

WELFARE STATE CONTEXT AND INDIVIDUAL HEALTH: THE ROLE OF  
DECOMMODIFICATION IN SHAPING SELF-PERCEIVED HEALTH

by

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of the requirements for the degree

of

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in

Sociology

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## ABSTRACT

Welfare State Context and Individual Health: The Role of  
Decommodification in Shaping Self-Perceived Health

by

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My research brings together two areas of sociological inquiry. The first area involves the study of the welfare state and the second the determinants of health status. Drawing on Esping-Andersen's work concerning a particular aspect of the welfare state, decommodification, two questions are of interest. First, are individuals in countries with more decommodifying welfare states less likely to report poor self-perceived health than individuals in countries with less decommodifying welfare states? Second, does decommodification affect the health of various population groups in different ways? Gender and income groups are of interest here. Theoretically, I argue that the welfare state impacts the stratification order, that social inequality is tied to social cohesion, and that social cohesion is linked to health. I draw on sources of both country- and individual-level data, including the Comparative Welfare Entitlements Dataset, the World Values Survey, and the European Values Study, to test hypotheses concerning the link between decommodification and self-perceived health. In general, I hypothesize that higher levels

of decommodification will contribute to a decreased likelihood that individuals report poor self-perceived health. Given the multilevel structure of my research questions and hypotheses, I use multilevel binary logistic regression to assess relationships of interest. My findings indicate that, for all groups, decommodification does not have a statistically significant relationship with self-perceived health. In other words, higher levels of welfare support do not decrease the likelihood that individuals report poor health. However, social cohesion has an important impact on self-perceived health. To elaborate, for all groups, those who are trusting, as compared to those who are not, are less likely to report poor health. Overall, the data do not support my hypotheses, revealing potential flaws in my theory linking the welfare state and health status. My research, then, has both theoretical and empirical implications.

## PUBLIC ABSTRACT

Welfare State Context and Individual Health: The Role of  
Decommodification in Shaping Self-Perceived Health

Karin M. Abel

What happens in the political arena has important implications for individual lives. But, the form these implications take is not always clear. Hence, conducting research to uncover the impacts of the passage and subsequent implementation of various social policies is crucial. Also, understanding what drives various health outcomes is extremely important, as people's well-being is tied to success (or failure) in so many aspects of their lives. My research seeks to uncover the link between the happenings in the political world and the health of individuals. If they understand the intricacies of this link, individuals will be better equipped to support and advocate for the types of social policies that are likely to yield fruitful results. My research is an attempt to improve people's knowledge in the area of health as it relates to politics in order that they may better serve their interests in the democratic process.

DEDICATION

To my parents for their endless support, love, and encouragement

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I would like to thank my committee members, Drs. Christy Glass, Erin Hofmann, Amy Bailey, Reed Geertsen, and Terry Peak. Additionally, I would like to express my thanks to former committee members Drs. Eric Reither and Douglas Jackson-Smith. Christy, I cannot adequately express in words how grateful I am to have had you by my side as I have experienced the ups and downs of graduate school. During challenging moments, you have always found a way to lift me up. I have often found myself reflecting on your words of wisdom. Needless to say, you have made an enormous difference in my life, in both the academic and personal realms. Thank you for listening to me and for your patience with me. I love you. And, I hope that as I move forward in life that I can make you proud.

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# CHAPTER 1

## INTRODUCTION

### *Overview*

The main purpose of this chapter is to provide a basic description of the present study. The chapter begins with a discussion of the research puzzle. This chapter concludes with a brief description of what comprises each of the remaining chapters.

### *Research Puzzle*

This study brings together two areas of sociological inquiry. The first area involves the study of the welfare state. To date, research in this area has focused on what constitutes the welfare state (Bonoli 1997; Castles and Mitchell 1993; Esping-Andersen 1990; Ferrera 1996; Korpi and Palme 1998; Leibfried 1992; Siaroff 1994; Wilensky 1975), how and why the welfare state develops (Brooks and Manza 2007; Castles 2004; Esping-Andersen 1985, 1990; Garrett 1998; Hecllo 1974; Hicks 1999; Jacobs 1993a, 1993b; Jimenez 1997; Korpi 1978, 1983; Lieberman 1998; Lipset 1990; Lubove 1968; O'Connor 1973; O'Connor 1996; Offe 1972; Orloff and Skocpol 1984; Quadagno 1996, 2004, 2005, 2011; Rodrik 1998; Rueschemeyer and Skocpol 1996; Shalev 1983; Skocpol 1985, 1992; Skocpol and Amenta 1986; Skocpol and Finegold 1982; Stephens 1979; Strange 1996; Wilensky 1975; Wilensky and Lebeaux 1965), and the impact of the welfare state (Brady 2003; Kenworthy 1999; Korpi and Palme 1998; Page and Simmons 2000; Ringen and Uusitalo 1992). Of particular importance here is the impact of the welfare state. Research in this vein has paid much attention to the role of the welfare state in shaping levels of poverty and income inequality (Brady 2003; Kenworthy 1999; Korpi



and Palme 1998; Page and Simmons 2000; Ringen and Uusitalo 1992). However, welfare state scholars have done relatively little to examine the relationship between social policy and health status.

The second area of sociological inquiry of interest involves research on the determinants of health status. Though it addresses a broad set of factors, much of this research has centered on the relationship between health status and socioeconomic status (SES) (Babones 2010; Chappell and Funk 2010; Goesling 2007; Green, Kerstetter, and Nylander 2008; Pirani and Salvini 2012; Ross and Mirowsky 1999; Walton et al. 2009; Wen and Gu 2011; Zajacova, Hummer, and Rogers 2012). But, what is missing in this discussion is a serious look at the role of the welfare state in shaping health status.

Welfare state scholars and medical sociologists, then, have done relatively little to bridge their respective fields. In recent years, though, some scholars have turned their attention to the link between the welfare state and health status (Avendano, Jürges, and Mackenbach 2009; Bambra and Eikemo 2009; Borrell et al. 2009; Eikemo et al. 2008a; Eikemo et al. 2008b; Eikemo et al. 2008c; Rostila 2007; Zambon et al. 2006). This field is still very much in development. As such, many opportunities exist for investigating the mechanisms that connect the welfare state to health status. In contrast to what other scholars have done, I examine the link between a particular aspect of the welfare state, decommodification, and health status. The concept of decommodification has to do with the extent to which the welfare state makes it possible for individuals to exit the labor market but still maintain an acceptable standard of living (Esping-Andersen 1990). As for health status, I am interested in self-perceived health at the individual level.

I contribute to the small but growing body of literature that investigates the relationship between the welfare state and health status by addressing two questions. First, are individuals in countries with more decommodifying welfare states less likely to report poor self-perceived health than individuals in countries with less decommodifying welfare states? Second, does decommodification affect the health of various population groups in different ways? Different gender and social status groups are of interest.

Unlike much previous work on the relationship between the welfare state and health status, my research questions have a multilevel structure, and hence, require a multilevel statistical approach. To elaborate, I am interested in the impact of a country-level variable, decommodification, on an individual-level variable, self-perceived health. This being the case, a single-level statistical approach (i.e., traditional binary logistic regression) is inadequate here. Rather, a multilevel statistical approach (i.e., multilevel binary logistic regression) is necessary.

An examination of the relationship between decommodification and self-perceived health has much to offer both theoretically and empirically. As to the former, my research allows for better theoretical specification of how social policy is linked with individuals' health. With regard to the latter, this project offers an opportunity to achieve a greater understanding of the mechanisms that link the societal-level processes associated with the welfare state to individuals' feelings about their health. An understanding of these mechanisms can be useful in the policymaking arena, ideally leading to the design and implementation of the most beneficial policy options.

*Outline of Chapters*

The next chapter offers a review of extant literature that is relevant to the research questions. Chapter 3 discusses key theoretical arguments and hypotheses of interest. Chapter 4 describes the data and methods. Chapters 5 and 6 present findings from bivariate and multivariate analyses, respectively. Chapter 7 provides a summary of study findings and suggests possible avenues for future research.

## CHAPTER 2

### LITERATURE REVIEW

#### *Overview*

This chapter provides a review of extant literature that is relevant to the research questions. To start, the chapter identifies two major research questions of interest. Next this chapter discusses the ways in which these questions link two different areas of sociological inquiry. Finally, the chapter details the ways in which this study helps to fill gaps in the literature that deals with the relationship between the welfare state and self-perceived health.

#### *Research Questions*

Sociologists and others have long been interested in understanding the connections between societal processes and individual outcomes. The founders of sociology certainly fell into this group, as they examined a variety of these connections (Durkheim 1951; Marx and Engels 1964; Weber 2001). For example, Weber (2001) investigated how religious institutions contributed to individuals' work ethics. Despite this general interest in societal processes and their impact on individual outcomes, medical sociologists have done relatively little to explore relationships between societal-level institutions and individual health status. In a recent article, Olafsdottir and Beckfield (2011:101) note that "medical sociologists have tended to pay less attention to the distal forces of societal-level institutions, focusing instead on the more proximate micro- and meso-level determinants of individual health." Only recently has this pattern begun to change as researchers have turned their attention to the relationship between the welfare

state and health status (Avendano et al. 2009; Bambra and Eikemo 2009; Borrell et al. 2009; Eikemo et al. 2008a; Eikemo et al. 2008b; Eikemo et al. 2008c; Rostila 2007; Zambon et al. 2006).

An aspect of the welfare state that has received much attention in the literature is level of decommodification (Bonoli 1997; Castles and Mitchell 1993; Esping-Andersen 1990; Ferrera 1996; Korpi and Palme 1998; Leibfried 1992; Orloff 1993; Siaroff 1994). Esping-Andersen (1990:37) defines the concept of decommodification as “the degree to which individuals, or families, can uphold a socially acceptable standard of living independently of market participation.” If higher levels of decommodification exist (as opposed to lower levels), individuals are better able to maintain a socially acceptable standard of living upon exiting the labor market. Also, what is appropriate in terms of conceptualizing and measuring individual health status has been the subject of much debate in the literature. Here, the discussion has often focused on whether self-perceived (or self-rated) health is a valid measure of health status (Bardage, Isacson, and Pedersen 2001; Burström and Fredlund 2001; DeSalvo et al. 2005; Dowd and Zajacova 2007; Jylhä et al. 1998; Jylhä, Volpato, and Guralnik 2006; Larsson et al. 2002; McGee et al. 1999). Much of this research shows that self-perceived health is a good predictor of subsequent mortality (Bardage et al. 2001; Burström and Fredlund 2001; DeSalvo et al. 2005; Jylhä et al. 2006; Larsson et al. 2002; McGee et al. 1999). The literature, then, supports the notion that self-perceived health is a useful measure of health status.

My research makes a meaningful contribution to the small but growing body of literature that investigates the relationship between the welfare state and health status by addressing two questions. First, are individuals in countries with more decommodifying

welfare states less likely to report poor self-perceived health than individuals in countries with less decommodifying welfare states? Second, does decommodification affect the health of various population groups in different ways? Different gender and social status groups (distinguished by income) are of interest.

Addressing the link between decommodification and self-perceived health is important for both theoretical and empirical reasons. From a theoretical standpoint, the structure of the welfare state is an important factor in the development of major societal-level institutions that contextualize the immediate causes of individual health status. Olafsdottir and Beckfield (2011:101) note “that the social organization of the welfare state is a major force shaping the economic, political, and cultural landscape that contextualizes and shapes the proximate causes of health, illness, and healing in advanced, industrialized nations.” An examination of the relationship between the welfare state and self-perceived health, then, allows for better theoretical specification of how social policy is linked with individuals’ health. In addition, empirically speaking, studying the link between the welfare state and self-perceived health offers an opportunity to identify the specific mechanisms through which the welfare state impacts self-perceived health. An understanding of these mechanisms can inform policy, and policymakers and others can draw on research pertaining to these issues in their efforts to design and implement the most beneficial policy options.

### *Linking Two Different Areas of Research*

In the voluminous literature on the impact of the welfare state, the issue of self-perceived health has not been the focus of much attention. Rather, scholars have mainly

addressed the role of the welfare state in reducing poverty and income inequality (Brady 2003; Kenworthy 1999; Korpi and Palme 1998; Page and Simmons 2000; Ringen and Uusitalo 1992). Given how people conceptualize the welfare state, this focus on the reduction of poverty and income inequality is not surprising. After all, as Marshall (2009) notes, social citizenship comprises the core idea of the welfare state. Social citizenship includes “the whole range from the right to a modicum of economic welfare and security to the right to share to the full in the social heritage and to live the life of a civilised being according to the standards prevailing in the society” (Marshall 2009:149). In theory, then, the welfare state is the mechanism through which the enforcement of rights associated with social citizenship occurs. In general, studies investigating the link between the welfare state and poverty/income inequality support the notion that more generous and/or egalitarian welfare states contribute to better outcomes. In other words, stronger welfare states are associated with less poverty/income inequality (Brady 2003; Kenworthy 1999; Korpi and Palme 1998; Ringen and Uusitalo 1992).

Additionally, in the large body of literature that addresses the determinants of self-perceived health, the role of the welfare state has not been a major point of interest. Instead, much of this literature has focused on the relationships between self-perceived health and SES (Babones 2010; Chappell and Funk 2010; Goesling 2007; Green et al. 2008; Pirani and Salvini 2012; Ross and Mirowsky 1999; Walton et al. 2009; Wen and Gu 2011; Zajacova et al. 2012), social capital (Bassani 2008; Chappell and Funk 2010; Dahl and Malmberg-Heimonen 2010; Huijts and Kraaykamp 2012; Moon, Park, and Cho 2010; Raymo and Zhou 2012), life satisfaction (Hirde and Forbes 1993; Prus 2011; Siahpush, Spittal, and Singh 2008), religious involvement (Krause 2010; Krause, Ellison,

and Marcum 2002; Levin 2001), acculturation (Finch, Frank, and Vega 2004; Kimbro, Gorman, and Schachter 2012), health behaviors (Södergren et al. 2008; Svedberg et al. 2006; Vingilis, Wade, and Adlaf 1998), marital status (Hahn 1993; Meadows, McLanahan, and Brooks-Gunn 2008), various aspects of the health care system (Phillips, Hammock, and Blanton 2005; Prus 2011), income distribution (Kennedy et al. 1998; Subramanian, Kawachi, and Kennedy 2001), and country economic well-being (e.g., Huijts and Kraaykamp 2012). Of particular interest to scholars has been the role of SES in shaping outcomes. This research confirms that higher SES contributes to better self-perceived health (Babones 2010; Goesling 2007; Green et al. 2008; Ross and Mirowsky 1999; Zajacova et al. 2012).

What is clear from the preceding discussion is that both welfare state scholars and medical sociologists have done relatively little to bridge their respective fields. In recent years, though, some scholars have turned their attention to the link between the welfare state and self-perceived health (Avendano et al. 2009; Bambra and Eikemo 2009; Borrell et al. 2009; Eikemo et al. 2008a; Eikemo et al. 2008b; Eikemo et al. 2008c; Rostila 2007; Zambon et al. 2006). Interest in this link stems from a recognition that the welfare state shapes the causes and consequences of individual health status. Medical sociologists have tended to focus on the proximate determinants of individual health status (Olafsdottir and Beckfield 2011). But, looking at only these proximate determinants does not tell the whole story. Bringing the welfare state into the discussion allows for a greater understanding of the interrelationships between societal processes, the proximate determinants of individual health, and individual health status. And, the new knowledge that is generated through research that examines these interrelationships can be a useful



resource in the policymaking arena and elsewhere. The next several paragraphs provide a review of the literature linking the welfare state and self-perceived health. These paragraphs also explain the ways in which this study makes a significant contribution to this area of inquiry.

### *The Welfare State and Self-Perceived Health*

A key assumption in the literature that deals with the welfare state-health relationship is that certain types of welfare states or welfare state regimes, particularly those that follow a social democratic model, are likely to produce better health outcomes (Brennenstuhl, Quesnel-Vallée, and McDonough 2012). According to Esping-Andersen (1990), the social democratic model is based on adherence to the principles of universalism and devotion to the pursuit of an equality of the highest standards. Characteristics of the social democratic model include high decommodification, low poverty/inequality, and heavy state involvement. In the social democratic model, all are thought to benefit. This being the case, the assumption in the literature that the social democratic model is likely to produce the best health outcomes is not surprising. Moreover, the Scandinavian countries are often thought to have welfare states that follow a social democratic model (e.g., Esping-Andersen 1990).

In terms of assessing this argument concerning the social democratic model, most scholars interested in self-perceived health have opted to compare population health and health inequalities across welfare state regimes (Avendano et al. 2009; Bambra and Eikemo 2009; Bambra, Netuveli, and Eikemo 2010; Borrell et al. 2009; Eikemo et al. 2008a; Eikemo et al. 2008b; Eikemo et al. 2008c; Espelt et al. 2008; Lahelma et al. 2000;

Rostila 2007; Zambon et al. 2006). Findings from these studies are mixed. Some support the notion that a social democratic model contributes to better outcomes (Eikemo et al. 2008b) and others do not (Bambra and Eikemo 2009; Eikemo et al. 2008a; Espelt et al. 2008; Lahelma et al. 2000; Rostila 2007). For example, Eikemo et al.'s (2008b) multilevel analysis of the relationship between welfare state regime and self-perceived health shows that people in countries with Scandinavian and Anglo-Saxon welfare regimes have better self-perceived health than those in countries with Southern and East European welfare regimes. In contrast, Bambra and Eikemo's (2009) study on welfare state regimes, unemployment, and health shows that unemployed people have poorer self-perceived health across European countries compared to those who are employed. Moreover, relative health inequalities are greatest in the Anglo-Saxon, Bismarckian, and Scandinavian regimes. The negative health effect of unemployment is especially strong for women in the Anglo-Saxon and Scandinavian regimes. Also important to note is that a number of studies report equivocal results (Bambra et al. 2010; Borrell et al. 2009; Eikemo et al. 2008c; Zambon et al. 2006).

In a somewhat different approach from other studies, Borrell et al. (2009) compare educational inequalities in health across countries with contrasting political traditions. Along with other factors, they account for a particular aspect of the welfare state: total public expenditure. In a way, then, they assess both general welfare regimes and specific policies of welfare regimes and their connections to self-perceived health. The results of their analysis show that educational inequalities in self-perceived health are negatively associated with level of public expenditure. Stated another way, as public expenditure increases, educational inequalities in self-perceived health decrease.

Overall, existing research on the relationship between the welfare state and self-perceived health does not unequivocally support the notion that following a social democratic model leads to better outcomes. The reasons for the inconsistencies are not entirely clear. However, the use of different measures for the welfare state, as well as the use of different control variables, may contribute to these inconsistencies. With a few exceptions (Eikemo et al. 2008a; Eikemo et al. 2008b; Rostila 2007), these types of studies do not employ a multilevel approach, which can be useful in assessing relationships between societal processes and individual outcomes. In fact, to determine relationships between variables at different levels, a multilevel approach is necessary. A single-level (or traditional) approach assumes that observations are independent. But, a multilevel approach accounts for “clustering” (Garson 2013). For example, individuals who live in the same country share characteristics of that country. So, to understand the impact of a country-level factor on an individual-level outcome, one must account for this within-country similarity, that is, clustering. In other words, one must use an approach that does not assume that observations are independent. Failing to do so may lead to incorrect conclusions.

What is clear from this brief review of extant research that links the welfare state and self-perceived health is that gaps remain in the literature. Two gaps are particularly salient. First, the literature does not adequately address the specific aspects of welfare states/regimes that contribute to self-perceived health. Studies that compare population health and health inequalities across welfare regime types do not pinpoint the specific features of welfare states/regimes that contribute to outcomes. These studies do not articulate which social programs (or aspects of social programs) are important for self-

perceived health. Borrell et al. (2009) examine the impact of a particular aspect of the welfare state: total public expenditure. But, this measure offers a rather vague assessment of the welfare state. Thus, a need exists for using measures that provide insight into what the welfare state actually does for individuals.

Second, the literature does not adequately account for the multilevel structure of social reality. One thing social scientists, and perhaps sociologists more than those in other disciplines, recognize is the value in understanding the relationships between societal processes and individual outcomes. While it has much to offer, single-level analysis does not provide an adequate examination of these relationships. Nor does it always reflect the real-world structure of situations. Individuals do, after all, live within countries, and country context may be an important factor in shaping individual outcomes. Despite this reality, much of the research interested in the relationship between the welfare state and self-perceived health does not take a multilevel approach. Hence, a need exists for investigating the multilevel aspects of the relationship between the welfare state and self-perceived health.

So, what factors might explain these gaps in the literature? One possible factor is that analysis of the relationship between the welfare state and self-perceived health is a relatively new phenomenon, and the field is very much in development. Another possible factor is that data limitations have made it difficult to pursue certain types of research questions. To get at the specific aspects of welfare states/regimes that may be of interest, scholars need data that can speak to these issues. A final factor is that perhaps the complexities involved with a multilevel approach have dissuaded some scholars from using it.

In order to help fill these gaps, my research incorporates a specific aspect of the welfare state, decommodification, into the analysis. Though many scholars have opted to do comparisons of population health and health inequalities across welfare state regimes (Avendano et al. 2009; Bambra and Eikemo 2009; Bambra et al. 2010; Borrell et al. 2009; Eikemo et al. 2008a; Eikemo et al. 2008b; Eikemo et al. 2008c; Espelt et al. 2008; Lahelma et al. 2000; Rostila 2007; Zambon et al. 2006), others have highlighted why this approach is problematic (e.g., Kangas 2010). For example, Kangas (2010:S45) argues, “Regime categories are like black boxes.” Stated another way, labeling countries “social democratic,” etc. does not actually say anything about the mechanisms that may impact the outcome of interest. To avoid the black box problem, scholars must use more specific indicators (Kangas 2010). Taking this approach makes it possible to disentangle the mechanisms that link distal social contexts to the lives of countries’ inhabitants. Here, testing whether individuals are less likely to report poor self-perceived health when higher levels of decommodification characterize social programs is more useful for creating relevant policy instruments than comparing health across broadly defined welfare state regimes. Additionally, huge variation within regime types exists. O’Connor, Orloff, and Shaver (1999) make this very point in their study detailing the differences in social policy and gender relations in four liberal welfare regimes (Australia, Great Britain, Canada, and the United States). By including a decommodification measure for each country, I account for within-regime variation.

A second way that my research helps to fill the gaps in the literature is through the use of a multilevel approach. In trying to assess the relationship between the welfare state and self-perceived health, only a few studies have employed this approach (Eikemo et al.

2008a; Eikemo et al. 2008b; Rostila 2007). Here, the use of a multilevel approach is appropriate given that the goal is to determine the relationship between a country-level characteristic, decommodification, and an individual-level characteristic, self-perceived health. As noted previously, one advantage of using this approach is that it accounts for naturally occurring clusters or hierarchies present in the data, that is, that individuals are “nested” within countries. A single-level (or traditional) approach assumes that observations are independent (Garson 2013). In this study, though, the idea is that individuals who live in the same country share characteristics of that country. In other words, observations are not independent. A multilevel approach takes this lack of independence into account. To ignore the multilevel structure of the data can lead to gross errors (Garson 2013). As it helps to fill major gaps in the literature, this research makes a valuable contribution to the literature on the link between the welfare state and self-perceived health. Chapter 4, which describes data and methods, contains a more detailed description of multilevel modeling. The next chapter discusses major concepts of interest and indicates expectations regarding relationships between them.

## CHAPTER 3

## THEORY

*Overview*

The purpose of this chapter is to describe theoretical arguments. The chapter begins with a discussion of the relationship between decommodification and self-perceived health. Next this chapter explains the ways in which gender shapes this relationship. Finally, the chapter explores the interplay between relative social status, decommodification, and self-perceived health.

*Decommodification and Self-Perceived Health*

Scholars have long been interested in identifying the defining features of the welfare state (Bonoli 1997; Castles and Mitchell 1993; Esping-Andersen 1990; Ferrera 1996; Korpi and Palme 1998; Leibfried 1992; Siaroff 1994; Wilensky 1975). In his seminal book *The Three Worlds of Welfare Capitalism*, Esping-Andersen (1990) contends that one such defining feature is a welfare state's level of decommodification. The concept of decommodification "refers to the degree to which individuals, or families, can uphold a socially acceptable standard of living independently of market participation" (Esping-Andersen 1990:37). Largely based on this concept of decommodification, Esping-Andersen (1990) categorizes welfare states into three regime types: liberal, conservative, and social democratic. Characteristics of the liberal welfare regime (e.g., the United States) include low decommodification, high poverty/inequality, and market dominance. The conservative welfare regime (e.g., Germany) is modestly decommodifying. The state intervenes only when the family is not in a position to take

care of its members, reinforcing traditional status relations. Characteristics of the social democratic regime (e.g., Norway) include high decommodification, low poverty/inequality, and heavy state involvement. What is clear is that contrasting levels of decommodification are associated with different types of outcomes. Thinking about the welfare state in terms of decommodification, then, is useful in that the emphasis is on what the welfare state actually does, that is, its impact. In this research, drawing on Esping-Andersen's (1990) work, I conceptualize the welfare state as it relates to decommodification. (As indicated in the next chapter, I measure the welfare state using a decommodification score for each country.)

According to Esping-Andersen (1990:55), "The welfare state may provide services and income security, but it is also, and always has been, a system of stratification." The welfare state, then, acts as both a reducer and producer of social inequality. Its organizational features shape divisions of class and status differentiation. The primary way the welfare state influences class and status is through its income redistribution activities. However, it can also have an impact on a country's education system and employment structure, both of which contribute to the level of social inequality. Put simply, the extent to which a welfare state is decommodifying has implications for the stratification order. More specifically, higher decommodification is related to lower social inequality (Esping-Andersen 1990). For my purposes, social inequality refers to countries' overall disparities in income or wealth. (As noted later in this paper, to measure social inequality, I use the Gini coefficient for each country.)

So, what does decommodification have to do with health status? (In this research, health status deals with individuals' subjective evaluation of their health, that is, their



self-perceived health. Such an evaluation is contingent on people's awareness of their own condition, as well as their understanding of the mechanics of health. As indicated in the next chapter, I measure health status with a survey question about people's perceptions of their health.) According to the relative income hypothesis, "[A]n individual's health is affected not only by their own level of income, but by the scale of inequality in society as a whole" (Kawachi, Wilkinson, and Kennedy 1999b:xvi). Though the evidence is mixed, a number of studies support this hypothesis (Blakely et al. 2000; Kahn et al. 2000; Kennedy et al. 1998; Soobader and LeClere 1999; Subramanian, Blakely, and Kawachi 2003a; Subramanian et al. 2003b; Subramanian and Kawachi 2003; Subramanian et al. 2001). Moreover, some studies show that social cohesion is a mechanism that links social inequality to health status (Kawachi et al. 1997; Wilkinson 1996). For my purposes, social cohesion refers to whether individuals feel they can trust people. (As noted later in this paper, I measure social cohesion with a survey question that asks people to indicate if they feel "most people can be trusted.") An explanation for the link between social inequality and social cohesion is that disparities (or differences) foster feelings of suspicion and distrust. According to Tumin (1953:393),

[T]o the extent that inequalities in social rewards cannot be made fully acceptable to the less privileged in a society, social stratification systems function to encourage hostility, suspicion and distrust among the various segments of society and thus to limit the possibilities of extensive social integration.

Social inequality, then, is an important factor shaping social cohesion.

Wilkinson (1996) offers some support to this perspective on the relationship between social inequality and social cohesion. He provides case studies of societies that at one time or another experienced significant fluctuations in the distribution of income.

In wartime Britain, for example, a compression of the income distribution was linked to stronger social cohesion, as well as improved life expectancy. Similarly, Kawachi et al. (1997) examine the relationship between income inequality and social cohesion in the US context. Using survey data with information about respondents' views as to whether others could be trusted, they find that degree of income inequality is highly correlated with the percent of citizens who thought that people try to take advantage. These researchers also conclude that lack of social trust is associated with increased mortality. In short, income inequality contributes to higher mortality via a lack of social trust. The literature, then, supports Tumin's (1953) contention that social inequalities hinder social integration. And, though these studies conceptualize social cohesion as a contextual variable, it seems reasonable to conclude that social inequality impacts individual social cohesion, too. In other words, the explanation here linking social inequality and social cohesion applies regardless of the level at which social cohesion operates.

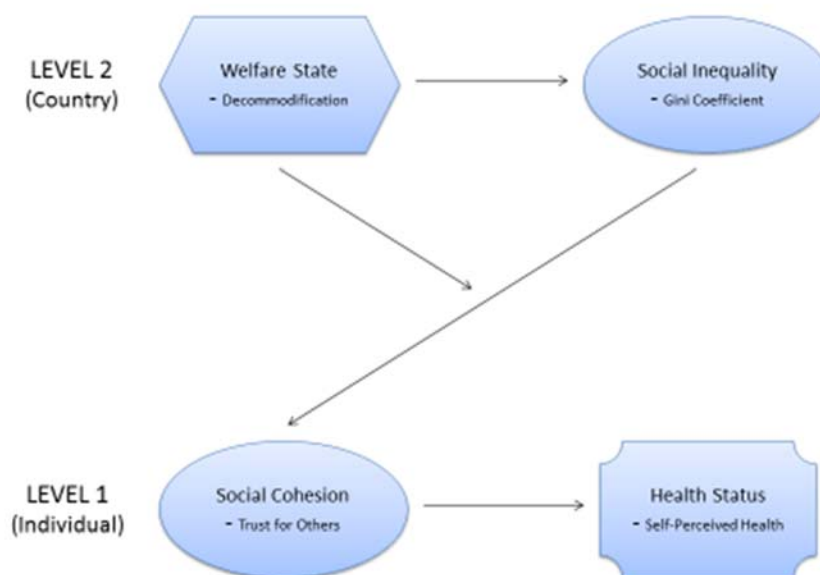
While the aforementioned studies focus on social cohesion as the mechanism that links social inequality to health status, other studies aim to investigate the connection between social cohesion and health status (i.e., social inequality is not a key component of the discussion) (Abada, Hou, and Ram 2007; House, Landis, and Umberson 1999; Kawachi, Kennedy, and Glass 1999a). House et al. (1999), for instance, provide evidence of the relationship between social cohesion and health status in the form of a review of some of the relevant literature. Part of this review includes a discussion of prospective studies that examine the connection between social relationships (as represented by things like marital status, level of contact with extended family and friends, church membership, etc.) and mortality. These studies show that lack of social relationships

contributes to an increased risk for mortality. People who are less socially integrated, then, are at greater risk in the arena of health.

Other studies of note analyze the impact of social cohesion on health outcomes other than mortality (Abada et al. 2007; Kawachi et al. 1999a). For example, Kawachi et al. (1999a) investigate the relationship between social capital (as represented by things like level of social trust) and individual self-rated health. Using US-based data, they find that living in areas of low social trust (as compared to living in areas of high social trust) dramatically increases the likelihood that individuals report poor self-rated health. Though my interest is in the relationship between individual social cohesion and individual health status, studies (e.g., Kawachi et al. 1999a) connecting contextual social cohesion to individual health status are still informative. They provide insight into what one might expect in terms of the relationship between the individual-level versions of social cohesion and health status. What the preceding discussion makes clear is that social cohesion is important for health status, regardless of how the two concepts are defined and measured. But, as the goal here is to link decommodification and *self-perceived health*, articulating an explanation for the link between the latter and social cohesion is worthwhile. In cases where social cohesion is lacking (or where trust for others is largely absent), individuals likely feel as if they have lower levels of access to sources of emotional and instrumental support (e.g., financial aid). For example, those who are experiencing feelings of distrust are perhaps not as inclined to seek support from those around them or to use public services that are available to them. In short, they may be less likely to take advantage of health-promoting resources. Such actions likely contribute to individuals' perceptions concerning their well-being, including their

physical and mental health, that is, their self-perceived health. From a theoretical standpoint, then, it makes sense that decommodification contributes to *self-perceived health*.

In sum, what is clear from Esping-Andersen's (1990) work is that higher levels of decommodification contribute to lower levels of social inequality. In environments that are more equal, individuals are likely to feel socially integrated, which decreases the likelihood of poor self-perceived health. Hence, where there is more decommodification, there should also be a decrease in the likelihood of poor self-perceived health. In short, through their decommodifying effects, welfare states can shape the extent and impact of countries' social inequalities. Decommodification, then, is a social determinant of self-perceived health. Figure 3-1 provides a visual representation of these theoretical arguments.



**Figure 3-1. Theoretical Model Linking Decommodification and Self-Perceived Health**

The following hypothesis develops from the preceding discussion: *individuals in countries with more decommodifying welfare states will be less likely to report poor self-perceived health compared to individuals in countries with less decommodifying welfare states*. Also important to consider is whether decommodification affects the health of various population groups in different ways.

*Gender, Decommodification, and Self-Perceived Health*

Scholars have criticized Esping-Andersen's decommodification-based welfare regime typology for a variety of reasons. (Arts and Gelissen [2002] provide a review of these critiques.) Some have argued that the number of regimes should be expanded to include other areas (e.g., the Antipodes or southern Europe) (Bonoli 1997; Castles and Mitchell 1993; Ferrera 1996; Korpi and Palme 1998; Leibfried 1992). Others have contended that Esping-Andersen's typology is too male-centric (e.g., Siaroff 1994). The latter point is of interest here.

In her critique of Esping-Andersen's work, Orloff (1993) argues that scholars need to analyze the gendered construction and impact of social provision. In developing her conceptual framework, she reconstructs important aspects of Esping-Andersen's typology, including decommodification and stratification, to incorporate gender. According to Orloff (1993:317), "Social benefits that decommodify labor affect women and men in different ways because their patterns of participation in paid and unpaid labor differ." Instead of focusing on "class hierarchies," as Esping-Andersen does, she emphasizes "gender hierarchies" (Orloff 1993:314).

Orloff (1993) notes two major ways welfare states reinforce gender hierarchies. First, they privilege full-time paid workers over workers who do unpaid work or who combine part-time work with domestic and caring labor. Second, they reinforce the sexual division of labor in which women do most of the unpaid work. With regard to the former, in most systems of social provision, men's claims are based on paid work, whereas most women's claims are based on familial or marital roles. Orloff (1993:315) indicates that "claims based on motherhood or marriage to a covered wage earner...are associated with lower benefit levels than are direct, work-based claims." Even in places where citizen-based benefits exist, work-based benefits receive funding priority, to the advantage of men. Women, then, are more likely than men to do unpaid work that limits their access to benefits that decommodify labor (Orloff 1993). This being the case, it seems reasonable to conclude that benefits that decommodify labor have the potential to benefit men more than women, including in the realm of health. A second hypothesis emerges from this discussion: *the magnitude of the relationship between decommodification and self-perceived health will be greater for men than for women.* Also, what follows from this hypothesis is that all of the relationships linking decommodification and self-perceived health (e.g., the relationship between decommodification and social inequality) will be stronger for men than for women.

*Relative Social Status, Decommodification,  
and Self-Perceived Health*

The question of interest here is whether decommodification affects the health of various social status groups in different ways. (In this research, relative social status refers to individuals' economic standing compared to others. As indicated in the next

chapter, I measure relative social status using indicators of household income.) Though they do not specifically address decommodification, some studies speak to this question. For example, evidence from Kahn et al.'s (2000) and Subramanian et al.'s (2001) studies suggests that affluent individuals experience health benefits when they reside in areas with higher social inequality. As lower decommodification is likely to produce higher social inequality, it seems reasonable to conclude that higher status individuals gain from a health standpoint when they reside in lower decommodification areas. If lower decommodification/higher social inequality does indeed decrease the likelihood of poor health for higher status individuals, then the mechanisms linking social inequality and health must operate differently for lower versus higher status individuals. In terms of this study, the implication is that a lack of social cohesion actually benefits higher status individuals. An explanation for this phenomenon is that, in situations where a lack of social cohesion exists, higher status individuals, who have a plethora of resources, are likely to keep those resources close to home. In support of this explanation, some studies (e.g., Bekkers 2003) indicate that lower levels of social cohesion do lead to lower levels of resource sharing. And, a large body of research links greater resources to better health (Babones 2010; Goesling 2007; Green et al. 2008; Ross and Mirowsky 1999; Zajacova et al. 2012). With more resources close to home, then, higher status individuals are likely to see a health benefit.

In a similar vein, evidence suggests that income inequality is especially detrimental to the health of poor or near-poor individuals (Kennedy et al. 1998; Lochner et al. 2001). Hence, living in lower decommodification areas is likely to be particularly harmful to lower status individuals. Here, social cohesion is likely to serve as a

compensatory mechanism. In other words, lower status individuals, who have few resources, are likely to rely more heavily on social cohesion than higher status individuals. That is, the presence of social cohesion, to some extent, compensates for a lack of other types of resources. Hence, a lack of social cohesion is likely to be harmful to lower status individuals, including in the arena of health. Two more hypotheses emerge from this discussion on relative social status, decommodification, and health.

***First, for higher income individuals, lower decommodification will decrease the likelihood of poor self-perceived health. Second, for lower income individuals, lower decommodification will increase the likelihood of poor self-perceived health.***

Using data from a variety of sources, I test these four hypotheses. The multilevel structure of these hypotheses—the aim is to examine decommodification, an aspect of a *country's* welfare state, and its impact on self-perceived health, a characteristic of the *individual*—demands a multilevel methodological approach. Consistent with such an approach, I take into account several individual- and country-level control variables that extant research has identified as relevant to self-perceived health.



## CHAPTER 4

### DATA AND METHODS

#### *Overview*

The main purpose of this chapter is to describe the data and methods. The chapter begins with a brief reiteration of study goals and hypotheses. Following this reiteration is a discussion on the units of analysis, the procedures for case selection, and the data. This chapter then pinpoints theoretically important concepts and offers details on concept operationalization. Next the chapter identifies and discusses a number of control variables for which the study accounts. Finally, this chapter describes the statistical approach and offers justification for this approach.

#### *Goals and Hypotheses*

As noted previously, a major goal here is to determine whether individuals in countries with more decommodifying welfare states are less likely to report poor self-perceived health than individuals in countries with less decommodifying welfare states. A second goal is to assess whether decommodification affects the health of various population groups in different ways. Four hypotheses are of interest:

1. *Individuals in countries with more decommodifying welfare states will be less likely to report poor self-perceived health compared to individuals in countries with less decommodifying welfare states.*
2. *The magnitude of the relationship between decommodification and self-perceived health will be greater for men than for women.*

3. *For higher income individuals, lower decommodification will decrease the likelihood of poor self-perceived health.*
4. *For lower income individuals, lower decommodification will increase the likelihood of poor self-perceived health.*

To test these hypotheses, I use a multilevel modeling approach, and in particular, multilevel binary logistic regression.

#### *Units of Analysis, Case Selection, and Data*

This study has two levels of analysis: countries and individuals. Previous literature has shown that decommodification is a defining feature of the welfare states of major industrialized capitalist countries (Bambra 2006; Esping-Andersen 1990). Accordingly, I examine only advanced countries where decommodification processes are likely occurring. The specific selection of countries is, to some extent, limited by the availability of data. Additionally, though, the selection is based on Esping-Andersen's (1990) "three worlds" study, which includes a discussion on the decommodification levels of the welfare states of 18 major industrialized capitalist countries. The countries of interest in the "three worlds" study and also here are the following: Australia, Austria, Belgium, Canada, Denmark, Finland, France, Germany, Ireland, Italy, Japan, the Netherlands, New Zealand, Norway, Sweden, Switzerland, the United Kingdom, and the United States.<sup>1</sup>

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<sup>1</sup> This study relies on the concept of model-based inference. Here, the interest is in the underlying process that has generated the data, and the use of sample data allows one to make inferences about this process. The 18 countries of interest may be considered a representative sample of all possible levels of the decommodification process. For more information on this topic, refer to Snijders and Bosker (2012).

The data for this study come from multiple sources. The country-level data come from three sources: the Comparative Welfare Entitlements Dataset (CWED), the Organization for Economic Cooperation and Development (OECD), and the World Health Organization (WHO). Compiled by Lyle Scruggs, the CWED provides information on the institutional features of the national social insurance programs of 18 advanced industrialized countries. This dataset brings together information from a variety of sources, including national data sources. The CWED offers decommodification scores for all the countries included in the dataset (Scruggs 2004). I use the decommodification data for 2002, the most recent year available. The OECD is an international organization with 34 member countries. The organization collects data on a broad range of topics to inform governmental policy around the world (Organisation for Economic Co-operation and Development 2015). Of interest here are country-level OECD data from the period 2000 to 2009 that address issues of social inequality and economic well-being.<sup>2</sup> WHO is the primary authority over issues pertaining to health in the United Nations system. The organization has 194 member states (World Health Organization 2015). I use 2004 WHO data on country health care expenditure.

Both the European Values Study (EVS) and the World Values Survey (WVS) supply the individual-level data. The EVS and WVS are two large-scale, cross-national survey research programs. Both programs use nationally representative samples of countries' adult populations. The surveys measure the ideas, beliefs, preferences, attitudes, values, opinions, and feelings about well-being of individuals all over the

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<sup>2</sup> The individual-level data in this study cover the period 2005 to 2010. I use country-level OECD data for the most recent year prior to 2005. Hence, most of the OECD data are 2004 numbers. However, in some cases, 2004 data are not available, meaning I draw on information for years prior to 2004. In only one case (Gini coefficient for Switzerland), I use data from 2009.

world. Both the EVS and WVS make available a longitudinal file that includes the studies' various waves. (The EVS longitudinal file has four waves, and the WVS longitudinal file has five waves.) These two longitudinal files can be combined into the Integrated Values Surveys 1981 to 2008 data file (European Values Study 2014; World Values Survey 2014).

I analyze only two waves of the integrated data file. More specifically, the 2005 to 2007 wave (or wave 5) of the WVS and the 2008 to 2010 wave (or wave 4) of the EVS are of interest. These two waves are the most recent ones available. With regard to WVS data collection, face-to-face interviewers used the core questionnaire translated into the local language. Wherever possible, the WVS used random probability sampling techniques. The 2005 to 2007 wave of the WVS includes information on 77,000 individuals in 54 countries (World Values Survey 2008). Similar to the situation with the WVS, the mode of data collection for the 2008 to 2010 wave of the EVS is face-to-face interviews with a standardized questionnaire translated into the appropriate national language(s). In terms of selection method, the 2008 to 2010 wave of the EVS used representative multi-stage or stratified random samples of adult populations. To answer the questionnaire, respondents had to have sufficient command of at least one of the national languages. The 2008 to 2010 wave includes 47 countries, and with some exceptions, the net sample size is 1,500 respondents per country (EVS 2011b). All individual-level data, including the measure for health status, come from the EVS and WVS datasets.

To create the single dataset from which study analyses come, the first step was to merge the individual-level EVS and WVS longitudinal files together. The second step

was to limit the EVS-WVS integrated dataset to the waves of interest, EVS wave 4 and WVS wave 5. Narrowed to these two waves, the dataset has 1,279 variables and 150,778 cases (EVS 2011a; WVS 2009). The third step was to remove irrelevant countries from the dataset. The fourth step was to create new variables in the dataset for all of the country-level variables. The fifth step was to input the values for the country-level variables for each case in the dataset. The values for the country-level variables came from the CWED, the OECD dataset, and the WHO dataset.

Combined, the EVS and WVS datasets, the CWED, the OECD dataset, and the WHO dataset make it possible to examine 18 countries and their inhabitants. Though most of the five datasets of interest provide information on dozens of countries, the decision to limit the dataset to only 18 countries is based on the CWED, as well as Esping-Andersen's (1990) work regarding decommodification levels across welfare states. With regard to the former, the CWED offers decommodification scores on just 18 countries (Scruggs 2004), the same ones that Esping-Andersen (1990) points to in his "three worlds" study. After limiting it to the 18 countries of interest and performing casewise deletion, the dataset includes 28,343 cases (EVS 2011a; WVS 2009). Regarding casewise deletion, for most analyses, I do not include any individual cases that are missing information on any study variables. The pre-casewise deletion dataset includes 35,767 cases, meaning that 7,424 cases are lost due to the casewise deletion process (EVS 2011a; WVS 2009).

Stata 12 (StataCorp 2011) is the statistical analysis package that produced all of the analyses. With regard to univariate analyses/descriptive statistics, this paper reports pre-casewise deletion numbers. Here the goal is to examine variables individually, so

retaining as much information as is possible on each variable is appropriate. To ensure that any comparisons in later analyses involve the same set of cases, the bivariate and multivariate analyses rely on the post-casewise deletion dataset. Also, for all descriptive statistics, I use the weighted sample to account for the reality that individuals with certain characteristics were less likely to respond to the survey. I use the unweighted sample for the bivariate and multivariate analyses, as the goal is to understand a process not to describe a population. In short, using the weighted sample is less important. Table 4-1 lists the 18 countries of interest and the number of cases in each of these countries. This table reflects the number of complete cases in each country (i.e., the number of cases from each country that I include in the bivariate and multivariate analyses).

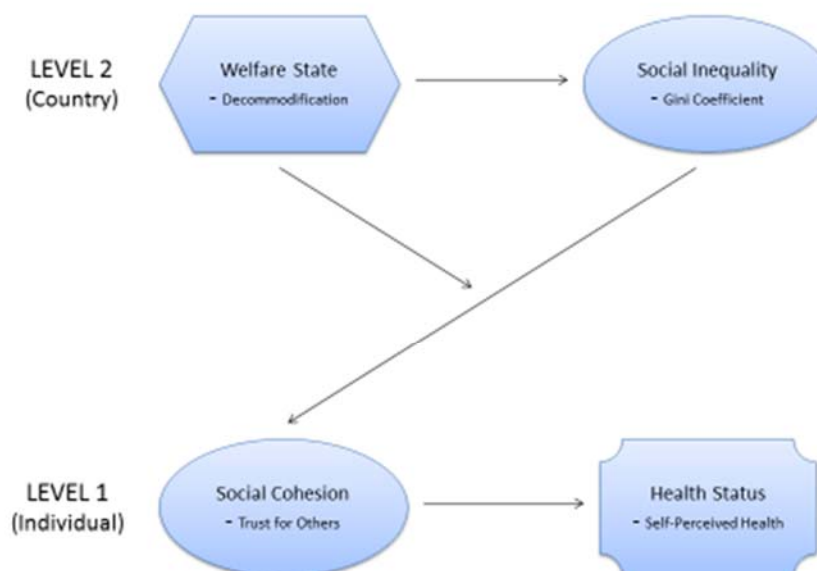
<i>Country</i>	<i>Cases</i>
Australia	1,250
Austria	1,197
Belgium	1,345
Canada	1,732
Denmark	1,074
Finland	1,866
France	2,212
Germany	3,371
Ireland	533
Italy	1,514
Japan	907
Netherlands	1,972
New Zealand	738
Norway	1,914
Sweden	1,811
Switzerland	1,974
United Kingdom	1,788
United States	1,145
<i>Total (N)</i>	<i>28,343</i>

Next is a discussion on the aspects of countries and individuals that are of interest.

Some variables are more theoretically important than others, but they all have the potential to offer interesting insight into the factors that contribute to self-perceived health.

### *Theoretically Important Variables*

Discussed in detail in the previous chapter, Figure 3-1 provides a visual representation of the overarching theoretical framework, highlighting key variables.



**Figure 3-1. Theoretical Model Linking Decommodification and Self-Perceived Health**

*Health status (individual-level).* The outcome of interest is health status. (See the lower right corner of Figure 3-1.) This concept deals with individuals' subjective evaluation of their health, that is, their self-perceived health. Such an evaluation is contingent on people's awareness of their own condition, as well as their understanding of the mechanics of health. To operationalize health status, I use the following EVS-

WVS question: “All in all, how would you describe your state of health these days?”

Respondents had the option of choosing “very good,” “good,” “fair,” “poor,” and “very poor” (EVS 2011b; WVS 2011). I dichotomize the variable into “very good” and “good” versus “fair,” “poor,” and “very poor.” Coded as 0, the very good/good option is the reference group. The fair/poor/very poor option is 1.

The use of self-perceived health as a measure of health status has been the subject of much debate in the literature (Bardage et al. 2001; Burström and Fredlund 2001; DeSalvo et al. 2005; Dowd and Zajacova 2007; Jylhä et al. 1998; Jylhä et al. 2006; Larsson et al. 2002; McGee et al. 1999). Some studies show that the predictive power of self-perceived health on subsequent mortality differs by SES (e.g., Dowd and Zajacova 2007). Other studies indicate that self-perceived health’s ability to predict mortality differs across genders and cultures (e.g., Jylhä et al. 1998). However, after accounting for some of these concerns, many studies find that self-perceived health is a good predictor of subsequent mortality (Bardage et al. 2001; Burström and Fredlund 2001; DeSalvo et al. 2005; Jylhä et al. 2006; Larsson et al. 2002; McGee et al. 1999). The literature assessing the viability of self-perceived health as a measure of health status, then, supports the notion that this measure is a useful one. Additionally, a number of studies show a strong association between a single item assessing general self-perceived health and mortality risk. These studies indicate that people with “poor” self-perceived health are at much higher mortality risk than those with “excellent” self-perceived health (DeSalvo et al. 2005). In short, my use of self-perceived health as a measure of health status is an acceptable approach. Likewise, using a single question to assess self-perceived health is a viable option.



*Welfare state (country-level)*. The main predictor of interest is decommodification, an aspect of the welfare state. (See the upper left corner of Figure 3-1.) Following Esping-Andersen (1990:37), decommodification refers “to the degree to which individuals, or families, can uphold a socially acceptable standard of living independently of market participation.” In terms of operationalizing the welfare state concept, the CWED provides a decommodification score for each of the 18 countries that are of interest (Scruggs 2004). A scale variable, higher scores indicate greater decommodification (i.e., people are better able to meet a socially acceptable standard of living absent market participation). In his book *The Three Worlds of Welfare Capitalism*, Esping-Andersen (1990) calculates decommodification scores for several countries. In brief, these scores are based on three income maintenance programs: pensions, unemployment, and sickness. The scores summarize an array of variables that get at the prohibitiveness of conditions for eligibility (e.g., means-tests), the strength of in-built disincentives (e.g., the waiting days for cash benefits) and the maximum duration of entitlements, and the extent to which benefits reflect normal earnings-levels. The scores are weighted according to the percent of the relevant population covered by the social security program (Esping-Andersen 1990:49). The Scruggs CWED dataset uses the same approach (Scruggs and Allan 2006). For more details on the scoring procedures, refer to Esping-Andersen’s (1990) work on the subject and/or Scruggs and Allan’s (2006) discussion on the subject.

The analyses here primarily use a scale (as opposed to categorical) version of the welfare state variable. However, as part of the bivariate analyses, I incorporate a categorical welfare state variable that has three options. I consider the lowest six

decommodification scores (17.90 to 24.70) as “low,” the next six scores (25.10 to 30.10) as “medium,” and the highest six scores (30.20 to 37.30) as “high.” As I am concerned with 18 countries, the justification for these distinctions is to evaluate whether differences exist in self-perceived health across three equal-sized groups of countries with varying levels of decommodification.

*Social inequality (country-level).* A key predictor is social inequality. (See the upper right corner of Figure 3-1.) This concept refers to countries’ overall disparities in income or wealth. To operationalize social inequality, I use OECD statistics for the Gini coefficient. These data are available on the OECD website (Organisation for Economic Co-operation and Development 2014). A scale measure, the Gini coefficient gets at the degree to which the distribution of income within a society’s economy deviates from a perfectly equal distribution. The coefficient measures the area between the hypothetical line of perfect equality and the observed Lorenz curve, as a proportion of the area between the line of perfect equality and the line of perfect inequality. A Gini coefficient of 0 indicates perfect equality, and a coefficient of 1 represents perfect inequality (Organisation for Economic Co-operation and Development 2006). For more detail on the Gini coefficient, refer to the Left Business Observer (1993) report on the subject.

Primarily I use a scale (as opposed to categorical) version of the social inequality variable, but I also incorporate a categorical version of the variable as part of the bivariate analyses. The categorical social inequality variable has three groups, with the lowest six Gini coefficients (approximately 0.22 to 0.27) as “low,” the next six coefficients (approximately 0.28 to 0.31) as “medium,” and the highest six coefficients (approximately 0.32 to 0.36) as “high.” Similar to the situation with the categorical

decommodification variable, the idea is to see if differences exist in self-perceived health across three equal-sized groups of countries with contrasting levels of social inequality.

*Social cohesion (individual-level).* The final theoretically important concept is social cohesion. (See the lower left corner of Figure 3-1.) Following other scholars' work (e.g., Kawachi et al. 1997), this concept refers to whether individuals feel they can trust people. In terms of operationalizing the concept of social cohesion, EVS-WVS participants responded to the following question: "Generally speaking, would you say that most people can be trusted or that you need to be very careful in dealing with people?" The two response options are "most people can be trusted" and "can't be too careful" (EVS 2011b; WVS 2011). Here, this variable is a dummy variable, with the "can't be too careful" group as the reference category. To summarize, the four theoretically important variables are health status (individual-level), the welfare state (country-level), social inequality (country-level), and social cohesion (individual-level). Table 4-2 shows weighted descriptive statistics for individual- and country-level variables that are theoretically important. Table A-1 (see Appendix A) shows weighted descriptive statistics by country for individual-level variables that are theoretically important.

### *Control Variables*

I control for a number of individual- and country-level factors that extant literature has identified as relevant to self-perceived health. What follows is a discussion of these factors.

*Individual-level.* A large body of literature contends that higher educational attainment contributes to better self-perceived health (Babones 2010; Goesling 2007; Green et al. 2008; Ross and Mirowsky 1999; Zajacova et al. 2012). Here, the concept of educational attainment refers to individuals' highest level of schooling that is completed. In terms of operationalizing educational attainment, respondents answered the following EVS-WVS question: "What is the highest educational level that you have attained?" The

**Table 4-2. Descriptive Statistics on Theoretically Important Variables (Weighted)**

<i>Level/Variable Name</i>	<i>%/Mean*</i>	<i>SE</i>	<i>Range</i>	<i>N**</i>
<u>Individual-Level</u>				
Health Status (Self-Perceived Health)				
Very good/good	74.03	1.66		35,676
Fair/poor/very poor	25.97	1.66		35,676
Social Cohesion (Trust for Others)				
Can't be too careful	53.14	3.83		34,505
Most people can be trusted	46.86	3.83		34,505
<u>Country-Level</u>				
Welfare State – Scale (Decommodification: Higher #s = More Decommodification)	(28.05)	1.22	17.90 – 37.30	35,767
Welfare State – Categorical (Decommodification)				
Low	27.54	11.01		35,767
Medium	33.20	12.04		35,767
High	39.26	13.08		35,767
Social Inequality – Scale (Gini Coefficient: 1 = Perfect Inequality)	(0.29)	0.01	0.23 – 0.36	35,767
Social Inequality – Categorical (Gini Coefficient)				
Low	30.72	11.40		35,767
Medium	39.60	13.19		35,767
High	29.68	11.50		35,767

\*Means are in parentheses.

\*\*Unweighted

response options are “inadequately completed elementary education,” “completed (compulsory) elementary education,” “incomplete secondary school: technical/vocational type/(compulsory) elementary education and basic vocational qualification,” “complete secondary school: technical/vocational type/secondary, intermediate vocational qualification,” “incomplete secondary: university-preparatory type/secondary, intermediate general qualification,” “complete secondary: university-preparatory type/full secondary, maturity level certificate,” “some university without degree/higher education – lower-level tertiary certificate,” and “university with degree/higher education – upper-level tertiary certificate” (EVS 2011b; WVS 2011). I collapse the eight possible response options into four categories: “less than secondary diploma or equivalent” (the combination of “inadequately completed elementary education,” “completed [compulsory] elementary education,” “incomplete secondary school: technical/vocational type/[compulsory] elementary education and basic vocational qualification,” and “incomplete secondary: university-preparatory type/secondary, intermediate general qualification”), “secondary diploma or equivalent” (the combination of “complete secondary school: technical/vocational type/secondary, intermediate vocational qualification” and “complete secondary: university-preparatory type/full secondary, maturity level certificate”), “some university, without degree” (only “some university without degree/higher education – lower-level tertiary certificate”), and “university, with degree” (only “university with degree/higher education – upper-level tertiary certificate”). This variable, then, is a categorical one. In the regression analyses, I use a series of education dummy variables, with “less than secondary diploma or equivalent” being the reference category.

The literature also supports the notion that relative social status is an important factor shaping self-perceived health. More specifically, those who have higher social status tend to report better health than those who have lower social status (e.g., Babones 2010). Here, relative social status refers to individuals' economic standing compared to others. With regard to operationalizing relative social status, I use EVS-WVS indicators of household income. The integrated dataset does not provide an income measure that is consistent across both the EVS and WVS waves of interest. Hence, converting the WVS measure of household income to match the EVS measure is necessary. The EVS wave offers an "income level" measure with three answer options: "low," "medium," and "high" (EVS 2011b). In contrast, the WVS wave gives a "scale of incomes" measure, with each respondent falling into an income decile (WVS 2011). To compare cases across the EVS and WVS waves, I collapse the WVS income deciles into three income groups, with the lowest three deciles as "low," the next three deciles as "medium," and the highest four deciles as "high."<sup>3</sup> For the purposes of the regression analyses, I use a series of income dummy variables. The "high" category is the reference group.

According to the literature, life satisfaction and self-perceived health are related to each other. In particular, those who have higher life satisfaction tend to have better health (Hirde and Forbes 1993; Prus 2011; Siahpush et al. 2008). Given this reality, I control for life satisfaction, which is the degree to which people are content with their overall situations. With regard to the operationalization of this concept, EVS-WVS respondents answered the following question: "All things considered, how satisfied are you with your

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<sup>3</sup> Both bivariate and multivariate analyses using other coding variations on the income measure demonstrate the validity of this approach. The results of these analyses do not deviate significantly from the bivariate and multivariate analyses shown in this paper.

life as a whole these days?” Participants had to indicate their level of satisfaction on a scale of 1 to 10, with 1 being “dissatisfied” and 10 being “satisfied” (EVS 2011b; WVS 2011). I maintain the same structure. For my purposes, then, the life satisfaction variable is a scale variable.

Religious involvement is another factor that the literature identifies as important for self-perceived health. Additionally, there is strong support in the literature for the idea that religious involvement has a positive impact on self-perceived health (Krause 2010; Krause et al. 2002; Levin 2001). Hence, I control for religious involvement. This concept refers to individuals’ level of religious participation. As for operationalizing religious involvement, I use the following EVS-WVS question: “Apart from weddings, funerals, and christenings, about how often do you attend religious services these days?” The eight response options are “never, practically never,” “less often,” “once a year,” “other specific holy days,” “only on special holy days/Christmas/Easter days,” “once a month,” “once a week,” and “more than once a week” (EVS 2011b; WVS 2011). I treat religious involvement as a scale variable, ranging from 1 (“never, practically never”) to 8 (“more than once a week”).

Moreover, some studies link marital status and self-perceived health. These studies show that marriage provides a health benefit (Hahn 1993; Meadows et al. 2008). Therefore, I control for this relationship. In terms of operationalizing marital status, EVS-WVS respondents indicated which of six options best described their situation. These options are “married,” “living together as married,” “divorced,” “separated,” “widowed,” and “single/never married” (EVS 2011b; WVS 2011). I collapse these responses into two categories: “married or cohabiting” (the combination of “married” and “living together as

married”) and “other marital status” (the combination of “divorced,” “separated,” “widowed,” and “single/never married”). Here, “married or cohabiting” is the reference category of the dummy variable.

Also important to note is that I incorporate two other individual-level control variables: age (scale) and gender (dichotomous). In terms of the former, EVS-WVS participants had to indicate their age in years (EVS 2011b; WVS 2011). I maintain the original structure of the age variable. With regard to the latter, I code female as 0 and male as 1. In other words, female is the reference category. To summarize, the individual-level control variables are educational attainment, relative social status, life satisfaction, religious involvement, marital status, age, and gender. Though I categorize them as “control variables,” gender and relative social status are theoretically significant in the discussion on whether decommodification affects various population groups in different ways.

*Country-level.* As for country-level factors, the literature suggests that various aspects of a nation’s health care system can contribute to self-perceived health (Phillips et al. 2005; Prus 2011). For example, Phillips et al. (2005) find that lack of health care coverage is connected to poorer health. Hence, I control for the relationship between health care system and self-perceived health. Here, the concept of health care system is a reference to the level of government involvement in health care funding compared to that of the private sector. To operationalize this concept, I use WHO data on general government expenditure on health as a percent of total health expenditure. These data are available on the WHO website (World Health Organization 2014). A scale variable, higher percentages indicate greater involvement on the part of the government. The



WHO measure includes both the resources channeled through government budgets to health services providers and the expenditure on health by parastatals, extrabudgetary entities, and the compulsory health insurance payments (World Health Organization 2011).

Also, some literature (e.g., Huijts and Kraaykamp 2012) confirms that economic well-being at the country level has a positive relationship with self-perceived health. As such, I control for this relationship. Economic well-being reflects countries' overall wealth and material conditions. To operationalize this concept, I use OECD statistics for gross domestic product (GDP) per capita (US dollars, constant prices, constant purchasing power parities [PPPs], OECD base year). These data are available on the OECD website (Organisation for Economic Co-operation and Development 2014). This variable is a scale one. In simple terms, GDP is the total market value of all goods and services produced in a country during a particular time period (Organisation for Economic Co-operation and Development 2002). GDP per capita is a country's GDP divided by the number of people in the country. Higher values of GDP per capita indicate stronger economic performance. To summarize, at the country-level, I control for health care system and economic well-being. Table 4-3 shows weighted descriptive statistics for both individual- and country-level control variables. Table B-1 (see Appendix B) shows weighted descriptive statistics by country for individual-level control variables.

What is clear from the above discussion is that the combination dataset (the CWED, the OECD dataset, the WHO dataset, the EVS dataset, and the WVS dataset merged together) from which study analyses come offers several advantages. To start, the

**Table 4-3. Descriptive Statistics on Control Variables (Weighted)**

<i>Level/Variable Name</i>	<i>%/Mean*</i>	<i>SE</i>	<i>Range</i>	<i>N**</i>
<u>Individual-Level</u>				
Educational Attainment				
Less than secondary diploma or equivalent	38.68	3.20		35,352
Secondary diploma or equivalent	32.04	2.10		35,352
Some university, without degree	15.06	1.95		35,352
University, with degree	14.22	1.55		35,352
Relative Social Status (Income Level)				
Low	32.72	1.97		29,971
Medium	36.64	2.24		29,971
High	30.64	2.17		29,971
Life Satisfaction (1 = Dissatisfied, 10 = Satisfied)	(7.57)	0.10	1.00 – 10.00	35,589
Religious Involvement (Religious Services Attendance: 1 = Never, Practically Never, 8 = More than Once a Week)	(3.30)	0.19	1.00 – 8.00	35,363
Marital Status				
Married or cohabiting	58.40	1.40		35,453
Other marital status	41.60	1.40		35,453
Age	(47.85)	0.34	15.00 – 108.00	35,627
Gender				
Male	48.20	0.29		35,715
Female	51.80	0.29		35,715
<u>Country-Level</u>				
Health Care System (Government Expenditure on Health as a Percent of Total Health Expenditure)	(73.60)	2.25	44.07 – 84.27	35,767
Economic Well-Being (GDP per Capita)	(33,237.08)	1,137.04	24,839.48 – 46,750.91	35,767

\*The relative social status percentages, etc. are the result of the imperfect combination of two variables, one from the EVS and the other from the WVS. Means are in parentheses.

\*\*Unweighted

dataset makes it possible to give an answer to the research questions of interest. These questions are multilevel, meaning they have individual- and country-level components.

Without data at both levels, providing an answer to my research questions would not be feasible. Additionally, the combination dataset is cross-national. To assess whether individuals in countries with more decommodifying welfare states are less likely to report poor self-perceived health requires cross-national data. Along these same lines, I put forth a theoretical argument that cannot be evaluated properly unless the available data speak to that argument. The combination dataset offers measures for key theoretical concepts. Likewise, the dataset gives measures for several control variables, which the literature has identified as important contributors to self-perceived health. Finally, the combination dataset allows for the examination of 18 countries (and accompanying inhabitants) that previous literature has noted are relevant when it comes to the issue of welfare state decommodification levels.

Of course, as is the case with all datasets, the combination dataset has weaknesses. To begin, the dataset lacks measures for some factors, at both country and individual levels, that may contribute to self-perceived health. For example, measures that account for certain cultural differences across countries, as well as measures for health behaviors at the individual level, do not exist in the dataset. Moreover, though the dataset offers measures for important concepts, these measures may not always be ideal. An example here is the measure for the “relative social status” concept. I use income variables in the combination dataset to operationalize this concept. However, wave 4 of the EVS and wave 5 of the WVS do not have an income variable that is consistent across the two waves. Measuring relative social status, then, requires combining two different income variables (one from the EVS and one from the WVS) in imperfect ways. Finally, though my research is essentially cross-sectional, the data come from several different

years. The analyses do not really account for any year-specific issues. Next is a discussion on the statistical approach I use to analyze both the individual- and country-level variables of interest.

### *Statistical Approach*

Previous sections of this chapter discuss the construction of the variables of interest, as well as provide univariate analyses on these variables. The remainder of this chapter gives a brief description of my statistical approach, especially as it pertains to bivariate and multivariate analyses, the subjects of the next two chapters. As stated previously, my aim is to assess whether individuals in countries with more decommodifying welfare states are less likely to report poor self-perceived health compared to individuals in countries with less decommodifying welfare states. I also test a number of other hypotheses pertaining to whether decommodification affects the health of various population groups in different ways. In other words, one goal is to determine the effect of a country-level variable, decommodification, on an individual-level variable, self-perceived health. Another goal is to ascertain the ways in which this relationship varies across gender and social status groups. While univariate and bivariate analyses offer some interesting insights, to really get at my research questions and hypotheses, multivariate analyses, specifically *multilevel* multivariate analyses, are imperative. What follows is an overview of what to expect when it comes to the bivariate and multivariate analyses.

*Bivariate analyses.* The next chapter discusses bivariate analyses as they pertain to my research questions and theoretical expectations. The focus is on relationships

between theoretical variables (i.e., welfare state, social inequality, social cohesion, health status, gender, and relative social status). To assess these relationships in ways that are consistent with theoretical concerns and that limit the use of regression approaches to the multivariate analyses, I use correlation and cross tabulation methods. To elaborate, the next chapter distinguishes between predictor and outcome variables in order to more clearly link the bivariate analyses to theoretical expectations. In places where the outcome of interest is a categorical variable, I use predictors that are also categorical, even if scale options of the predictors exist. Taking this approach makes it possible to confine regression analyses (i.e., binary logistic regression analyses) to the multivariate portion of this paper, as well as to treat variables in ways that are consistent with theoretical interests (i.e., keep predictors as predictors and outcomes as outcomes). As to the latter point, an alternative option would be to maintain the original structure of the variables, to reverse their ordering (i.e., treat predictors as outcomes and outcomes as predictors), and then to run t-tests. From a theoretical standpoint, following such an approach could lead to confusion. These issues involving variable ordering are, of course, not a major concern when both variables have only categorical options or when both variables have scale options. In short, correlation and cross tabulation methods work well when it comes to evaluating bivariate relationships of interest. The intention here is to determine whether two variables are associated with each other and to do so within the context of my theoretical expectations.

Correlation and cross tabulation methods provide researchers with useful information regarding bivariate relationships. Correlations summarize the association between two scale variables. When they discuss correlations, social scientists are often

referring to Pearson's correlation coefficient. This coefficient offers information on the strength and direction of the linear relationship between two variables. Correlations range from -1.00 to +1.00, with 0.00 indicating that no linear relationship exists between the two variables. Correlations of -1.00 indicate perfect negative linear relationships, and correlations of +1.00 indicate perfect positive linear relationships. Cross tabulations, on the other hand, summarize the relationship between two categorical variables. They do so in the form of a grid that shows all possible combinations of two variables' categories. Typically, the groups one wants to compare are in grid columns and their characteristics are in grid rows. Column percentages, as compared to just counts, allow one to more easily assess differences in characteristics across groups of interest. Beyond column percentages, chi-square tests are necessary to establish statistical significance. Significance levels of less than 0.05 are desirable. However, the chi-square significance test does not indicate much about the strength of a relationship. For nominal variables, Cramer's V helps remedy this situation. Cramer's V ranges from 0.00 to +1.00, with numbers closer to +1.00 indicating a stronger relationship (Sweet and Grace-Martin 2012).<sup>4</sup> All of the cross tabulations in the next chapter include at least one dichotomous variable. I consider these variables nominal. I conceptualize the variable categories as distinct, not categories marking two points along a spectrum.<sup>5</sup> Hence, Cramer's V is an appropriate indicator of relationship strength. To reiterate, my aims are to determine whether associations exist between variables of theoretical importance, and if they do, to evaluate those associations in terms of strength. Correlation and cross tabulation methods

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<sup>4</sup> For the 2 by 2 tables in this paper, the Cramer's V values are negative, with values closer to -1.00 representing stronger relationships.

<sup>5</sup> An alternative and viable approach would be to consider these dichotomous variables ordinal and use gamma as the measure of association.

are useful tools for achieving these aims. The next chapter shows the results on each variable combination for the overall sample and by gender, and where theoretically important, by social status group.

*Multivariate analyses.* Chapter 6 discusses multivariate analyses that speak to my hypotheses concerning self-perceived health. Whereas univariate analysis is concerned with individual variables in isolation from other variables and bivariate analysis is interested in relationships between two variables, multivariate analysis aims to shed light on relationships between and among several variables (Sweet and Grace-Martin 2012). I use two major types of multivariate analysis: *traditional* binary logistic regression and *multilevel* binary logistic regression. The latter is of the utmost importance, as my research questions and hypotheses have a multilevel structure. The former is also useful in that it highlights the value of taking a multilevel approach to multilevel research questions and hypotheses. In other words, using a traditional analysis in a multilevel situation can lead to erroneous conclusions. And, comparing traditional and multilevel results can demonstrate this reality.

Applying a traditional approach to a multilevel situation can be problematic. Such an approach assumes that individual-level observations are independent. To acknowledge the multilevel structure of the data, though, is to say that observations are *not* independent (Garson 2013). As Garson (2013:6) notes,

[Traditional approaches] assume error terms are independent and have equal error variances, whereas when data are nested or cross-classified by groups, individual-level observations from the same upper-level group will not be independent but rather will be more similar due to such factors as shared group history and group selection processes.

Here, the idea is that individuals within a country share characteristics of that country, a situation in which correlated error is likely to exist. A multilevel approach, then, is appropriate because it does not assume that observations are independent and can handle the occurrence of correlated error. A failure to take correlated error into account, as is the case with a traditional approach, can lead to erroneous conclusions (e.g., incorrect interpretations regarding the importance of one or another predictor variable) (Garson 2013).

Also, unlike a traditional approach, a multilevel approach allows one to “decompose the total variance in the outcome variable into portions associated with each level” (Guo and Zhao 2000:445). In terms of this study, a multilevel approach makes it possible to disentangle the sources of the variation in the outcome variable, self-perceived health. Such an approach allows one to determine how much of this variation is due to between-country differences versus within-country differences.

Finally, in contrast to a traditional approach, a multilevel approach diminishes the risk of committing the ecological fallacy. This type of approach makes it possible to simultaneously model variables at different levels without resorting to aggregation or disaggregation (Garson 2013). In cases where they have two-level data, scholars all too often aggregate individual-level data to the country-level, and then try to draw conclusions about individuals. A multilevel approach helps scholars to avoid such mistakes. This type of approach also allows scholars to pinpoint the specific variables at each level that are having the most impact (Garson 2013). As noted previously, I use both country- and individual-level data. Using a multilevel approach makes it possible to examine the ways in which phenomena at each of these levels are shaping the outcome



variable of interest, self-perceived health. Without the existence of a multilevel approach, one might resort to aggregation or disaggregation methods and draw incorrect conclusions about the factors that influence self-perceived health.

As for multivariate analyses, the multilevel binary logistic regression results are the main focus of attention. However, this paper does highlight some traditional binary logistic regression results, primarily to illustrate the value of a multilevel statistical approach to the research questions of interest. Hence, a more detailed discussion on each of these approaches is important. Multilevel binary logistic regression models the relationship of multiple predictor variables, which may be at different levels of analysis, to an outcome variable (Garson 2013). Given that I am interested in the impact of a country-level variable, decommodification, on an individual-level variable, self-perceived health, a multilevel approach is appropriate. Moreover, the fact that the outcome variable, self-perceived health, is binary supports the notion that multilevel binary logistic regression is an appropriate method. To reiterate, the health status variable has two response options, one coded as 0 (very good/good) and the other as 1 (fair/poor/very poor).

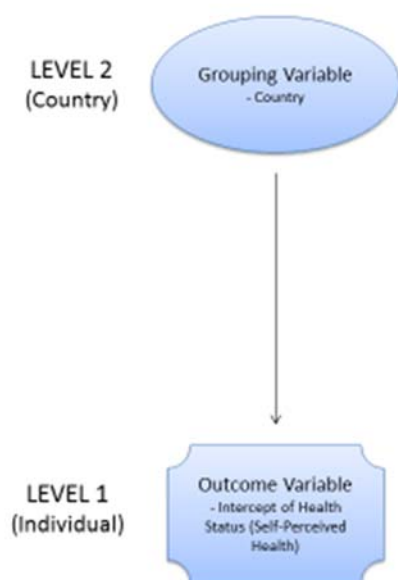
Within the realm of multilevel binary logistic regression, scholars have the option of picking from several types of models. I use two models from the random intercept regression models family: the random intercept null model (hereafter, the “null model”) and the random intercept model with level 1 and level 2 predictors (hereafter, the “random intercept model”). The null model is useful in that it informs researchers as to the need for a multilevel approach. More specifically, the null model predicts the level 1 intercept of the outcome variable as a random effect of the level 2 grouping variable, with

no other predictors at either level (Garson 2013). Here is the general equation for the null model:

$$\log(\pi_{ij}/1 - \pi_{ij}) = \beta_0 + u_{0j}$$

The intercept  $\beta_0$  is shared by all countries while the random effect  $u_{0j}$  is specific to country  $j$ . The random effect is assumed to follow a normal distribution with variance  $\sigma_{u_0}^2$  (Centre for Multilevel Modelling 2015). The null model produces what is known as the intraclass correlation (ICC), which indicates how much of the variation in the outcome variable is due to level 2 factors (Garson 2013). Here, the ICC shows what percentage of the variation in self-perceived health is due to between-country differences, as opposed to within-country differences. If no between-country variation exists, then multilevel modeling may not be the appropriate method. An ICC value that is greater than 0.00 and has a significance level of less than 0.05 is an indication that some of the variation in self-perceived health is due to level 2 factors. Figure 4-1 provides a visual representation of the null model as it relates to this study. This paper presents null model results for the overall sample, as well as by gender and social status group.

What separates the random intercept model from the null model is that the former allows for the inclusion of level 1 and level 2 predictors. In particular, the random intercept model predicts the level 1 intercept of the outcome variable as a random effect of the level 2 grouping variable. The model also predicts the level 1 intercept on the basis of level 2 random effect predictors and on the basis of level 1 predictors treated as fixed



**Figure 4-1. Null Model with Study Variables**

effects (slopes not predicted by level 2) (Garson 2013). Here is the general equation for the random intercept model:

$$\log(\pi_{ij}/1 - \pi_{ij}) = \beta_0 + \beta_1 x_{1ij} + \beta_2 x_{2j} + u_{0j}$$

In this equation,  $\beta_0$  is the intercept,  $\beta_1$  is the effect on the log-odds of a one-unit increase in  $x_1$  for individuals in the same group, and  $\beta_2$  is the effect on the log-odds of a one-unit increase in  $x_2$ . Additionally,  $u_{0j}$  is the level 2 residual. The random effect is assumed to follow a normal distribution with variance  $\sigma_{u_0}^2$  (Centre for Multilevel Modelling 2015). The random intercept model produces odds ratios (log-odds exponentiated) and their significance levels, as well as the log likelihood numbers that allow for model comparisons (Rabe-Hesketh and Skrondal 2008). In this study, each odds ratio shows the impact that a one-unit change in the predictor variable has on the likelihood that one reports fair/poor/very poor health (net the effects of the other variables in the model).

Statistical significance levels at less than 0.05 are acceptable here. One must also consider the issue of between- versus within-effects in the interpretation of odds ratios (Centre for Multilevel Modelling 2015). Here, all odds ratios for country-level variables represent only a between-country effect, whereas all odds ratios for individual-level variables represent only a within-country effect. Finally, in assessing model fit, I rely on the likelihood ratio test, which compares a model with more parameters to a model with fewer parameters. Here is the equation for the likelihood ratio test:

$$\text{Likelihood ratio} = 2 * (-MF \log \text{likelihood} + MM \log \text{likelihood})$$

In this equation,  $-MF \log \text{likelihood}$  refers to the negative of the log likelihood value for the model with fewer parameters, and  $MM \log \text{likelihood}$  refers to the log likelihood value for the model with more parameters. Here is the equation for degrees of freedom:

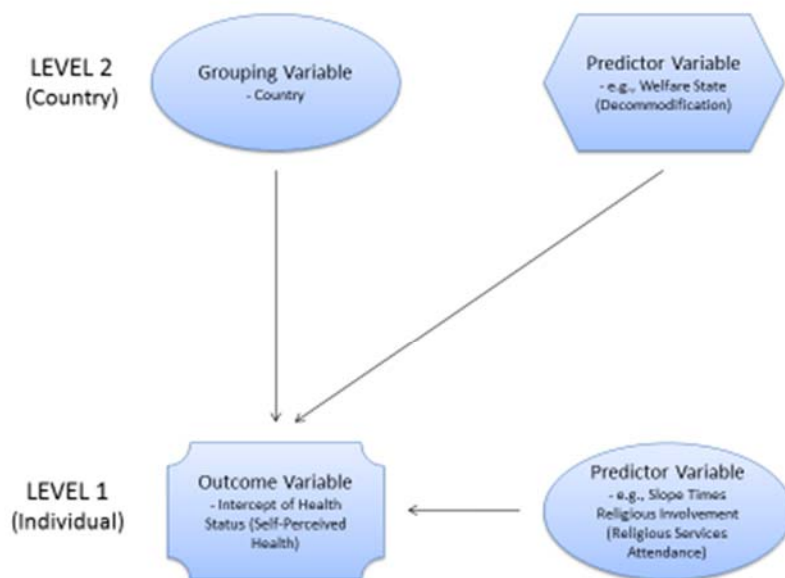
$$df = -k_{MF} + k_{MM}$$

Here,  $-k_{MF}$  is the negative of the number of parameters in the smaller model, and  $k_{MM}$  is the number of parameters in the bigger model. The likelihood ratio statistic follows a chi-square distribution (Tabachnick and Fidell 2000). In this study, a significance value of less than 0.05 is desirable. The idea is to determine if later models do indeed improve on the null model in terms of predictive power. With regard to my research, the random intercept model provides information about the relationship between a country-level variable, decommodification, and an individual-level variable, self-perceived health, while accounting for several other variables at both levels. Figure 4-2 provides a visual representation of the random intercept model as it relates to this study.

To address the question of whether individuals in countries with more decommodifying welfare states are less likely to report poor self-perceived health

compared to individuals in countries with less decommodifying welfare states, I carry out a four-step analytical process. The first step is to run a null model in order to determine the ICC. Assuming that the ICC is statistically significant and shows that country-level factors account for some of the variation in the outcome variable, the next step is to run a random intercept model that includes the main predictor variable, decommodification, and the outcome variable, self-perceived health. The third step is to bring other theoretically relevant variables into the model. The final step is to add other country- and individual-level predictor variables to the equation. To determine whether decommodification affects the health of various population groups in different ways, I repeat the four-step process for each of the gender and social status groups of interest. These analyses shed light on my hypotheses.

A single-level approach, traditional binary logistic regression models the relationship of multiple predictor variables to an outcome variable. Moreover, this



**Figure 4-2. Random Intercept Model with Study Variables**

approach is appropriate only in cases where the outcome variable is a binary one (Sweet and Grace-Martin 2012). Here is the standard equation for traditional binary logistic regression:

$$\log(\pi/1 - \pi) = \beta_0 + \beta_1 x$$

In this equation,  $\pi/(1 - \pi)$  is the odds that  $y = 1$  and  $\log[\pi/(1 - \pi)]$  is the log-odds or logit. Additionally,  $\beta_0$  is the intercept, and  $\beta_1$  is the effect of a one-unit change in  $x$  on the log-odds that  $y = 1$  (Centre for Multilevel Modelling 2015). Traditional binary logistic regression produces odds ratios (log-odds exponentiated) and their significance levels, as well as model fit information (Sweet and Grace-Martin 2012). Here, each odds ratio shows the impact that a one-unit change in the predictor variable has on the likelihood that one reports fair/poor/very poor health (net the effects of the other variables in the model). I consider statistical significance levels at less than 0.05 as acceptable. This paper does not dedicate much space to the issue of model fit for traditional binary logistic regression. My interest in this approach has more to do with comparing odds ratios and their significance levels to those of a multilevel approach than with assessing model fit. Though it produces similar output to that of multilevel binary logistic regression, traditional binary logistic regression is inadequate for my research. In short, the main problem with this approach is that it fails to adequately account for correlated error, which can lead to erroneous conclusions (Garson 2013). The point of showing some traditional binary logistic regression results in this paper is to bolster the argument that a multilevel approach is the correct one. The next two chapters show the results of the bivariate analyses (Chapter 5) and the multivariate analyses (Chapter 6).

## CHAPTER 5

## FINDINGS FROM BIVARIATE ANALYSES

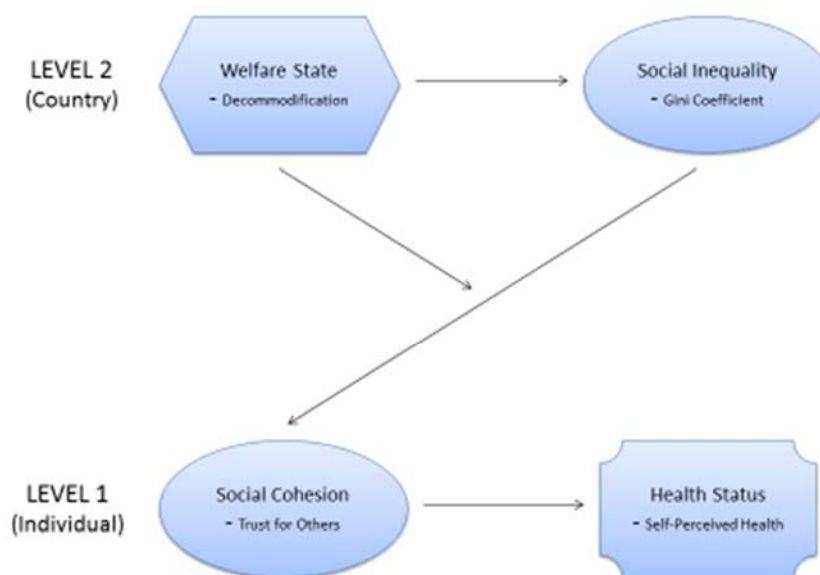
*Overview*

This chapter presents results from bivariate analyses. The chapter begins with a review of the key theoretical arguments at issue. Next this chapter discusses findings from bivariate analyses of each of the theoretical relationships of interest. The chapter concludes with a summary of the bivariate findings, as well as with a discussion of the ways in which these findings guide the multivariate analyses of the next chapter.

*Review of Theoretical Arguments*

Discussed in detail in Chapter 3, Figure 3-1 shows my overarching theoretical framework. Broadly speaking, I propose that the welfare state (decommodification) shapes the extent and impact of social inequality (Gini coefficient). Additionally, social inequality (Gini coefficient) impacts social cohesion (trust for others). And, finally, social cohesion (trust for others) contributes to health status (self-perceived health). This chapter presents analyses of each of the bivariate relationships that exist between theoretically relevant variables. Specifically, the key theoretical relationships that the bivariate analyses address are the following: decommodification and Gini coefficient; decommodification and trust for others; decommodification and self-perceived health; Gini coefficient and trust for others; Gini coefficient and self-perceived health; and trust for others and self-perceived health.

For the overall sample, I predict that the bivariate results will show a negative linear relationship between decommodification and Gini coefficient, meaning that greater



**Figure 3-1. Theoretical Model Linking Decommodification and Self-Perceived Health**

involvement on the part of the welfare state is associated with lower levels of social inequality. In addition, I predict that higher decommodification/lower Gini coefficient will be associated with greater support for the idea that most people can be trusted, as well as with lower levels of fair/poor/very poor health. Finally, I predict that support for the idea that most people can be trusted will be associated with lower levels of fair/poor/very poor health.

If they are to be consistent with theoretical expectations, the results by gender will show these same general patterns, but the magnitude of the relationships of interest will be greater for men than for women. Concerning the results by social status group, I predict some deviation from the general patterns. Specifically, relationships that have self-perceived health as the outcome variable will show that processes linked to lower decommodification levels coincide with lower levels of fair/poor/very poor health for higher income individuals, but not for lower income individuals. This chapter presents



bivariate results for each combination of variables for the overall sample, by gender, and where theoretically important, by social status group. Of course, as noted previously, my aim is to establish associations between key variables.

### *Decommodification and Gini Coefficient*

Based on theory, I predict that the relationship between decommodification and Gini coefficient will be a negative linear one but that the magnitude of this relationship will be greater for men than for women. To investigate the relationship between decommodification and Gini coefficient, I rely on correlation methods. The idea is to examine the relationship between the scale versions of the two variables. For the overall sample, the decommodification-Gini coefficient correlation is  $-0.70$ , indicating a strong negative linear relationship. In other words, as decommodification increases, Gini coefficient decreases. Consistent with my theoretical predictions, then, stronger welfare support is associated with lower levels of social inequality. The decommodification-Gini coefficient correlations for males only and females only are nearly identical at  $-0.71$  and  $-0.70$ , respectively. Stated another way, the magnitude of the relationship is about the same for men and women. Thus, while stronger welfare support is associated with lower levels of social inequality, there does not appear to be a gender variation. Though the magnitude of the relationship is about the same for men and women, the findings here largely coincide with my theoretical predictions.

*Decommodification and Trust for Others*

In the examination of all other relationships of interest, including the relationship between decommodification and trust for others, I use cross tabulation methods. Theoretically speaking, I predict that higher decommodification will be associated with greater support for the idea that most people can be trusted. Table 5-1 shows the relationship between these two variables for the overall sample. The percentage of individuals who indicate that most people can be trusted is greater for the high-decommodification group (55.50) than for the medium- (39.92) or low- (45.64) decommodification groups. The chi-square test indicates that the relationship between these two variables is statistically significant. Moreover, the Cramer's V value (0.13) shows a moderate association between decommodification and trust for others. These findings indicate that, consistent with my theoretical expectations, in countries with stronger welfare support, individuals express greater agreement with the view that most people can be trusted.

**Table 5-1. Decommodification and Trust for Others\***

<i>Trust for Others</i>	<i>Decommodification</i>			Total
	Low	Medium	High	
Can't be too careful	54.36%	60.08%	44.50%	52.19%
Most people can be trusted	45.64%	39.92%	55.50%	47.81%
Total	100.00%	100.00%	100.00%	100.00%
N	(7,802)	(9,054)	(11,487)	(28,343)

\*p<0.05

From a theoretical standpoint, I predict that the relationship between decommodification and trust for others will be greater in magnitude for men compared to women. Tables 5-2 and 5-3 show this relationship for males only and females only, respectively. The cross tabulations for the decommodification-trust for others relationship

show a similar pattern for males, females, and the overall sample, that is, the percentage of individuals who indicate that most people can be trusted is greater in the high-decommodification group than in the other two groups. Additionally, for males and females, the relationship is statistically significant. The Cramer's V for the males-only group (0.15) is similar to the Cramer's V for the females-only group (0.12), indicating moderate associations in both cases. In the sense that relationship strength is similar for both men and women, these findings do not coincide with my theoretical predictions. So, while higher welfare support is associated with greater support for the idea that most people can be trusted, gender differences do not appear to be present.

**Table 5-2. Decommodification and Trust for Others, Males Only\***

<i>Trust for Others</i>	<i>Decommodification</i>			Total
	Low	Medium	High	
Can't be too careful	54.44%	60.72%	43.56%	51.85%
Most people can be trusted	45.56%	39.28%	56.44%	48.15%
Total	100.00%	100.00%	100.00%	100.00%
N	(3,646)	(4,208)	(5,641)	(13,495)

\*p<0.05

**Table 5-3. Decommodification and Trust for Others, Females Only\***

<i>Trust for Others</i>	<i>Decommodification</i>			Total
	Low	Medium	High	
Can't be too careful	54.28%	59.53%	45.42%	52.51%
Most people can be trusted	45.72%	40.47%	54.58%	47.49%
Total	100.00%	100.00%	100.00%	100.00%
N	(4,156)	(4,846)	(5,846)	(14,848)

\*p<0.05

### *Decommodification and Self-Perceived Health*

In general, I predict that higher decommodification will be associated with lower levels of fair/poor/very poor health. Table 5-4 shows the relationship between these two variables for the overall sample. The percentage of individuals who report fair/poor/very

poor health is greater in the high-decommodification group (27.30) and medium-decommodification group (28.46) than in the low-decommodification group (24.24). The chi-square test indicates that the relationship between decommodification and self-perceived health is statistically significant. That said, the Cramer's V value (0.04) shows that the relationship is a weak one. These findings are, of course, contrary to my theoretical expectations. In other words, while my theory suggests that higher welfare support will be associated with lower levels of fair/poor/very poor health, the results here indicate that the former is associated with higher levels of fair/poor/very poor health.

**Table 5-4. Decommodification and Self-Perceived Health\***

<i>Self-Perceived Health</i>	<i>Decommodification</i>			Total
	Low	Medium	High	
Very good/good	75.76%	71.54%	72.70%	73.17%
Fair/poor/very poor	24.24%	28.46%	27.30%	26.83%
Total	100.00%	100.00%	100.00%	100.00%
N	(7,802)	(9,054)	(11,487)	(28,343)

\*p<0.05

Based on theory, I predict that higher decommodification will be associated with lower levels of fair/poor/very poor health but that this relationship will be stronger for men than for women. Tables 5-5 and 5-6 show the relationship between these two variables by gender. Both tables indicate that the percentage of individuals who report fair/poor/very poor health is greater in the high- and medium-decommodification groups than in the low-decommodification group. In addition, chi-square tests show that the relationships in both tables are statistically significant. The Cramer's V value for the males-only table (0.05) is about the same as that of the females-only table (0.04). The Cramer's V values indicate weak associations. For both men and women, the results here indicate that higher welfare support is associated with higher levels of fair/poor/very poor

health. In terms of strength, the relationship is much the same for the genders. These findings do not coincide with my theoretical predictions.

**Table 5-5. Decommodification and Self-Perceived Health, Males Only\***

<i>Self-Perceived Health</i>	<i>Decommodification</i>			Total
	Low	Medium	High	
Very good/good	75.97%	70.67%	73.80%	73.41%
Fair/poor/very poor	24.03%	29.33%	26.20%	26.59%
Total	100.00%	100.00%	100.00%	100.00%
N	(3,646)	(4,208)	(5,641)	(13,495)

\*p<0.05

**Table 5-6. Decommodification and Self-Perceived Health, Females Only\***

<i>Self-Perceived Health</i>	<i>Decommodification</i>			Total
	Low	Medium	High	
Very good/good	75.58%	72.29%	71.64%	72.95%
Fair/poor/very poor	24.42%	27.71%	28.36%	27.05%
Total	100.00%	100.00%	100.00%	100.00%
N	(4,156)	(4,846)	(5,846)	(14,848)

\*p<0.05

Theoretically speaking, I predict that the relationship between decommodification and self-perceived health will be different for lower versus higher income groups.

Specifically, the argument is that, for higher income groups, lower decommodification will be tied to lower levels of fair/poor/very poor health. In contrast, for lower income groups, lower decommodification will be related to higher levels of fair/poor/very poor health. Tables 5-7, 5-8, and 5-9 show the relationship between decommodification and self-perceived health for various income groups. For the low-income group (Table 5-7), the percentage of people who report fair/poor/very poor health is about the same across decommodification groups. Also, the chi-square test indicates a lack of statistical significance. The Cramer's V value is very close to 0.00. Regarding the low-income group, then, welfare support and self-perceived health are not related to each other. For

the medium- and high-income groups (Tables 5-8 and 5-9), the percentage of people who report fair/poor/very poor health is slightly lower in the low-decommodification group than in the medium- and high-decommodification groups. These relationships are statistically significant. The Cramer's V value for the medium-income group (0.04) is about the same as that of the high-income group (0.03), indicating weak associations. Thus, for the medium- and high-income groups, higher welfare support is associated with greater levels of fair/poor/very poor health. Overall, these findings coincide with my theoretical expectations.

**Table 5-7. Decommodification and Self-Perceived Health, Low Income Group Only\***

<i>Self-Perceived Health</i>	<i>Decommodification</i>			Total
	Low	Medium	High	
Very good/good	62.05%	60.85%	61.51%	61.39%
Fair/poor/very poor	37.95%	39.15%	38.49%	38.61%
Total	100.00%	100.00%	100.00%	100.00%
N	(2,116)	(3,392)	(3,848)	(9,356)

\*Not statistically significant

**Table 5-8. Decommodification and Self-Perceived Health, Medium Income Group Only\***

<i>Self-Perceived Health</i>	<i>Decommodification</i>			Total
	Low	Medium	High	
Very good/good	77.33%	73.90%	73.82%	74.86%
Fair/poor/very poor	22.67%	26.10%	26.18%	25.14%
Total	100.00%	100.00%	100.00%	100.00%
N	(3,021)	(3,000)	(4,416)	(10,437)

\*p<0.05

**Table 5-9. Decommodification and Self-Perceived Health, High Income Group Only\***

<i>Self-Perceived Health</i>	<i>Decommodification</i>			Total
	Low	Medium	High	
Very good/good	84.88%	82.49%	84.52%	84.00%
Fair/poor/very poor	15.12%	17.51%	15.48%	16.00%
Total	100.00%	100.00%	100.00%	100.00%
N	(2,665)	(2,662)	(3,223)	(8,550)

\*p<0.05

*Gini Coefficient and Trust for Others*

From a theoretical standpoint, I predict that higher Gini coefficient will be associated with lower levels of support for the idea that most people can be trusted. Table 5-10 shows the relationship between these two variables for the overall sample. The percentage of individuals who indicate that most people can be trusted is lower in the high-Gini coefficient group (40.13) than in the medium- (42.31) and low- (61.08) Gini coefficient groups. High inequality, then, is tied to lower levels of trust. And, the relationship between these two variables is statistically significant. Here, Cramer's V is 0.19, which indicates a moderate association. These findings are consistent with my theoretical predictions.

**Table 5-10. Gini Coefficient and Trust for Others\***

<i>Trust for Others</i>	<i>Gini Coefficient</i>			Total
	Low	Medium	High	
Can't be too careful	38.92%	57.69%	59.87%	52.19%
Most people can be trusted	61.08%	42.31%	40.13%	47.81%
Total	100.00%	100.00%	100.00%	100.00%
N	(9,207)	(11,312)	(7,824)	(28,343)

\*p<0.05

Based on theory, I predict that the magnitude of the relationship between Gini coefficient and trust for others will be greater for men than for women. Tables 5-11 and 5-12 show the relationship between these two variables for males only and females only, respectively. Both tables indicate that the percentage of individuals who report that most people can be trusted is lower in the high-Gini coefficient group compared to the other two groups. These relationships are statistically significant. These findings indicate that, for both men and women, higher social inequality is associated with lower levels of support for the idea that most people can be trusted. Additionally, the Cramer's V for the

males-only group (0.19) is about the same as that for the females-only group (0.18). These values indicate moderate associations. In other words, the strength of the relationship between social inequality and trust for others is about the same for both genders. These findings do not coincide with the gender aspects of my theoretical expectations.

**Table 5-11. Gini Coefficient and Trust for Others, Males Only\***

<i>Trust for Others</i>	<i>Gini Coefficient</i>			Total
	Low	Medium	High	
Can't be too careful	38.59%	57.77%	59.95%	51.85%
Most people can be trusted	61.41%	42.23%	40.05%	48.15%
Total	100.00%	100.00%	100.00%	100.00%
N	(4,581)	(5,266)	(3,648)	(13,495)

\*p<0.05

**Table 5-12. Gini Coefficient and Trust for Others, Females Only\***

<i>Trust for Others</i>	<i>Gini Coefficient</i>			Total
	Low	Medium	High	
Can't be too careful	39.23%	57.62%	59.79%	52.51%
Most people can be trusted	60.77%	42.38%	40.21%	47.49%
Total	100.00%	100.00%	100.00%	100.00%
N	(4,626)	(6,046)	(4,176)	(14,848)

\*p<0.05

### *Gini Coefficient and Self-Perceived Health*

In general, I predict that higher Gini coefficient will be associated with higher levels of fair/poor/very poor health. Table 5-13 shows the relationship between these two variables for the overall sample. The percentage of people who report fair/poor/very poor health is greater in the high- (26.58) and medium- (28.12) Gini coefficient groups than in the low-Gini coefficient group (25.45). The relationship between the two variables is statistically significant, meaning higher social inequality is correlated with higher levels of fair/poor/very poor health. Here, the Cramer's V is 0.03, indicating a weak association.



To reiterate, in countries with higher levels of social inequality, individuals are less likely to report good health compared to individuals in countries with lower levels of social inequality. These findings are consistent with my theoretical predictions.

<i>Self-Perceived Health</i>	<i>Gini Coefficient</i>			Total
	Low	Medium	High	
Very good/good	74.55%	71.88%	73.42%	73.17%
Fair/poor/very poor	25.45%	28.12%	26.58%	26.83%
Total	100.00%	100.00%	100.00%	100.00%
N	(9,207)	(11,312)	(7,824)	(28,343)

\*p<0.05

Theoretically speaking, I predict that higher Gini coefficient will be associated with higher levels of fair/poor/very poor health but that this relationship will be stronger for men than for women. Tables 5-14 and 5-15 show the relationship between these two variables by gender. For males only (Table 5-14), the percentages of people who indicate fair/poor/very poor health are about the same across Gini coefficient groups. The chi-square test shows a lack of statistical significance, and the Cramer's V is 0.01. For men, then, social inequality and self-perceived health are not related to each other. In contrast, for females only (Table 5-15), the percentages of people who indicate fair/poor/very poor health are greater for the high- (26.03) and medium- (29.37) Gini coefficient groups than for the low-Gini coefficient group (24.92). The relationship in the females-only table is statistically significant. The Cramer's V for the females-only relationship is 0.04, indicating a weak association. So, for females, higher social inequality is related to higher levels of fair/poor/very poor health. Contrary to my theoretical expectations, the association between social inequality and self-perceived health is nonexistent for men. For women, though, higher social inequality is associated with higher levels of

fair/poor/very poor health. The strength of the relationship between social inequality and self-perceived health, then, is stronger for women than men, a finding that contradicts my theoretical expectations.

**Table 5-14. Gini Coefficient and Self-Perceived Health, Males Only\***

<i>Self-Perceived Health</i>	<i>Gini Coefficient</i>			Total
	Low	Medium	High	
Very good/good	74.02%	73.32%	72.78%	73.41%
Fair/poor/very poor	25.98%	26.68%	27.22%	26.59%
Total	100.00%	100.00%	100.00%	100.00%
N	(4,581)	(5,266)	(3,648)	(13,495)

\*Not statistically significant

**Table 5-15. Gini Coefficient and Self-Perceived Health, Females Only\***

<i>Self-Perceived Health</i>	<i>Gini Coefficient</i>			Total
	Low	Medium	High	
Very good/good	75.08%	70.63%	73.97%	72.95%
Fair/poor/very poor	24.92%	29.37%	26.03%	27.05%
Total	100.00%	100.00%	100.00%	100.00%
N	(4,626)	(6,046)	(4,176)	(14,848)

\*p<0.05

From a theoretical standpoint, I predict that the relationship between Gini coefficient and self-perceived health will be different for lower versus higher income groups. Specifically, the argument is that, for higher income groups, higher Gini coefficient will be tied to lower levels of fair/poor/very poor health. In contrast, for lower income groups, higher Gini coefficient will be related to higher levels of fair/poor/very poor health. Tables 5-16, 5-17, and 5-18 show the relationship between Gini coefficient and self-perceived health for various income groups. For the low-income group (Table 5-16), the percentage of people who report fair/poor/very poor health is greater for the high- (39.73) and medium- (39.85) Gini coefficient groups than for the low-Gini coefficient group (35.99). In other words, higher inequality is tied to higher levels of

fair/poor/very poor health. This relationship is statistically significant. Moreover, Cramer's V is 0.04, indicating a weak association. For the medium- and high-income groups (Tables 5-17 and 5-18), the percentages of people who report fair/poor/very poor health are similar across Gini coefficient groups, with chi-square tests indicating the absence of statistical significance. The Cramer's V value for both the medium- and high-income groups is 0.02. So, for medium- and high-income groups, social inequality and self-perceived health are not related to each other. The findings for the low-income group are consistent with my theoretical predictions, but not the findings for the medium- and high-income groups.

**Table 5-16. Gini Coefficient and Self-Perceived Health, Low Income Group Only\***

<i>Self-Perceived Health</i>	<i>Gini Coefficient</i>			Total
	Low	Medium	High	
Very good/good	64.01%	60.15%	60.27%	61.39%
Fair/poor/very poor	35.99%	39.85%	39.73%	38.61%
Total	100.00%	100.00%	100.00%	100.00%
N	(2,934)	(3,945)	(2,477)	(9,356)

\*p<0.05

**Table 5-17. Gini Coefficient and Self-Perceived Health, Medium Income Group Only\***

<i>Self-Perceived Health</i>	<i>Gini Coefficient</i>			Total
	Low	Medium	High	
Very good/good	75.34%	74.04%	75.61%	74.86%
Fair/poor/very poor	24.66%	25.96%	24.39%	25.14%
Total	100.00%	100.00%	100.00%	100.00%
N	(3,443)	(4,419)	(2,575)	(10,437)

\*Not statistically significant

### *Trust for Others and Self-Perceived Health*

In general, I predict that support for the idea that most people can be trusted will be associated with lower levels of fair/poor/very poor health. Table 5-19 shows the

**Table 5-18. Gini Coefficient and Self-Perceived Health, High Income Group Only\***

<i>Self-Perceived Health</i>	<i>Gini Coefficient</i>			Total
	Low	Medium	High	
Very good/good	84.52%	84.33%	83.12%	84.00%
Fair/poor/very poor	15.48%	15.67%	16.88%	16.00%
Total	100.00%	100.00%	100.00%	100.00%
N	(2,830)	(2,948)	(2,772)	(8,550)

\*Not statistically significant

relationship between these two variables for the overall sample. The percentage of people who report fair/poor/very poor health is lower in the “most people can be trusted” group (20.21) than in the “can’t be too careful” group (32.89). The relationship between trust for others and self-perceived health is statistically significant. Also, the Cramer’s V value is -0.14, indicating a moderate association. These findings are consistent with my theoretical expectations in that they indicate that support for the view that most people can be trusted is associated with lower levels of fair/poor/very poor health.

**Table 5-19. Trust for Others and Self-Perceived Health\***

<i>Self-Perceived Health</i>	<i>Trust for Others</i>		Total
	Can’t be too careful	Most people can be trusted	
Very good/good	67.11%	79.79%	73.17%
Fair/poor/very poor	32.89%	20.21%	26.83%
Total	100.00%	100.00%	100.00%
N	(14,793)	(13,550)	(28,343)

\*p<0.05

Based on theory, I predict that support for the idea that most people can be trusted will be associated with lower levels of fair/poor/very poor health but that this relationship will be stronger for men than for women. Tables 5-20 and 5-21 show the relationship between the two variables for males only and females only, respectively. The pattern in both tables is much the same as the one in the table for the overall sample. Stated another

way, the percentage of people who report fair/poor/very poor health is lower in the “most people can be trusted” group than in the other group. The relationship between trust for others and self-perceived health is statistically significant for both men and women. The Cramer’s V for the males-only group (-0.13) is similar to the Cramer’s V for the females-only group (-0.16). These values indicate moderate associations. So, while support for the idea that most people can be trusted is associated with lower levels of fair/poor/very poor health, there does not appear to be a gender variation. The findings here regarding gender, then, do not coincide with my theoretical predictions.

**Table 5-20. Trust for Others and Self-Perceived Health, Males Only\***

<i>Self-Perceived Health</i>	<i>Trust for Others</i>		Total
	Can’t be too careful	Most people can be trusted	
Very good/good	68.01%	79.22%	73.41%
Fair/poor/very poor	31.99%	20.78%	26.59%
Total	100.00%	100.00%	100.00%
N	(6,997)	(6,498)	(13,495)

\*p<0.05

**Table 5-21. Trust for Others and Self-Perceived Health, Females Only\***

<i>Self-Perceived Health</i>	<i>Trust for Others</i>		Total
	Can’t be too careful	Most people can be trusted	
Very good/good	66.29%	80.32%	72.95%
Fair/poor/very poor	33.71%	19.68%	27.05%
Total	100.00%	100.00%	100.00%
N	(7,796)	(7,052)	(14,848)

\*p<0.05

Theoretically speaking, I predict that the relationship between trust for others and self-perceived health will be different for lower versus higher income groups. Specifically, the argument is that, for higher income groups, support for the idea that most people can be trusted will be tied to higher levels of fair/poor/very poor health. In

contrast, for lower income groups, support for the idea that most people can be trusted will be related to lower levels of fair/poor/very poor health. Tables 5-22, 5-23, and 5-24 show the relationship between trust for others and self-perceived health for various income groups. All three tables show that the percentage of people who report fair/poor/very poor health is lower in the “most people can be trusted” group than in the “can’t be too careful” group. Additionally, the relationship between trust for others and self-perceived health is statistically significant for all three income groups. The Cramer’s V value for the low-income group is -0.16, signifying a moderate association. For the medium- and high-income groups, the Cramer’s V values are -0.09 and -0.10, respectively. The Cramer’s V values for the medium- and high-income groups are indicative of weak associations. So, for the low-income group, support for the idea that most people can be trusted is associated with lower levels of fair/poor/very poor health, a finding that is consistent with my theoretical expectations. Also, while my theory suggests that, for higher status groups, support for the idea that most people can be trusted will be associated with higher levels of fair/poor/very poor health, the results here for the medium- and high-income groups do not coincide.

**Table 5-22. Trust for Others and Self-Perceived Health, Low Income Group Only\***

<i>Self-Perceived Health</i>	<i>Trust for Others</i>		Total
	Can’t be too careful	Most people can be trusted	
Very good/good	55.23%	70.85%	61.39%
Fair/poor/very poor	44.77%	29.15%	38.61%
Total	100.00%	100.00%	100.00%
N	(5,665)	(3,691)	(9,356)

\*p<0.05

**Table 5-23. Trust for Others and Self-Perceived Health, Medium Income Group Only\***

<i>Self-Perceived Health</i>	<i>Trust for Others</i>		Total
	Can't be too careful	Most people can be trusted	
Very good/good	71.07%	79.15%	74.86%
Fair/poor/very poor	28.93%	20.85%	25.14%
Total	100.00%	100.00%	100.00%
N	(5,541)	(4,896)	(10,437)

\*p<0.05

**Table 5-24. Trust for Others and Self-Perceived Health, High Income Group Only\***

<i>Self-Perceived Health</i>	<i>Trust for Others</i>		Total
	Can't be too careful	Most people can be trusted	
Very good/good	79.73%	87.08%	84.00%
Fair/poor/very poor	20.27%	12.92%	16.00%
Total	100.00%	100.00%	100.00%
N	(3,587)	(4,963)	(8,550)

\*p<0.05

### *Summary of Bivariate Findings*

This chapter shows results from bivariate analyses of relationships between theoretically important variables. These results largely support theoretical predictions pertaining to the overall sample. Higher welfare support is associated with lower social inequality, as well as with greater levels of support for the idea that most people can be trusted. Also, higher social inequality is correlated with lower levels of support for the view that most people can be trusted and higher levels of fair/poor/very poor health. Finally, support for the idea that most people can be trusted is associated with lower levels of fair/poor/very poor health. For the overall sample, the only relationship that is not consistent with theoretical expectations is the one between decommodification and self-perceived health. Analysis of these two variables indicates that higher decommodification is associated with higher levels of fair/poor/very poor health. In other

words, in countries with higher welfare support, individuals are more likely to report poor health outcomes than individuals in countries with lower welfare support. This finding is contrary to my theoretical expectation that individuals in countries with higher welfare support will be more likely to report good health outcomes than individuals in countries with lower welfare support. The chapter dealing with multivariate analyses extends the discussion of theoretical relationships, bringing in several control variables. Controlling for other factors that the literature indicates shape self-perceived health renders some of these relationships statistically insignificant. Also important to note is that the relationship between decommodification and Gini coefficient is a very strong one. Hence, for the multivariate analyses, only one of these variables, decommodification, is included in the models.

As for the gender aspects of the theoretical predictions, the bivariate results in this chapter do not offer much support. That is, the strength of theoretical relationships is not greater for men than for women. In fact, none of the theoretical relationships are stronger for men, as opposed to women. The Cramer's V values for the males-only relationship, as compared to the females-only relationship, do differ in some places. However, these differences are small, making it difficult to conclude, based solely on one imperfect measure of strength, that one relationship is stronger than the other. These findings, contrary to theoretical expectations, indicate that strength of the relationships between theoretical variables is much the same for both genders. Multivariate analyses, in the next chapter, help shed some light on the finer details of the differences between men and women when it comes to relationships of interest.



With regard to the social status aspects of the theoretical predictions, the bivariate findings in this chapter provide some support. For example, concerning the relationship between decommodification and self-perceived health, for the medium- and high-income groups, the percentage of people who report fair/poor/very poor health is slightly lower in the low-decommodification group than in the medium- and high-decommodification groups. In other words, for higher status groups, analysis of the relationship between welfare support and self-perceived health shows that higher welfare support is associated with higher levels of fair/poor/very poor health. The multivariate analyses of the next chapter refine this discussion of social status groups.

## CHAPTER 6

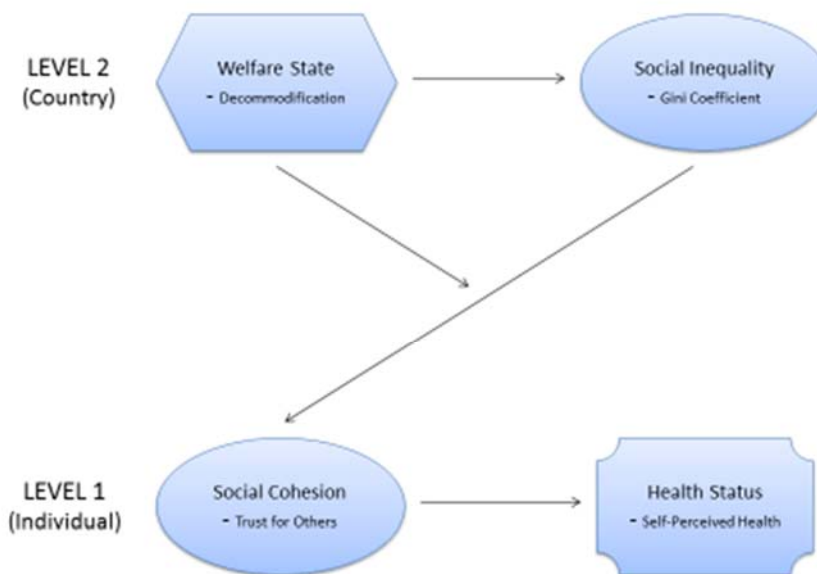
## FINDINGS FROM MULTIVARIATE ANALYSES

*Overview*

This chapter presents results from multivariate analyses. The chapter begins with a review of the theoretical framework, as well as hypotheses of interest. This chapter then presents the results of the multilevel binary logistic regression analysis for the overall sample, by gender, and by social status group. The chapter also includes a comparison of multilevel and single-level regression results. This chapter concludes with a summary of the multivariate findings.

*Review of Theory and Hypotheses*

As discussed in detail in Chapter 3, Figure 3-1 provides a visual representation of my overarching theoretical framework. The welfare state (decommodification) shapes the



**Figure 3-1. Theoretical Model Linking Decommodification and Self-Perceived Health**

extent and impact of social inequality (Gini coefficient). Social inequality (Gini coefficient) impacts social cohesion (trust for others). And, finally, social cohesion (trust for others) influences health status (self-perceived health).

I am interested in four hypotheses that stem from this theoretical framework.

Table 6-1 summarizes these four hypotheses and shows hypothesis labels that appear throughout this chapter and the next one. To test these four hypotheses, I use a multilevel modeling approach, specifically multilevel binary logistic regression.

**Table 6-1. Study Hypotheses and Their Labels**

<i>Label</i>	<i>Hypothesis</i>
H1	Individuals in countries with more decommodifying welfare states will be less likely to report poor self-perceived health compared to individuals in countries with less decommodifying welfare states.
H2	The magnitude of the relationship between decommodification and self-perceived health will be greater for men than for women.
H3	For higher income individuals, lower decommodification will decrease the likelihood of poor self-perceived health.
H4	For lower income individuals, lower decommodification will increase the likelihood of poor self-perceived health.

### *Between-Country Variation in Self-Perceived Health*

To establish the need for a multilevel approach, this paper includes null model results for the overall sample, by gender, and by social status group. Table 6-2 shows these results. The ICC values and significance levels are of particular importance here. In all cases, the results are statistically significant. The null model for the overall sample shows an ICC of 0.04, indicating that 4 percent of the variation in self-perceived health is due to factors at the country level. For males and females, the ICC values are 0.05 and

0.04, respectively. In other words, for males, 5 percent of the variation in the outcome variable is due to level 2 factors, whereas for females, this amount is 4 percent. In order from low to high income, the ICC values for the income groups are 0.02, 0.04, and 0.04. For the low-income group, then, country-level factors account for 2 percent of the variation in self-perceived health. For both the medium- and high-income groups, 4 percent of the variation in the outcome variable is due to factors at the country level. What is clear here is that in all the preceding situations, some of the variation in self-perceived health is due to factors at the country level. Hence, a multilevel approach is appropriate.

<i>Group</i>	<i>ICC*</i>	<i>Log Likelihood</i>
Overall	0.04	-16,155.60
Males	0.05	-7,658.53
Females	0.04	-8,501.90
Low-income	0.02	-6,176.06
Medium-income	0.04	-5,768.42
High-income	0.04	-3,715.68

\*All ICC values are statistically significant at the 0.05 level.

### *Decommodification and Self-Perceived Health*

I hypothesize that individuals in countries with more decommodifying welfare states will be less likely to report poor self-perceived health than individuals in countries with less decommodifying welfare states (H1). The idea here is that higher decommodification/lower social inequality contributes to higher levels of trust. Higher levels of trust, in turn, produce lower levels of fair/poor/very poor health (or higher levels of very good/good health). Table 6-3 shows multilevel binary logistic regression (i.e., random intercept model) results for the overall sample. The outcome variable of interest

is, of course, self-perceived health. Model 1 includes only one predictor variable: decommodification. The odds ratio for this predictor (OR = 1.00) indicates that decommodification does not impact self-perceived health, and this odds ratio is not statistically significant. In Model 1, then, the relationship between welfare support and self-perceived health is nonexistent, a finding that does not support H1.

The situation is much the same for decommodification (OR = 1.01, not statistically significant) in Model 2, but the odds ratio for social cohesion (here “Most People Can Be Trusted”) is 0.53 and is statistically significant. Individuals who are trusting, as compared to those who are not, are 47 percent less likely to report fair/poor/very poor health. In other words, being trusting is beneficial for self-perceived health. This finding supports my theoretical expectations (H1).

Model 3 includes theoretical and control variables of interest. In this model, the situation does not fundamentally change for theoretically important variables (i.e., decommodification and social cohesion). However, controlling for other country- and individual-level variables does reduce the impact of social cohesion (OR = 0.68) on self-perceived health. These results indicate that welfare support does not have an effect on self-perceived health. The information here, then, does not support my hypothesis (H1) regarding the overall relationship between welfare support and self-perceived health. That said, these results do support the notion that social cohesion is a contributing factor when it comes to self-perceived health. More specifically, those who are trusting, as compared to those who are not, are less likely to report fair/poor/very poor health.

In addition to addressing theoretical concerns, Model 3 provides information on other important relationships. None of the country-level odds ratios in this model are

statistically significant. Concerning individual-level variables, these results indicate that those with a secondary diploma or equivalent (OR = 0.79), as compared to those with less than a secondary diploma or equivalent, are 21 percent less likely to report fair/poor/very poor health. The effect is even greater for those with a university degree (OR = 0.67). Stated another way, compared to those with less than a secondary diploma or equivalent, those with a university degree are 33 percent less likely to report fair/poor/very poor health. Also, low-income individuals (OR = 1.62) are 62 percent more likely and medium-income individuals (OR = 1.26) 26 percent more likely to report fair/poor/very poor health than high-income individuals. With regard to life satisfaction (OR = 0.72), those who are more satisfied are less likely to report fair/poor/very poor health, net of education and income. More specifically, for a one-unit increase on the life satisfaction scale (movement toward greater satisfaction), individuals are 28 percent less likely to report fair/poor/very poor health. As for religious services attendance (OR = 0.98), those who attend more services are less likely to report fair/poor/very poor health. In particular, for a one-unit increase on the religious services attendance scale (movement toward more attendance), individuals are 2 percent less likely to report fair/poor/very poor health. Moreover, for each additional year of age (OR = 1.04), individuals are 4 percent more likely to report fair/poor/very poor health. All of these individual-level relationships are statistically significant. But, two individual-level odds ratios are not statistically significant, the ones for marital status and gender.

Another important consideration is model fit. To assess model fit, I use the likelihood ratio test to compare a model with more parameters to a model with fewer parameters. (See Chapter 4 for details on the likelihood ratio test.) For the overall sample,

a comparison of Model 1 to the null model shows that the former does not improve on the latter in terms of predictive power. The addition of the decommodification variable, then, does not make it possible to more accurately predict self-perceived health. However, Model 2 is a better fit than Model 1, meaning the addition of the social cohesion variable does increase predictive power. Similarly, Model 3 is an improvement over Model 2. That is, the addition of several of the control variables matters for predicting self-perceived health.

### *Gender, Decommodification, and Self-Perceived Health*

I also hypothesize that the magnitude of the relationship between decommodification and self-perceived health will be greater for men than for women (H2). To elaborate, the idea is that, for both genders, higher decommodification/lower social inequality produces higher levels of trust. And, higher levels of trust contribute to lower levels of fair/poor/very poor health (or higher levels of very good/good health). The gender hypothesis, though, predicts that the magnitude of these relationships will be greater for men than for women. Tables 6-4 and 6-5 show multilevel binary logistic regression (i.e., random intercept model) results for the males-only and females-only groups, respectively. In both tables, Model 1 includes only the decommodification predictor variable. For both males and females, the odds ratio for this variable is 1.00 and is not statistically significant. Welfare support, then, does not impact self-perceived health for either men or women. These findings do not support H2.

The situation for decommodification is much the same in Model 2 for both males and females. In contrast, for both males and females, the social cohesion odds ratio is

**Table 6-3. Determinants of Fair/Poor/Very Poor Self-Perceived Health, Multilevel Binary Logistic Regression Odds Ratios, N = 28,343**

<i>Level/Variable Name</i>	<i>Model 1</i>	<i>Model 2</i>	<i>Model 3</i>
<b>THEORETICAL VARIABLES</b>			
<u>Country-Level</u>			
Decommodification (Higher #s = More Decommodification)	1.00 (0.02)	1.01 (0.02)	1.01 (0.02)
<u>Individual-Level</u>			
Most People Can Be Trusted		0.53*** (0.02)	0.68*** (0.02)
<b>CONTROL VARIABLES</b>			
<u>Country-Level</u>			
Government Expenditure on Health as a Percent of Total Health Expenditure GDP per Capita			1.01 (0.01)  1.00 (0.00)
<u>Individual-Level</u>			
Secondary Diploma or Equivalent			0.79*** (0.03)
Some University, without Degree			0.79*** (0.04)
University, with Degree			0.67*** (0.04)
Low Income			1.62*** (0.07)
Medium Income			1.26*** (0.05)
Life Satisfaction (1 = Dissatisfied, 10 = Satisfied)			0.72*** (0.01)
Religious Services Attendance (1 = Never, Practically Never, 8 = More than Once a Week)			0.98** (0.01)
Other Marital Status ("Married or Cohabiting" = Reference Category)			1.03 (0.03)
Age			1.04*** (0.00)
Male			0.96 (0.03)
Log Likelihood	-16,155.58	-15,909.34	-13,719.19

\*Statistically significant at 0.05 level

\*\*Statistically significant at 0.01 level

\*\*\*Statistically significant at 0.001 level

statistically significant. Also, the effect is greater for women than for men. More specifically, in the case of males (Table 6-4), those who are trusting (OR = 0.56), as compared to those who are not, are 46 percent less likely to report fair/poor/very poor



health. As for females (Table 6-5), individuals who are trusting (OR = 0.50) are half as likely to report fair/poor/very poor health as those who are not. So, for both genders, being trusting is beneficial for self-perceived health. However, trust is more important for the health of women than for that of men. These findings do not support H2.

For both the males- and females-only tables, Model 3 includes all theoretical and control variables. In these models, the situation for theoretically important variables (i.e., decommodification and social cohesion) does not fundamentally change. That said, the effect of social cohesion does decrease for both men and women when controlling for other relevant factors. To elaborate, for men (Table 6-4), the social cohesion odds ratio indicates that those who are trusting (OR = 0.73), as compared to those who are not, are 27 percent less likely to report fair/poor/very poor health. As for females (Table 6-5), those who are trusting (OR = 0.64), relative to those who are not, are 36 percent less likely to report fair/poor/very poor health. The effect, then, is greater for women than men. With regard to the relationship between welfare support and self-perceived health, these findings do not support my hypothesis concerning gender differences (H2). In other words, welfare support does not impact the perceived health of either men or women. The other theoretically important variable, social cohesion, does have an effect on self-perceived health for both men and women. For both genders, those who are trusting, as compared to those who are not, are less likely to report fair/poor/very poor health. The magnitude of the effect is greater for women than for men. In other words, trust is more important for the perceived health of women than it is for that of men, a finding that does not support my theoretical expectations regarding gender.

In terms of non-theoretical variables in the model, the situation for both men and women is much the same as for the overall sample. However, religious involvement (OR = 0.98, not statistically significant) does not impact the perceived health of men (Table 6-4). For women (Table 6-5), the results here indicate that religious services attendance (OR = 0.98) does contribute to self-perceived health. The odds ratio on this variable, then, is statistically significant for women. For each one-unit increase on the religious services attendance scale (movement toward greater attendance), women are 2 percent less likely to report fair/poor/very poor health.

Model fit is another important consideration. Here again, I use the likelihood ratio test. For males, Model 1 does not have greater predictive power than the null model. Model 2, though, is an improvement over Model 1. And, Model 3 has better predictive power than Model 2. The situation is essentially the same for females. For both genders, then, knowledge about decommodification does not help in the prediction of self-perceived health. In contrast, knowledge about social cohesion, as well as several of the control variables, does improve predictive power.

*Relative Social Status, Decommodification,  
and Self-Perceived Health*

Additionally, I hypothesize that the relationship between decommodification and self-perceived health will be different for lower versus higher income groups (H3 and H4). More specifically, for lower income individuals, lower decommodification will increase the likelihood of poor self-perceived health (H4). But, for higher income individuals, lower decommodification will decrease the likelihood of poor self-perceived health (H3). The idea here is that lower decommodification/higher social inequality

**Table 6-4. Determinants of Fair/Poor/Very Poor Self-Perceived Health, Males Only, Multilevel Binary Logistic Regression Odds Ratios, N = 13,495**

<i>Level/Variable Name</i>	<i>Model 1</i>	<i>Model 2</i>	<i>Model 3</i>
<b>THEORETICAL VARIABLES</b>			
<u>Country-Level</u>			
Decommodification (Higher #s = More Decommodification)	1.00 (0.02)	1.01 (0.02)	1.02 (0.02)
<u>Individual-Level</u>			
Most People Can Be Trusted		0.56*** (0.02)	0.73*** (0.03)
<b>CONTROL VARIABLES</b>			
<u>Country-Level</u>			
Government Expenditure on Health as a Percent of Total Health Expenditure GDP per Capita			1.01 (0.01)  1.00 (0.00)
<u>Individual-Level</u>			
Secondary Diploma or Equivalent			0.86** (0.05)
Some University, without Degree			0.86* (0.06)
University, with Degree			0.71*** (0.05)
Low Income			1.74*** (0.11)
Medium Income			1.21** (0.07)
Life Satisfaction (1 = Dissatisfied, 10 = Satisfied)			0.71*** (0.01)
Religious Services Attendance (1 = Never, Practically Never, 8 = More than Once a Week)			0.98 (0.01)
Other Marital Status (“Married or Cohabiting” = Reference Category)			1.01 (0.05)
Age			1.04*** (0.00)
<b>Log Likelihood</b>	<b>-7,658.53</b>	<b>-7,562.25</b>	<b>-6,519.50</b>

\*Statistically significant at 0.05 level

\*\*Statistically significant at 0.01 level

\*\*\*Statistically significant at 0.001 level

contributes to lower levels of trust for all income groups. But, for lower income individuals, lower levels of trust produce higher levels of fair/poor/very poor health (or lower levels of very good/good health), whereas for higher income individuals, lower

**Table 6-5. Determinants of Fair/Poor/Very Poor Self-Perceived Health, Females Only, Multilevel Binary Logistic Regression Odds Ratios, N = 14,848**

<i>Level/Variable Name</i>	<i>Model 1</i>	<i>Model 2</i>	<i>Model 3</i>
<b>THEORETICAL VARIABLES</b>			
<u>Country-Level</u>			
Decommodification (Higher #s = More Decommodification)	1.00 (0.02)	1.01 (0.02)	1.01 (0.02)
<u>Individual-Level</u>			
Most People Can Be Trusted		0.50*** (0.02)	0.64*** (0.03)
<b>CONTROL VARIABLES</b>			
<u>Country-Level</u>			
Government Expenditure on Health as a Percent of Total Health Expenditure			1.01 (0.01)
GDP per Capita			1.00 (0.00)
<u>Individual-Level</u>			
Secondary Diploma or Equivalent			0.74*** (0.04)
Some University, without Degree			0.73*** (0.05)
University, with Degree			0.63*** (0.05)
Low Income			1.53*** (0.10)
Medium Income			1.31*** (0.08)
Life Satisfaction (1 = Dissatisfied, 10 = Satisfied)			0.72*** (0.01)
Religious Services Attendance (1 = Never, Practically Never, 8 = More than Once a Week)			0.98* (0.01)
Other Marital Status (“Married or Cohabiting” = Reference Category)			1.05 (0.05)
Age			1.04*** (0.00)
Log Likelihood	-8,501.89	-8,349.26	-7,197.49

\*Statistically significant at 0.05 level

\*\*Statistically significant at 0.01 level

\*\*\*Statistically significant at 0.001 level

levels of trust produce lower levels of fair/poor/very poor health (or higher levels of very good/good health). Tables 6-6, 6-7, and 6-8 show multilevel binary logistic regression (i.e., random intercept model) results for low-, medium-, and high-income groups,

respectively. In all three tables, Model 1 includes just the main predictor of interest, decommodification. For each of the income groups, the odds ratio for this variable is 1.00 and is not statistically significant. In other words, for all three income groups, the relationship between welfare support and self-perceived health is nonexistent. These findings do not support H3 and H4.

Also, for all income groups, Model 2 shows that decommodification does not impact self-perceived health, as the odds ratio for decommodification is not statistically significant. The odds ratio for social cohesion, however, is statistically significant for all three income groups. And, the effect of social cohesion is strongest for those who have low income. For the low-income group (Table 6-6), those who are trusting (OR = 0.52), as compared to those who are not, are 48 percent less likely to report fair/poor/very poor health. For the medium- and high-income groups (Tables 6-7 and 6-8), those who are trusting (ORs = 0.65 and 0.60), relative to those who are not, are 35 and 40 percent less likely to report fair/poor/very poor health, respectively. Stated another way, for all three income groups, being trusting is beneficial for self-perceived health. These findings support H4 but not H3.

Model 3 includes all theoretical and control variables. With regard to theoretically important variables (i.e., decommodification and social cohesion), the situation is much the same in Model 3 as in Model 2 for all three income groups. But, as is the case with the analyses for the overall sample and by gender, the impact of social cohesion decreases in Model 3. For example, for the low-income group (Table 6-6), those who are trusting (OR = 0.63), as compared to those who are not, are 37 percent less likely to report fair/poor/very poor health. These findings largely do not support my hypotheses

regarding lower versus higher income groups (H3 and H4). In particular, for all three income groups, welfare support does not have an effect on self-perceived health. Moreover, social cohesion, another theoretically important variable, has a similar effect on self-perceived health for all three groups. To elaborate, in all three income groups, those who are trusting, as compared to those who are not, are less likely to report fair/poor/very poor health. My hypotheses, though, imply that higher income individuals who are trusting, relative to those who are not, will be more likely to report poor self-perceived health (H3). Important to note is that these results do indicate that social cohesion is less impactful on the perceived health of the medium- and high-income groups than on that of the low-income group. This finding suggests that social cohesion is not as important for the health of higher status individuals as it is for that of lower status individuals.

In terms of non-theoretical variables, Model 3, for the most part, shows the same general patterns for all income groups as is the case for the overall sample. Some exceptions regarding the religious involvement and gender variables are present, though. Whereas for the low-income group (Table 6-6) the odds ratio for religious involvement is statistically significant, the opposite is true for the medium- and high-income groups (Tables 6-7 and 6-8). Regarding the low-income group (Table 6-6), for each one-unit increase on the religious services attendance scale (movement toward greater attendance) (OR = 0.97), individuals are 3 percent less likely to report fair/poor/very poor health. Also, for the medium-income group (Table 6-7), the odds ratio for gender is statistically significant. Here, males (OR = 0.86), as compared to females, are 14 percent less likely to report fair/poor/very poor health.

Another important consideration is model fit. As noted previously, I use the likelihood ratio test to establish model fit. For all three income groups, Model 1 does not improve on the null model in terms of predictive power. The addition of the decommodification variable, then, does not aid in the prediction of self-perceived health. However, for all three income groups, Model 2 has greater predictive power than Model 1. Likewise, for all three income groups, Model 3 is a better fit than Model 2. That is, the addition of the social cohesion variable and several of the control variables improves predictive power.

#### *Multilevel Versus Single-Level Statistical Analysis*

As has been noted repeatedly, I use a multilevel modeling approach because the interest here is in determining the impact of a country-level variable, decommodification, on an individual-level variable, self-perceived health. Chapter 4 delineates in detail why applying a traditional approach to such a situation is problematic. In short, a traditional approach assumes that individual-level observations are independent, and thus does not properly account for correlated error. And, a failure to adequately account for correlated error can lead to erroneous conclusions (Garson 2013). The goal in this chapter is to go beyond just explaining the shortcomings of a traditional approach with words. Rather, the idea is to show the contrasting results of multilevel and traditional binary logistic regressions. The point of this exercise is to bolster the argument that a multilevel approach is the correct one and to validate further this chapter's multilevel binary logistic regression results.

**Table 6-6. Determinants of Fair/Poor/Very Poor Self-Perceived Health, Low Income Group Only, Multilevel Binary Logistic Regression Odds Ratios, N = 9,356**

<i>Level/Variable Name</i>	<i>Model 1</i>	<i>Model 2</i>	<i>Model 3</i>
<b>THEORETICAL VARIABLES</b>			
<u>Country-Level</u>			
Decommodification (Higher #s = More Decommodification)	1.00 (0.01)	1.00 (0.01)	1.01 (0.02)
<u>Individual-Level</u>			
Most People Can Be Trusted		0.52*** (0.02)	0.63*** (0.03)
<b>CONTROL VARIABLES</b>			
<u>Country-Level</u>			
Government Expenditure on Health as a Percent of Total Health Expenditure GDP per Capita			1.00 (0.01)  1.00 (0.00)
<u>Individual-Level</u>			
Secondary Diploma or Equivalent			0.81*** (0.05)
Some University, without Degree			0.76** (0.07)
University, with Degree			0.72** (0.08)
Life Satisfaction (1 = Dissatisfied, 10 = Satisfied)			0.74*** (0.01)
Religious Services Attendance (1 = Never, Practically Never, 8 = More than Once a Week)			0.97** (0.01)
Other Marital Status ("Married or Cohabiting" = Reference Category)			1.00 (0.05)
Age			1.04*** (0.00)
Male			1.05 (0.05)
Log Likelihood	-6,175.99	-6,076.19	-5,315.41

\*Statistically significant at 0.05 level

\*\*Statistically significant at 0.01 level

\*\*\*Statistically significant at 0.001 level

Table 6-9 shows both multilevel and traditional binary logistic regression results for the overall sample. With regard to the latter, the table displays two regressions, one that does not involve Stata 12's (StataCorp 2011) "cluster" option and one that does. The cluster option adjusts standard errors based on a grouping variable but does not impact



**Table 6-7. Determinants of Fair/Poor/Very Poor Self-Perceived Health, Medium Income Group Only, Multilevel Binary Logistic Regression Odds Ratios, N = 10,437**

<i>Level/Variable Name</i>	<i>Model 1</i>	<i>Model 2</i>	<i>Model 3</i>
<b>THEORETICAL VARIABLES</b>			
<u>Country-Level</u>			
Decommodification (Higher #s = More Decommodification)	1.00 (0.02)	1.01 (0.02)	1.01 (0.02)
<u>Individual-Level</u>			
Most People Can Be Trusted		0.65*** (0.03)	0.73*** (0.04)
<b>CONTROL VARIABLES</b>			
<u>Country-Level</u>			
Government Expenditure on Health as a Percent of Total Health Expenditure GDP per Capita			1.01 (0.01)  1.00 (0.00)
<u>Individual-Level</u>			
Secondary Diploma or Equivalent			0.77*** (0.05)
Some University, without Degree			0.80** (0.06)
University, with Degree			0.70*** (0.06)
Life Satisfaction (1 = Dissatisfied, 10 = Satisfied)			0.71*** (0.01)
Religious Services Attendance (1 = Never, Practically Never, 8 = More than Once a Week)			0.98 (0.01)
Other Marital Status ("Married or Cohabiting" = Reference Category)			1.05 (0.06)
Age			1.04*** (0.00)
Male			0.86** (0.04)
Log Likelihood	-5,768.42	-5,729.41	-5,082.87

\*Statistically significant at 0.05 level

\*\*Statistically significant at 0.01 level

\*\*\*Statistically significant at 0.001 level

point estimates (StataCorp 2011). In this case, country is the grouping variable. The differences across the models are striking. For example, in the multilevel model, none of the odds ratios for the country-level variables are statistically significant. In contrast, in the traditional (without cluster) model, all of the odds ratios for the country-level

**Table 6-8. Determinants of Fair/Poor/Very Poor Self-Perceived Health, High Income Group Only, Multilevel Binary Logistic Regression Odds Ratios, N = 8,550**

<i>Level/Variable Name</i>	<i>Model 1</i>	<i>Model 2</i>	<i>Model 3</i>
<b>THEORETICAL VARIABLES</b>			
<u>Country-Level</u>			
Decommodification (Higher #s = More Decommodification)	1.00 (0.02)	1.00 (0.02)	1.01 (0.02)
<u>Individual-Level</u>			
Most People Can Be Trusted		0.60*** (0.04)	0.67*** (0.05)
<b>CONTROL VARIABLES</b>			
<u>Country-Level</u>			
Government Expenditure on Health as a Percent of Total Health Expenditure			1.01 (0.01)
GDP per Capita			1.00 (0.00)
<u>Individual-Level</u>			
Secondary Diploma or Equivalent			0.82* (0.07)
Some University, without Degree			0.79* (0.08)
University, with Degree			0.61*** (0.06)
Life Satisfaction (1 = Dissatisfied, 10 = Satisfied)			0.69*** (0.01)
Religious Services Attendance (1 = Never, Practically Never, 8 = More than Once a Week)			0.99 (0.01)
Other Marital Status ("Married or Cohabiting" = Reference Category)			1.02 (0.08)
Age			1.04*** (0.00)
Male			1.00 (0.06)
Log Likelihood	-3,715.65	-3,682.72	-3,335.02

\*Statistically significant at 0.05 level

\*\*Statistically significant at 0.01 level

\*\*\*Statistically significant at 0.001 level

variables are statistically significant. If relying on the traditional (without cluster) findings, one might incorrectly conclude that greater decommodification increases the odds of reporting fair/poor/very poor health. More specifically, for each one-unit increase

on the decommodification scale (OR = 1.02), individuals are 2 percent more likely to report fair/poor/very poor health.

With the inclusion of the cluster option, the odds ratios for the country-level variables are no longer statistically significant. However, the point estimates are the same as in the without-cluster model. Important to note is that the point estimates for the multilevel model are not always the same as the ones for the traditional models. For instance, the odds ratio for low income in the multilevel model is 1.62, whereas this number is 1.77 in the traditional models. In both cases, the odds ratio is statistically significant. But, the odds ratio for low income in the traditional models shows a much larger effect.

Finally, some of the individual-level odds ratios that are statistically significant in the multilevel model (i.e., some university without a degree and religious services attendance) are not in the traditional (with cluster) model. These discrepancies are problematic. In sum, if not for the use of a multilevel modeling approach, the results of this study could have been wrong.

### *Summary of Multivariate Findings*

This chapter presents results from multivariate analyses. In all of the null models, the ICC indicates that some of the variation in the outcome variable of interest, self-perceived health, is due to country-level factors. The use of a multilevel modeling approach, then, is appropriate here. Table 6-10 summarizes findings regarding my hypotheses. In terms of the random intercept models (i.e., multilevel models that include predictors), the regression results for the overall sample do not support my hypothesis

**Table 6-9. Determinants of Fair/Poor/Very Poor Self-Perceived Health, Multilevel/Traditional Binary Logistic Regression Odds Ratios, N = 28,343**

<i>Level/Variable Name</i>	<i>Multilevel</i>	<i>Traditional (without Cluster)</i>	<i>Traditional (with Cluster)</i>
<b>THEORETICAL VARIABLES</b>			
<u>Country-Level</u>			
Decommodification (Higher #s = More Decommodification)	1.01 (0.02)	1.02*** (0.00)	1.02 (0.02)
<u>Individual-Level</u>			
Most People Can Be Trusted	0.68*** (0.02)	0.70*** (0.02)	0.70*** (0.04)
<b>CONTROL VARIABLES</b>			
<u>Country-Level</u>			
Government Expenditure on Health as a Percent of Total Health Expenditure	1.01 (0.01)	1.01** (0.00)	1.01 (0.01)
GDP per Capita	1.00 (0.00)	1.00*** (0.00)	1.00 (0.00)
<u>Individual-Level</u>			
Secondary Diploma or Equivalent	0.79*** (0.03)	0.86*** (0.03)	0.86** (0.05)
Some University, without Degree	0.79*** (0.04)	0.84*** (0.04)	0.84 (0.10)
University, with Degree	0.67*** (0.04)	0.72*** (0.04)	0.72*** (0.06)
Low Income	1.62*** (0.07)	1.77*** (0.08)	1.77*** (0.08)
Medium Income	1.26*** (0.05)	1.30*** (0.05)	1.30*** (0.07)
Life Satisfaction (1 = Dissatisfied, 10 = Satisfied)	0.72*** (0.01)	0.72*** (0.01)	0.72*** (0.01)
Religious Services Attendance (1 = Never, Practically Never, 8 = More than Once a Week)	0.98** (0.01)	0.98* (0.01)	0.98 (0.01)
Other Marital Status ("Married or Cohabiting" = Reference Category)	1.03 (0.03)	0.98 (0.03)	0.98 (0.06)
Age	1.04*** (0.00)	1.04*** (0.00)	1.04*** (0.00)
Male	0.96 (0.03)	0.98 (0.03)	0.98 (0.05)
Log Likelihood (or Log Pseudolikelihood)	-13,719.19	-13,877.91	-13,877.91

\*Statistically significant at 0.05 level

\*\*Statistically significant at 0.01 level

\*\*\*Statistically significant at 0.001 level

about the relationship between decommodification and self-perceived health (H1). In all of the models for the overall sample, the decommodification odds ratio is not statistically significant. In other words, welfare support does not significantly affect individual self-perceived health. I hypothesize, though, that individuals in countries with more decommodifying welfare states will be less likely to report poor self-perceived health than individuals in countries with less decommodifying welfare states. The results here do not support this prediction. In contrast, the results for the overall sample show that, in all the models that include it, the odds ratio for social cohesion, another theoretically important variable, is statistically significant. The evidence indicates, then, that those who are trusting, as compared to those who are not, are less likely to report fair/poor/very poor health, a finding that coincides with expectations.

As for the by-gender random intercept models, the regression results do not support my hypothesis that the magnitude of the relationship between decommodification and self-perceived health will be greater for men than for women (H2). Stated another way, welfare support does not significantly impact the perceived health of men or women. However, for both genders, the other theoretically important variable, social cohesion, does have an effect. For both men and women, those who are trusting, as compared to those who are not, are less likely to report fair/poor/very poor health. But, the magnitude of the effect is greater for women than for men. Social cohesion, then, is more important for the health of women than for that of men, a finding that is inconsistent with expectations.

With regard to the random intercept models by social status group, the regression results largely do not support my hypotheses concerning lower versus higher income

groups (H3 and H4). More specifically, the relationship between welfare support and self-perceived health is nonexistent in all three income groups. Additionally, for all three income groups, the theoretically relevant variable, social cohesion, has a similar effect on self-perceived health. That is, in all three cases, those who are trusting, relative to those who are not, are less likely to report fair/poor/very poor health. My hypotheses, though, imply that higher income individuals who are trusting, as compared to those who are not, will be more likely to report poor self-perceived health. Also, these results indicate that social cohesion is less impactful on the perceived health of the medium- and high-income groups than on that of the low-income group. This finding suggests that social cohesion is not as important for the health of higher status individuals as it is for that of lower status individuals.

**Table 6-10. Findings Regarding Study Hypotheses**

<i>Label</i>	<i>Hypothesis</i>	<i>Supported?*</i>
H1	Individuals in countries with more decommodifying welfare states will be less likely to report poor self-perceived health compared to individuals in countries with less decommodifying welfare states.	D → H: No T → H: Yes
H2	The magnitude of the relationship between decommodification and self-perceived health will be greater for men than for women.	D → H: No T → H: No
H3	For higher income individuals, lower decommodification will decrease the likelihood of poor self-perceived health.	D → H: No T → H: No
H4	For lower income individuals, lower decommodification will increase the likelihood of poor self-perceived health.	D → H: No T → H: Yes

\*D = Decommodification; T = Trust; H = Self-Perceived Health

Finally, a comparison of multilevel and traditional binary logistic regression results bolsters the argument that a multilevel approach is appropriate for this study. In particular, the multilevel and traditional models here produce different outcomes when it

comes to odds ratios and statistical significance. For example, in the multilevel model, none of the odds ratios for country-level variables are statistically significant. But, in the traditional (without cluster) model, all of the odds ratios for country-level variables are statistically significant. A reliance on the traditional (without cluster) model, then, might lead one to draw incorrect conclusions. In short, if not for the use of a multilevel approach, the results of this study could have been really off base.

## CHAPTER 7

## SUMMARY AND CONCLUSIONS

*Overview*

This chapter summarizes study findings and offers some concluding thoughts. The chapter begins with a review of research questions and theoretical expectations. Next this chapter reiterates key findings, relating them to hypotheses and overall theoretical expectations. The chapter then examines study implications and possible avenues for future research. Finally, this chapter discusses study limitations.

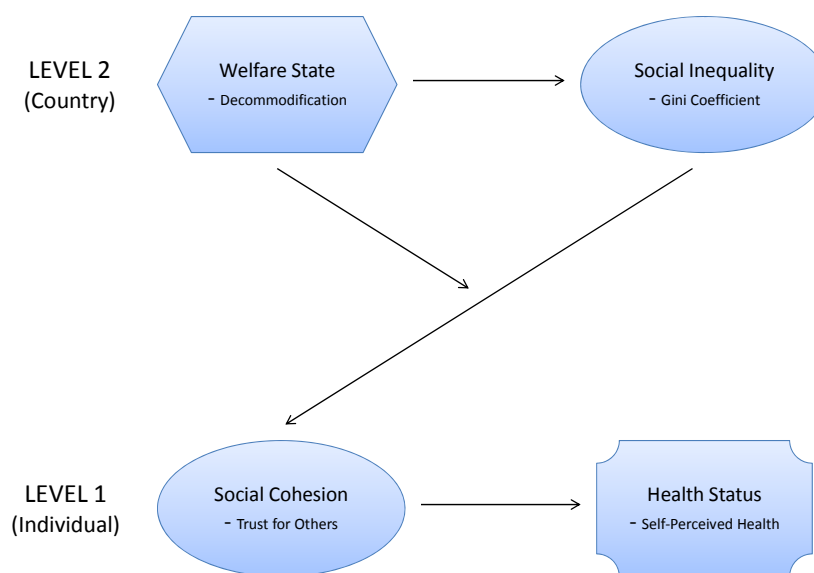
*Review of Research Questions, Theory, and Hypotheses*

Two major research questions are of interest here. First, are individuals in countries with more decommodifying welfare states less likely to report poor self-perceived health than individuals in countries with less decommodifying welfare states? Second, does decommodification affect the health of various population groups in different ways? Different gender and social status groups are of interest.

First shown in Chapter 3, Figure 3-1 offers a visual representation of the theoretical framework. I propose that the welfare state (decommodification) shapes the extent and impact of social inequality (Gini coefficient). Additionally, social inequality (Gini coefficient) impacts social cohesion (trust for others). And, finally, social cohesion (trust for others) contributes to health status (self-perceived health).

From my theory linking the welfare state and health status come four hypotheses. First shown in Chapter 6, Table 6-1 specifies hypotheses and accompanying labels. I use





**Figure 3-1. Theoretical Model Linking Decommodification and Self-Perceived Health**

a multilevel statistical approach (i.e., multilevel binary logistic regression) to test these hypotheses.

### *Hypotheses and Key Findings*

Importantly, the results from null models (i.e., multilevel models that do not include predictors) indicate that some of the variation in self-perceived health is due to country-level factors. The main question here is whether decommodification is one of these factors. To state the situation succinctly, the data do not support the idea that decommodification is important for individual self-perceived health. Below is a more detailed discussion of the findings related to each hypothesis of interest.

*H1.* I hypothesize that individuals in countries with more decommodifying welfare states will be less likely to report poor self-perceived health than individuals in

**Table 6-1. Study Hypotheses and Their Labels**

<i>Label</i>	<i>Hypothesis</i>
H1	Individuals in countries with more decommodifying welfare states will be less likely to report poor self-perceived health compared to individuals in countries with less decommodifying welfare states.
H2	The magnitude of the relationship between decommodification and self-perceived health will be greater for men than for women.
H3	For higher income individuals, lower decommodification will decrease the likelihood of poor self-perceived health.
H4	For lower income individuals, lower decommodification will increase the likelihood of poor self-perceived health.

countries with less decommodifying welfare states. In terms of the random intercept models (i.e., multilevel models that include predictors), the regression results for the overall sample do not support my hypothesis about the relationship between welfare support and self-perceived health. In all the models for the overall sample, welfare support does not significantly affect individual self-perceived health. However, the results for the overall sample show that, in all the models that include it, social cohesion, another theoretically important variable, does have an effect on self-perceived health. The evidence indicates, then, that those who are trusting, as compared to those who are not, are less likely to report fair/poor/very poor health, a finding that coincides with expectations.

*H2.* I hypothesize that the magnitude of the relationship between decommodification and self-perceived health will be greater for men than for women. Regarding the by-gender random intercept models, though, the regression results do not support my gender hypothesis. In other words, welfare support does not significantly impact the perceived health of men or women. However, for both genders, the other

theoretically important variable, social cohesion, does have an effect. For both men and women, those who are trusting, as compared to those who are not, are less likely to report fair/poor/very poor health. But, the magnitude of the effect is greater for women than for men. Social cohesion, then, is more important for the health of women than for that of men, a finding that is inconsistent with expectations.

*H3 and H4.* I hypothesize that the relationship between decommodification and self-perceived health will be different for lower versus higher income groups (H3 and H4). More specifically, for lower income individuals, lower decommodification will increase the likelihood of poor self-perceived health (H4). But, for higher income individuals, lower decommodification will decrease the likelihood of poor self-perceived health (H3). As for the random intercept models by social status group, the regression results largely do not support my hypotheses concerning lower versus higher income groups. In particular, the relationship between welfare support and self-perceived health is nonexistent in all three income groups. Moreover, for all three income groups, the theoretically relevant variable, social cohesion, has a similar effect on self-perceived health. That is, in all three cases, those who are trusting, relative to those who are not, are less likely to report fair/poor/very poor health. Concerning lower status individuals, this finding coincides with theoretical expectations. Finally, these results indicate that social cohesion is less impactful on the perceived health of the medium- and high-income groups than on that of the low-income group. Stated another way, social cohesion is more important for the perceived health of lower, as opposed to higher, status individuals.

First shown in Chapter 6, Table 6-10 summarizes findings regarding hypotheses. To summarize, the results from null models indicate that country-level factors explain a

portion of the variation in self-perceived health. But, the data do not support the idea that decommodification is one of these factors. This outcome holds when examining the overall sample, the sample by gender, and the sample by social status groups. Also, the data do support some of the theoretical predictions concerning the relationship between social cohesion and self-perceived health.

**Table 6-10. Findings Regarding Study Hypotheses**

<i>Label</i>	<i>Hypothesis</i>	<i>Supported?*</i>
H1	Individuals in countries with more decommodifying welfare states will be less likely to report poor self-perceived health compared to individuals in countries with less decommodifying welfare states.	D → H: No T → H: Yes
H2	The magnitude of the relationship between decommodification and self-perceived health will be greater for men than for women.	D → H: No T → H: No
H3	For higher income individuals, lower decommodification will decrease the likelihood of poor self-perceived health.	D → H: No T → H: No
H4	For lower income individuals, lower decommodification will increase the likelihood of poor self-perceived health.	D → H: No T → H: Yes

\*D = Decommodification; T = Trust; H = Self-Perceived Health

### *Theory and Key Findings*

On the whole, the bivariate and multivariate results offer some support to my theory linking welfare support and self-perceived health. To start, for all groups of interest, the results from bivariate analyses show that higher welfare support is associated with lower social inequality. Also, for all groups of interest, higher welfare support/lower social inequality is correlated with greater levels of support for the idea that most people can be trusted. Regarding the multivariate analyses for the overall sample and by gender, the results show that those who are trusting, as compared to those who are not, are less

likely to report fair/poor/very poor health. The same is the case for lower status individuals.

But, some findings from the bivariate and multivariate analyses contradict my theoretical arguments. To elaborate, the results from bivariate analyses show that while higher welfare support is associated with lower social inequality, there does not appear to be a gender variation. Similarly, though higher welfare support/lower social inequality is correlated with greater levels of support for the idea that most people can be trusted, gender differences do not seem to be present. In addition, the results from multivariate analyses show that the relationship between social cohesion and self-perceived health is stronger for women than for men and does not fundamentally differ by social status group. With regard to the latter, for higher status individuals, those who are trusting, compared to those who are not, are not more likely to report fair/poor/very poor health. Finally, for all groups of interest, welfare support does not have an effect on self-perceived health.

#### *Study Implications and Avenues for Future Research*

Clearly, the results from bivariate and multivariate analyses do not fully support either my hypotheses or the theory from which I derive my hypotheses. In such situations, opportunities exist to do some rich and creative thinking as to possible explanations, as well as to discuss both theoretical and empirical implications. For all groups of interest, the results from multivariate analyses show that welfare support does not have an effect on individual perceived health. These results are not wholly unexpected given the lack of consistent findings in the existing literature (Avendano et al.

2009; Bambra and Eikemo 2009; Bambra et al. 2010; Borrell et al. 2009; Eikemo et al. 2008a; Eikemo et al. 2008b; Eikemo et al. 2008c; Espelt et al. 2008; Lahelma et al. 2000; Rostila 2007; Zambon et al. 2006). But, my theory provides solid justification for the prediction that, for all groups of interest, welfare support will impact individual perceived health. Why, then, do the data not support this prediction? Of course, one possible explanation is that, taking into account my conceptualization (and measurement) of the welfare state, a relationship between these two variables truly does not exist. In other words, my findings reflect what is really going on in the social world. If the reality, this explanation suggests that my theory is in need of revision. Perhaps my conceptualization (and measurement) of the welfare state does not adequately represent the policy features that are most likely to impact self-perceived health. After all, scholars have long been engaged in a discussion about the range of possibilities when it comes to the defining features of the welfare state (Bonoli 1997; Castles and Mitchell 1993; Esping-Andersen 1990; Ferrera 1996; Korpi and Palme 1998; Leibfried 1992; Siaroff 1994; Wilensky 1975). In future projects, then, scholars might find it helpful to conceptualize (and measure) the welfare state in other ways as they seek to understand the relationship between the welfare state and individual perceived health.

Alternatively, a relationship between welfare support and individual perceived health really does exist, but for some reason, the data do not offer the evidence. To elaborate, during the period under study, a major economic recession occurred that may have significantly impacted social spending and welfare state provisions. The 2002 welfare state data I use in this study predate the recession, but some of the individual-level data do not. More specifically, regarding individual-level data, I use the 2005 to

2007 wave of the WVS and the 2008 to 2010 wave of the EVS for the analyses. If, due to the recession, major changes in social spending and welfare state provisions occurred after 2007, the 2008 to 2010 EVS data on self-perceived health may not be a reflection of 2002 welfare state conditions. In short, my use of individual-level data that precedes (the 2005 to 2007 wave of the WVS) and follows (the 2008 to 2010 wave of the EVS) the economic recession perhaps explains why study results do not show a relationship between welfare support and individual perceived health. The possibility exists that the waves “cancelled” each other out. Thus, in the future, separately analyzing data that precedes the recession from data that follows the recession might help to clarify the relationship between welfare support and individual perceived health.

Moreover, in general, I predict that higher welfare support will decrease the likelihood that individuals report poor self-perceived health. So, what might “explain away” this relationship? Perhaps individuals in higher welfare support situations have greater expectations concerning their health. Having greater access to health resources than those in lower welfare support situations, these individuals may expect the highest of standards when it comes to health outcomes. In short, individuals in higher welfare support situations may *perceive* their health to be poor given that their expectations regarding health are greater. Though the literature provides support to the validity of self-perceived health as a measure (Bardage et al. 2001; Burström and Fredlund 2001; DeSalvo et al. 2005; Jylhä et al. 2006; Larsson et al. 2002; McGee et al. 1999), it might also be fruitful, in terms of future research, to look at the relationship between the welfare state and objective measures of individual health.

Though the multivariate analyses do not support hypotheses regarding the link between welfare support and individual perceived health, one need not conclude that my theory is completely without merit. To elaborate, the results from the bivariate analyses show that higher welfare support is linked to lower social inequality. These results are consistent with Esping-Andersen's (1990) work that links decommodification to inequality. Also, the results from bivariate analyses indicate that higher welfare support/lower social inequality is associated with greater support for the idea that most people can be trusted. Other scholars have found a similar relationship (e.g., Kawachi et al. 1997). Another important point is that the results from multivariate analyses show that being trusting is beneficial to self-perceived health. These results reflect the pattern in previous research (e.g., Kawachi et al. 1999a). Furthermore, the findings regarding individual social cohesion and individual perceived health are particularly compelling. Clearly, then, good reasons exist for a continued theoretical and empirical interest in social cohesion as a factor that shapes health. In the future, researchers interested in health outcomes should contemplate where social cohesion might fit into the discussion, and at the very least, include social cohesion, where possible, as a control variable in statistical analyses.

Also important to consider is why study results do not link welfare support to individual perceived health, even though some evidence here suggests that the former is associated with social cohesion. These realities suggest that researchers have some work to do when it comes to understanding the relationship between welfare support and social cohesion, both theoretically and empirically. So, moving forward, researchers might find it worthwhile to examine individual social cohesion as an outcome variable. Looking



closely at social psychology literature that has relevance for perceptions of social trust (e.g., Rahn and Transue 1998) may be a good first step. Including discoveries from this body of literature in an investigation of the relationship between the welfare state and individual social cohesion may lead to better theoretical and empirical understanding. For example, one might find, in a review of the social psychology literature, that beliefs about self-reliance are important for perceptions of social trust. Additionally, beliefs about self-reliance may be relevant when it comes to the development of welfare states. In other words, maybe a third variable can explain the relationship between welfare support and social cohesion that is evident in my findings. Future research should seek to clarify these relationships.

Orloff's (1993) work provides justification for the argument that gender matters when it comes to the relationship between welfare support and self-perceived health. The idea here is that men, as compared to women, have more access to the benefits that decommodify labor, and as a result, they are more likely to experience advantages in the realm of health. However, contrary to theoretical expectations, the results from bivariate analyses show that no gender differences exist in the strength of the relationship between welfare support and social inequality, as well as the relationship between welfare support/social inequality and social cohesion. Similarly, inconsistent with theoretical expectations, the results from multivariate analyses show that the relationship between individual social cohesion and individual self-perceived health is stronger for women than for men. A possible explanation for the multivariate finding is that welfare support is simply not having the anticipated impact. If so, the gender aspects of the theoretical expectations regarding the impact of welfare support may not apply here. One

implication of all of these findings pertaining to gender is that my theory is in need of revision. A good starting point might be to investigate possible explanations for the gender differences in the relationship between individual social cohesion and individual perceived health. In addition, assuming that welfare support and individual perceived health have a relationship that is not captured in this study, it might also be useful to investigate whether mechanisms that link welfare support and individual perceived health are different for men versus women.

Finally, I predict that, for higher income individuals, those who are trusting, relative to those who are not, are more likely to report fair/poor/very poor health. This argument is premised on research that indicates that those who have resources will be more likely to part with those resources when greater trust is present (e.g., Bekkers 2003) and that fewer resources translates into poorer health (Babones 2010; Goesling 2007; Green et al. 2008; Ross and Mirowsky 1999; Zajacova et al. 2012). But, contrary to theoretical expectations, the results from multivariate analyses show that, for higher income individuals, those who are trusting, relative to those who are not, are less likely to report fair/poor/very poor health. A possible explanation for this finding is that giving of resources provides a health benefit that counteracts the decline in health that accompanies a loss in resources. In terms of future research, scholars, then, might find it a valuable endeavor to examine the health benefits of giving.

What the above discussion makes evident is that scholars have much more work to do when it comes to understanding the relationships of interest in this study, both from theoretical and empirical standpoints. Many opportunities exist to improve on previous efforts to theoretically specify how social policy is linked with individuals' health. As

well, much has yet to be done in the area of empirically verifying theoretical arguments. Continued efforts to understand these links are especially valuable given potential opportunities to inform policy decisions that may have broad consequences.

### *Limitations*

This study has several limitations. First, the data lack measures for some factors, at both country and individual levels, that may contribute to self-perceived health. For example, measures that account for certain cultural differences across countries, as well as measures for health behaviors at the individual level, do not exist in the data. To elaborate on the former, it is possible that the cultural traits of different countries could influence the way the individuals within those countries define health and hence their perceptions regarding their own health. Second, though the data offer measures for important concepts, these measures may not always be ideal. An example here is the measure for the “relative social status” concept. I use income variables in the combination dataset to operationalize this concept. However, wave 4 of the EVS and wave 5 of the WVS do not have an income variable that is consistent across the two waves. Measuring relative social status, then, requires combining two different income variables (one from the EVS and one from the WVS) in imperfect ways. Finally, though my research is essentially cross-sectional, the data come from several different years. But, I do not really account for any year-specific issues or change over time.

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APPENDICES

Appendix A. Descriptive Statistics for Theoretical Variables, by Country

**Table A-1. Descriptive Statistics on Theoretically Important Variables at the Individual Level, by Country (Weighted)**

<i>Country/Variable Name</i>	<i>%</i>	<i>SE</i>	<i>N*</i>
<u>Australia</u>			
Health Status (Self-Perceived Health)			
Very good/good	74.91	1.20	1,412
Fair/poor/very poor	25.09	1.20	1,412
Social Cohesion (Trust for Others)			
Can't be too careful	53.86	1.37	1,403
Most people can be trusted	46.14	1.37	1,403
<u>Austria</u>			
Health Status (Self-Perceived Health)			
Very good/good	73.22	1.18	1,509
Fair/poor/very poor	26.78	1.18	1,509
Social Cohesion (Trust for Others)			
Can't be too careful	63.64	1.28	1,452
Most people can be trusted	36.36	1.28	1,452
<u>Belgium</u>			
Health Status (Self-Perceived Health)			
Very good/good	73.73	1.20	1,509
Fair/poor/very poor	26.27	1.20	1,509
Social Cohesion (Trust for Others)			
Can't be too careful	64.06	1.30	1,498
Most people can be trusted	35.94	1.30	1,498
<u>Canada</u>			
Health Status (Self-Perceived Health)			
Very good/good	81.87	1.06	2,159
Fair/poor/very poor	18.13	1.06	2,159
Social Cohesion (Trust for Others)			
Can't be too careful	57.20	1.39	2,107
Most people can be trusted	42.80	1.39	2,107



**Table A-1. Descriptive Statistics on Theoretically Important Variables at the Individual Level, by Country (Weighted)**

<i>Country/Variable Name</i>	<i>%</i>	<i>SE</i>	<i>N*</i>
<u>Denmark</u>			
Health Status			
(Self-Perceived Health)			
Very good/good	79.68	1.06	1,506
Fair/poor/very poor	20.32	1.06	1,506
Social Cohesion			
(Trust for Others)			
Can't be too careful	23.88	1.13	1,486
Most people can be trusted	76.12	1.13	1,486
<u>Finland</u>			
Health Status			
(Self-Perceived Health)			
Very good/good	62.31	1.19	2,141
Fair/poor/very poor	37.69	1.19	2,141
Social Cohesion			
(Trust for Others)			
Can't be too careful	37.88	1.17	2,073
Most people can be trusted	62.12	1.17	2,073
<u>France</u>			
Health Status			
(Self-Perceived Health)			
Very good/good	70.93	0.92	2,501
Fair/poor/very poor	29.07	0.92	2,501
Social Cohesion			
(Trust for Others)			
Can't be too careful	76.17	0.87	2,486
Most people can be trusted	23.83	0.87	2,486
<u>Germany</u>			
Health Status			
(Self-Perceived Health)			
Very good/good	68.05	0.86	4,123
Fair/poor/very poor	31.95	0.86	4,123
Social Cohesion			
(Trust for Others)			
Can't be too careful	61.40	0.95	3,840
Most people can be trusted	38.60	0.95	3,840

**Table A-1. Descriptive Statistics on Theoretically Important Variables at the Individual Level, by Country (Weighted)**

<i>Country/Variable Name</i>	<i>%</i>	<i>SE</i>	<i>N*</i>
<u>Ireland</u>			
Health Status			
(Self-Perceived Health)			
Very good/good	86.29	1.10	999
Fair/poor/very poor	13.71	1.10	999
Social Cohesion			
(Trust for Others)			
Can't be too careful	61.52	1.66	984
Most people can be trusted	38.48	1.66	984
<u>Italy</u>			
Health Status			
(Self-Perceived Health)			
Very good/good	67.29	0.96	2,524
Fair/poor/very poor	32.71	0.96	2,524
Social Cohesion			
(Trust for Others)			
Can't be too careful	69.80	0.94	2,409
Most people can be trusted	30.20	0.94	2,409
<u>Japan</u>			
Health Status			
(Self-Perceived Health)			
Very good/good	54.04	1.51	1,088
Fair/poor/very poor	45.96	1.51	1,088
Social Cohesion			
(Trust for Others)			
Can't be too careful	60.92	1.52	1,026
Most people can be trusted	39.08	1.52	1,026
<u>Netherlands</u>			
Health Status			
(Self-Perceived Health)			
Very good/good	75.47	0.88	2,602
Fair/poor/very poor	24.53	0.88	2,602
Social Cohesion			
(Trust for Others)			
Can't be too careful	44.12	1.10	2,522
Most people can be trusted	55.88	1.10	2,522

**Table A-1. Descriptive Statistics on Theoretically Important Variables at the Individual Level, by Country (Weighted)**

<i>Country/Variable Name</i>	<i>%</i>	<i>SE</i>	<i>N*</i>
<u>New Zealand</u>			
Health Status (Self-Perceived Health)			
Very good/good	81.66	1.26	949
Fair/poor/very poor	18.34	1.26	949
Social Cohesion (Trust for Others)			
Can't be too careful	48.84	1.66	905
Most people can be trusted	51.16	1.66	905
<u>Norway</u>			
Health Status (Self-Perceived Health)			
Very good/good	78.41	0.94	2,115
Fair/poor/very poor	21.59	0.94	2,115
Social Cohesion (Trust for Others)			
Can't be too careful	25.81	0.99	2,090
Most people can be trusted	74.19	0.99	2,090
<u>Sweden</u>			
Health Status (Self-Perceived Health)			
Very good/good	78.58	0.92	2,180
Fair/poor/very poor	21.42	0.92	2,180
Social Cohesion (Trust for Others)			
Can't be too careful	30.91	1.08	2,031
Most people can be trusted	69.09	1.08	2,031
<u>Switzerland</u>			
Health Status (Self-Perceived Health)			
Very good/good	81.99	0.79	2,510
Fair/poor/very poor	18.01	0.79	2,510
Social Cohesion (Trust for Others)			
Can't be too careful	45.32	1.07	2,412
Most people can be trusted	54.68	1.07	2,412

**Table A-1. Descriptive Statistics on Theoretically Important Variables at the Individual Level, by Country (Weighted)**

<i>Country/Variable Name</i>	<i>%</i>	<i>SE</i>	<i>N*</i>
<u>United Kingdom</u>			
Health Status (Self-Perceived Health)			
Very good/good	73.78	0.88	2,601
Fair/poor/very poor	26.22	0.88	2,601
Social Cohesion (Trust for Others)			
Can't be too careful	63.77	1.00	2,540
Most people can be trusted	36.23	1.00	2,540
<u>United States</u>			
Health Status (Self-Perceived Health)			
Very good/good	81.71	1.31	1,248
Fair/poor/very poor	18.29	1.31	1,248
Social Cohesion (Trust for Others)			
Can't be too careful	60.65	1.72	1,241
Most people can be trusted	39.35	1.72	1,241

\*Unweighted

Appendix B. Descriptive Statistics for Control Variables, by Country

**Table B-1. Descriptive Statistics on Individual-Level Control Variables, by Country (Weighted)**

<i>Country/Variable Name</i>	<i>%/Mean*</i>	<i>SE</i>	<i>Range</i>	<i>N**</i>
<u>Australia</u>				
Educational Attainment				
Less than secondary diploma or equivalent	21.71	1.16		1,393
Secondary diploma or equivalent	28.96	1.28		1,393
Some university, without degree	34.61	1.34		1,393
University, with degree	14.72	0.80		1,393
Relative Social Status (Income Level)				
Low	38.26	1.39		1,309
Medium	28.24	1.30		1,309
High	33.50	1.33		1,309
Life Satisfaction (1 = Dissatisfied, 10 = Satisfied)	(7.28)	0.05	1.00 – 10.00	1,410
Religious Involvement (Religious Services Attendance: 1 = Never, Practically Never, 8 = More than Once a Week)	(2.88)	0.07	1.00 – 8.00	1,405
Marital Status				
Married or cohabiting	68.00	1.28		1,407
Other marital status	32.00	1.28		1,407
Age	(50.94)	0.44	18.00 – 95.00	1,410
Gender				
Male	45.27	1.37		1,411
Female	54.73	1.37		1,411
<u>Austria</u>				
Educational Attainment				
Less than secondary diploma or equivalent	64.18	1.25		1,509
Secondary diploma or equivalent	26.17	1.14		1,509
Some university, without degree	3.01	0.45		1,509
University, with degree	6.64	0.65		1,509

**Table B-1. Descriptive Statistics on Individual-Level Control Variables,  
by Country (Weighted)**

<i>Country/Variable Name</i>	<i>%/Mean*</i>	<i>SE</i>	<i>Range</i>	<i>N**</i>
<b>Relative Social Status</b> (Income Level)				
Low	35.55	1.39		1,246
Medium	36.52	1.39		1,246
High	27.94	1.29		1,246
Life Satisfaction (1 = Dissatisfied, 10 = Satisfied)	(7.56)	0.06	1.00 – 10.00	1,509
Religious Involvement (Religious Services Attendance: 1 = Never, Practically Never, 8 = More than Once a Week)	(3.77)	0.06	1.00 – 8.00	1,504
<b>Marital Status</b>				
Married or cohabiting	47.82	1.31		1,510
Other marital status	52.18	1.31		1,510
Age	(47.80)	0.49	18.00 – 91.00	1,510
<b>Gender</b>				
Male	48.06	1.31		1,510
Female	51.94	1.31		1,510
<b>Belgium</b>				
<b>Educational Attainment</b>				
Less than secondary diploma or equivalent	42.29	1.34		1,508
Secondary diploma or equivalent	25.82	1.16		1,508
Some university, without degree	22.95	1.13		1,508
University, with degree	8.95	0.76		1,508
<b>Relative Social Status</b> (Income Level)				
Low	25.79	1.28		1,354
Medium	45.45	1.41		1,354
High	28.75	1.28		1,354
Life Satisfaction (1 = Dissatisfied, 10 = Satisfied)	(7.67)	0.05	1.00 – 10.00	1,508
Religious Involvement (Religious Services Attendance: 1 = Never, Practically Never, 8 = More than Once a Week)	(2.89)	0.06	1.00 – 8.00	1,509

**Table B-1. Descriptive Statistics on Individual-Level Control Variables,  
by Country (Weighted)**

<i>Country/Variable Name</i>	<i>%/Mean*</i>	<i>SE</i>	<i>Range</i>	<i>N**</i>
<b>Marital Status</b>				
Married or cohabiting	60.36	1.32		1,506
Other marital status	39.64	1.32		1,506
Age	(49.50)	0.54	18.00 – 100.00	1,509
<b>Gender</b>				
Male	48.79	1.34		1,509
Female	51.21	1.34		1,509
<b>Canada</b>				
<b>Educational Attainment</b>				
Less than secondary diploma or equivalent	32.03	1.32		2,143
Secondary diploma or equivalent	36.37	1.35		2,143
Some university, without degree	9.97	0.85		2,143
University, with degree	21.63	1.14		2,143
<b>Relative Social Status (Income Level)</b>				
Low	25.55	1.35		1,818
Medium	27.84	1.34		1,818
High	46.60	1.53		1,818
Life Satisfaction (1 = Dissatisfied, 10 = Satisfied)	(7.76)	0.05	1.00 – 10.00	2,157
Religious Involvement (Religious Services Attendance: 1 = Never, Practically Never, 8 = More than Once a Week)	(3.87)	0.07	1.00 – 8.00	2,144
<b>Marital Status</b>				
Married or cohabiting	63.17	1.33		2,156
Other marital status	36.83	1.33		2,156
Age	(46.98)	0.49	16.00 – 94.00	2,143
<b>Gender</b>				
Male	47.94	1.40		2,155
Female	52.06	1.40		2,155



**Table B-1. Descriptive Statistics on Individual-Level Control Variables, by Country (Weighted)**

<i>Country/Variable Name</i>	<i>%/Mean*</i>	<i>SE</i>	<i>Range</i>	<i>N**</i>
<u>Denmark</u>				
Educational Attainment				
Less than secondary diploma or equivalent	24.71	1.16		1,489
Secondary diploma or equivalent	40.05	1.30		1,489
Some university, without degree	26.91	1.15		1,489
University, with degree	8.33	0.73		1,489
Relative Social Status (Income Level)				
Low	35.30	1.49		1,098
Medium	47.10	1.53		1,098
High	17.60	1.14		1,098
Life Satisfaction (1 = Dissatisfied, 10 = Satisfied)	(8.36)	0.05	1.00 – 10.00	1,503
Religious Involvement (Religious Services Attendance: 1 = Never, Practically Never, 8 = More than Once a Week)	(3.17)	0.05	1.00 – 8.00	1,505
Marital Status				
Married or cohabiting	56.21	1.32		1,498
Other marital status	43.79	1.32		1,498
Age	(48.26)	0.50	18.00 – 95.00	1,507
Gender				
Male	49.05	1.32		1,507
Female	50.95	1.32		1,507
<u>Finland</u>				
Educational Attainment				
Less than secondary diploma or equivalent	31.20	1.15		2,133
Secondary diploma or equivalent	28.55	1.06		2,133
Some university, without degree	22.91	0.98		2,133
University, with degree	17.33	0.87		2,133

**Table B-1. Descriptive Statistics on Individual-Level Control Variables, by Country (Weighted)**

<i>Country/Variable Name</i>	<i>%/Mean*</i>	<i>SE</i>	<i>Range</i>	<i>N**</i>
<b>Relative Social Status</b> (Income Level)				
Low	39.82	1.24		1,941
Medium	38.35	1.22		1,941
High	21.82	0.96		1,941
Life Satisfaction (1 = Dissatisfied, 10 = Satisfied)	(7.77)	0.04	1.00 – 10.00	2,140
Religious Involvement (Religious Services Attendance: 1 = Never, Practically Never, 8 = More than Once a Week)	(3.00)	0.05	1.00 – 8.00	2,134
<b>Marital Status</b>				
Married or cohabiting	57.86	1.18		2,132
Other marital status	42.14	1.18		2,132
Age	(48.19)	0.48	17.00 – 87.00	2,148
<b>Gender</b>				
Male	48.22	1.18		2,148
Female	51.78	1.18		2,148
<b>France</b>				
<b>Educational Attainment</b>				
Less than secondary diploma or equivalent	54.71	1.02		2,496
Secondary diploma or equivalent	16.23	0.77		2,496
Some university, without degree	12.84	0.69		2,496
University, with degree	16.22	0.75		2,496
<b>Relative Social Status</b> (Income Level)				
Low	39.72	1.05		2,241
Medium	34.68	1.03		2,241
High	25.60	0.94		2,241
Life Satisfaction (1 = Dissatisfied, 10 = Satisfied)	(7.01)	0.04	1.00 – 10.00	2,500
Religious Involvement (Religious Services Attendance: 1 = Never, Practically Never, 8 = More than Once a Week)	(2.46)	0.04	1.00 – 8.00	2,496

**Table B-1. Descriptive Statistics on Individual-Level Control Variables, by Country (Weighted)**

<i>Country/Variable Name</i>	<i>%/Mean*</i>	<i>SE</i>	<i>Range</i>	<i>N**</i>
<b>Marital Status</b>				
Married or cohabiting	53.00	1.02		2,495
Other marital status	47.00	1.02		2,495
Age	(47.80)	0.38	18.00 – 108.00	2,502
<b>Gender</b>				
Male	47.71	1.02		2,502
Female	52.29	1.02		2,502
<b>Germany</b>				
<b>Educational Attainment</b>				
Less than secondary diploma or equivalent	55.14	0.93		4,110
Secondary diploma or equivalent	27.10	0.85		4,110
Some university, without degree	7.13	0.45		4,110
University, with degree	10.62	0.57		4,110
<b>Relative Social Status (Income Level)</b>				
Low	30.04	0.90		3,664
Medium	46.46	0.98		3,664
High	23.50	0.84		3,664
Life Satisfaction (1 = Dissatisfied, 10 = Satisfied)	(7.12)	0.03	1.00 – 10.00	4,121
Religious Involvement (Religious Services Attendance: 1 = Never, Practically Never, 8 = More than Once a Week)	(3.16)	0.04	1.00 – 8.00	4,076
<b>Marital Status</b>				
Married or cohabiting	61.13	0.92		4,128
Other marital status	38.87	0.92		4,128
Age	(48.30)	0.35	18.00 – 93.00	4,115
<b>Gender</b>				
Male	48.39	0.93		4,139
Female	51.61	0.93		4,139

**Table B-1. Descriptive Statistics on Individual-Level Control Variables, by Country (Weighted)**

<i>Country/Variable Name</i>	<i>%/Mean*</i>	<i>SE</i>	<i>Range</i>	<i>N**</i>
<u>Ireland</u>				
Educational Attainment				
Less than secondary diploma or equivalent	38.02	1.62		995
Secondary diploma or equivalent	39.62	1.66		995
Some university, without degree	16.80	1.30		995
University, with degree	5.56	0.78		995
Relative Social Status (Income Level)				
Low	29.20	1.95		582
Medium	37.26	2.13		582
High	33.53	2.10		582
Life Satisfaction (1 = Dissatisfied, 10 = Satisfied)	(7.79)	0.06	1.00 – 10.00	1,009
Religious Involvement (Religious Services Attendance: 1 = Never, Practically Never, 8 = More than Once a Week)	(4.88)	0.08	1.00 – 8.00	1,005
Marital Status				
Married or cohabiting	46.43	1.67		1,000
Other marital status	53.57	1.67		1,000
Age	(42.58)	0.59	17.00 – 90.00	982
Gender				
Male	49.72	1.68		1,013
Female	50.28	1.68		1,013
<u>Italy</u>				
Educational Attainment				
Less than secondary diploma or equivalent	39.82	1.00		2,483
Secondary diploma or equivalent	40.08	0.99		2,483
Some university, without degree	10.66	0.62		2,483
University, with degree	9.44	0.59		2,483

**Table B-1. Descriptive Statistics on Individual-Level Control Variables, by Country (Weighted)**

<i>Country/Variable Name</i>	<i>%/Mean*</i>	<i>SE</i>	<i>Range</i>	<i>N**</i>
<b>Relative Social Status</b> (Income Level)				
Low	45.76	1.25		1,628
Medium	27.46	1.11		1,628
High	26.78	1.10		1,628
Life Satisfaction (1 = Dissatisfied, 10 = Satisfied)	(7.05)	0.04	1.00 – 10.00	2,508
Religious Involvement (Religious Services Attendance: 1 = Never, Practically Never, 8 = More than Once a Week)	(5.16)	0.04	1.00 – 8.00	2,492
<b>Marital Status</b>				
Married or cohabiting	59.66	0.99		2,494
Other marital status	40.34	0.99		2,494
Age	(48.36)	0.37	18.00 – 95.00	2,531
<b>Gender</b>				
Male	48.74	1.00		2,531
Female	51.26	1.00		2,531
<u>Japan</u>				
<b>Educational Attainment</b>				
Less than secondary diploma or equivalent	13.53	1.04		1,072
Secondary diploma or equivalent	59.51	1.50		1,072
Some university, without degree	1.87	0.41		1,072
University, with degree	25.09	1.32		1,072
<b>Relative Social Status</b> (Income Level)				
Low	42.10	1.56		1,000
Medium	29.70	1.44		1,000
High	28.20	1.42		1,000
Life Satisfaction (1 = Dissatisfied, 10 = Satisfied)	(6.98)	0.06	1.00 – 10.00	1,080
Religious Involvement (Religious Services Attendance: 1 = Never, Practically Never, 8 = More than Once a Week)	(3.81)	0.05	1.00 – 8.00	1,090

**Table B-1. Descriptive Statistics on Individual-Level Control Variables, by Country (Weighted)**

<i>Country/Variable Name</i>	<i>%/Mean*</i>	<i>SE</i>	<i>Range</i>	<i>N**</i>
<b>Marital Status</b>				
Married or cohabiting	74.59	1.32		1,090
Other marital status	25.41	1.32		1,090
Age	(47.97)	0.48	18.00 – 79.00	1,096
<b>Gender</b>				
Male	44.07	1.50		1,096
Female	55.93	1.50		1,096
<b><u>Netherlands</u></b>				
<b>Educational Attainment</b>				
Less than secondary diploma or equivalent	46.87	1.09		2,582
Secondary diploma or equivalent	24.83	0.97		2,582
Some university, without degree	20.78	0.88		2,582
University, with degree	7.51	0.58		2,582
<b>Relative Social Status (Income Level)</b>				
Low	44.94	1.19		2,106
Medium	29.67	1.08		2,106
High	25.39	1.05		2,106
Life Satisfaction (1 = Dissatisfied, 10 = Satisfied)	(7.92)	0.03	1.00 – 10.00	2,602
Religious Involvement (Religious Services Attendance: 1 = Never, Practically Never, 8 = More than Once a Week)	(3.05)	0.05	1.00 – 8.00	2,540
<b>Marital Status</b>				
Married or cohabiting	61.69	1.08		2,578
Other marital status	38.31	1.08		2,578
Age	(46.50)	0.39	15.00 – 95.00	2,602
<b>Gender</b>				
Male	48.91	1.09		2,604
Female	51.09	1.09		2,604

**Table B-1. Descriptive Statistics on Individual-Level Control Variables, by Country (Weighted)**

<i>Country/Variable Name</i>	<i>%/Mean*</i>	<i>SE</i>	<i>Range</i>	<i>N**</i>
<u>New Zealand</u>				
Educational Attainment				
Less than secondary diploma or equivalent	32.73	1.54		932
Secondary diploma or equivalent	18.35	1.27		932
Some university, without degree	25.86	1.43		932
University, with degree	23.07	1.38		932
Relative Social Status (Income Level)				
Low	19.69	1.37		843
Medium	25.50	1.50		843
High	54.80	1.71		843
Life Satisfaction (1 = Dissatisfied, 10 = Satisfied)	(7.90)	0.06	1.00 – 10.00	927
Religious Involvement (Religious Services Attendance: 1 = Never, Practically Never, 8 = More than Once a Week)	(2.78)	0.08	1.00 – 8.00	933
Marital Status				
Married or cohabiting	70.78	1.50		924
Other marital status	29.22	1.50		924
Age	(48.97)	0.55	18.00 – 89.00	928
Gender				
Male	45.02	1.63		933
Female	54.98	1.63		933
<u>Norway</u>				
Educational Attainment				
Less than secondary diploma or equivalent	25.62	1.00		2,108
Secondary diploma or equivalent	31.09	1.03		2,108
Some university, without degree	21.52	0.91		2,108
University, with degree	21.77	0.91		2,108

**Table B-1. Descriptive Statistics on Individual-Level Control Variables, by Country (Weighted)**

<i>Country/Variable Name</i>	<i>%/Mean*</i>	<i>SE</i>	<i>Range</i>	<i>N**</i>
<b>Relative Social Status</b> (Income Level)				
Low	34.67	1.13		1,939
Medium	32.15	1.08		1,939
High	33.18	1.08		1,939
Life Satisfaction (1 = Dissatisfied, 10 = Satisfied)	(8.04)	0.04	1.00 – 10.00	2,112
Religious Involvement (Religious Services Attendance: 1 = Never, Practically Never, 8 = More than Once a Week)	(2.86)	0.05	1.00 – 8.00	2,107
<b>Marital Status</b>				
Married or cohabiting	60.94	1.09		2,111
Other marital status	39.06	1.09		2,111
Age	(46.38)	0.41	18.00 – 79.00	2,115
<b>Gender</b>				
Male	49.75	1.12		2,112
Female	50.25	1.12		2,112
<b>Sweden</b>				
<b>Educational Attainment</b>				
Less than secondary diploma or equivalent	24.70	0.96		2,151
Secondary diploma or equivalent	35.01	1.09		2,151
Some university, without degree	18.23	0.85		2,151
University, with degree	22.06	0.93		2,151
<b>Relative Social Status</b> (Income Level)				
Low	26.69	1.01		2,079
Medium	28.68	1.03		2,079
High	44.63	1.14		2,079
Life Satisfaction (1 = Dissatisfied, 10 = Satisfied)	(7.68)	0.04	1.00 – 10.00	2,165
Religious Involvement (Religious Services Attendance: 1 = Never, Practically Never, 8 = More than Once a Week)	(2.23)	0.04	1.00 – 8.00	2,156



**Table B-1. Descriptive Statistics on Individual-Level Control Variables,  
by Country (Weighted)**

<i>Country/Variable Name</i>	<i>%/Mean*</i>	<i>SE</i>	<i>Range</i>	<i>N**</i>
<b>Marital Status</b>				
Married or cohabiting	60.69	1.12		2,095
Other marital status	39.31	1.12		2,095
Age	(46.66)	0.37	18.00 – 85.00	2,177
<b>Gender</b>				
Male	50.41	1.12		2,182
Female	49.59	1.12		2,182
<u>Switzerland</u>				
<b>Educational Attainment</b>				
Less than secondary diploma or equivalent	35.80	1.00		2,494
Secondary diploma or equivalent	35.65	1.03		2,494
Some university, without degree	5.63	0.46		2,494
University, with degree	22.92	0.90		2,494
<b>Relative Social Status (Income Level)</b>				
Low	19.98	0.92		2,072
Medium	49.79	1.16		2,072
High	30.22	1.07		2,072
Life Satisfaction (1 = Dissatisfied, 10 = Satisfied)	(8.00)	0.04	1.00 – 10.00	2,501
Religious Involvement (Religious Services Attendance: 1 = Never, Practically Never, 8 = More than Once a Week)	(3.29)	0.05	1.00 – 8.00	2,483
<b>Marital Status</b>				
Married or cohabiting	51.86	1.06		2,486
Other marital status	48.14	1.06		2,486
Age	(50.16)	0.38	18.00 – 99.00	2,512
<b>Gender</b>				
Male	47.13	1.06		2,512
Female	52.87	1.06		2,512

**Table B-1. Descriptive Statistics on Individual-Level Control Variables, by Country (Weighted)**

<i>Country/Variable Name</i>	<i>%/Mean*</i>	<i>SE</i>	<i>Range</i>	<i>N**</i>
<u>United Kingdom</u>				
Educational Attainment				
Less than secondary diploma or equivalent	39.63	1.02		2,505
Secondary diploma or equivalent	32.86	0.99		2,505
Some university, without degree	15.93	0.76		2,505
University, with degree	11.58	0.69		2,505
Relative Social Status (Income Level)				
Low	28.95	1.07		1,898
Medium	31.40	1.11		1,898
High	39.65	1.19		1,898
Life Satisfaction (1 = Dissatisfied, 10 = Satisfied)	(7.54)	0.04	1.00 – 10.00	2,596
Religious Involvement (Religious Services Attendance: 1 = Never, Practically Never, 8 = More than Once a Week)	(2.85)	0.05	1.00 – 8.00	2,586
Marital Status				
Married or cohabiting	50.34	1.03		2,594
Other marital status	49.66	1.03		2,594
Age	(47.45)	0.38	15.00 – 103.00	2,591
Gender				
Male	48.31	1.03		2,602
Female	51.69	1.03		2,602
<u>United States</u>				
Educational Attainment				
Less than secondary diploma or equivalent	34.73	1.68		1,249
Secondary diploma or equivalent	54.24	1.74		1,249
Some university, without degree	9.26	1.04		1,249
University, with degree	1.76	0.39		1,249

**Table B-1. Descriptive Statistics on Individual-Level Control Variables, by Country (Weighted)**

<i>Country/Variable Name</i>	<i>%/Mean*</i>	<i>SE</i>	<i>Range</i>	<i>N**</i>
<b>Relative Social Status</b> (Income Level)				
Low	21.98	1.54		1,153
Medium	56.47	1.80		1,153
High	21.55	1.48		1,153
Life Satisfaction (1 = Dissatisfied, 10 = Satisfied)	(7.30)	0.06	1.00 – 10.00	1,241
Religious Involvement (Religious Services Attendance: 1 = Never, Practically Never, 8 = More than Once a Week)	(4.49)	0.09	1.00 – 8.00	1,198
<b>Marital Status</b>				
Married or cohabiting	53.58	1.75		1,249
Other marital status	46.42	1.75		1,249
Age	(45.93)	0.60	18.00 – 91.00	1,249
<b>Gender</b>				
Male	48.27	1.74		1,249
Female	51.73	1.74		1,249

\*The relative social status percentages, etc. are the result of the imperfect combination of two variables, one from the EVS and the other from the WVS. Means are in parentheses.

\*\*Unweighted

## CURRICULUM VITAE

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## RESEARCH AND TEACHING INTERESTS

Social Policy and Welfare State Institutions; Comparative-Historical Sociology;  
Political Sociology; Sociology of Health and Medicine

## EDUCATION

Ph.D. Sociology. Utah State University, 2015 (expected)

Dissertation Title: “Welfare State Context and Individual Health: The Role of  
Decommodification in Shaping Self-Perceived Health”

M.S. Sociology. Utah State University, 2010

Thesis Title: “Private or Public Insurance? The Institutional History of Health  
Care in the United States and the United Kingdom”

B.S. Sociology (Magna Cum Laude). University of Utah, 2005

A.S. Individualized (High Honors). Utah Valley University, 2003

## ACADEMIC EMPLOYMENT

**Instructor**, Utah State University, 2014-Present

## AWARDS AND HONORS

2013 *Graduate Student Instructor of the Year*, Department of Sociology, Social Work  
& Anthropology, Utah State University

2013 Joseph A. and Grace W. Geddes Research Scholarship, Utah State University

2012 Carmen Fredrickson Fellowship, Utah State University

2010 Joseph A. and Grace W. Geddes Research Scholarship, Utah State University

2010 Calvin R. Maurer Fellowship, Utah State University

2010 Edward O. Moe Fellowship, Utah State University

- 2008 Presidential Fellowship, Utah State University
- 2003 Transfer Student Honors at Entrance Scholarship, University of Utah
- 1996 General Academic Scholarship, Utah Valley University

## PUBLICATIONS

### Peer-Reviewed Journal Articles

Reither, Eric N., Theresa M. Fedor, Karin M. Abel, and Dan J. Hatch. 2009. "Associations between Educational Attainment and Diabetes in Utah: The Behavioral Risk Factor Surveillance System, 1996-2007." *Utah's Health: An Annual Review* 14:42-51.

### Refereed Book Chapters

Abel, Karin and Christy Glass. 2013. "Social Support Programs." Pp. 804-12 in *Sociology of Work: An Encyclopedia*. Vol. 2, edited by V. Smith. Thousand Oaks, CA: Sage Publications.

**\*Named "2013 Outstanding Academic Title" by Choice Magazine**

### Manuscripts in Progress

Abel, Karin M. "Welfare State Context and Individual Health." In preparation for submission to *Social Science and Medicine*.

Abel, Karin M. "Private or Public Insurance? Explaining Health Care Policy in the United States and the United Kingdom, 1900-1950." In preparation for submission to *Social Forces*.

Bailey, Amy K., Karin M. Abel, and Stepfan Huntsman. "Community Socioeconomic Change, Military Enlistment, and Enlistee Characteristics, 1990-2008." In preparation for submission to *Armed Forces and Society*.

## SELECTED PRESENTATIONS

Abel, Karin. 2014. "The Relationship between Decommodification and Self-Perceived Health in Major Industrialized Capitalist Countries." Annual Meetings of the *Pacific Sociological Association*. Portland, OR.

Abel, Karin M. 2013. "Private or Public Insurance? The Institutional History of Health Care in the United States and the United Kingdom." Annual Meetings of the *Social Science History Association*. Chicago, IL.

Bailey, Amy K., Karin M. Abel, and Stepfan Huntsman. 2013. "Community Socioeconomic Change, Military Enlistment, and Enlistee Characteristics, 1990-2008." Annual Meetings of the *Population Association of America*. New Orleans, LA.

Abel, Karin M. 2013. "The Welfare State and Self-Perceived Health." Annual Meetings of the *Pacific Sociological Association*. Reno, NV.

Abel, Karin. 2012. "Private or Public Insurance? The Institutional History of Health Care in the United States and the United Kingdom." Annual Intermountain Graduate Research Symposium. Logan, UT.

Holyoak, Grant, Karin Abel, and Christy Glass. 2011. "Identifying Patterns of Migration to the Intermountain West." Research on Capitol Hill. Salt Lake City, UT.

## RESEARCH POSITIONS

**Research Assistant**, Utah State University, 2010-2012

Projects

Community Characteristics and Military Enlistment, with Dr. Amy Bailey

"Identifying Patterns of Migration to the Intermountain West," with Dr. Christy Glass

**Research Assistant**, University of Utah, 2005-2006

Projects

Securing Copyright Permissions for a Sociology Textbook, with Drs. Marcia Segal and Theresa Martinez

## TEACHING POSITIONS

**Graduate Instructor**, Utah State University, 2011-2014

Courses: *Introductory Sociology, Social Problems, Social Statistics*

**Teaching Assistant**, Utah State University, 2009-2010

Courses: *Introductory Sociology, Social Statistics, Criminology*

**Teaching Assistant**, University of Utah, 2005-2006

Courses: *Race/Ethnicity/Class/Gender, Ethnic Minorities in America, Deviant Behavior/Social Control*

## UNDERGRADUATE COURSES TAUGHT

### **Introductory Sociology**

Semesters (Student Counts): Spring 2014 (83), Spring 2013 (88)

### **Social Problems**

Semesters (Student Counts): Fall 2014 (45), Fall 2011 (55), Summer 2011 (12)

### **Social Inequality**

Semesters (Student Counts): Spring 2015 (34), Fall 2014 (45)

### **Methods of Social Research**

Semesters (Student Counts): Spring 2015 (44), Fall 2014 (34)

### **Social Statistics**

Semesters (Student Counts): Fall 2013 (31)

## PROFESSIONAL MEMBERSHIPS

*American Sociological Association, 2013-Present*

*Pacific Sociological Association, 2013-Present*

*Social Science History Association, 2013-2013*

## PROFESSIONAL SERVICE

**Reviewer**, *International Journal of Sociology*, 2014-2014

## DEPARTMENTAL SERVICE

**President**, *Sociology Graduate Student Association*, Utah State University, 2013-2014

**Vice President**, *Sociology Graduate Student Association*, Utah State University, 2010-2011