed and analyzed the results of the index. By employing a mixed method quantitative and qualitative approach, the top 100 global articles that constituted the WikiGCI were first discursively analyzed for expressions of the wholeness of the

world and global social meaning. These global articles were then utilized as the numerator in a ratio with the denominator of the relative size of the editing community per country to form the index. WikiGCI scores were used to analyze regional patterns of participation in global consciousness in the online encyclopedia.

4.3 Methodology for the Worldscape

Question two of this dissertation focused on how the world is understood in written representation in Wikipedia. Specifically, I employed the metaphorical landscape Wikipedia Worldscape to analyze how globalizing socio-economic discourses based on core regional power influence the construct of global articles (global ideas) to create views of the world. Methodologically, I applied a mixed method approach to the discursive analysis by conducting both qualitative (e.g., analysis of subject matter) and quantitative (e.g., content analysis and regression) analyses.

To investigate how the view of the world is represented in Wikipedia, knowledge production needs to be understood. One major methodology to examine the social construct of knowledge is discourse analysis (DA), which looks for underlying meaning, deep assumptions and relations of power that are constructed through discourse (Foucault, 1972; Foucault, 1980; Burr, 2003; Hodgkiss, 2001; Laffey & Weldes, 2004; Macdonnell, 1986; Mannheim, 1968; Schiffrin, Tannen, & Hamilton, 2001). Discourses are sets of texts, images, and speeches that create “a framework for understanding the world” (Barnes & Duncan, 1992, p. 8). An idea produced by discourses is not singular but an interconnection of different objects. It is, therefore, “the interplay of the rules that make possible the appearance of objects during a given period of time” (Foucault, 1972, p. 32). An idea that produces an understanding and view of a place is the interconnections of various discourses. Burr (2003) discussed how knowledge is bound up with power. In order for

something to become knowledge that represents a place, it needs the stamp of approval by society. Power, the ability that people have to act or produce a result, shapes, and defines the view or understanding of a place, whether it is local or global.

For this dissertation, I applied critical discourse analysis, which is a subfield of discourse analysis. CDA focuses on how social and political dominance is replicated in discourses (Fairclough, 1992; Fairclough, 2001; Fairclough & Clive 1995; Fairclough & Wodak 1997; Wodak 2001). It is concerned not only with social constructs of reality but also with power and control. The concepts of power, history, and ideology are pivotal in this analysis. For example, vocabulary is historically situated, and discourses are universally connected (Fairclough, 2001). The argument and narrative structure of the text can be significant ideologically. Ideology converts meaning into something considered to be matter-of-fact. To identify how discourses affect the view of a place, one needs to understand how socio-economic power structures the knowledge that constructs the view.

CDA can be used to examine phenomena such as globalization (Alvesson & Karreman 2000). The study of discourses commonly begins with an extensive a priori understanding of the variables that affect the phenomenon. As stated in Chapter 3, I chose four globalizing socio-economic discourses based on core regional power to discursively analyze Wikipedia articles and establish variables for the regression analyses. The first globalizing discourse is Core Countries, which demonstrates how the view of the world is shaped by the positionality of core countries within the modern world-system. Second, Use of English indicates a core region language's socio-historic position within global conversations. Third, Commodification shows how the monetization of knowledge shapes the view of the world. Fourth, the discourse Media Institutions denotes how major core region media institutions impact globally how millions of people view the

world. These four globalizing discourses originated in the socio-economic powers (e.g., institutions, language, and media) of the core region to construct the Wikipedia Worldscape, or the view of the world in Wikipedia content mediated by the modern world-system. I hypothesized that these globalizing discourses are used more in the global articles than in the local articles.

To investigate how people create representations of the world, I sampled articles to analyze how Wikipedians from different regions in the world-system discursively depict the world differently from the local place by engaging globalizing discourses (i.e., editing articles composed of globalizing discourses). Conducting sampling required sample sizes that were manageable for qualitative research and sufficiently large for quantitative research. Furthermore, there were two requirements for the language and country of the articles. First, I selected articles edited in Peru (periphery), Russia (semi-periphery), and the U.S. (core) to represent how editors potentially differ discursively in the three regions according to Wallerstein's (2004) world-system. Second, I analyzed the last edited versions of the articles in the country's majority language: Spanish, Russian, and English, respectively.⁴

From the database of the 270 Wikipedia language tables that I processed, I obtained the articles for the global and local samples for Peru, Russia, and the U.S. For the global sample, I generated a list of the titles edited in the most countries by joining all the language tables by the English language primary key. This list summed the number of countries editing each title in all its language versions. I then acquired the top 30 titles edited in the most countries, from which I identified the ones edited in the three sample countries and languages. In the global sample, all

⁴ I analyze these three languages because of my advanced reading skills in them.

articles in certain subjects, e.g., politicians and countries⁵, were locked and excluded from the analysis.

For the local sample of articles edited only in one country, I sampled articles from a set of randomized articles edited in the one country in the majority language (e.g., only in Peru in Spanish). Using the interlanguage links table, I excluded the article if IPs were located in any other country in any language version or concerned any subject that was locked in the global sample. I then performed a thematic analysis sampling (Braun & Clarke, 2016). This sampling examines patterned discursive meaning across data that relates to the research objective. My goal was to collect a sufficient number of articles that demonstrated patterns in globalizing interdiscursivity (e.g., the use of Core Countries and Use of English discourses for certain subjects). I conducted sampling until saturation when no new discursivity was gathered with additional articles. Because no new interdiscursive patterns appeared in the four globalizing discourses as sampling progressed, I concluded the local sampling at 200 articles per country, a suggested number for large project sizes (Braun & Clarke, 2016).

After establishing the global and local samples of Wikipedia articles, I performed a mixed method qualitative/quantitative CDA of globalizing discourses. I analyzed the Wikipedia articles qualitatively to gather an in-depth understanding of the discursive construct of the narratives and quantitatively to identifying descriptive and statistically significant relationships of the discourses and the scale of the articles.

First, I qualitatively analyzed the articles by examining the semantic and grammatical particularities in the texts that indicated the discourses. I analyzed articles for textual features that

⁵ Six articles concerning politicians and monarchs as well as four articles concerning countries and continents were locked and excluded. The locking of articles is further explained in Chapters 5 and 6.

indicate power, such as references to authority and relational values. For example, I focused on how institutions (e.g., companies, governments, and educational institutions) were cited and used in the narratives to support the knowledge. I also examined the articles for globalizing intertextually that constructed the views of place. This encompassed analyzing how links in the article to supplementary information created by core region socio-economic power were embedded in the narratives and references. For instance, this included linking the article to other websites or Wikipedia articles that discussed financial sponsors or core region events. Furthermore, I focused the analysis on local and global articles concerning the same subject matter (e.g., articles concerning soccer and films) to identify how globalizing discourse differed in constructing the articles. The discursive differences suggested how globalizing discourses structured views of the world as opposed to local views while holding the subject matter constant.

Second, I employed quantitative methods (content and regression analyses) to analyze the discursive construct of the Wikipedia Worldscape. To perform these analyses, I coded the articles into categories by the four discursive indicators presented in Chapter 3 and the scale of the article (coded 1 or 0 indicating presence or absence of the category). For the four discourses, I first coded the article for the Core Country discourse if the relevance of the article's knowledge was associated with the core (U.K., Europe, U.S., Canada, Australia/N.Z., Japan) in the introduction of the Wikipedia global article (e.g., U.S. film). The introduction of the article contains the main idea of the article, stating the place that is most important for information. Second, I coded the article Use of English if the article contained one or more citations of resources in the English language. For this research, the citation sources of "References," "See also," "Further Reading," and "Notes" in all articles were analyzed in all the languages investigated for English language sources that were used to construct the knowledge. Third, I coded the article for Commodification if a monetary

value was associated with the knowledge in any part of the article. This could take the form of any currency (e.g., American dollars or Russian rubles). Fourth, I coded the article for Media Institution if the article referenced one or more core region media institutions in any part of the article, for example, the article concerned a Disney produced film or a BBC report was cited in the references. For the scale of the article, I coded it as global (1) if it was edited globally or local (0) if edited only in one country.

After coding the articles, I used content analysis to code the articles (Drisko & Maschi 2016), which quantifies and analyzes the meanings and relationships of words, concepts and themes (discourses) in texts. By systematically identifying special traits in the articles, researchers can infer intentions and international differences in knowledge production. I analyzed descriptive statistics (e.g., percentages) to discern discursive differences between the local articles and global articles.

After the content analysis, I performed multiple logistic regression analyses on the coded articles (Hosmer, Lemeshow, & Sturdivant 2013; LaMorte, 2016; Logistic Regression, n.d.). In logistic regression, the goal of the analysis is to determine how the independent variables affect one nominal dependent variable. This is accomplished by predicting the probability of the dependent variable by the independent variables, potentially suggesting which independent variable(s) has the major effect on the dependent variable. For my research, the scale of the article (global or local) was the dependent variable, and the four globalizing discourse variables were the independent variables. I hypothesized that the presence of the globalizing discourses in the article could predict the global scale of the article edited in each sample country (Peru, Russia, and the U.S.):

I also applied this analysis to determine which independent variable(s) may have more effect in predicting the global scale of the article contingent on the positionality of the country in the modern world-system. For example, certain discourses could better predict the global scale of articles edited in Peru (periphery) rather than in Russia (semi-periphery). The classification table produced with the regression analysis shows the predictive accuracy of the analysis. It reports how well each scale category (global or local) is predicted compared to the observed values and how well the entire regression worked. To corroborate the findings of the logistic regression analysis, I also performed a leave-one-out cross-validation (LOOCV) to evaluate the predictive performance of the logistic regression analyses (Gupta, 2020; Schmid, 2020). LOOCV generates an averaged accuracy rate to evaluate the regression analysis by removing each data point individually and predicting it based on the rest of the dataset.

In sum, the goal of this qualitative and quantitative analysis was to analyze how Wikipedia content is a mediated view of the world shaped by the socio-economic power stemming from the core region in the modern world-system. Global articles, or Wikipedia articles edited in the most countries, have views of the world constructed by globalizing discourses. The quantitative analysis examined how the engagement of globalizing discourses in the articles statistically predicted the global scale of the article (e.g., multiple logistic regression) and indicated discursive patterns to the view of the world. The qualitative analysis showed textual examples of how this discursive construct of the narratives differed local views from global ones. Research objective 1 methodology provided a socio-economic understanding of global ideas.

4.4. Summary

With this three-step methodological approach, I processed the data and analyzed them for the two research objectives. The general data mining prepared the data for analysis by geolocating the IP address edits to article titles worldwide for the research period (October – December 2016). After careful cleaning of the data and quality control, the final sample set consisted of approximately 1.5 million unique IP addresses editing the online encyclopedia. From this set of edits, I identified the article titles to be investigated.

5. Wikipedia Global Consciousness Index: Results

In this chapter, I present the results of the first research objective concerning the Wikipedia Global Consciousness Index. First, I discuss how global articles affirmed global consciousness by narrating global ideas that affected people and places worldwide and global social meaning. Second, I analyze the results for the WikiGCI, demonstrating how country-level patterns in the index's scores not only reflected regional dynamics in the modern world-system (Wallerstein, 2004) but also socio-historic particularities of different regions. Third, I report preliminary discursive results of the index's 100 global articles to establish a framework with which to discuss the more in-depth critical discourse analysis of question two regarding the Wikipedia Worldscape.

5. 1 Wikipedia Global Articles

Mapping of the IP addresses editing Wikipedia demonstrated worldwide activity (Figure 5.1). Of the 203 countries investigated, editing communities ranged from large communities containing greater than 1,000 unique IPs in 97 countries to small communities containing fewer than 100 unique IPs in 61 sub-Saharan African or small countries. Furthermore, the mapping of the unlocked global articles that comprised the WikiGCI revealed the global nature of this knowledge. Wikipedians in more than 150 countries on all continents edited the content (Figure 5.2). Global articles edited in the most countries extended from the title *Charlie Puth* edited in 38 countries to *Halloween* edited in 66 countries, or a third of the world (Table 5.1). Subjects that constituted more than two percent of all titles represented a wide variety of ideas: countries, soccer players, musicians, films, soccer teams, politicians, the Internet, companies, history, television programs, video games, soccer matches, astronomy and technology. Regardless of the topic, global consciousness manifested in ideas discussed worldwide. For example, articles on the topics of holidays, anime and terrorism conveyed an understanding of the world-as-a-whole and global social meaning during the research time period.

A prime example of the awareness of the global whole was the unlocked article that was edited in the most countries, the holiday *Halloween*. Upon reading the English, Russian and Spanish versions of the title, similar narratives appeared. The Spanish and Russian versions located the origin of the holiday in the U.K. while the English version mentioned Celtic culture. Awareness of the world-as-a-whole was expressed in that all versions clearly stated that this holiday had

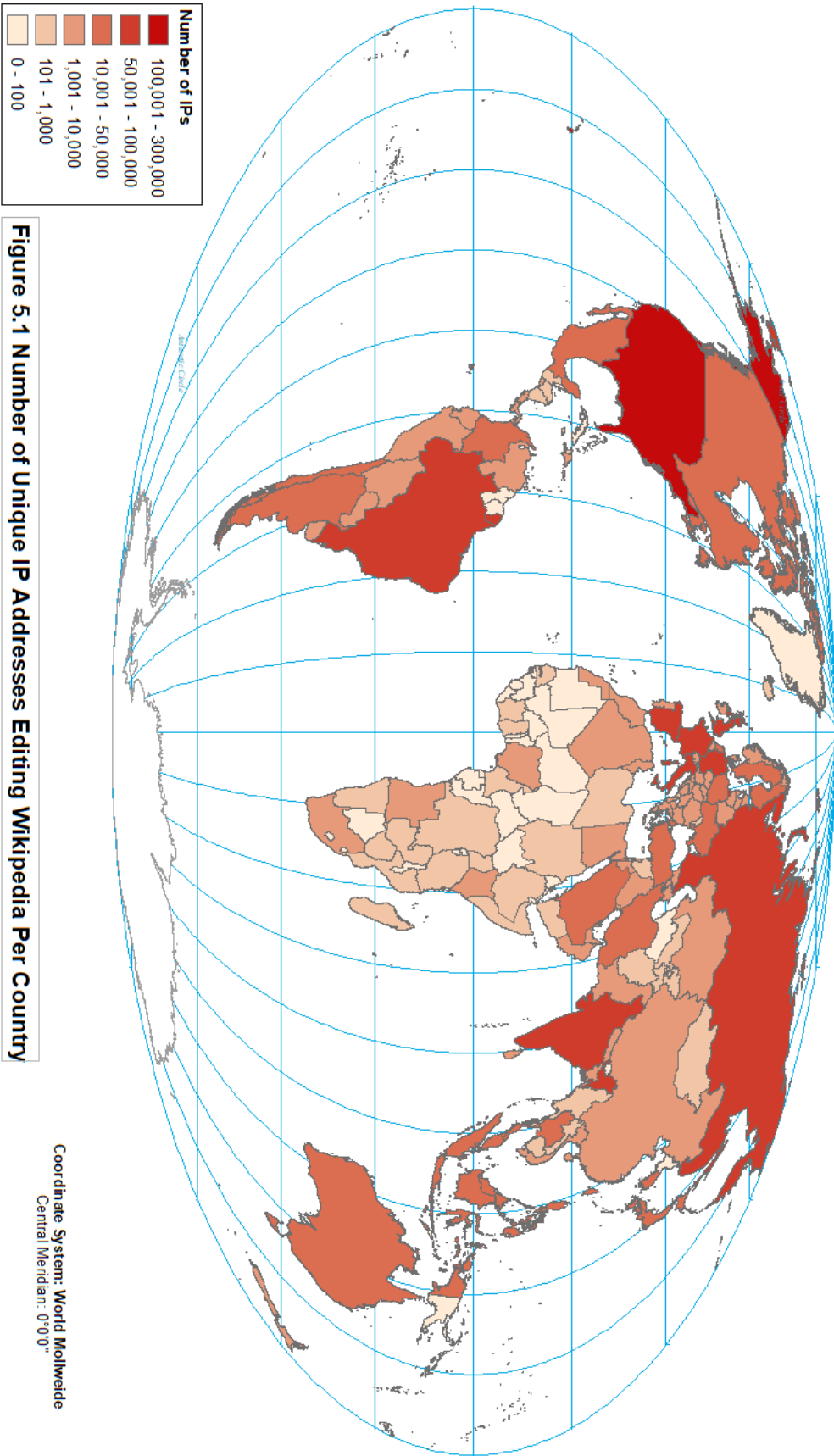


Figure 5.1 Number of Unique IP Addresses Editing Wikipedia Per Country

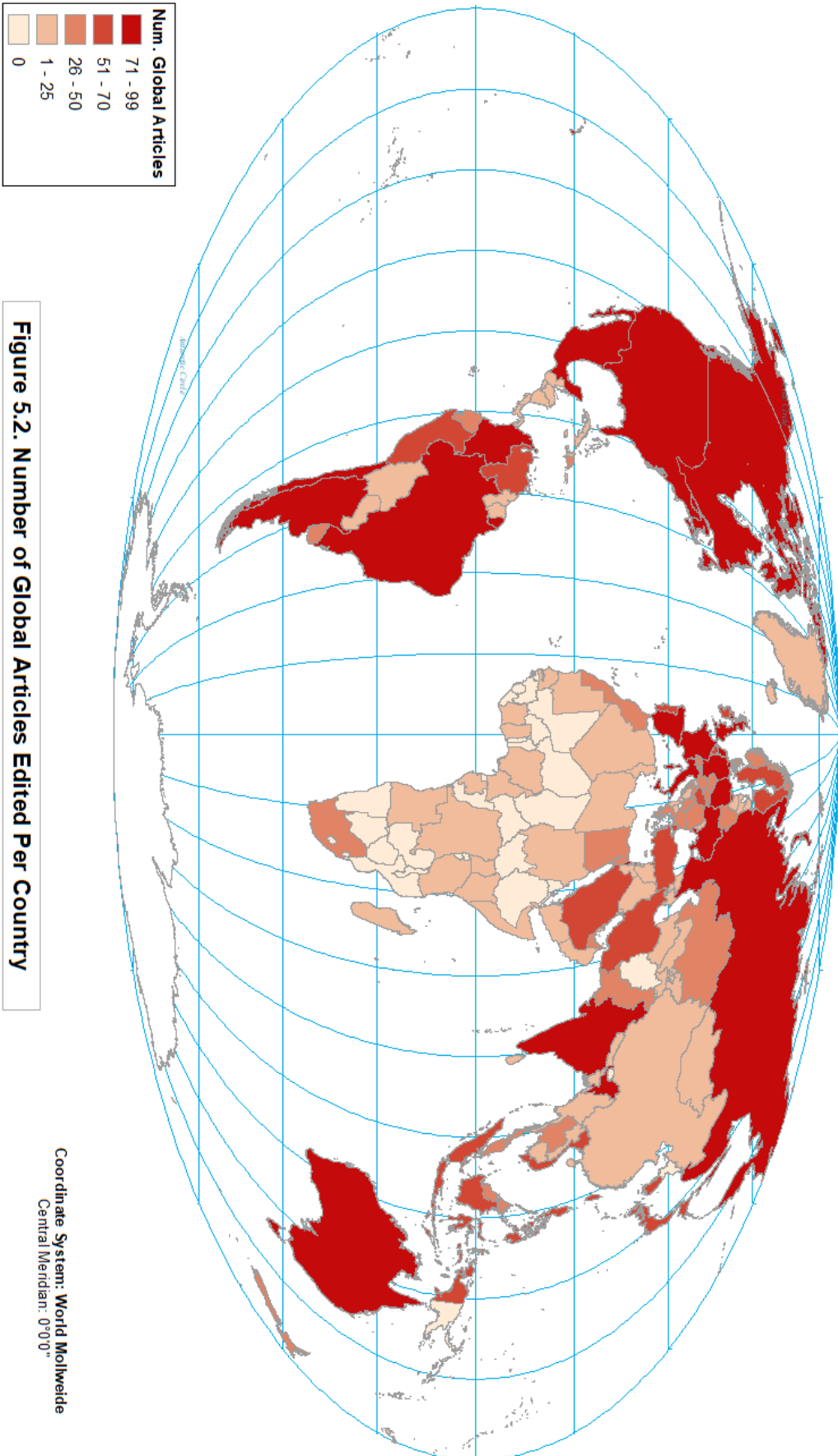


Figure 5.2. Number of Global Articles Edited Per Country

Table 5.1: Number of Countries Editing Unlocked Global Articles

Num. Countries	Titles	Category
66	Halloween	Holidays
65	United States presidential election, 2016	Elections
60	Associação Chapecoense de Futebol	Soccer Team
60	Miss World 2016	Beauty Competition
60	George Michael	Musicians
60	Fantastic Beasts and Where to Find Them (film)	Films
59	Rogue One	Films
59	2016-17 La Liga	Soccer Matches
57	V (entertainer)	Musicians
56	Nico Rosberg	Racing Drivers
55	Bill Goldberg	Wrestlers
54	Moana (2016 film)	Films
52	Leonard Cohen	Musicians
52	LaMia Flight 2933	Accident
51	Battlefield 1	Video Games
51	Black Friday (shopping)	Holidays
51	Zinedine Zidane	Soccer Players
51	Yuri on Ice	Television Programs
51	Doctor Strange (film)	Films
50	Andy Murray	Tennis Players
50	Five Nights at Freddy's: Sister Location	Video Games
49	The Undertaker	Wrestlers
49	Game of Thrones	Television Programs
48	Wi-Fi	Internet
48	The Weeknd	Musicians
48	Oscar (footballer, born 1991)	Soccer Players
48	Martin Garrix	Musicians
48	Aleppo	Cities
48	Gregorian calendar	Calendar
48	2016 Formula One season	Racing Competition
47	Survivor Series (2016)	Wrestling
47	2018 FIFA World Cup qualification (UEFA)	Soccer Matches
47	One Piece	Manga
46	FC Bayern Munich	Soccer Teams
46	António Guterres	Politicians
46	Miss Peregrine's Home for Peculiar Children (film)	Films
46	The Vampire Diaries	Television Programs
46	World Chess Championship 2016	Chess

45	The Chainsmokers	Musicians
45	Bonobo	Animals
45	Dragon Ball Super	Anime
45	Atlético Madrid	Soccer Teams
45	Harry Potter and the Cursed Child	Plays
44	Miraculous: Tales of Ladybug & Cat Noir	Television Programs
44	New Year's Eve	Holidays
44	Carrie Fisher	Actors
44	Antoine Griezmann	Soccer Players
43	2016 MTV Europe Music Awards	Music
43	Miss Peregrine's Home for Peculiar Children	Books
43	Alan Walker (music producer)	Music Producers
43	Andrei Karlov	Ambassadors
43	Nintendo Switch	Video Games
42	Marco Reus	Soccer Players
42	Supermoon	Astronomy
42	Pierre-Emerick Aubameyang	Soccer Players
42	United States presidential election	Elections
42	Titanic (1997 film)	Films
42	Transformers: The Last Knight	Films
42	2016 FIFA Club World Cup	Soccer Matches
42	Logan (film)	Films
42	La Liga	Soccer Teams
42	Gerard Piqué	Soccer Players
42	Sergio Ramos	Soccer Players
41	Mercedes-Benz	Companies
41	Mike Pence	Politicians
41	Manuel Neuer	Soccer Players
41	Karate	Martial Arts
41	Google Translate	Internet
41	Pop music	Music
41	FIFA 17	Video Games
41	FIFA Club World Cup	Soccer Matches
41	2018 FIFA World Cup qualification (CONMEBOL)	Soccer Matches
41	American Horror Story	Television Programs
41	Black Pink	Musicians
41	Austria	Countries
40	Borussia Dortmund	Soccer Teams
40	Burj Khalifa	Buildings
40	Gianluigi Donnarumma	Soccer Players
40	Hurricane Matthew	Hurricanes

40	Passengers (2016 film)	Films
39	Westworld (TV series)	Television Programs
39	Pirates of the Caribbean: Dead Men Tell No Tales	Films
39	Spider-Man: Homecoming	Films
39	Air pollution	Climate
39	Five Nights at Freddy's	Companies
39	Attack on Titan	Manga
39	2016 Berlin attack	Terrorism
39	2017 Formula One season	Racing Competition
39	Byun Baek-hyun	Musicians
39	Debbie Reynolds	Actors
39	Henrih Mkhitaryan	Soccer Players
38	James Ellsworth (wrestler)	Wrestlers
38	HTML	Internet
38	Gigi Hadid	Models
38	Starbucks	Companies
38	N'Golo Kanté	Soccer Players
38	Sausage Party	Films
38	Dubai	Cities
38	Samsung Galaxy Note 7	Technology
38	Charlie Puth	Musicians

Note: The list was constructed by analyzing IP edits performed from October to December 2016. Articles devoted to lists and dates were excluded due to the wide scope of the content.

expanded worldwide. The Russian version specified that “глобализации” (globalization) spread the idea while the Spanish version narrated how film and television created the internationalization of the holiday. Even though inhabitants of different countries might have different opinions and experiences of the holiday, they now know the holiday affects people and places worldwide.

The narratives of the Halloween articles can also be analyzed at the ideological level of global social meaning. The Russian article reported how stores were now selling costumes, per the custom of the imported American holiday. This provoked the ire of the Orthodox Church and government, which protested that it was “несовместимым с русской культурой” (“incompatible with Russian culture”). The Spanish article seemed almost to struggle with the international and local meaning of the holiday. Although it stated that the majority of Spanish and Latin American societies maintained that the American holiday had “invadido” (invaded) their countries, it proposed that it should also be considered a Spanish holiday because similar traditions were celebrated in Celtic cultures in Spain prior to U.S. independence. Global consciousness was expressed in the contestation over the ideological meaning of the global idea. The narratives of Halloween depicted a conflict that pitted traditional ideology based on customary and religious practices of the holiday against the encroaching materialistic practices of the American version.

Global articles on other topics such as anime expressed awareness of the global whole. The article *Yuri on Ice* (51 countries) discussed the newly released Japanese anime series depicting a male trainer from Russia instructing a male figure skater from Japan. Editors in the three languages expressed awareness of the wholeness of the world by situating the coupling of these different nationals within worldwide skating competitions. The development of their romantic relationship also reflected a global awareness of the growing contention concerning same-sex relationships. All versions debated the critical impact of this first gay relationship in a sports anime as well as

the accuracy of its depiction. Oppression of these relationships in the world was part of the story. The Spanish-language version specified how the series highlighted the controversy of these types of relationships in Japan and Russia: “También ha llamado la atención por representar a dos personajes originarios de países con poca aceptación de la homosexualidad” (“Also, it drew attention by representing two characters from countries with little acceptance of homosexuality”). This article demonstrated that same-sex relations have become an issue of global conversations. Wikipedians were aware that it was an idea not only in their countries, but also in others worldwide.

The same-sex relationship in *Yuri on Ice* displayed the debate in the world at the imaginary level of global social meaning. Considered religiously and scientifically impermissible, some societies are starting to permit sexual minorities to define romance themselves. This article exhibits the expanding critique of the global imaginary that marriage is exclusively between opposite sexes. Only within the past 20 years have some countries officially recognized this kind of union. Secular and religious ideologies are disputing the assumed worldwide heterosexual common sense of this relationship. The contestation reported in the article chronicled the changing global social meaning occurring at the time of the editing of the articles as the anime was broadcast and discussed.

Another topic, terrorism, also exhibited awareness of the wholeness of the world. All versions of the article *2016 Berlin attack (39 countries)* narrated how the Islamic State of Iraq and the Levant claimed responsibility for a Tunisian driving a truck into a crowd of Christmas shoppers in Berlin, Germany. The article listed the dozen countries in four continents from which people were killed or wounded in the terrorist attack. Editors clearly expressed the global impact of the event. World leaders expressed their condolences concerning the event. The editors recounted how some politicians in different countries condemned lax asylum policies and lack of border controls

among E.U. countries for the attacks. Russian editors quoted President Trump's depiction of event as a religious war, «„Исламское государство“ и исламистские террористы постоянно устраивают резню христиан в их общинах и местах отправления культа» (“‘The Islamic State’ and Islamic terrorists constantly massacre Christians in their communities and places of worship”). Editors in dozens of countries discussed how the violent collision of social values between Western secularism and Eastern Islamism in Berlin had global implications.

The terrorist attack in *2016 Berlin attack* can be analyzed at the being-in-the-world level of global social meaning. Editors worldwide narrated how regional cultural and religious belief systems were struggling for dominance and growing protests against open borders among countries. This reflects the changing spatiality and performativity of being-in-the-world. While globalization from the 1990s to 2010s encouraged open borders for freer movements of people and goods, a growing populist backlash in the core against this influx has recently called on tightening borders. Many people are now criticizing the modernistic view of globalization where open borders are normative. This article title edited expansively in the world during the research time period denoted accelerated changes in being-in-the-world.

Other global ideas such as leisure and entertainment in Wikipedia global articles can serve as empirical units to investigate the experiences of the global whole as well. Some of the most expansive ideas were articles internationally relevant to culture such as sports (e.g., Zinedine Zidane, the French soccer superstar, edited in 51 countries), films (e.g., the global premiere of the U.S. film *Rogue One*, 59 countries) and even a coffee brand, *Starbucks* (38 countries). This could indicate growing levels of disposable income and inclusion in world networks have made leisure more important on a world level. Global consciousness was indicated in locked articles as well. Even though these articles were locked in at least one language, articles such as *HIV/AIDS* (39

countries) and *Earth* (49 countries) were edited worldwide and expressed ideas proposed as global ideas by global consciousness scholars (James & Steger, 2016; Robertson, 1994).

Global articles exhibit the lived meanings and changes of the ideational construct of the global consciousness at the time of their editing. They provide the ideational empiricism with which to understand a consciousness of the global whole. Global ideas such as Halloween or a terrorist attack that affect many different societies worldwide cause awareness of the world-as-a-whole. These global ideas can also be analyzed at different levels of global social meaning. Global ideas that appear mundane such as an anime cartoon or holiday are analytically rich at different levels (ideologies, imaginaries, and beings-in-the-world). By examining different language versions of the same global idea that are actively edited in the most countries during a certain time period, one obtains a more thorough understanding of global consciousness and its changing composition. The units of analysis (the global ideas) in the WikiGCI contain narratives with which one can understand a more detailed and telling expression of world-as-a-whole than the units of analysis in the KOF Globalisation Index (e.g., the number of imported cars and embassies located abroad).

5.2 WikiGCI

The WikiGCI revealed regional differences in the editing of global articles. While core and semi-periphery countries displayed no disproportional editing of these articles, the periphery was divided into different regions that edited these articles at exceptionally high or low rates. These editing patterns in the WikiGCI scores suggested that different regions edited global articles depending on socio-economic conditions and historical contexts.

First, the locking of articles produces a caveat to the understanding and application of the WikiGCI. Although the WikiGCI fairly represents many Wikipedia cultural categories, political categories tend to be underrepresented because they were locked against IP editing worldwide. To gather the 100 titles for the index that were not locked in at least one language, I had to consult 284 titles. Cultural categories such as films, soccer, music, games and television programs were commonly open for IP edits worldwide. Other categories such as political subjects were continuously locked, most likely due to their contentious nature. Less than one-third of the titles relating to politicians (e.g., *Fidel Castro*), countries (e.g., *United States*) and history (e.g., *Ancient Greece*) were open in all languages (Table 5.2). Caution ought to be taken when politically analyzing the results. On the other hand, this does not negate any political understanding of the world from the articles. Some articles with explicitly political themes, such as *Aleppo* (the final evacuation of the Syrian city during the civil war, 48 countries) and *United States presidential election, 2016* (65 countries), were counted in the index.

Table 5.2: Title Locking by Subject

Subject	Number Open Titles	Number Closed Titles	Total Num. (% of Total)
Entertainment (musicians, films and television programs)	27	13	40 (14%)
Soccer (players, teams and matches)	21	17	38 (13.3 %)
Countries & Politicians	3	32	35 (12.3 %)
Internet, Technology and Software	4	16	20 (7.0 %)
Companies	3	5	8 (2.8 %)
Video Games	4	4	8 (2.8 %)
History	0	8	8 (2.8 %)

5.2.1 Regional Patterns

The WikiGCI revealed different patterns of editing global articles by region (Table 5.3 and Figure 5.3). For the majority of editing communities in most core (e.g., U.S., Germany, and France) and many semi-periphery (e.g., Russia, Saudi Arabia, and Brazil) countries, global ideas that have meaning for world wholeness and global social meaning seem to be ordinary compared to other world regions. These communities edited global articles proportionally to their sizes, registering moderate WikiGCI scores from .96 to 1.05. Thus, editing communities that are in more industrialized countries, have stronger institutions, as well as specialize in service and information industries do not edit these ideas in any disproportionate manner. These populations tend to be wealthier, more educated and with more access to technology. Global articles are arguably commonplace in countries with socio-economic conditions that offer more access to wealth and information.

The results concerning the periphery are equivocal, however. The majority of the editing communities in African countries (e.g., Zimbabwe, Chad and Liberia) and many Asian countries edited relatively fewer global articles compared to core and semi-periphery countries, indicating these global articles receive less attention in countries with lower levels on socio-economic indicators. Ideas representing global awareness are more exceptional among their editing communities. These countries are characterized by lower education rates, higher poverty rates, less stable institutions as well as more employment in agriculture and natural resources. In addition, many African countries that edited no global articles have little technology and access to the Internet. Less access to education, wealth and information appears to decrease the interaction with global ideas and global consciousness in Wikipedia.

Table 5.3. WikiGCI and Global Articles

WikiGCI	Country	Num. Global Articles
5.49	Samoa	1
2.30	Saint Vincent and the Grenadines	1
2.04	Greenland	1
1.89	Marshall Islands	1
1.81	Djibouti	2
1.77	Cuba	3
1.74	Mauritania	4
1.62	Liechtenstein	1
1.27	Andorra	2
1.20	Bolivia	23
1.18	Madagascar	4
1.16	Trinidad and Tobago	8
1.16	Panama	20
1.16	Honduras	17
1.14	El Salvador	21
1.13	Congo, Dem. Rep.	2
1.13	Guatemala	16
1.11	Uruguay	47
1.10	Bahamas	2
1.10	Paraguay	21
1.09	Bulgaria	47
1.08	Lebanon	21
1.08	Chile	86
1.08	Nicaragua	12
1.08	Costa Rica	25
1.08	Armenia	18
1.07	Luxembourg	9
1.07	Montenegro	5
1.06	Puerto Rico	21
1.06	Ireland	54
1.06	Malta	7
1.06	Ecuador	37
1.06	Colombia	84
1.05	Venezuela	60
1.05	Dominican Republic	35
1.05	Brunei Darussalam	3
1.05	Kyrgyzstan	8
1.04	Uzbekistan	6
1.04	Bosnia and Herzegovina	21

1.04	Palestinian Territory	12
1.04	Portugal	54
1.04	Denmark	49
1.04	Argentina	91
1.04	Spain	99
1.03	Finland	64
1.03	Ghana	6
1.03	Belarus	43
1.03	Belgium	59
1.03	Switzerland	50
1.03	Hungary	51
1.03	Macao	10
1.02	Senegal	4
1.02	Haiti	3
1.02	Israel	78
1.02	Croatia	35
1.02	Slovakia	32
1.02	Greece	46
1.02	Bermuda	1
1.02	Turkmenistan	1
1.02	Hong Kong	65
1.02	Netherlands	84
1.02	Mexico	93
1.02	Sweden	70
1.01	Tajikistan	2
1.01	Singapore	37
1.01	Indonesia	65
1.01	Vietnam	60
1.01	Brazil	96
1.01	Iceland	7
1.01	Kuwait	18
1.01	Peru	55
1.01	Ukraine	76
1.01	France	97
1.00	South Korea	69
1.00	Canada	89
1.00	Germany	97
1.00	Kazakhstan	35
1.00	Maldives	2
1.00	South Africa	29
1.00	United States	99

0.99	Poland	81
0.99	Saudi Arabia	60
0.99	Romania	43
0.99	Serbia	37
0.99	Cyprus	6
0.99	Mongolia	5
0.99	Mauritius	4
0.98	Turkey	67
0.98	Egypt	36
0.98	Italy	96
0.98	Jamaica	6
0.98	Australia	76
0.98	Czechia	49
0.97	Albania	13
0.97	United Kingdom	92
0.97	Russia	89
0.96	Austria	46
0.96	Gabon	1
0.96	Lithuania	21
0.96	Morocco	41
0.96	Estonia	18
0.95	Moldova	8
0.95	Nepal	14
0.95	Algeria	25
0.95	New Zealand	30
0.95	Norway	45
0.95	Iran	63
0.95	Georgia	12
0.95	India	78
0.95	Suriname	1
0.95	Cambodia	4
0.94	United Arab Emirates	34
0.94	Philippines	53
0.94	Iraq	15
0.94	Taiwan	65
0.94	Libya	4
0.94	Azerbaijan	19
0.93	Qatar	12
0.93	Malaysia	47
0.93	Monaco	1
0.92	Myanmar	6

0.92	Latvia	15
0.92	Japan	61
0.91	Sri Lanka	16
0.91	Tunisia	15
0.91	Bangladesh	17
0.90	Bahrain	5
0.90	Jordan	12
0.90	China	25
0.90	Guam	1
0.90	Syria	4
0.89	Guyana	1
0.88	Thailand	41
0.87	Kenya	6
0.86	Somalia	1
0.86	Pakistan	33
0.85	Slovenia	12
0.84	Sudan	2
0.82	Angola	12
0.82	Nigeria	10
0.77	Fiji	1
0.77	Oman	4
0.76	Laos	1
0.72	Macedonia	3
0.70	Cameroon	1
0.66	Yemen	1
0.65	Uganda	1
0.64	Cote D'Ivoire	1
0.63	Tanzania	1
0.00	Afghanistan	0
0.00	Antigua and Barbuda	0
0.00	Aruba	0
0.00	Barbados	0
0.00	Belize	0
0.00	Benin	0
0.00	Bhutan	0
0.00	Botswana	0
0.00	Burkina Faso	0
0.00	Burundi	0
0.00	Cape Verde	0
0.00	Cayman Islands	0
0.00	Central African Republic	0

0.00	Chad	0
0.00	Comoros	0
0.00	Congo, Rep.	0
0.00	Dominica	0
0.00	Equatorial Guinea	0
0.00	Eritrea	0
0.00	Ethiopia	0
0.00	Gambia	0
0.00	Grenada	0
0.00	Guinea	0
0.00	Guinea-Bissau	0
0.00	Kiribati	0
0.00	Lesotho	0
0.00	Liberia	0
0.00	Malawi	0
0.00	Mali	0
0.00	Micronesia	0
0.00	Mozambique	0
0.00	Namibia	0
0.00	Nauru	0
0.00	Niger	0
0.00	North Korea	0
0.00	Palau	0
0.00	Papua New Guinea	0
0.00	Rwanda	0
0.00	Saint Kitts and Nevis	0
0.00	Saint Lucia	0
0.00	San Marino	0
0.00	Sao Tome and Principe	0
0.00	Seychelles	0
0.00	Sierra Leone	0
0.00	Solomon Islands	0
0.00	South Sudan	0
0.00	ESwatini	0
0.00	Timor-Leste	0
0.00	Togo	0
0.00	Tonga	0
0.00	Tuvalu	0
0.00	Vanuatu	0
0.00	Zambia	0
0.00	Zimbabwe	0

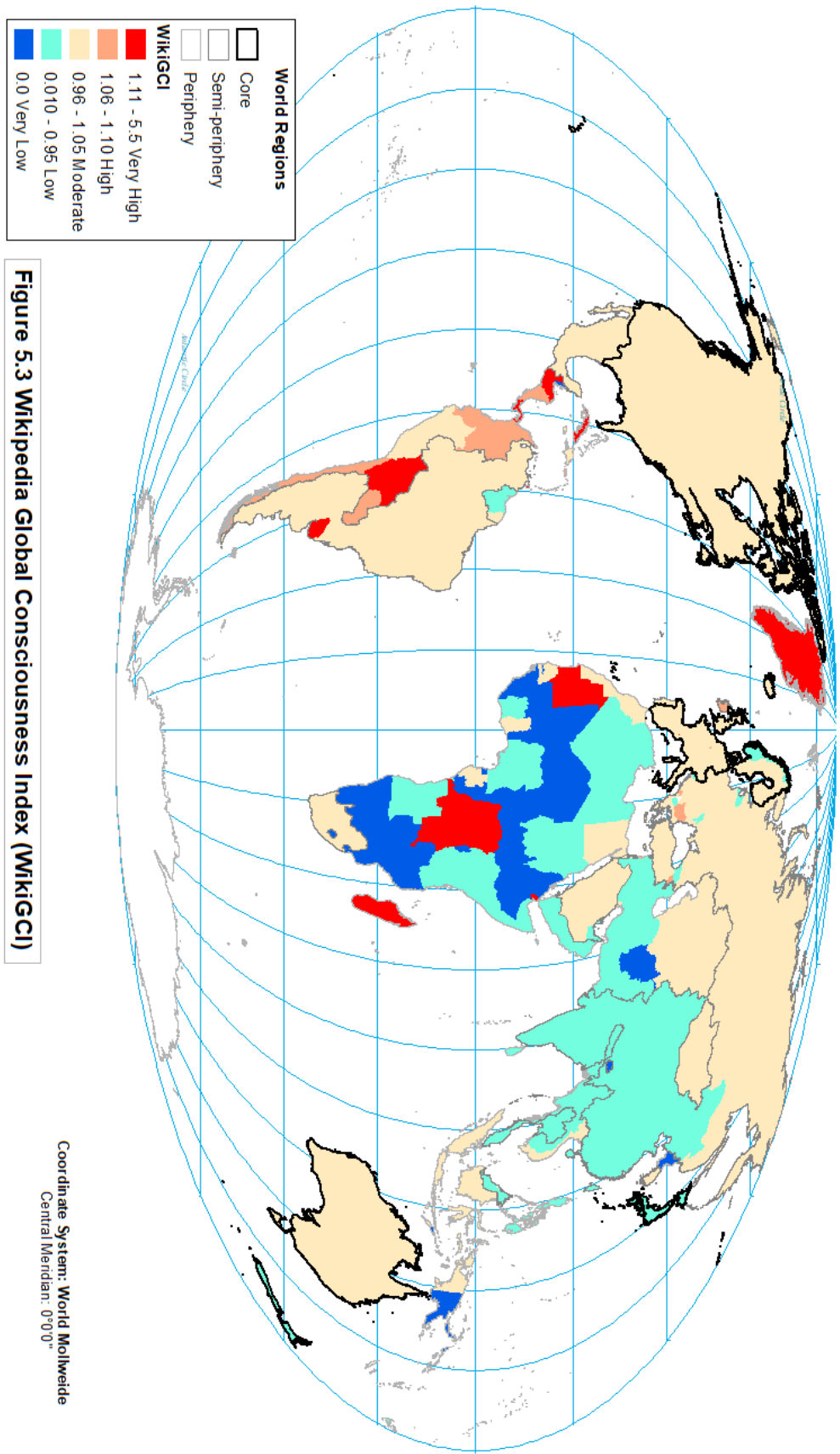


Figure 5.3 Wikipedia Global Consciousness Index (WikiGCI)

Most IP communities in periphery Latin American countries (e.g., Cuba, Bolivia, and Panama) edited global articles at higher rates in proportion to the size of the communities, scoring from 1.06 to 1.77. High scores in Latin America may be a reflection of Schulze and Fischer's (Schulze, 2018; Schulze & Fischer 2018) proposal that this region exhibits "in-betweenness." Due to the region's early history of European colonialization and connection with world trade along with the mixture of different races and cultures, the difference between Western and non-Western knowledge is often unclear. Beginning in the 16th century, institutions such as slavery, the Catholic Church and European colonial governments deeply erased, modified or replaced autochthonous knowledge (e.g., religion, culture, education and language). These new institutions brought with them their own ideas that intermingled and normalized within the Western world. On the other hand, this hybrid positionality is different from other areas in the periphery such as Africa and Asia. Countries in those areas experienced shorter periods of Western colonial rule and less cultural penetration. Europeans colonized most of Africa only in the late 19th century, while countries such as Japan were never completely controlled. Their lower WikiGCI could reflect a somewhat more robust continuation of local knowledge.

High WikiGCI scores in Latin America may also indicate greater U.S. influence in that region, especially compared to scores in Africa. For example, all twelve global articles that concerned films were U.S. productions. An average of seven times as many Latin American countries edited these titles as did African countries. However, the difference in editing between the two regions was not as wide concerning subject matter that was not associated with the U.S. For example, 10 global articles were about soccer players, all of whom were born in Latin America, Europe, and Africa. For this subject matter, an average of only twice as many Latin American countries edited these titles as did African countries. Even though there appears some variation in

scores perhaps due to small population sizes (e.g., a high WikiGCI score for Greenland), the WikiGCI scores differ mainly by region.

5.3 Discursivity of the Global Articles

Institutions, networks and events were clearly part of the narratives in most global articles. Factors such as core country association with the information, mass media, markets and networks appeared in most of the articles and influenced the information.

Core country association with the knowledge dominated the global articles' information, with 83 of the 100 articles associating the title with these countries. Editors in many countries reported on core country events such as the terrorist attack in Berlin and the presidential elections in the US. Even the American shopping holiday Black Friday had worldwide coverage (51 countries). Europe was prominent in most of the titles relating to soccer players, matches, and teams. Articles concerning manga and anime originated in Japan. Core country institutions such as soccer teams and publishers were distinct parts of the narratives.

Mass media, the media technologies reaching large audiences, influenced the writing of global articles. One-third of the titles were directly related to media items such as films, television programs, and music. Many of these media items were supported by multi-million dollar companies. For example, all three language versions of Yuri on Ice reported Asahi TV, the billion-dollar Japanese television chain, as the main distributor. The role of films and television in diffusing the concept of Halloween was important in the narrations of the holiday. Television sponsors for soccer teams and other sporting events were commonly stated in the narratives. Mass media outlets foster ideas to become part of the global consciousness.

Market networks and institutions, furthermore, assisted information to become global articles. Editors noted in all language versions the commercialization of Halloween, which supports a huge industry based on selling costumes. The narrations of many of the soccer players included contract payments and lists of sponsors. For example, editors reported that companies such as Christian Dior and Adidas paid millions of dollars to Zinedine Zidane to promote their products. The marketing of DVDs and CDs related to the anime program was part of the article for Yuri on Ice.

Regional patterns in the WikiGCI are partly explained by the amount of a country's interaction with global networks. There is a statistically significant low-moderate positive correlation between the WikiGCI and the connectivity index the KOF, $r(192) = .341, p < .001$. In other words, 11% (r squared) of the variance in the WikiGCI can be explained by the KOF. That is, the more a country engaged in networks (e.g. trade, overseas embassies and the Internet) with other countries on a world level, the more its IP community edited global articles. The variance in the WikiGCI is, at best, only weakly related to forms of connectivity among countries.

Therefore, many events, institutions and networks in the form of mass media, core country association (United States, Europe and Japan), markets and trade condition ideas to become global. They influence ideas to become global articles representing the Wikipedia Global Consciousness. Even though some global articles are more based on nature (e.g. Supermoon, a form of full moon), strong socio-economic influences shaped most of the articles. Wikipedians narrated the importance of countries, institutions and companies in constructing the global ideas. By identifying global articles, one obtains a deeper insight into the social construct of the ideational basis of the global consciousness and its transformation over time.

6. Wikipedia Worldscape: Results

In this chapter, I present the results of research objective 2: To discursively analyze regional patterns in Wikipedia's global and local articles by treating written knowledge in Wikipedia as a metaphorical landscape (Wikipedia Worldscape). First, I examine how the globalizing discourses (Core Country, Use of English, Commodification, and Media Institutions) represented the local place (Peru, Russia, and the U.S.) differently from the shared global whole. I use certain subject matters (films, soccer players, and holidays) to show how the globalizing discourses depict the world differently from the local place in the same subject matter. Second, I discuss the results of the content analysis for the four globalizing discourses to analyze different patterns across all four globalizing discourses in distinguished the understanding of the world-as-a-whole and the local places. Third, I report the results of the logistic regression analyses for each country. I examine how the uniqueness of place and positionality in the modern world-system of Peru, Russia, and the U.S. influenced Wikipedians in those countries to edit global articles with particular globalizing discourses.

6.1 Critical Discourse Analysis: The View of the World by Subject Matter

Along with editors in more than one-fourth of the countries in the world, editors in Peru, Russia, and the U.S. edited global articles concerning 18 different subject matters, ranging from the Internet to a beauty competition (Table 6.1 and 6.2). Wikipedia articles on these topics were the most edited worldwide and represent the Worldscape, the widest, shared view of the world. Not all the 30 global titles were edited in each sample country. From the list of the same 30 titles, 30 English language versions were edited in the U.S., 28 Russian language versions were edited in Russia, and 17 Spanish language versions were edited in Peru. Compared to local views of place in the local articles, Wikipedians heavily engaged globalizing discourses when narrating global articles with views of the world. This discursive difference appears when analyzing subject matters edited both globally and locally: films, soccer players, and holidays.

Table 6.1. Article Samples by Scale

Country	Total	Global Articles	Local Articles
U.S.	230	30	200
Russia	228	28	200
Peru	217	17	200

Table 6.2 Editing of Global Articles in U.S., Russia, and Peru.

Total Editing Countries	Titles	Category	Edited in Sample Countries		
			US	Russia	Peru
66	Halloween	Holidays	X	X	X
65	United States presidential election, 2016	Elections	X	X	
60	Associação Chapecoense de Futebol	Soccer Team	X	X	
60	Fantastic Beasts and Where to Find Them (film)	Films	X	X	X
60	Miss World 2016	Beauty Competition	X		
60	George Michael	Musicians	X	X	
59	2016-17 La Liga	Soccer Matches	X	X	X
59	Rogue One	Films	X	X	X
57	V (entertainer)	Musicians	X	X	X
56	Nico Rosberg	Racing Drivers	X	X	
55	Bill Goldberg	Wrestlers	X	X	X
54	Moana (2016 film)	Films	X	X	X
52	Leonard Cohen	Musicians	X	X	
52	LaMia Flight 2933	Accident	X	X	
51	Zinedine Zidane	Soccer Players	X	X	
51	Yuri on Ice	Television Programs	X	X	X
51	Doctor Strange (film)	Films	X	X	X
51	Black Friday (shopping)	Holidays	X	X	
51	Battlefield 1	Video Games	X	X	X
50	Andy Murray	Tennis Players	X	X	X
50	Five Nights at Freddy's: Sister Location	Video Games	X		X
49	The Undertaker	Wrestlers	X	X	
49	Game of Thrones	Television Programs	X	X	X
48	Aleppo	Cities	X	X	
48	Wi-Fi	Internet	X	X	X
48	The Weeknd	Musicians	X	X	
48	Oscar (footballer, born 1991)	Soccer Players	X	X	
48	2016 Formula One season	Racing Competition	X	X	X
48	Gregorian calendar	Calendar	X	X	X
48	Martin Garrix	Musicians	X	X	X

6.1.1 Films

The four global articles concerning films that were edited in Peru, Russia, and the U.S. heavily engaged all the globalizing discourses (Core Countries, Use of English, Commodification, and Media Institutions). The globalizing discursivity in the article *Rogue One* (edited in 59 countries) represents this subject matter. It described the American science fiction film, narrating its global premiere in December 2016. Editors linked the article to the core media companies (e.g., Walt Disney Studios). Each version heavily commodified the film by stating the box office receipts of \$706 million⁶. The versions edited in Russia and the U.S. had sections labeled “Marketing,” describing how the film was promoted. The U.S. article displayed intertextual commodification by relating how a trailer for the film was shown during the broadcast of the 2016 Summer Olympics, which advertised the film during a global event. Versions edited in the U.S. and Peru cited mass media twitter announcements regarding actors and the soundtrack. Most of the references in all versions were in English, the version edited in Peru containing the least amount of English language references at 81 percent of all citations. Thus, the world view depicted in the global articles about films is described as the product of major core media institutions, heavily monetized and with many resources in English.

As opposed to globalizing socio-economic powers that construct global films (e.g., *Rogue One*), films in the non-core local views were firmly associated with the less powerful local place of origin and language. For example, a film edited only in Peru, *¡Asu mare! 2*, concerned the second in a trilogy of Peruvian films centered on a protagonist living in Lima. Although the article boasted that these were the most watched nationally produced films in the country’s cinematic

⁶ All monetary sums are in 2016 American dollars.

history, it only enumerated the number of spectators, not financial sums. The film was critically successful but did not expansively diffuse internationally. Most references cited local Peruvian media outlets (e.g., *El Comercio*, a locally owned newspaper). Approximately 90 percent of the references were in Spanish. Edited only in Russia, the article *Околофутбола* (Kicking Off) concerned the eponymous film, which recounted a group of soccer fans who frequently engaged in brawls with fans of other teams. Wikipedians reported a budget of \$1.5 million, which paled in comparison to that of *Rogue One*. All the resources used to construct the article's narrative were in Russian, mostly from film and sports websites in Russia. Outside of the core, small local media institutions and local language resources construct local views depicted in the film articles.

6.1.2 Soccer Players

Globalizing discourses constructed the two global articles concerning soccer players. Soccer players within the view of the world are often heavily monetized, located in the core, and reported by core media outlets. For example, versions edited in Russia and the U.S. engaged similar interdiscursivity in noting powerful institutions in the article concerning the French soccer player, *Zinedine Zidane* (edited in 51 countries). Both versions commodified the knowledge by stating his “world record” contract of €75 million (\$91 million in 2016) with Real Madrid in 2001 and contained links to Wikipedia articles regarding his sponsors, companies such as Adidas, Audi, and France Telecom. Quotes praising his career from the media were woven into narratives, for example, the BBC's online article “Bangladesh hails 'messiah' Zidane,” which recounted how the soccer star visited adoring fans in a village in Bangladesh. Both versions referenced the BBC (media outlet), Real Madrid (soccer team), and Adidas (sportswear manufacturer), all powerful multi-billion dollar core institutions.

Local articles concerning soccer players in non-core countries had little globalizing discursivity composing the local view. The Peruvian article *Andy Pando* concerned a soccer player from that country. The article chronicled his performance, and the teams for which he played were mostly Peruvian. Even though the article mentioned four contracts, the Wikipedians did not report any monetary sums. Large mass media mentions were absent, and all the references were in Spanish. The Russian soccer player, *Мусалов, Магомед Ахмедович* (Musalov, Magomed Akhmedovich), played only for Russian and Azerbaijani teams. The article listed his career but no contracts or sponsorship. All references were specialized soccer resources mostly in Russian. No powerful market or media institutions were associated with the knowledge. Though soccer players are a subject matter for the world and local places, globalizing interdiscursivity conditions the objects of knowledge to be edited globally (e.g., Zidane) or not. The local views in articles about local soccer players lack financial support and powerful media coverage.

6.1.3. Holidays

The subject matter holidays indicated a strong globalizing discursivity in the global articles compared to local articles. For example, *Halloween* (edited in 66 countries) engaged in all four globalizing discourses. Depicted as a holiday with increasing world significance due to the U.S., article versions edited in Peru, Russia, and the U.S. mentioned how U.S. cinema and consumerism diffused the U.S. holiday worldwide. Costumes were now being sold in Russia, as is the U.S. tradition. The Spanish Wikipedia article *Halloween* edited in Peru accredited Hollywood films for the staying power of the ancient holiday, “La imagen de niños norteamericanos correteando por las oscuras calles disfrazados de duendes, fantasmas, y demonios, pidiendo dulces y golosinas ... ha quedado grabada en la mente de muchas personas” (“The image of U.S. children scampering

through the dark streets disguised as goblins, ghosts, and demons ... has been imprinted on the minds of many people.”). Core media institutions played an important role in the construction of Halloween’s worldwide representation. All three versions referenced a minimum of approximately half of their citations in English. For example, the BBC’s online description of the holiday in English was cited in the three versions. In the view of the world, holidays tend to be associated with the core, heavily mediated by powerful media institutions and diffused in the English language and markets.

Local place holidays did not contain comparable globalizing discursivity as *Halloween*. Two articles edited only in Peru discussed local holidays and festivals. For example, *Día de la Canción Criolla* (Day of the Creole Song) is a Peruvian national festival dedicated to Creole music celebrated on October 31, the same day as Halloween. It was established by the government as political recognition of the growing indigenous movement. The article located the festival only in Peru. No commercialization was mentioned. Only local musicians were listed as “difusores” (diffusers) of the holiday. The resources were in Spanish authored by Peruvian institutions (e.g., an academic article published by the Pontifical Catholic University of Peru). Thus, the holidays in the local view are associated with the socio-economic power of the local place, language, and media.

6.2 Content Analysis

Content analysis indicated that editors engaged with discourses based on core socio-economic power more in editing global articles than local ones. Editors in the non-core countries, Peru and Russia, engaged all four globalizing discourses more extensively in global articles than in local articles, while discursive behavior in local and global articles edited in the U.S. differed less (see Figures 6.1 and 6.2).

Figure 6.1 Discursive Indicators in Global Articles

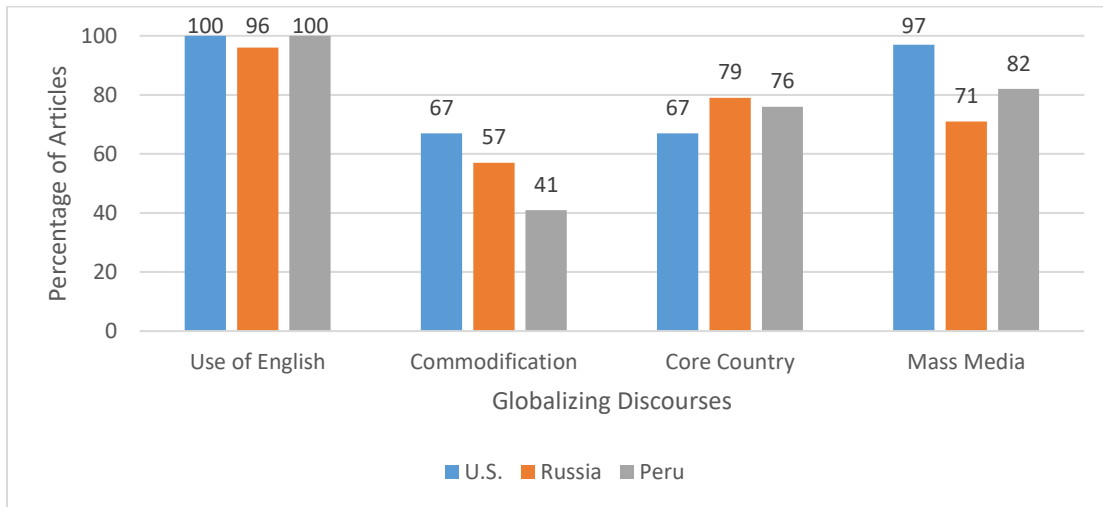
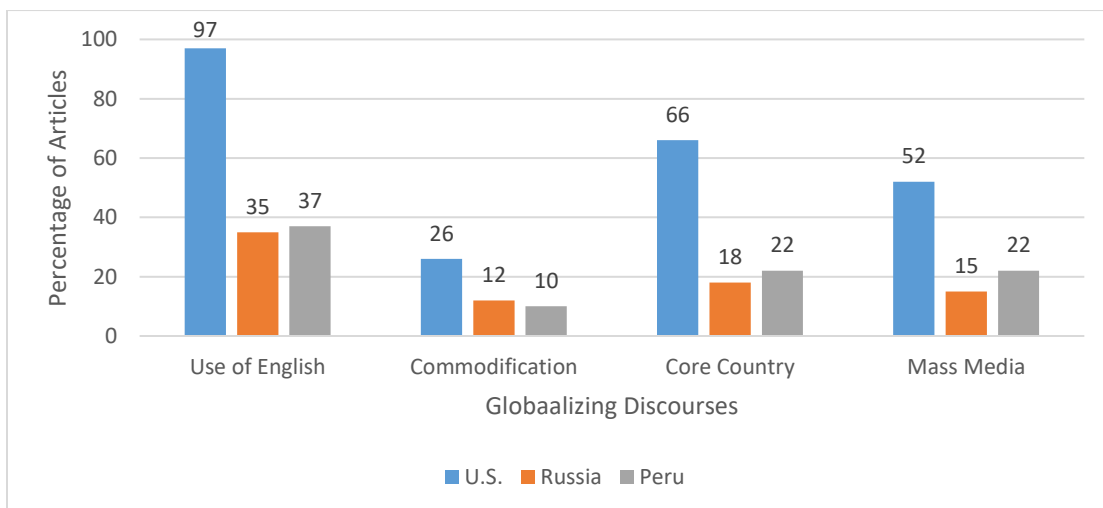


Figure 6.2 Discursive Indicators in Local Articles



Note: There is a potential two-three percent margin of error in the Use of English due to broken links to the sources cited in the references.

The large percentage of global articles employing discourses suggests that the view of the world edited in three different regions in the world-system is heavily constructed with globalizing discourses based on core socio-economic power. This global/local difference is discernable for each discourse. First, nearly all global articles referenced English language resources, compared to approximately a third of the local articles edited in Peru and Russia. English forms the linguistic foundation for resources constructing global knowledge and the view of the world (e.g., BBC reports and soccer databases). Second, commodification was the least used discourse globally, ranging from a maximum of 67 percent of articles edited in the U.S. to a minimum of 41 percent edited in Peru. Nevertheless, all country samples associated the knowledge with financial sums (e.g. contracts and box office receipts) in more than twice as many global articles as local articles. Commodification constructed knowledge in international markets. Third, all country samples associated the relevance of the global knowledge with core countries (e.g., Spanish soccer team and U.S. film) in more than two-thirds of the global articles. The view of the world in global articles is mostly constructed with knowledge associated with the core. Editors in Peru and Russia associated the majority of the local articles with the local place. Because of their lack of socio-economic power, non-core countries were not generally part of the views of the world. Finally, versions edited in the three countries referenced core media institutions in greater than 70 percent of the global articles (e.g. a Disney production and BBC report). However, editors in the non-core countries referenced mostly local media to narrate the local articles. Core media institutions dominate in diffusing knowledge globally. Because of their focus on knowledge stemming from the core, views of the world mostly represent the core.

The substantially greater engagement of globalizing discourses by Wikipedians in global articles demonstrates how globalizing socio-economic powers (core countries, media firms, and

English language resources) produce views of the world. Because socio-economic power in the core produces globalizing discourses, there is an intersectionality between views of the world and the local view in the U.S. Non-core editors, however, construct the view of the world mostly based on core regional power.

6.3 Logistic Regression: Globalizing Discursive Predictive Power

Logistic regression was employed to analyze the alternative hypothesis that the presence of globalizing discourse(s) in an article predicted a global scale of the article, demonstrating how discourses originating in the socio-economic power of the core shapes world representation. The results indicated that although the presence of the four independent variables (globalizing discourses) in the article increased the probability that the article was edited globally (dependent variable indicating the scale of editing the article: global or local), there was still a uniqueness of place when editors engaged the discourses. Because of its status as a core country, U.S. editors edited both local and global articles with such similar discursivity that logistical regression could not predict the scale of the articles. Non-core editors, however, engaged in different discourses at different strengths that were appropriate for their uniqueness of place when constructing their view of the world.

6.3.1 Core: *United States*

The logistic regression identified all articles edited in the U.S. as local, suggesting that the socio-economic power constructing the four globalizing discourses originate locally in the core (Table 6.3). Even though the regression model was statistically significant ($X^2(4) = 39.83, p < .001$) and

the LOOCV accuracy was 86.95% (s 33.67%), the regression model could not predict global articles (See Classification Table). The analysis predicted that all the articles were local. The four globalizing discourses were used similarly in constructing the narratives in both the local and global articles. This points to the origin of the globalizing discourses in the local socio-economic power of the core. For example, many international media institutions are core region companies, and many international organizations operate in English, the local U.S. language. In addition, many global articles are dedicated to local events and places in the core (e.g., the U.S. election), which virtually transforms that region into the majority of the representation of the world. Because the core strongly influences commodification on a global level in terms of tastes and consumption (e.g., U.S. film), this discourse can not differentiate global from local ideas in the core. The results in the U.S. suggest the local socio-economic power in the core construct the globalizing discourses that are engaged by Wikipedians in Peru and Russia in editing global articles.

Table 6.3 Logistic Regression of U.S. Articles.

Variable	B	Odds Ratio (OR)
Use of English	18.500	108257483
Commodification	1.464*	4.324
Media Institutions	2.980*	19.697
Core Countries	-.387	.679
Nagelkerte	.295	
X2	39.83, df = 4, p < .001	

Note: * signifies p < .05

Classification Table

Observed		Predicted		Percentage Correct
		Scale Local	Scale Global	
Scale	Local	200	0	100.0
	Global	30	0	.0
Overall Percentage				87.0

The cut value is .500

6.3.2 Semi-periphery: Russia

Wikipedians in Russia edited global articles containing globalizing discourses that corresponded to Russia's unique socio-historic condition. The regression model (Table 6.4) was statistically significant ($X^2(4) = 79.05, p < .001$) and the LOOCV accuracy was 92.10 percent ($s = 26.96$ percent). The regression model could predict nearly all the local articles and two-thirds of the global articles (See Classification Table) based on three statistically significant discourses: Use of English (OR = 23.53), Media Institutions (OR = 5.89) and Commodification (OR = 3.54). The use of English language resources was clearly the strongest discourse. The odds of the article being global increased by a factor of 23 if editors in Russia edited articles that employed English language references, holding the other discourses constant. Employment of media (factor of five) and commodification discourses (factor of three) also noticeably increased the chances of the knowledge being global.

Table 6.4 Logistic regression of Russian Articles

Variable	B	Odds Ratio (OR)
Use of English	3.158*	23.534
Commodification	1.267*	3.548
Media Institutions	1.775*	5.899
Core Countries	.842	2.321
Nagelkerte	.558	
X2	79.05, df = 4, p < .001	

Note: * signifies $p < .05$

Classification Table

Observed	Scale	Predicted		Percentage Correct
		Local	global	
Scale	Local	193	7	96.5
	Global	10	18	64.3
Overall Percentage				92.5

a. The cut value is .500

Russia's uniqueness of place as a semi-periphery country may influence how editors there engaged with globalizing discourses constructed by core socio-economic powers. The strong odds ratio for English language references in Russia is possibly due to its late entrance into global networks after the Cold War. There has not been a long tradition of communicative English education in the country. Lazaretnaya (2013) reported that since the 1990s, the English language has transformed from an instrument for ideological education that taught students to read texts narrating Soviet superiority over the West to an indispensable communicative tool to interact with the world. Although the All-Russian Census (2010) indicated that the percentage of Russians who spoke English remained low, for example, 11% in 2009, many Russians have eagerly been learning English for international business, tourism, and Internet communication. The high odds ratio for Use of English can reflect the relatively recent drive of many Russians to interact internationally in the global lingua franca.

Furthermore, the statistically significant results for commodification and media institutions could be an indication of the Russian uniqueness of place. First, commodification may have been statistically significant, because Russians mistrust their local currency, the ruble. Global articles edited in Russia associated the ideas with large sums of mostly core region currencies (e.g., multi-million dollar budget for *Rogue One*). Gilman (2021) reported how Russians traditionally mistrust their local currency because the government has conducted several traumatic monetary reforms in the past decades (e.g., forced confiscation of certain denominations). Russians also continue to use hard currency for large purchases (e.g., real estate) because the ruble is a weak currency. Russian Wikipedians, therefore, may be inclined to use hard currency to describe the expensive global ideas, which are more commonly commodified than local ideas. In addition, the statistically significant Media Institutions discourse may be the result of the commercialization of Post-Soviet

Russian media (Vartanova, 2012). Even though the government still controls the political content in television programs and newspapers produced in Russia, it hesitates to censor content created online. Russian media, furthermore, parallels the West in the commercialization of entertainment, allowing market tastes to guide content. This could influence how Russian Wikipedians actively engaged in Western media (e.g. U.S. television programs and Youtube).

The Core Countries discourse was not significant perhaps also due to Russia's uniqueness of place. As a semi-periphery country, it has qualities of both the periphery and core. For example, while 60 percent of its GDP depends on natural resources (Russia's Natural Resources Valued at 60% of GDP, 2019), Russia exerts military influence over bordering former Soviet republics. Unlike other semi-periphery countries (e.g., Brazil and India), Russia was never colonized by the core. The core did not violently replace Russian educational, religious, and governmental institutions with colonialism. As the Soviet Union, Russia was a superpower in its own right vis-à-vis the West. Russia lacks long, historically imposed colonial and subservient relationships to the core, which would establish that region as the standard. Russian Wikipedians might not depend heavily on constructing a representation of the world with direct references to core countries and rely on other globalizing discourses to understand the world.

Analysis of the incorrectly predicted articles (both global as local and local as global) demonstrates how globalizing discourses are employed as well. Like with global articles, editors in Russia engaged the three statistically significant globalizing discourses in the seven local articles incorrectly predicted as global. However, the knowledge in these articles had diffused to Russia before this research period (Oct. – Dec. 2016). For example, the locally edited article *Флирт со зверем* (“Someone like you”) concerned the U.S. film produced by 20th Century Fox with a budget of \$31 million, which premiered in Russia in 2001. Like *Rogue One* which premiered in Russia

during the research period, the regression analysis identified the article concerning the older film as global by the discourses regardless of when the knowledge was diffused. The other type of incorrect prediction, global articles as local, often concerned subject matter (e.g., soccer). Two incorrectly predicted articles were related to the crash of MiaFlight 2933, which killed most of the Brazilian soccer team Associação Chapecoense. Because soccer is immensely popular in Russia, international news concerning this sport can rely more on local socio-economic powers to create the narrative, not globalizing interdiscursivity.

6.3.3 Periphery: Peru

Editors in Peru, a non-core country, constructed the view of the world by engaging discourses produced by globalizing socio-economic powers of the core that more corresponded to Peru's uniqueness of place as a periphery country. The logistic regression successfully distinguished the global and local articles in the Peru sample based on globalizing discourses (Table 6.5). The model was strong ($X^2(4) = 62.63$, $p < .001$) and the LOOCV accuracy was 94.47 percent (*s* 22.85 percent). The model could predict nearly all local articles and six-tenths of the global articles (See Classification Table). For Peru, the two statistically significant independent variables were Media Institutions (OR = 12.13) and Core Countries (OR = 5.32). Media was the strongest discourse based on its odds ratio. The odds of the article being global were 12 times greater when editors in Peru edited articles that mentioned core media outlets, holding the other discourses constant. Association of the knowledge with the core also increased the chances of the knowledge being global by a factor of five.

Table 6.5 Logistic regression of Peruvian Articles.

Variable	B	Odds Ratio (OR)
Use of English	19.072	191724175
Commodification	1.516	4.553
Media Institutions	2.496*	12.131
Core Countries	1.671*	5.320
Nagelkerte	.593	
X2	62.63, df = 4, p < .001	

Note: * signifies $p < .05$

Classification Table

Observed		Predicted		Percentage Correct
		Local	Global	
Scale	Local	193	7	96.5
	Global	7	10	58.8
Overall Percentage				93.5

a. The cut value is .500

The socio-historic uniqueness of place could influence how editors in the periphery country Peru engaged globalizing discourses originating in the core socio-economic powers (Frappier 2007; Pulgar-Vidal, Burr, Davies, Moore and Kus 2019; Skidmore & Smith 2005). Core media institutions are important for the representation of the world in Peru. U.S. media companies have been active players in Latin American television programming and advertising since the 1960s. Large percentages of commercialization and foreign content have always been a consistent issue in the Peruvian media industry (Fox & Fox, 1997). Frappier (2007) observed how U.S. companies have increasingly utilized media institutions to sell their products in Latin American markets. The large presence of commercial American television programs and films among the global articles in Wikipedia edited in Peru could suggest U.S. commercial influence. Furthermore, the statistically significant result for Core Countries could indicate Peru's unique positionality to Spain and the U.S. Spain's 300-year rule left a profound colonial framework to Peruvian society. Peru shares

strong cultural, linguistic, educational, and religious bonds with Spain and Europe established values and standards that continue today. Spaniards installed the Spanish language in the country and imposed Catholicism on the culture. The U.S., U.K., and other core countries also have had substantial economic influence in the country. Dependent on exports, Peru has been reliant on core investment in mining, petroleum, and agriculture for the past two centuries (Skidmore & Smith 2005). Because of these ties, Peruvian representations of the world, both materially and ideationally, could be associated with the core.

Commodification was possibly not statistically significant because Peru's currency (the sol) maintained a steady exchange rate compared to other currencies. Andina (2012) reported that a sense of security in the sol and lower inflation decreased uncertainty about the economic future and reduced dollarization, or the use of the U.S. dollar as a medium of exchange in addition to the national currency. This currency stability perhaps lowered the need to define ideas with monetary values. Core Country and Media Institution's discourses also appeared sufficient to identify global ideas regardless of the use of resources in the English language. In this non-core country, editors perhaps construct the representation of the world by engaging discourses produced by globalizing socio-economic powers of the core based on Peru's socio-economic experience.

Incorrectly predicted articles also provide discursive insight. Core media and association with core countries were discursively parts of the seven local articles incorrectly predicted as global, but the knowledge contained in the articles had previously diffused to Peru. For example, the locally edited article *iGoodbye* was a cartoon produced by the U.S. network Nickelodeon that broadcast in Latin America in 2013. Furthermore, the regression model incorrectly predicted seven global articles as local often by subject matter (e.g., video games). Editors did not associate the

incorrectly predicted articles *Five Nights at Freddy's: Sister Location* and *Battlefield 1* with any country.

6.4 Discussion: Wikipedia Worldscape

By analyzing global articles edited in the most countries as discursive representations of the world in a mediated *scape*, I examined how core region socio-economic powers shaped the four globalizing discourses that constructed the views of the world. Each discourse shaped a role in differentiating the world and local views contained in global and local articles.

The heavy use of English language resources in constructing global articles indicated the legacy and strength of English-speaking countries such as the U.S. and the U.K. Because of colonial, economic, and military dominance, the language became the global lingua-franca. It was prominently used to construct the view of the world in Wikipedia subjects such as films and holidays. In fact, it was such a powerful discourse that its odd ratio was large in all three countries. For example, Peru's Use of English was OR 191724175, but not statistically significant. Other discourses (e.g., Core Countries and Media Institutions) were sufficient to construct the narratives of the global articles for the particular titles that were edited in Peru (e.g. films and television programs) and distinguish them from local titles. Use of English, on the other hand, was statistically significant for the Russian sample. Russian Wikipedians edited global articles that extensively employed resources in this language. The socio-economic power structuring the use of other languages (e.g., Russian) has not been sufficient to establish global communicative networks (e.g., institutional languages and news outlets) to produce the views of the world.

The view of the world in Wikipedia articles edited in the most countries was decidedly constructed by associating the relevance of the knowledge with the core region. More than two-thirds of the global articles concerned subjects that were relevant because of Western Europe, the U.S. and Japan. For example, Wikipedians editing articles worldwide about Zinedine Zidane or *Rogue One* situated the knowledge in the core. Association with the core was a statistically significant factor in differentiating global and local articles for editors in the former colony in the periphery, Peru. Non-core places tended not to have the socio-economic power (e.g., institutions and capital) to appear in the view of the world.

Commodification framed knowledge globally and created a representation of the world. Large box office receipts of U.S. films and expensive contracts for European soccer stars were essential components for the representation of the world. This suggests that expensive core-driven consumption habits help frame the representation of the world. Editors in each country also engaged in this discourse according to the uniqueness of place within the world-system. Russian editors monetize global articles with hard currency because they mistrust their unstable currency, whereas Peruvians use other discourses to differentiate global articles from local articles perhaps because of the feeling of security in their currency. While currency stability can be a partial explanation for the country-level differences, this discourse requires further study in more than three countries for greater insight.

Compared to the other three discourses, the Media Institutions discourse was employed in global articles edited in both non-core countries. Media institutions played a vital role in narrating the view of the world in Wikipedia. The variable was statistically significant in predicting global articles in both Russia and Peru. These data suggest that powerful core country media institutions played a central role in shaping knowledge and constructing a view of the world. Twitter

announcements, BBC reports, and New York Times coverage conditioned objects such as a film or soccer player to be global knowledge.

My findings suggest a core/non-core understanding of the Wikipedia Worldscape. While the samples only represent one country from each region, they indicate that the uniqueness of place influences editors in non-core countries to represent the view of the world within certain socio-economic powers of the core in the form of media, language, and institutions. Utilizing both the socio-historic particularities and contemporary positionality in the modern world-system of Peru and Russia can indicate why Wikipedians in those countries edited global articles with certain globalizing discourses.

Discursive association with the core in Wikipedia probably includes remnants of a colonial past where the editors are located. For example, the core discourse was statistically significant in Peru, where colonialism largely established many of the country's standards with core region values (e.g., religion, government, and education). Semi-periphery countries, however, have also been colonized and maintain similar social and cultural bonds with the core. Arenas (2005) discussed how Brazil, for example, continues to share discursive similarities in its national identities with Portugal because of shared religious, linguistic, and governmental experiences and histories. Levine (1996) described how Brazil's position in the present world-system combines with its colonial history to explain many of its contemporary economic conditions (e.g., access to credit and entitlement to land). India also maintains a colonial heritage that mixes with its semi-periphery positionality. Gilmer (2019) chronicled how British colonialization left material and ideational structures to modern India in the form of governmental buildings, the English language, and the national sport (cricket). Colonial heritage ought to be considered in addition to positionality in the world-system to understand discursive core association.

Also, the conventional understanding of positionality in the world-system may not be adequate to interpret the commodification discourse. Even though Peru is the periphery country (i.e., more dependence on the core for capital), the commodification discourse was statistically significant only in the semi-periphery country Russia (i.e., less dependence on the core for capital). This result could indicate the unique socio-economic conditions of Peru and Russia. Russians traditionally mistrust the ruble and monetize large sums with dollars and euros, so expensive global ideas were distinguishable by commodification. On the other hand, even though Peru is more dependent on the core for capital, the currency is stable. Peruvian Wikipedians, therefore, might have had less need to monetize expensive global ideas, many of which represented core consumption. In Wikipedia, core socio-economic powers create discourses with which non-core editors engage to construct the view of the world based on the uniqueness of place of their particular countries along with positionality in the world-system.

The results of Wikipedia Worldscape also have implications for the Wikipedia Global Consciousness Index. The units of analysis for the index are the global ideas contained in the global articles analyzed for the view or understanding of the world. As was demonstrated by the Wikipedia Worldscape, global ideas are heavily shaped by the socio-economic power of the core. While the uniqueness of place certainly influenced the engagement of the particular globalizing discourses (e.g., the Core Country discourse's statistically significant use in the former colony Peru but not in Russia), the core region's power strongly structured the understanding of the world. Editing articles that contained globalizing discourses predicted the global scale of approximately two-thirds of the articles edited in Peru and Russia. On the other hand, because the socio-economic power that created the globalizing discourses was local in the core, these discourses constructed both local and global articles indistinguishably in the U.S. Socio-economic power originating in

the core framed how Wikipedia editors in the sample countries in three different world-system regions are aware of the wholeness of the world and attribute global meaning to it. The socio-economic power of the core shaped the majority of the global ideas that serve as the units of analysis for the WikiGCI.

7. Conclusion

I contribute to the study of globalization, Geography, and Wikipedia in a number of ways. First, the WikiGCI provides a new index with which to measure and understand meaning and awareness of the world-as-a-whole. The new units of analysis for the WikiGCI, or the global ideas contained in the global articles, allow a deeper analysis of global consciousness and its evolution. By discursively analyzing the view of the world in Wikipedia content (i.e., the Wikipedia Worldscape), I further our understanding of the influential role of the core region in the modern world-system in constructing globalizing discourses which are used to structure global consciousness. The discursive analysis of the core's socio-economic role is further nuanced because editors outside of the core engage with globalizing discourses in ways related to the socio-historic conditions of their countries in depicting the world.

Second, I contribute to the study of Geography by providing an applied means to investigate global consciousness. Previously, global consciousness has mainly been researched and understood in tourism geography, requiring people to travel to different places to provide the meaning of the wholeness of the world. The WikiGCI, however, permits greater flexibility in how global consciousness is expressed. Third, I contribute to the study of Wikipedia in Geography by expanding our understanding of place representation, applying participatory data representing editing to supplement measures based on structural data, and methodologically elaborating on how CDA can identify places and analyze themes in manners not available in conventional data mining methods.

7.1 Contributions to Globalization

The two main research objectives of this dissertation, the WikiGCI and the Wikipedia Worldscape, contributed to globalization research in several ways. Based on the theories of global consciousness (Robertson, 1992, 2011), the WikiGCI supplemented globalization indexes based on the process of globalization by providing a new index with which to measure the awareness and meaning of the world-as-a-whole. The global ideas that composed the new index also permitted a more in-depth analysis of global consciousness and a means to examine the contestation that changes it. The discursive analysis of the Wikipedia Worldscape further revealed the role of the modern world-system (Wallerstein, 2004, 2011) in shaping our view of the world and the global consciousness. Core region socio-economic power strongly influences global consciousness. However, editors negotiate with globalizing discourses produced by the socio-economic power of the core region guided by the socio-historic uniqueness of their countries and positionality in the world-system to create views of the world.

By theoretically focusing on global consciousness (Robertson, 1992, 2011), or the meaning and awareness of the world-as-a-whole, I constructed a new index, the Wikipedia Global Consciousness Index (WikiGCI), based on global ideas to supplement globalization indexes based on networks and flows. Process-based indexes such as the KOF Globalisation Index successfully demonstrate the material structure of globalization mostly by counting objects and people crossing borders. For example, indicators for the KOF Globalisation Index are objects and people crossing borders, such as import/export, films, and immigration. Nevertheless, the study of these indicators can only provide a limited understanding of the world. For example, the KOF can be correlated or regressed with other measures (e.g., GDP and International Country Risk Guide) to provide global

social meaning (e.g., increased wealth inequality or interethnic violence). The WikiGCI, on the other hand, contributes to our understanding by providing a deeper sense of the social meaning of the world by analyzing global ideas. The narratives in the global articles such as *Yuri on Ice*, *Halloween*, and *2016 Berlin attack* reveal how editors think of the global whole by debating ideas that affect people and places worldwide. They express a sense of the wholeness of the world by narrating arguments concerning globally salient issues such as same-sex relations, American cultural diffusion, and freedom of movement. Global articles as units of analysis in an index provide deeper insight into the thinking of the world-as-a-whole that is less understood by simply reporting statistics of objects flowing in networks in indexes such as the KOF Globalisation Index.

The WikiGCI, furthermore, provides a measure of global consciousness, a phenomenon that has been mostly elusive to measurement (Martens, Caselli, De Lombaerde, Figge, & Scholte, 2015; Caselli, 2012; Buchan, Grimalda, Wilson, Brewer, Fatas, & Foddy, 2009). Previous globalization measures have heavily focused on a priori economic indicators and to a lesser degree cultural ones (Buchan et al., 2009). However, the WikiGCI permits any idea that is edited by Wikipedians in the most countries to be an indicator. It does not preselect variables to investigate. Rather, its flexibility allows a bottom-up creation of the understanding of the world expressed by the global ideas contained in the global articles. Previous measures of global consciousness have been limited in that they are behavioral, such as focusing on international travel and possession of currency. In contrast, the WikiGCI is comprised of ideas that editors worldwide are debating and editing at the time of the study. The discursive investigation of the articles' narratives in their different language versions indicated that the Wikipedians were aware of the wholeness of the world. The global consciousness index can also be used to understand the regional differences in participation in global conversations concerning global awareness. By mapping the country score

on WikiGCI, areal patterns of editing are evident, suggesting different socio-economic influences on editors' narrating global ideas (e.g., in-betweenness in Latin America).

The ideas that compose the Wikipedia Global Consciousness Index can be utilized to further apply and analyze more in-depth the theories of global consciousness (Robertson, 1992, 2009, 2011) and global social meaning (Steger & James, 2013, 2019; James & Steger, 2016). There are cautions to understanding global consciousness by the editing of Wikipedia, however. There is an overrepresentation of cisgendered men in the editing process worldwide, which skews the representation of this consciousness to this gender. Nevertheless, volunteers globally create all the content in the online encyclopedia, not organizations. Prior investigation of global consciousness has mostly been academic, concentrating on scholarly research, speeches, and historical documentation. For example, Robertson investigated global consciousness using historical work, such as in his discussion of universal and particular cultural traits in the historical development of Japan. James and Steger, furthermore, have investigated global ideas by performing genealogical research on the concept of globalization within academic scholarship and discursive analysis on speeches given by key players in globalization (e.g., President Trump of the U.S.). These studies have not concentrated on expressions by the public of this form of consciousness. On the other hand, Wikipedia global articles edited in the most countries express global ideas that have importance in the lives of the worldwide editors at the time of editing. The editing demonstrated the real-time global significance of the ideas, and how they impacted and transformed the awareness and meaning of the wholeness of the world.

Analysis of global ideas reveals how global consciousness operates: global ideas can be disputed while simultaneously providing our awareness of the global whole. The WikiGCI provides insight into our world by identifying global ideas that can reveal contestation and changes

in global social meaning (e.g., ideologies, imaginaries, and beings-in-the-world). For example, global ideas displayed awareness of the world-as-a-whole by narrating the worldwide diffusion of the American version of Halloween and the global impact of a terrorist attack in Berlin. They narrated disputes that can be tracked as they transform the global consciousness. These global ideas, moreover, indicated contestation in ideologies, imaginaries, and beings-in-the-world in 2016. Components of being-in-world (e.g., the spatiality of open borders) and global imaginary (e.g., assumed marriage heteronormativity) were being heatedly debated. By reporting on ideas that were being debated in countries worldwide, Wikipedians were aware of world wholeness.

By discursively analyzing the view of the world in the global articles, or the Wikipedia Worldscape, this research also analyzes the strong effect that the modern world-system (Wallerstein, 2004, 2011) has on the awareness of the world and globalization. Statistical analysis of the four globalizing discourses indicates that the socio-economic power of the core region (e.g., the U.S., Western Europe, and Japan) largely shapes our view of the world. This region's power constructs the commodification, language, media, and place references that structure the narration of global articles and the view of the world. This is evident in the regression analyses distinguishing global articles from local articles in sample countries from the three world-system regions (Peru – periphery, Russia – semi-periphery, and the U.S. – core). Because the globalizing discourses were based on the socio-economic power of the core, global and local views were discursively indistinguishable in the U.S., and the regression analysis could not predict the global articles. However, outside the core, the globalizing discourses could predict approximately two-thirds of the global articles in both Peru and Russia. The globalizing discourses indicate an understanding of the world in Wikipedia content as a socio-economic mediated view of the world. These global articles expose the core region's socio-economic influence on the ideational

foundation of global consciousness in Wikipedia as well. The discursive results in both the Wikipedia Worldscape and the WikiGCI indicate a strong core region structuring of global consciousness.

This ideational foundation is not solely a matter of the core determining the understanding of the world, however. The modern world-system's construction of our understanding of the world is nuanced by the uniqueness of place (Massey, 1991; Massey & Massey, 2005), in this instance the individual countries. Editors in both non-core countries engaged in the globalizing discourses that were appropriate for the socio-historic conditions of their countries within the positionality in the world-system. Statistical analysis of the globalizing discourses indicated that editors in Russia engaged more in the Use of English and Commodification to construct the view and understanding of the world. This could suggest the distinct place of Russia in the world, where Russians are now embracing English to communicate in the world and prefer core region currency to identify global ideas. Editors in the former colony Peru, on the other hand, relied heavily on references to core region countries to view and understand the world. Outside of the core, Wikipedians edited articles that contained globalizing discourses guided by the uniqueness of place combined with the positionality in the modern world-system (i.e., periphery or semi-periphery). While the core region's socio-economic power certainly produced the discursive building blocks with which editors engaged to view the world, the particular socio-historic conditions of the countries influenced the editors in applying the globalizing discourses to view and understand the world.

Even though the core of the modern world-system strongly shaped global consciousness in Wikipedia, that region did not decisively create all global ideas. The title *Supermoon*, an astronomical event where the full moon is larger than usual, was edited in 42 countries. This idea is important to people and places worldwide because it is a physical event concerning our planet,

not the power of the core. This suggests a physicality to global consciousness, where one understands the wholeness of the world through physical means like shared objects in the sky. Other titles have less core-based discursive underpinning as well. For example, the title *V (entertainer)* concerned the then up-and-coming South Korean singer Kim Tae-hyung. Edited in 57 countries, this title suggested the growing global interest in K-pop, pop music originating in the semi-periphery country South Korea. In addition, some titles concerned events outside the core. Edited in 48 countries, the title *Aleppo* reported the evacuation of the city during the Syrian Civil War. This title indicates that events in the periphery can attract global attention. Events and personages outside of the core can also produce global awareness and meaning. While the majority of global articles attest to the socio-economic power of the core, one-third of the global articles edited in Peru and Russia could not be predicted based on globalizing discourses.

My research also indicated how flows of information shaped global consciousness, but they are subtle flows of information in discourses. Much like Appadurai's discussion of how *scapes* (flows) influence global imagination, discursive flows influence thinking of the world-as-a-whole. Knowledge in the form of tweets or BBC reports is transmitted by media institutions from the core, which helps shape the understanding of the shared global whole. Documents and information in English, the global lingua franca, are circulated worldwide, which structures a sense of wholeness to the world. Discursive flows worldwide create thinking, or imagination, of a world-as-a-whole. These flows explained more of the variance in global articles in Peru and Russia (r^2 .55 and .62 respectively) than the KOF (r^2 .11), suggesting that actual items of information (e.g., tweets or documentation in English) are better predictors of global articles than aggregate summations of flows (e.g., import/export and Internet per 1,000 in the KOF).

The WikiGCI and Wikipedia Worldscape, furthermore, can provide insight into the historical development of global consciousness and globalization by examining how global ideas and globalizing discourses change over time. Wikimedia permits the editing history of each article to be publically available. With these histories, one can geolocate editing over time and study how and which ideas are edited the most globally within the constraints of editing policies for the online encyclopedia (e.g., locking of articles). Much like with the global articles for my research, articles written in the past since 2001, the foundation of Wikipedia, and future articles that reach global editing status can illuminate transforming awareness and meaning of the shared global whole. For example, opinions and ideas concerning spatiality, freedom of movement, and open borders were expressed in global articles like *2016 Berlin attack*. This global social meaning changed since the enthusiasm for globalization in the early 2000s, a change which could have been expressed in global articles since that time. Global consciousness might manifest in other global articles and take on different meanings. In addition to global consciousness, the historical development of globalization can be investigated in the editing histories. Since 2001, articles might have been constructed with different globalizing discursivity because of changing conditions in the world. Articles can be analyzed during different periods (e.g., military conflicts and economic downturns) to identify potential discursive variations. Perhaps because of shifting socio-economic power in the core and other places worldwide, different discourses have been or will be applied in narratives of global articles. For example, the countries associated with the main idea of the top 100 articles edited in the most countries can be analyzed in the future to compare them to the 2016's results. Whereas 2016 ideas were mostly associated with core countries (e.g., U.S., France, and Japan), shifting positionality in the world-system might indicate different countries (e.g., China and South Korea). Global socio-economic power in the future may be located in new countries and may even produce new globalizing discourses (e.g., change of the global lingua franca).

In sum, this research has contributed to globalization research by broadening our understanding of the discursive view of the world and the awareness and meaning of the world-as-a-whole. By creating a new index theoretically based on global consciousness, I supplemented our understanding of the world that was provided by available indexes based on theories of globalization as a process. The new units of analysis in the WikiGCI, or the global ideas, allows a deeper understanding of the thinking of the world-as-a-whole. They also permit an examination of the worldwide contestation and debates concerning these ideas, revealing an ever-evolving global consciousness. The globalizing discourses that construct these ideas, furthermore, pointed to the role that the core region in the modern world-system plays in structuring global consciousness. Even though the socio-economic power of the core builds the discourses with which to construct global consciousness, there remains a negotiation at the country-level in which editors apply the globalizing discourses influenced by the socio-historic uniqueness of place.

7.2 Contributions to Geography

I contribute to the discipline of geography by studying 1) the ideational base of global consciousness beyond the sub-discipline of tourism geography, 2) how it is understood in depictions of the world, and 3) how flows and uniqueness of place shape global awareness and meaning. First, Geography has focused on how tourism affects the awareness of the world-as-a-whole (Galvani et al., 2020; Lew, 2018; Short et al., 2001). For Lew (2018), travel alters an individual's global consciousness by experiencing unknown content and new links among places. My research adds to this understanding by investigating the ideational structure of global consciousness. Second, this ideational structure also corroborates previous work in Geography (Cosgrove, 1994, 2001), which suggests an understanding of the world-as-a-whole in historic

depictions of the world. Third, my research also expands upon geographical research into the interactions of the uniqueness of place (Massey, 1991; Massey & Massey, 2005) and flows (Appadurai, 1996) that affect global understanding.

The ideational approach to the study of global consciousness offers the benefit that it decouples the understanding of the global whole from dependency on a person in travel networks for meaning. A touristic account of global consciousness requires a person in flows, traveling to different places. However, in the ideational approach, global articles with their various language versions in the WikiGCI contain detailed accounts of how people understand what the world means and how they are aware of it. Even though global ideas are influenced by networks (e.g., use of English language resources), an ideational understanding of global consciousness does not require a person's movement within networks as a tourist understanding necessitates.

This research, furthermore, corroborates Cosgrove's (1994, 2001) analyses of the understanding of the world-as-a-whole in representations of the world, even in more contemporary depictions such as in the written content in Wikipedia. Cosgrove's historical examination of depictions of the world suggested that they influenced our understanding of one world. For example, the planet earth captured in photographs taken from the Moon in the 1970s has shaped concepts such as One-world, which understands socio-economic expansion throughout the world, and Whole-earth, which perceives the world as bonds between the Earth and humanity. The same image of the planet can be interpreted differently. Depiction of the world in Wikipedia's contents also indicates similar divergent opinions. Wikipedians globally narrate different language versions of the same global idea (e.g., a holiday, film, or sports event), engaging various globalizing discourses that have particular significance to where they live and how they understand the world. A Peruvian, for instance, might see the world within a post-colonial framework, while a Russian

may define global ideas through monetization. Depictions of one world, whether in photographs or written content online, can bear awareness and varying interpretations of the world-as-a-whole.

My research has also expanded upon two theories of globalization: Appadurai's (1996) *scapes* and Massey's (1991; Massey & Massey, 2005) global sense of place. First, thinking of the world-as-a-whole in Wikipedia shares similarities with Appadurai's proposition of how worldwide flows (e.g., media, ideological images, and people) form the basis of global imagination. For example, *mediascapes* are the flows of films and television programs with which people can create images of the world. It is a social practice in which the individual negotiates with globally defined fields of possibility. Wikipedia knowledge construction resembles Appadurai's *scapes*. Wikipedians use discursive flows in the form of tweets and films (i.e., the components of a *mediascape*) to narrate global articles and form an understanding of the shared global whole. These global articles contain global social meaning (e.g., the significance of the holiday Halloween worldwide), much like global imagination. Robertson's (1992, 2009, 2011) global consciousness resembles Appadurai *scapes* and the global imagination. Even though many scholars (Martens, Caselli, De Lombaerde, Figge, & Scholte, 2015; Caselli, 2012; Buchan, Grimalda, Wilson, Brewer, Fatas, & Foddy 2009) critique modern globalization indexes with the framework of Robertson's theories of global consciousness (i.e., globalization's increasing global consciousness and thinking of a global whole), Appadurai's theories are most likely equally appropriate (i.e., flows and global imagination).

Second, Massey's (1991; Massey & Massey, 2005) proposition of global sense of place expands upon our understanding of global consciousness. In Massey's global sense of place, every place is a unique combination of interactions and connections that the place has with other places worldwide. This combination is also historical, where the layers of connections with other places

over time compose the character of the place. This is similar to the global consciousness in Wikipedia. Whereas the influence of the economic global core region in shaping the global conscious is considerable, it is not a completely deterministic structure. The uniqueness of place in the form of socio-historic particularities guides Wikipedians in editing global articles with certain globalizing discourses. Globalizing discourses originate in the socio-economic power of the core (e.g., capital, institutions, and languages). Wikipedians edit global articles that are narrated with particular globalizing discourses that are fitting for their uniqueness of place. For example, Wikipedians in Peru are probably influenced by their country's centuries of colonial ties with Spain in the core. Because of the influence of the connections with that particular place (e.g., colonial government and mercantilism of the metropole), Peruvian Wikipedians perhaps structure their thinking of the world-as-a-whole with the direct association of the importance of the article with the core. This unique combination of interactions of a place with others worldwide can influence how Wikipedians in the world-system edit articles with particular globalizing discourses.

7.3 Contributions to the Study of Wikipedia

My dissertation research contributed to the study of Wikipedia in the discipline of geography in three principal areas. First, my research corroborates and expands our understanding of place representation in the online encyclopedia by exploring how editors in different regions apply different discourses (themes) to understand the global whole. Second, I develop Geography's use of indexes to understand global phenomena by supplementing measures based on structural data with participatory data representing editing in Wikipedia. Third, I elaborate on how CDA can

methodologically identify places and analyze themes in manners to which conventional data mining methods in Geography are not conducive.

First, my results corroborate and elaborate on the study of place representation in Wikipedia. Geographers have investigated how themes, language, and place characteristics structure representations of various places in Wikipedia articles (e.g., the world and cities) (Ballatore & Sabbata, 2020; Graham, et al. 2014, 2015; Hu, 2018; Keßler, 2017; Levin, Lechner, & Brown, 2017; Osborne, Graham, & Dittus, 2020; Salvin & Fabrikant, 2016; Santos, Anastácio, & Martins, 2015). My investigation of world representation in Wikipedia indicates that different discourses can be applied to the thinking of the world-as-a-whole. For example, the title *Halloween* exhibited an awareness of the global whole. Editors in the three language versions recognized how people and places worldwide were related in that they were adopting and/or protesting the holiday that was diffusing around the world. It also elaborates on how the depiction of the world is discursively more subtle than simply which editors perform the most edits in Wikipedia (i.e., most editors located in the core). Rather, the socio-economic power that structures globalizing discourses is decisive to understanding how editors worldwide understand the world.

My results correspond with the geographic research on Wikipedia content (Osborne et al., 2020) because different regions can use different themes to understand the world-as-a-whole depending on the region's socio-historic uniqueness. Osborne et al. investigated how different groups used different themes to describe and understand Berlin, Germany. While Wikipedians in Germany edited articles about the history of communist East Berlin, Wikipedians located in English-speaking countries edited articles concerning the Nazi past of the city. This demonstrates how the understanding of a city is shaped by the socio-historic qualities of the place where the editors are located. Editors in Germany have a more nostalgic understanding of Berlin, whereas

editors in the English-speaking world had more relations with the city from the Nazi era. This region-based thematic understanding of that city is similar to my research of the depiction of the world in Wikipedia. Whereas Wikipedians in Peru engaged discourses (Core and Media Institutions) more socio-historically appropriate for their country to depict the world (e.g., colonial positionality to the core), Russians engaged other discourses (Use of English and Commodification) more appropriate for their country (e.g., expanding interactions with the world). Depiction of the shared global whole was discursively constructed differently by Wikipedians in various regions depending on their uniqueness of place. Whether it was the understanding of Berlin or the world, Wikipedians utilized different discourses that were suitable for their unique regions to think about a city or the world-as-a-whole.

My research, furthermore, corresponds with previous geographic research indicating the strong influence of the core on the depiction of the world in Wikipedia (Graham et al., 2014, 2015), but the influence stems from discourses and not the number of editors. The research conducted on the English language Wikipedia by Graham et al. specified how countries were depicted in the online encyclopedia's content by editing conducted by Wikipedians located in the core. This suggests that this region of the world dominates in creating the depiction of the world because its percentage of the total editors overshadows other regions. My research, on the other hand, suggests a strong core influence on the depiction of the world as well, but it is a matter of how the socio-economic power of the core shapes the discourses employed to understand the world. When I investigated editing conducted by Wikipedians outside of the core in Peru and Russia in the Spanish and Russian Wikipedias, the core's influence in depicting the world is discursive. The core's socio-economic power creates globalizing discourses which editors outside of the core used to depict the world (e.g., English language resources and media institutions). Both research

projects concluded that the core is the global region that most strongly influences views of the world, but my research indicates a subtler discursive structure employed by editors in and outside of the core.

Second, my dissertation contributes to the study of Wikipedia by expanding on the indexes that provide an understanding of the world using structural data with data concerning editing participation in Wikipedia (Levin et al., 2017; Ojanperä et al. 2019). For example, Ojanperä et al. supplemented the structural dimensions of the World Bank's Knowledge Economy Index (KEI) with Wikipedia editing data to include a participatory dimension to the index that measures the global digital knowledge economy. The inclusion of this participatory dimension augmented our understanding of this global phenomenon (e.g., the digital divide in Africa is even wider than the structural dimensions suggest). By employing global articles as the unit of analysis in the WikiGCI, I contribute to the study of Wikipedia by constructing an index to capture global consciousness with participatory patterns in editing as well. These patterns indicate regional participation in global consciousness. For instance, Wikipedians in Latin America edited a relatively high number of global articles, which could be explained by the region's early European colonialization that decimated local institutions, languages, and religions. A discursive analysis of the global articles also revealed a strong core region basis to the global ideas. These ideas were predominately associated with core countries, media institutions, and markets. These data generated from Wikipedia content can expand on the more structural globalization indexes (e.g., KOF Globalisation Index). The use of global articles edited in the online encyclopedia as a participatory dimension highlights aspects of the world that are often not captured by indexes based on structural dimensions.

Third, I contribute to the geographic study of Wikipedia methodologically in terms of place identification and thematic analysis. Scholars (Graham et al., 2014; Ballatore & De Sabbata, 2020) employing Wikipedia have employed methodologies that limited how place was identified in the articles. They mostly data mined the articles by geolocating geotags (e.g., sets of geographic coordinates) embedded in the articles. Such methodologies identify only one-sixth of the articles (Graham et al., 2014). However, by discursively analyzing the narrative of the articles, the most relevant places associated with the main ideas of the articles are easily recognizable in the introduction paragraphs. Articles that revealed a great deal about global consciousness (e.g., *Yuri on Ice* and *Halloween*) did not have embedded coordinates and would have been left unexplored if data mined in such a manner. Wikipedians clearly stated the country of origin and significant places in the combined five of the six language versions of *Yuri on Ice* and *Halloween*, indicating the importance of the core for these two global articles. This discursive identification of place also revealed that articles edited by IP addresses only in Peru and Russia mostly associated the main idea with the local place, further indicating the role of the core in distinguishing local and global views. Although the sample of articles in my research was much smaller compared to large data mining efforts, this approach greatly expanded the geography under investigation. This recognition of the place indicates in a more in-depth manner to study the significance of the place to the idea.

In addition to place identification, I contribute to the thematic analysis of Wikipedia by showing how a focused CDA on specific sections of Wikipedia articles reveals more nuanced expressions of power. Geographers (Salvini & Fabrikant, 2016) have applied software (topic modeling) to cluster vocabulary found in articles to extract socio-economic meaning in the connection of global cities. This inductive method has successfully demonstrated clusters of words

discovered by algorithms, but it is not necessarily conducive to recognizing a priori themes in the articles. By studying specific sections of the Wikipedia articles that are the same in each language version, guided results are possible regarding the core's role in constructing the view of the world and global consciousness. For example, a critical discourse analysis of the references of the articles revealed the strong role of the English language in shaping the view of the world. The globalizing discourse of Use of English predicted with a high odds ratio (OR 23) the global scale of the articles edited in Russia. This focused examination of the resources used to create the articles indicates the socio-economic power of the U.K. and U.S. that elevated the English language to global lingua franca, and perhaps Russia's new positionality in the world in its quest to have greater interactions internationally. As previously mentioned, a directed study of the article introductions also revealed the most important place associated with the main idea. The core region was dominant in global articles and was able to predict the scale in articles edited in Peru. The CDA of this section of the articles in the three language versions suggested a close association of the awareness of the world-as-a-whole with the core region. In Peru, it possibly indicates how the continuing heritage of Spanish colonialism and U.S. influence sways the view of the world.

My research supports the propositions of geographers who advocate mixed methods of investigating data sets (Kitchin, 2013, Kitchin & McArdle, 2016). While it is relatively easy to capture aspects of Big Data, or data sets consisting of tera- or petabytes worth of data, within its data ontology, it is more difficult to analyze beliefs, values, and opinions that are expressed in the data. For example, the data ontology of Wikipedia allows embedding of geotags in the articles. This greatly facilitates the geolocating of the articles through algorithms. However, this popular algorithmic approach in Geography leaves articles without geotags unexplored. Small data studies consisting of a few hundred articles can permit a critical discourse analysis, which conducts a

deeper examination of how power is expressed in the narratives. A mixed method approach leverages the strengths of both approaches. By geolocating edits performed with IP addresses (Big Data methodology), I was able to locate articles written globally and locally. With these articles identified, I was able to discursively analyze the articles edited in the most countries (Small Data methodology) to find statements of global social meaning and power. The Small Data set was conducive to a priori research questions.

7.4 Future Research

There are several ways to address any bias from disparities in editing by gender, age, and location of the editors. To investigate and potentially compensate for these biases, future work can conduct interviews and surveys of Wikipedians as well as studies on edits conducted by registered editors.

As mentioned in Chapter 2, there are explicit biases in the Wikipedia data in regards to the gender and location of the editors. Surveys have consistently found that the overwhelming majority of Wikipedians are young males (Wikipedia contributors, 2019b; Hill & Shaw, 2013; Wikimedia Foundation, 2011). This can skew the content to more cisgendered male subject matters and points of view. For example, the high number of articles concerning soccer (38 locked and unlocked articles titles from the 284 article titles consulted to generate the list of 100 global articles) is probably an indication of this tendency. The location of the majority of Wikipedians in a few countries in the global north can also influence the structure and content of Wikipedia articles.

Conducting interviews/surveys of Wikipedians and investigating edits performed by registered editors are two means to analyze how this bias possibly affects the results of the research objectives of my dissertation. I specifically investigated in my dissertation how global consciousness (awareness and social meaning given to the world-as-a-whole) was expressed in the

global articles and how the four globalizing discourses (Core Country, Use of English, Commodification, and Media Institutions) structured the narratives of the global articles.

First, interviews and surveys can be specifically geared towards analyzing how gender, age, and location influence these two research objectives. Several studies (Gardner, 2011; Hill & Shaw, 2013; Wikipedia contributors, 2019b; Wikimedia Foundation, 2011) have distributed questionnaires using listservs to Wikipedia editors asking for their demographics and information regarding motivations and deterrents to editing. Future research can utilize this methodology as well. Questionnaires can be disseminated by listservs such as wiki-research-l@lists.wikimedia.org, which serves the editing community. In these questionnaires, example articles that expressed global consciousness (e.g. *Halloween*, *Yuri on Ice*, and *2016 Berlin attack*) can be included. Wikipedians can be asked how they would edit them. Edits performed by different demographics (e.g., gender: cisgendered males and females, age: those younger and older than thirty) can be compared for discursive differences in expressions of global consciousness and the application of globalizing discourses. Analysis can potentially focus on discursive elements that I identified in this research (e.g., statements about spatiality and open borders in *2016 Berlin attack* and use of monetization in *Halloween*). Or, hypothetical article editing situations can be suggested, and Wikipedians can be asked about the discursive construction of the articles (e.g., how Wikipedians feel about citing English-language resources). This questionnaire methodology, furthermore, can be implemented to examine regional differences in editing. Editing by Wikipedians from different regions (core, semi-periphery, and the periphery) can be analyzed for discursive differences among the regions. The future analyses can follow the same process as I performed, such as critical discourse analysis and logistic regression which were detailed in this dissertation.

Future research can also discursively analyze edits conducted by registered editors, who in some cases publish demographic information about themselves. Because unregistered editors with IP address edits reveal no demographic information, registered users who edit the articles under investigation here can add insight to the issues of explicit bias. For example, a more concentrated analysis of the individual edits performed by registered editors with published demographics (e.g., age and gender) may show differences in discursive constructs of the articles. This would entail a more expanded investigation of the user profiles to identify those with sufficient details to permit an analysis of the influence of those demographics on the narratives. If there is adequate data on a country-level gathered by the surveys or analysis of the registered editors, the WikiGCI could be recalculated to ascertain if demographics alter the results or if the location of registered editors influences the narratives differently from the location of unregistered editors.

8. Appendix

To gauge the potential effect of implicit bias in the sample set, I applied a bootstrap resampling of the articles and estimated statistics on the population of articles (Frost, 2021). Implicit bias could be produced due to the types of articles that were selected for the sample. For this technique, I resampled the dataset with 1,000 iterations with replacement for all 100 global articles.

The difference in the mean WikiGCI scores between the original sample (0.769) and the bootstrap sample (0.733) was negligible given the range of scores. As seen in Table 8.1, the bootstrap resampling produced a mean WikiGCI score of 0.733 with confidence intervals (CI) of 95% ranging from 0.690 to 0.769, while the average WikiGCI score in the original set of articles was 0.769. The difference in the two means was .036, which is slight given the full range of the country scores, from 0.00 (Zimbabwe) to 5.49 (Samoa).

However, the original WikiGCI mean score was on the cusp of the upper CI limit, which may indicate possible bias in sample titles selected for the original WikiGCI. To examine this possibility, I analyzed article titles that were oversampled (i.e., replaced three or more times) in the bootstrap samples with extreme WikiGCI mean scores at the Upper and Lower CIs (Upper: .779, .776, and .773; Lower: .669, .669, and .681). There was no discernable bias in the number of countries editing. For example, approximately the same mean number of countries (Upper: 46.7 countries; Lower: 46 countries) edited the articles at both CI levels. Both groups contained articles in which all four discourses were present (Upper: *Passengers (2016 film)*; Lower: *Moana (2016 film)*) and only one or two discourses were present (Upper: *V (entertainer)*; Lower: *Supermoon*). Future research could further analyze these titles to identify any possible bias in the sampling.

Table 8.1: Original Sample and Bootstrap Sample Descriptive Statistics

	Original Sample	Bootstrap Sample
Mean WikiGCI	0.769	0.733
Median WikiGCI	0.952	0.953
Upper – Lower 95% CI	.688 - .85	0.690 - 0.769
Standard Deviation	0.591	0.516

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