THE CATHOLIC UNIVERSITY OF AMERICA

The End of Society? Defining and Tracing the Development of Fragmentation through
The Modern and into the Post-Modern Era

A DISSERTATION

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Abstract

Without great precision, sociologists have used the term 'fragmentation' to describe a state of disconnect found in both advanced industrial and developing nations. They suggest that it is influenced by such factors as globalization and capitalism. This dissertation attempts to define fragmentation as a process and suggest how it can be used as a theoretical perspective for understanding contemporary social divisions. Prior research is used to define social fragmentation as a process in modern society by which different groups form parallel structures within society, which have little or no consistent interaction between them over the full spectrum of the social experience; these groups are closely related to exposure to modern ideas. Fragmentation is found on four axes: spatial, cultural normative, economic, and political. From these axes, six specific types of fragmentation were selected as examples of how a method can be created to investigate this social phenomenon. A cross-sectional method was used with the nation-state as the unit of analysis, where theoretically based predictor variables were regressed against theoretically based indicator values in order to capture a snapshot of how fragmentation appears in countries at differing levels of development. Two types of special fragmentation were analyzed. Analysis of fragmentation of families suggests that immigration to a country and female labor force participation increased fragmentation. Analysis of fragmentation of cities that suggests the best predictors of fragmentation have to do with poverty. Two types of cultural normative fragmentation were selected. Analysis of fragmentation of normative systems suggests that various cultural factors, income distribution, education, and access to the internet predict greater fragmentation.

Analysis of fragmentation of morality suggests it is most closely related to modern structures for dissemination of knowledge. Two types of economic fragmentation were selected. Analysis of fragmentation of markets suggests that the structure of economies strongly influences fragmentation. Analysis of fragmentation of production processes provided only limited support for the hypothesis that the most modern economies featured the most fragmentation. Overall analysis suggests that social fragmentation can be empirically defined and measured. Future research should consider access to world systems as a factor in the fragmentation process.

This dissertation by Eric Sean Williams fulfills the dissertation requirement for the doctoral degree in Sociology approved by Bronislaw Misztal, as Director, and by Enrique Pumar, and Enzo Mingione as Readers.

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Dedication

This dissertation is dedicated to the memory of my father Evan Harpur Williams. Along with my mother, he believed that education was an end in and of itself, and should be pursued throughout one's lifetime. After retiring as a teacher, he started a second career as a child advocate and social worker, helping children with emotional and social needs succeed in public school settings. As a father, he never questioned my desire for a graduate education, even offering unlimited support when I decided that I was a sociologist not a psychologist. He passed away in 2008, but his love and guidance fills the pages of this work. I know he is proud of me.

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Chapter 1

Introduction

Recent political candidates in the United States have called for the nation to unite during a time of financial difficulties and war, to work together to build a stronger society. However, people on each side of the ideological divide feel that their values are the ones behind which the country should unite. In Denmark several years ago, the government was caught in a tug-of-war between Muslims who were offended by cartoons depicting the prophet Mohammed and those who believed that free speech should be almost unlimited. In many countries, representatives of the working class decry what they perceive to be growing divisions between the rich and the poor. Around cities in the developing world, slums continue to grow.

Social divisions such as these are not new. In the aftermath of Julius Caesar's conquest of Egypt, there was tension between those who supported worship of the traditional Roman deities and those who wanted to incorporate the Egyptian pantheon into the life of the Republic. During the Protestant Reformation, countries would ban speech from opposing religious groups, fearing the spread of heretical ideas. Classical Athens, recognized as the first democracy, involved a strong division between the class of freemen and that of slaves.

In modern Western society, freedom and merit are supposed to determine one's life chances. However, for much of the modern era factors such as race, sex, and socioeconomic class have limited some groups' ability to integrate into the larger society. Members of these groups are limited in their life chances, as they often are unable to

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mobilize the necessary socially acceptable means to achieve the same outcomes as the majority.

As Western society proceeds into the late-modern era, new types of social divisions seem to be forming. For instance, in the first sociological study of American society, the Marquise Alexis de Tocqueville observed that the United States was a nation of voluntary group memberships. However, in the 1980's Robert Putman observed in *Bowling Alone* that membership in such organizations was declining at alarming rates. Similar patterns of social disunity have been observed in societies throughout the world in many different social structures. Some have referred to this process of society breaking down into disjointed parts as fragmentation.

This dissertation seeks demonstrate that the concept of *fragmentation* is a process that leads to new forms of social divisions unique to modern society and to modernization. After developing a working definition of fragmentation, it will establish the patterns of social structures that are most likely to demonstrate fragmentation. Next, various types of fragmentation will be studied in some depth, creating statistical models to determine what social factors can be used to indicate the presence of said types of fragmentation in society. Those models will then be compared in search of commonalities, from which a revised definition of fragmentation will be proposed. Finally, the implications of fragmentation for the future of modern society will be proposed.

Four Perspective Regarding Social Divisions and Fragmentation

Four perspectives of social differentiation are noteworthy in providing a perspective of how fragmentation or similar differentiation theories have been approached in past research. These perspectives come from neo-Marxism, economic sociology, cultural sociology, and dependency theory. Each of these provides certain themes that can help to formulate a comprehensive theory of fragmentation, though each also has considerable limitations.

The Neo-Marxist Perspective

In general, neo-Marxism is simply revisions to Marxist theory that include stratified conflicts other than just class conflict that lead to exploitation in society. Some of the major lines of stratification found in neo-Marxist theories are race, ethnicity, sex, and location. However, in developing countries class still drives much of the social conflict from this perspective, even though class often follows ethnic lines. For instance, in Bolivia much of the wealth is held by white decedents of European immigrants, while indigenous Indian groups are often destitute. From the same example, neo-Marxists are interested in the unequal distribution of capital from resources where the whiter eastern lowlands are much wealthier than the more Indian western mountains.

As early Marxism was concerned with transnational labor issues, neo-Marxist theory often confronts transnational issues including globalization. To many from this tradition, the growing interconnectedness of global capitalism has allowed members of the bourgeoisie from one part of the world to oppress people from entirely different places. Resnick and Wolff (2001) state,

> … we can say there is no inside and outside to global capitalist exploitation; it no
>
> longer displays a fixed spatiality. The passing of classical capitalist imperialism
>
> spread the cancer of capitalist exploitation more globally. (p 64)

Instead, the elites from developed nations effectively divide the societies of developing countries into easily exploitable groups, just as they find ways to dominate groups within their own societies.

Neo-Marxists also suggest that some of the traditional factors seen as social divisions are being overcome by transnational capitalism, though not for the better. In many cases, different racial, ethnic, religious, and gender groups are being oppressed together. Those who are chosen to be part of the elite may be part of some dominant group, but it does not necessarily need to be based upon any traditional division. For instance, in their discussion of neo-imperialism, Resnick and Wolff (2001) state that,

> Not only is there no fixed place of capitalist surplus-value appropriation in
>
> Empire, but the capitalist appropriators themselves decreasingly display any
>
> necessary citizenship, race, ethnicity, or gender. In classical capitalist
>
> imperialism, by contrast, the location of appropriators often correlated perfectly
>
> with their citizenship, race, and gender. (p 64)

In other words, those who exploit others do so because they have access to various means that allow them to do so. Only when access to the means of exploitation exists do divisions such as race, ethnicity, and gender come into play.

Another key point of the neo-Marxist view of modern social divisions was postulated by Manuel Castells in his research regarding networked societies. Specifically in describing the rise of the 'fourth world' in *The End of the Millennium* he states (2000)

> Globalization proceeds selectively, including and excluding segments of economies and societies in and out of the networks of information, wealth, and power that characterize the new, dominant system. Individualization of work leaves workers to each one of themselves, to barging their fate *vis-à-vis* constantly changing market forces. The crisis of the nation-state, and the institutions of civil society constructed around it during the industrial era, undermines institutional capacity to correct social imbalances derived from unrestricted market logic. (p. 165)

He further suggest that this exclusion creates *"black holes of informational capitalism* (2000, p. 165) which are,

> … regions of societies from which, statistically speaking, there is no escape from the pain and destruction inflicted on the human condition for those who, in one way or another, enter those social landscapes. (2000, p 165)

The important point is that for various reasons members of societies become relegated to areas of society so disconnected with the structures of power in modern society that they are unable to mobilize enough resources of any type to escape the cycles of exploitation.

In essence, the neo-Marxist perspective could be summed up in that those who have power can and usually do exploit the masses. Social divisions are thus created because some have access to power while others do not have it. Subsequently, those who

are without power are easily isolated from the tools of modern society that can benefit their lives. Society thus is divided into those who do not have power and those who are condescended to be allowed to have some.

In developing a theory of social fragmentation, two key points from neo-Marxism can be drawn. First, the new social divisions in late modern society are global in scope. International trade and communication allow for various interests in a given country to be controlled from an entirely different country. This will be important in that I will argue that fragmentation is global in scope and that fragmentation is driven by access to the tools of modernity. The second point from neo-Marxism which contributes to a theory of social fragmentation is the concept of access and lack of access. As Castells' writings suggest, those who do not have access to the tools of modernity are rarely able to escape the spatial, economic, and social dimensions of their exclusion. The exploited become so divorced from the centers of power in society that they have little control over their own conditions.

Neo-Marxist theories of modern social divisions do describe some important processes associated with some types of modern social divisions. However, for several reasons this perspective is lacking. Most importantly, the theories are overly focused on the power of class and transnational capitalism in modern social division. While this explains some of the social divisions in developing societies, it does not explain the divisions in the developed world nearly as well. In addition, neo-Marxist theories are not

nearly as useful at explaining non-hierarchical divisions in countries where access to tools such as education and the internet are prevalent.

Economic Sociology

The perspectives found in economic sociology are diverse as they relate to fragmentation and social isolation. Many are focused upon social isolation in specific contexts; some focus on fragmentation as a large scale state of societies. However, what the theories do have in common is a focus on economic deprivation as a cause of fragmentation.

One of the theorists that illustrates this point most clearly is William Julius Wilson, who emphasizes that the loss of work in urban centers is the main cause of social isolation in the contemporary United States (1996). To illustrate his point he uses the African-American community to demonstrate how changes in the physical location of classes within the African-American community have changed the overall structure of the black urban community. For instance, he describes the pre-1960's situation as,

> Lower-class, working-class, and middle-class black families lived more or less in the same communities (albeit in different neighborhoods), sent their children to the same schools, availed themselves of the same recreational facilities, and shopped at the same stores. Whereas today's black middle-class professionals no longer tend to live in ghetto neighborhoods and have moved increasingly into mainstream occupations outside the black community… (1987, p 7).

In other words, as programs such as affirmative action brought more economic opportunities to the African-American middle class, desegregation allowed them to remove themselves from the inner city community. He continues,

> The net result is that the degree of social isolation—defined in this context as the lack of contact or of sustained interaction with individuals and institution that represent mainstream society—in these highly concentrated poverty areas has become far greater than we had previously assumed. (1987, 18)

New opportunities for parts of one racial group hurt other parts of that racial group. In the long run, according to Wilson this led the full marginalization of the inner city from the suburban centers of power, generally along racial lines. With Roger Lawson he states (Lawson and Wilson, 1995)

> …[in the US] as cities lost population, they became poorer and more minority in their racial and ethnic composition, so much so that in the eyes of many in the dominant white population, the minorities symbolize the ugly urban scene left behind. Today the divide between the suburbs and the city is, in many respects, a racial divide. (p 697-698)

Thus, the lack of opportunity for those who remain in the inner city removes the chance of any political or social power coming from the isolated urban communities.

According to Lawson and Wilson (1995) the social isolation of the urban population creates a 'new poverty' based upon this social isolation. They describe the effect of this as

> … "the new poverty," these recent forms of inequality reflect changes in the size
>
> and composition of economically marginal groups, the crystallization of racial
>
> cleavages among them, a downward turn in their life chances, and an increase in
>
> their social and political isolation. (p 693)

This creates a poverty that is all encompassing, and not just economic in nature. They explain by stating,

> What most characterizes the "new poverty" is that it affects the life chances of
>
> the poor more acutely than in the recent past. It has involved qualitative changes
>
> in status, social relations, and expectations of the poor and does not just represent
>
> new forms of material inequality and deprivation. (p 693)

Those left in cities with no access to economic activity lose any ability to enter the mainstream of society.

Wilson's arguments capture an essential point of my fragmentation theory that groups, once isolated from society in the late modern world, have a hard time reintegrating. However, on several points Wilson's theory is lacking. First, his focus is entirely upon the racial aspects of social isolation, which is fully understandable since he is primarily researching racism and racial integration. However, not all social divisions in the late modern society can be characterized as racial, just as previously I argued they are not only based upon class. Instead, differences based upon beliefs and practices have become just as relevant. A second limitation of Wilson's theories is that social isolation is simply based upon economic inequality. Again, the recognition of social isolation based upon belief and practice belies this perspective.

Other perspectives from an economic sociological point of view point to changes in patterns of consumption as an illustration of the fragmented nature of contemporary society. For instance, Viviana Zelizer (1999) describes the idea of 'flavor boundaries' between neighborhoods in modern communities, which are lines where marketing studies show that preferences for one type of cuisine give way to preferences for others (p 201). She argues that this undermines the idea of the modern market as a unifying force by stating (1999),

> Class differences certainly became salient in the 1940s and 50s, but two other developments likewise deserve attention: first, the extension of consumer culture actually produced differentiated markets corresponding to ethnic, religious, or racial traditions; second, new groups of immigrants relived some of the same process of negotiation with the American marketplace as their predecessors had experienced in the 1920s. (p 201)

She argues that rather than bringing unity to society, access to the market place has created a greater number of markets that cater to group preferences.

The economic sociological perspective is helpful in developing a comprehensive theory of social fragmentation in several ways. First, it acknowledges that new forms of social divisions lead to a type of exclusion that leads to new types of social isolation that in general can prevent groups from having any hope of integration into mainstream society. Second, it recognizes that fragmentation can include economic aspects. However, this perspective is also limited in that it focuses entirely upon economic causes and

effects of social isolation and social divisions. A further review of literature will demonstrate other factors which are associated with fragmentation.

Cultural Sociology

Cultural sociology can be described as a mirror image of economic sociology, and a number of theorists do work in both areas[1]. However, unlike economic sociologists, cultural sociologists look to factors such as beliefs and practices in order to explain social differences and social isolation.

While many theorists have approached the problem of fragmentation from such a point of view, perhaps the clearest explanation was described by Robert Wuthnow (1999) when he stated,

> Concerns about fragmentation raise the issue of diversity even more directly than do any of the other argument, because it is particular racial, ethnic, language, and religious groups that compose the "fragments" into which civil society is said to have broken. Fragmentation is taken to be a problem in at least three ways. One is that diverse groups have so little in common that they are unable to come to agreement at all, and thus live as "islands of bristling difference." A second is that diverse groups can agree only on limited or single issues and thus perpetuate acrimony around these issues. The third is that some groups do not share a commitment to the wider society enough to participate in efforts to promote larger aims. (p 24)

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[1] In fact, at the 2006 American Sociological Association Annual Meeting in Montreal, the economic sociology and cultural sociology sections combined their sectional receptions partly due to overlapping membership.

In another sense though, Wuthnow suggests that fragmentation is also a feeling individuals experience in relation to their social relationships. He explains this feeling in the United States (1999)

> But the deeper source of Americans' sense that something is wrong lies in the loosening of social relationships that has taken place during the past half century. An appropriate way of understanding these relationships is to realize that people have not simply become atomized or fragmented into disillusioned interest groups but that institutions have become more *porous* as they have become more complex, permitting social ties to be broken more easily and yet requiring that they be maintained more flexibly and at greater distance as well. (p 28)

This captures one of the most important aspects of fragmentation that in a fragmented society groups do not hold strong bonds between each other or among their own members. Instead, there is an assumption of transience. Alliances in an economic transaction, a political movement, or a social movement are assumed to be unable to survive over a long period of time as eventually a major difference will drive the constituent groups and members of those groups apart.

In his discussion of civil society, Jeffery Alexander further explains that the modern social world is inherently fragmented. He states that (2007)

> The ideals of a civil society point towards a fully inclusive community of putatively rational, independent, trusting, respectful, honest, and cooperative individuals. In relation to such an idealized community, actually existing social

divisions, inequalities, rigid boundaries, and divisions are presumptively

illegitimate. (p 26)

However, this utopian view of an integrated and diverse modern society was never

realized. Because societies were founded by diverse individuals they took on

characteristics that resembled those who founded them. Differences in beliefs, languages,

and basic assumptions about the world caused sometimes radical differences between

social groups. As Alexander (2006) stated,

> … The founders of societies manifest distinctive racial, linguistic, religious, and
>
> geographical origins. In the historical construction of civil societies, one finds
>
> these primordial qualities established as the highest criteria of humanity, as
>
> representing a higher competence for civil life. (p 405)

Thus, from Alexander's perspective, modern civil societies have always had certain core

groups that define the culture of the society that surrounds them. Because they dominate

the culture, they use it as a way of socially isolating other groups. Which groups are

excluded is not always a matter of intentionality. Instead, it is a matter of which groups

differ most from the core cultural norms at the time a society is constructed. Alexander

(2006) explains,

> Exclusion results for the very process of construction, in real time a real space,
>
> empirical civil societies, from their instantiation in larger, complex,
>
> differentiated, and segmented social systems. In the contradiction generated by
>
> institutionalization that produces exclusion, what particular groups are excluded
>
> is historically contingent. That, at any particular historical moment, some groups

are relatively more distant from the core is systemic, the result of the very

process of instantiating the civil sphere in time, space, and plural institutional

domains. (p 411)

Alexander further posits that exclusion from civil society is almost inherently a process

of domination where those from outside groups are seen as deficient on core beliefs or

practices. He suggests that (2007)

> The discourse of civil society reminds us that, insofar as the civil sphere becomes
>
> institutionalized in time and space, it becomes a closed community and not, at its
>
> boundaries, an open one. Those who are lucky enough to become members of
>
> civil society, whether they are located at its very core or are more distant from
>
> the centre, are continuously, even fervently, concerned with justifying why others
>
> cannot be included. They are likely to believe that only they, themselves, are
>
> honest, truthful, calm, and cooperative, and to suspect that others are irrational,
>
> emotional, out of control, unreasonable, dependent and childlike, factional and
>
> disputatious, prone to conspiracy, and domineering. It is because outsiders are
>
> devoutly believed to be constructed of such polluted qualities that they are seen
>
> as incapable of being included in civil society. In order to protect the civil sphere,
>
> they must be excluded, repressed, and possibly even eliminated in a physical
>
> way. (p 27)

It is possible for outside perspectives to become part of the mainstream. However it is

very difficult. Alexander concedes (2007) that,

> So hegemony remains, and core groups do constrain, but never in terms of
>
> domination alone. Even if we give the encrusted traditions of the centre their due,

> however, we can see that the positive and negative idealizations of civil society
> are neither exhausted nor controlled by hegemony. The social instantiations of
> civil discourse are always subject to repositioning, within the historical
> sedimentations of limits of time, place, and institution. (p 29)

However, this repositioning or pluralization of civil society in general is not a process that leads to social stability. Instead, Alexander suggests that (2006)

> Stability is possible in so-called plural societies—democratic societies composed
> of "columnized" primordial groupings. It is empirically more likely, however,
> that processes of pluralization will engender new forms of domination, and
> eventually, secession or even civil war. (p 418)

Alexander argues that the process of building a society brings cultural groups into conflict; the chance of true plurality is not necessarily possible. In sum, modern society is fragmented. While social fragments can be repositioned, fragmentation simply is.

Alexander makes a strong argument that modern society is inherently fragmented, he does not find fragmentation to be a process. Instead, it is inherent to society building. Some groups will be in-groups and some groups will be out-groups, and the in-groups will dominate the out-groups. However, this perspective is at odds with others such as William Julius Wilson's, who sees fragmentation as something that develops and increases over time. While Alexander does not seem to deny this, he also does not explicitly see new forms of social exclusion as a process. Instead, when societies form, walls form around the core, which are more or less static. In addition, Alexander does not address ideas of access to the core culture other than at the very defining of a society.

Whereas Castells argues that success in modern society is contingent upon access to the systems of modern society, Alexander seems to imply that those in out-groups can never gain access to the cultural tools of in-groups.

Some final points regarding the cultural sociological perspective upon fragmentation can be found in Antony Giddens' discussion of how globalization changes the lives of individuals. Whereas Alexander sees walls naturally existing between societies, Giddens sees the growing exposure of cultures to each other as creating a reaction that drives them apart. For instance, Giddens (2003) explains the development of modern nationalist movement by stating,

> Globalisation [sic] is the reason for the revival of local cultural identities in different parts of the world. If one asks, for example, why Scots want more independence in the UK, or why there is a strong separatist movement in Quebec, the answer is not to be found only in their cultural history. Local nationalisms spring up as a response to globalizing tendencies, as the hold of older nations weakens. (p 13)

According to Giddens, the reaction to globalization can be found in a growing dependence of cultural groups on 'tradition', which he insists (2003)

> is actually a product of the past two hundred years in Europe. Just like the concept of risk, which I talked about in the previous chapter, in medieval times there was no generic notion of tradition. There was on call for such a work, precisely because tradition and customs were everywhere. (p 39)

In other words, as groups faced increasing exposure to each other, a new way of talking about themselves was created. Giddens further explains that the purpose of the development of 'tradition' was a way to maintain power. He states (2003)

> … traditions always incorporate power, whether they are constructed in a deliberate way or not. Kings, emperors, priests and others have long invented traditions to suit themselves and to legitimate their rule. (p 40)

In the extreme, according to Giddens, groups that seek to protect their identity through dependence upon tradition might turn to fundamentalism, which he describes as (2003)

> Fundamentalism isn't about what people believe but, like tradition more generally, about why they believe it and how they justify it… Fundamentalism is beleaguered tradition. It is tradition defended in the traditional way – by reference to ritual truth – in a globalising world that asks for reasons. Fundamentalism therefore, has nothing to do with the context of beliefs, religious or otherwise. What matters is how the truth of beliefs is defended or asserted (p. 49)

In other words, societies generally do not inherently define themselves in terms of their beliefs and practices, but only do so as a reaction to the ways in which other groups define their beliefs and practices. Modern social divisions are thus a reactionary attempt to avoid assimilation to a hegemonic culture.

The way in which Giddens' concept of tradition is translated from the societal level to the meso level of inter-group interactions is essential to a holistic concept of fragmentation. When discussing the effect modernity has on the individual's life,

Giddens (1990) explains that it becomes important to avoid interactions with individuals that might create conflict. He describes the mechanism that allows social stability as 'civil inattention', which he describes as (1990)

> Civil inattention is the most basic type of facework commitment involved in encounters with strangers in circumstances of modernity. It involves not just the use of the face itself, but the subtle employment of bodily posture and positioning which gives off the message "you may trust me to be without hostile intent"—in the street, public buildings, trains, or busses, or at ceremonial gatherings, parties, or other assemblies. Civil inattention is trust as "background noise"—not as a random collection of sounds, but as carefully restrained and controlled social rhythms. (p. 82)

This theory can be extended to suggest how social differentiation in the modern world might proceed. Groups that do not wish to be confronted with challenges to their way of life might use a meso-level civil inattention to simply ignore the beliefs and practices of other groups, creating a situation of non-interaction. This would continue until the former group feels that their ways of living are being attacked or denigrated, in which case defensive walls are drawn based upon group identity. The result is 'us' versus 'them'.

The cultural sociology perspective of modern social differentiation has much to add to a general theory of fragmentation. First, as Alexander states, fragmentation is inherent to modernity. Second, as Giddens states, it involves groups defining themselves as opposed to the other. Third, as Wuthnow suggests, groups become so far apart that social communication and negotiation is almost impossible. Finally, as Giddens suggests,

fragmentation is a process. However, using cultural sociology as the only guide to define social fragmentation is limited. Just as economic sociologists downplay the role of cultural differences in causing fragmentation, cultural sociologists tend to undervalue the economic aspects of fragmentation. A comprehensive theory of fragmentation must maintain that both economic and cultural transactions can bring about fragmentation.

Dependency Theories

Dependency theories put forth by Andre Gunder Frank and others tended to see inequalities in macro-level economic development as based upon exploitation along the lines of race and physical location. Countries that traditionally were able to dominate continued to dominate. However, development was limited to those who ran the capitalist enterprises in the developing nations. Cockcroft (1989) states that,

> … employers in turn grew wealthier, while reducing the average wage levels of
>
> their own work forces through "runaway plants" (to the Third World) and the
>
> importation of cheap labor… (p 11)

In some ways, their perspective is similar to the neo-Marxists in that it focuses upon the exploitation of the masses by capital. However, there are some important differences.

Perhaps some of the best explanations of how dependency fragments societies can be found in the work of Peter Evans, who maintains that access to international capital is the defining aspect of divisions in developing societies. In his discussion of dependency development (1979) he states,

> The end result of the incorporation of the periphery into the international capital
>
> system, as far as the elite is concerned, is to create a complex alliance between

elite local capital, international capital, which I have called here "the triple

alliance." The result is not a monolith. Each of the partners comes at

industrialization with different strengths, and their interests vary accordingly (p

11) [2]

Certain locals, usually elites left over from imperialism, are able to access sources of

global capital through their alliances with multinational corporations. The state then

protects these relationships. This produces a system where certain groups have access to

technology out of step with the development of their social systems in relation to

employment. Evans (1979) suggests that,

> Disarticulation between technology and social structure reinforces the economy's
>
> lack of integration… Productive technologies imported from the center are not
>
> designed to absorb the huge reserves of underemployed agricultural labor.
>
> Products developed in the center and assimilated by the periphery are luxury
>
> products in the context of the periphery. Their production uses scarce resources
>
> and results in a "distortion in the allocation of resources in favor of those
>
> products and to the detriment of mass consumption goods" (Amin, 1977b:9). (p
>
> 29)

In other words, elites use a disproportionately large amount of a country's resources in

order to supply the needs of the global economic core, while leaving a disproportionately

small amount of the resources for the general population. Not only are the masses

economically excluded, but according to Evans (1979), they suffer even further

marginalization,

---

[2] To clarify the point, the "triple alliance" consists of local elites, multinational corporations, and the state.

> Because they are effectively barred from economic participation, to allow
>
> political participation would be disruptive. Social and cultural exclusion follow
>
> from political and economic exclusion. (p 29)

The elites, however, do not become fully integrated into the international system, instead they remain part of their society in a very real way. Evans (1979) states that

> The "internalized" bourgeoisie which is allied with international capital retains
>
> an interest in local accumulation despite their ties to the center. This is
>
> undeniable in the case of partnerships based on joint ownership of industrial
>
> firms, and may even apply in a restricted way to those who merely service the
>
> multinationals. The local bourgeoisie cannot afford to relinquish nationalism
>
> even if international capital has become their principal ally. (p 40)

Thus, they remain part of the national society, but sit in a privileged position. However, they do not interact with others in that society in a meaningful way. Their access to international capital gives them resources to live in an isolated world, far removed from the problems of the general public. They are also able to maintain their social and political power in society simply by virtue of their alliance with the state and a common need to prevent social disruption.

Evans also illustrates points regarding the usefulness of networks in amassing social power. In discussing how to use transnational networks to fight marginalization, he suggests access to the world social system can empower the dispossessed. For instance, he (2000) argues that some transnational activists use their access to world social and communications systems to empower the marginalized because

> … they use global networks and ideologies to shift the balance of power at the
>
> local level in favor of the dispossessed. They are not likely overturn the whole
>
> apparatus, but they constitute challenges to "business as usual" both globally and
>
> locally, and are in this sense "counter-hegemonic". (p 231)

Essentially, they are able to give the marginalized access to systems that otherwise they would not have. With access comes power.

The important point that should be taken from dependency theories as they relate to fragmentation is that exploitation is based not upon the monopolization of resources or the means of production, but rather by monopolization of access to world economic and social systems. However, there are limitations to the use of dependency theories to explain fragmentation. The main limitation is that there is still a primary focus on economic relations, which is undermined by the cultural sociology theories. In addition, while dependency is seen as a somewhat dynamic process, in general, dependency theories do not see fragmentation as a process itself, only as an artifact of other processes, namely economic exclusion.

In essence, a good definition of social fragmentation will have to incorporate all the elements of these four perspectives, which the second chapter of this dissertation accomplishes.

Social Fragmentation

A simple description of social fragmentation is a lack of social unity that decreases the chances of social cohesion. However, as social unity and social cohesion can be defined in multiple ways, such a description is insufficient. Therefore,

fragmentation should be described as a process unto itself. From this perspective, it can be said to have two dimensions, a temporal and a physical. Study of both dimensions of fragmentation will lead to a more thorough definition of this concept.

Social Unity: Togetherness

As previously stated, social unity can be defined in multiple ways. However, not every definition adds context to the concept of social fragmentation. The definition that is most useful is Zygmunt Bauman's (1995) idea of social unity as togetherness, specifically his concepts of postulated, tempered, and manifest togetherness.

Postulated togetherness is not real. Instead it is created from a desire to connect with others in an inherently unconnected world. Bauman (1995) describes postulated togetherness as,

> … a work of imagination spurred by *homesickness*… (… Homesickness is not just the absence of home, but – albeit unknowingly – about the impossibility of ever finding one; it is about keeping hope alive by the expedient of infinite postponement). (47-48)

Furthermore, he states that,

> … the postulated togetherness seduces by its promise of intimate encounters guaranteed to be consummated before even attempted. 'Feeling at home', 'belonging', means encounters plentiful and unproblematic, encounters invariably satisfying, the comforts of being with others cleansed of dangers of having the 'with' withdrawn, or the cosiness [sic] turning into oppression. (47)

In other words, late modern society requires a structure of togetherness which connects the disconnected. Postulated togetherness is important to a conception of social unity related to fragmentation in that it is an abstraction, a way of creating unity in a diverse society by producing an imagined similarity. Nationalism could be such an example in that it is meant to create an artificial metanarrative uniting people that may have once been dissimilar in language, culture, religion, and the like. In theory, fragmented societies will still have postulated togetherness, but not at the societal level. Instead, this type of togetherness will be found in smaller social groupings.

Tempered togetherness is a togetherness of common purposeful action. Bauman (1995) describes it as,

> … a togetherness on purpose, though the purposes that prompted people to come together may not be at one with the purpose of their being together. Whatever the purpose of this togetherness, staying together is the condition of reaching it, as there is no other reason for its perpetuation, the purpose of togetherness determines the form the togetherness needs to assume, while other purposes – notably those which motivate the gathered to come and stay together – need to be either enlisted to serve and support that form or be forced into irrelevance. (46)

This is a long-term goal-oriented form of togetherness in which people unite to work for a long- term seemingly achievable goal. The word *seemingly* should be stressed in that the success of goal achievement may be the maintenance of a status quo, keeping a social structure in stasis. Bauman further describes tempered togetherness as being

> … a matrix of (and for) structured encounters – normatively regulated, rule-
>
> governed, pre-emptively [sic] circumscribed and preferably sharp and short, lest
>
> they should spill over other encounters which need to be kept in a different
>
> register, lose focus, or grow receptive to purposes other than the one at hand. (46)

Thus, tempered togetherness is a formalized togetherness. Not only are goals defined, but

the achievement of those goals is regulated. Process is important, as is outcome. An

example of this form of togetherness can be seen in the nation-state, which traditionally

used national mythologies and imagined structures, such as nationalism, to guide their

societies through history using a common and enforced metanarrative. Laws and

regulation on social, economic, and political interaction reinforced values, which created

a social unity in that actors would generally would act in concert and would be

sanctioned, formally or informally, if they did not.

Manifest togetherness is in a way an anti-togetherness. It lets individuals feel a

sense of unity without actually having to emotionally unite with others. Bauman (1995)

describes its purpose as

> …being together, and being together in large numbers, numbers which do not
>
> normally inhabit the space of that size, numbers which exceed the ordinary,
>
> prescribed or daily experienced density… A mass, but a uniform mass – in which
>
> everything idiosyncratic and private may dissolve (albeit, and comforting, for a
>
> time only) or be strangled into silence. The routine of quotidianity [sic] is
>
> suspended for the duration, together with its bittersweet little freedoms and big

dependencies, the daily tyranny of possibilities and sorrowful joys of decision-

making. (46-47)

Like postulated togetherness, manifest togetherness is an illusion of togetherness – at

least in part. Instead of pretending to be together physically and psychically, it features

actually proximity. However, the illusion of unity is real for a time. Bauman (1995)

further describes manifest togetherness by stating

> With identity, at least for the duration, not an individual property – the manifest
>
> togetherness nips encounter in the bud. There are no selves capable of meeting
>
> the others in their selfhoods, and so the manifest togetherness is a space without
>
> encounters; in that togetherness one seeks, and finds, or find without seeking, a
>
> leave of absence from the wearisome and worrisome, taxing and testing gamble
>
> of encounter. (47)

In other words, in manifest togetherness the individual identity is irrelevant to unity. For

a time, the individuals ignore their own selves in search of belonging. However, there is a

lack of intimacy inherent to this togetherness as the individual is fully absorbed in an

encounter with space and time; the other, in a sense, does not exist.

These types of togetherness relate to fragmentation in that unified societies will

feature a predominance of the first two types of togetherness. Fragmented societies will

feature the latter. A unified society will include an imagined story of how and why the

given society has come together using a social metanarrative to create imagined goals for

that society (i.e., postulated togetherness). It will also involve an extended unity to work

towards those goals in a structured way (i.e., tempered togetherness.) On the other hand,

a fragmented society will lack a clear direction and will not have any outcome defined as 'success'. Instead, any social unity will be brief and purposeful, but will lack an overarching meaning. After such an interaction, unity will end and individuals will go their own way emotionally and often physically.

Fragmentation: Temporal Dimension

Fragmentation occurs over time. It does not simply appear, but seems to follow a trajectory over time. Hans Thor Anderson and Ronald van Kempen (2001) identify some of changes associated with modernity that influence fragmentation when they state,

> During the last two centuries, Europe has undergone several structural changes: the first round of industrialization in the 19th century; the shift from heavy manufacturing, such as steel and coal, to light manufacturing; the growth of the service sector; the increasing role of the computer in manufacturing and other industries; and lately a massive process of de-industrialization, complemented by an enormous expansion of public services, research activities, the culture industry, the media and the communications business. Each of these changes produced new forms of social institution and relations. (4)

Though not specifically using the term fragmentation, Karl Marx (1967) spoke to this process as well when he stated,

> Our epoch, the epoch of the bourgeoisie, posses, however, this distinctive feature: it has simplified the class antagonisms. Society as a whole is more and more splitting up into two great hostile camps, into two great classes directly facing each other… (80)

Combining these thoughts, fragmentation can be understood as social structures developing from unified structures into divided structures many times in antagonistic relationships.

However, the divisions in society cannot be seen only in the economic sphere. Fragmentation can be seen in many different social structures, several of which will be discussed in the following chapters. What is essential to understand is that as a society is exposed to a greater amount of modern thought, the more fragmented it will become.

Fragmentation can also be described through an understanding of time itself. For most members of modern society, by definition the day is divided into different fragments. It begins and ends with time for sleeping. Next follows the ritual of preparing for work, followed by participation in wage labor. After the workday, the individual has personal/activity time where he or she participates in solitary or civil society activities. Life is compartmentalized. Bauman expands upon this fragmentary nature of time, declaring contemporary life as a series of episodes. He explains this by stating (Bauman 2000),

> The meeting of strangers is *an event without a past*. More often than not, it is also *an even without a future* (it is expected to be, hoped to be, free of a future), a story most certainly '*not* to be continued', a one-off chance, to be consummated in full while it lasts and on the spot, without delay and without putting the unfinished business off for another occasion. (95)

Essentially, the liquid modern world is a world disconnected from its past and future. The continuity associated with the progression of time is no longer endemic to life.

Combining these two perspectives, it is evident that time itself has become more fragmented in tandem with modernization. While the development of wage labor structured the day in ways not seen in the past, fragmenting it into episodes of life mutually exclusive to each other, there still was a continuity of monotony with the same schedules reoccurring day to day, week to week, and so forth. However, Bauman's perspective suggests that the monotony of interactions inherent to the fragmented time of the earlier modern era is now intensified. The growing social distance in late modernity prevents coherent metanarratives of interaction from developing. Thus, what has been experienced was experienced and will not be experienced again.

This implies that once individuals or groups form some kind of social alliance, it is not permanent. All interactions end, with the groups parting ways practically and emotionally. Social, economic, and political coalitions are united only as long as the issues united them exist. Once the unifying principle disappears, loyalties end and groups become further fragmented. As individualism is inherent to modernity, when individuals' interests diverge, they become more socially isolated. Fragmentation increases over time.

Fragmentation: Physical Dimension

Physical fragmentation of the social world does not simply imply physical separation of social groups and social actors into different locations (though later chapters will argue that political entities such as cities can be fragmented). Instead, it refers to the social location of groups and individuals within the overall social system. Jürgen Friedrichs and Jan Vranken (2001) describe this by stating

> On the macro-level, fragmentation can be defined as a specific form of social differentiation. It denotes a reduction of social ties among social groups, extremely low mobility between groups, and a great variation (disparity) of behavioral options. Thus, it is the opposite of social cohesion… On the micro-level, inter-group network ties are weak or even non-existent. (25)

These social groups can be based upon traditional social divisions such as race and class. However, fragmentation transcends these groupings. In the postmodern society, social division can be based upon almost any social designation. Individuals can be fragmented from society based upon almost any identity they assume.

Social divisions based upon an individual's or a group's multiple social location based upon their identities, whether self-defined or externally defined, is the basis of fragmentation. What makes fragmentation different is that there is no room for mobility between groups and little interaction between social groups. Bauman (2000) suggest that contemporary society features

> … *the end of the era of mutual engagement*: between supervisors and the supervised, capital and labor, leaders and their followers, armies at war. The prime technique of power is now escape, slippage, elision and avoidance, the effective rejection of any territorial confinement with its cumbersome corollaries of order-building, order-maintenance and the responsibility for the consequences of it all as well as of the necessity to bear their costs. (11)

As individuals become more specified in their various identities, they retreat into groupings where individuals tend to have similar identities. There is little interaction between those groups. Thus, the exchange of social perspectives is terminated.

Collective action, either specified towards the accomplishment of a specific goal or generalized to the general maintenance of a functioning society, becomes much more difficult. Bauman (2000) describes this by stating,

> The disintegration of the social network, the falling apart of effective agencies of collective action is often noted with a good deal of anxiety and bewailed as the unanticipated 'side effect' of the new lightness and fluidity of the increasingly mobile, slippery, shifty, evasive and fugitive power. But social disintegration is as much a condition as it is the outcome of the new technique of power, using disengagement and the art of escape as its major tools. For power to be free to flow, the world must be free of fences, barriers, fortified borders and checkpoints. Any dense and tight network of social bonds, and particularly a territorially rooted tight network, is an obstacle to be cleared away. (14)

If the greatest power in the postmodern world is the power to independently and individually determine or internalize one's identity, it follows that power can only be fully exercised by freeing oneself from the bonds of social location. Power is the ability to find one's own space in the social world. Like the American concept of 'moving west', in the postmodern world individuals can migrate from their own social space to a place where they are surrounded by individuals to which they can better relate.

This is the paradox of fragmentation. While individuals are free to migrate to whatever social space they desire, they become stranded in the social space in which the stop. The lack of group mobility and interaction prevents individuals from redefining their identity. Thus, individuals become divided on many different issues, and society becomes fragmented based upon many different factors.

The primary concern of this dissertation is to explore the fragmentation of societies upon different factors. It will attempt to show, by creating models for several different types of fragmentation, that different types of fragmentation are a part of a related process—a process endemic to modernity.

Axes of Fragmentation

This dissertation will have a somewhat unique structure. It will not begin with a comprehensive literature review of fragmentation as a process within modernity. Much of the appropriate literature has already been reviewed, and in general, very little literature sees fragmentation as both a process endemic to modernity *and* as a comprehensive state of society. Instead, there is a fair amount of literature referring to different types of social fragmentation. Therefore, the majority of chapters will identify specific types of fragmentation, beginning with reviews of literature that either describe or speak to fragmentation within that exact type of fragmentation.

In order to better organize the chapters, four axes of fragmentation will be identified. In a way, these axes can be said to be the three pillars of the social sphere: society, economy, and polity, as well as the spatial attributes of modern society. The

research will show that each of these axes features its own type of fragmentation, but that these types of fragmentation are all related to the concepts of identity, social location, and choice.

Spatial Fragmentation

Spatial fragmentation is perhaps the most visible axis of social fragmentation as it refers to the physical separation of groups or individuals within the modern social structure. It involves relatively unified structures divided into parts that in many ways lose communications with the other parts. This axis of fragmentation operates on both the micro level and the macro level. Two types of fragmentation operate on this axis.

Fragmentation of the family refers to the dis-integration[3] of the family in the modern world. The section will demonstrate that as modernity has progressed the family has ceased to be a unified unit of production. This has occurred in two ways. First, as modernity increases, gender and age roles will become more pronounced. Second, the rise of individualism will weaken the bonds in the family bringing about the separation of individual members from the family, at first temporarily for short periods of time and eventually permanently.

Fragmentation of cities refers to the isolation of certain neighborhoods within metropolitan areas from the overall life of the cities. These neighborhoods will have little if any interaction with other neighborhoods. In the most profound way, fragmentation

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[3] Though the dash is not traditionally used in the spelling of disintegration, one is used here to specify the intended meaning. While 'disintegration' has come to imply dissolution of something into its smallest possible components (e.g., disintegration of rock into sand), 'dis-integration' is intended to mean the breaking down of something that is integrated into any small components.

will separate residential neighborhoods. After establishing several indicators that have traditionally represented fragmentation of cities, data will show that these indicators will predict a lack of access to basic services that is indicative of fragmentation.

Cultural Normative Fragmentation

The second axis of fragmentation refers to fragmentation in the abstract structures that determine 'proper behavior' in a society. They refer to how individuals in modern society internally determine new ways to live 'a good life' that become divergent from the ways that were traditionally externally defined by society. Two types of fragmentation fall onto this axis.

Fragmentation of normative systems refers to the disappearance of a common system of values within a given society. Specifically, values that give a society direction will be lacking, making it difficult for societies to mobilize to pursue specific goals. The analysis will indicate that countries featuring certain indicators of modernity will have less agreement on given social values. Interpretation will suggest that diverse societies will be less likely to be able to unify along normative lines, suggesting present or future social conflict.

Fragmentation of morality is somewhat similar to fragmentation of normative systems. However, instead of suggesting how an individual within a given society should live his or her life, fragmentation of morality speaks to from which behaviors an individual should refrain. In theory, countries with greater levels of this type of fragmentation may have greater social conflict based partly upon the fact that some

individual's behaviors will be antithetical to the morality of others. Analysis will suggest that various social factors can indeed be used to indicate the absence of moral unity within a society.

Economic Fragmentation

The third axis of fragmentation, economic fragmentation, refers to growing divides within the various structures of economic exchange within a society. It deals with the social location in which or from which members of a society engage in production and consumption.

Fragmentation of markets involves the increasing tendency of markets to divide into formal and informal markets. The research will indicate that among countries that have been able to establish control over their domestic markets, some will then lose control over large segments of the total exchange, creating dead capital that does not benefit the political economy of the state. The data will indicate that all countries feature some level of informality, but that certain indicators can suggest what factors might influence a country to have a great amount of informality within its economy. Fragmentation of the production process refers to the end of manufacturing and provision of services as a unified process in single locations. The literature will show that it is initially associated with the development of outsourcing, but will eventually culminate in increasing amounts of off-shoring (i.e., off-shore outsourcing). This type of fragmentation can become problematic for society in that even though it allows for greater profits for companies while lowering or maintaining costs for consumers, it can

also precipitate a loss of jobs within a given country. Data will indicate that this classic type of globalization is not only found in industrialized countries that lose jobs, but also in developing countries that do not develop unified production processes and which begin their development by producing components for countries that have already industrialized.

Fragmentation of labor markets refers to the growing divide in many countries between relatively high paying skilled industrial and high-end service jobs, and low-skill service positions that often leave workers in near poverty. This can be a problem for a society in that those with fewer of the requisites needed for high paying jobs are relegated to positions that provide for little social mobility. In addition, individuals are often unable to proceed from the unskilled service position to higher paying positions. Once in the low-end jobs one's economic opportunities become stagnant. For reasons stated below, analysis of this type of fragmentation will not be included.

Fragmentation of the class system generally refers to discontinuity in the class system of a given society where people tend to be either rich or poor. The middle class has either disappeared or never actually developed. This can cause social conflict because the poor generally will have more limited life chances, making upward mobility increasingly difficult. The upper class tends to replicate itself, effectively replicating the lower classes as well. For reasons stated below, analysis of this type of fragmentation will not be included.

Political Fragmentation

Political fragmentation refers to divisions within a country's political system that can cause the polity to become less effective. In essence, these are divisions that make it difficult, if not impossible, for a government to steer a country towards the achievement of certain goals. This can lead a country to become stagnant, with the improvement of citizens' lives almost impossible.

Fragmentation of government is somewhat unique in terms of the types of fragmentation in that it is sometimes intentionally produced in order to protect the rights of citizens and regions within a country. However, when fragmentation of government becomes too entrenched, it can lead to a situation where a government cannot confront social problems or react to national emergencies. For reasons stated below, analysis of this type of fragmentation will not be included.

Fragmentation of party systems refers to countries where established political parties become weakened to a point where they cannot mobilize their members to gain power in a government. This type of fragmentation can be indicated both by the presence of a large number of political parties in a country where few, if any, can form governments on their own, or by growing numbers of unaffiliated voters within a country. For reasons stated below, analysis of this type of fragmentation will not be included.

Four Axes of Fragmentation

Figure 1.a. shows a graphical representation of the four axes of fragmentation. The four axes of fragmentation are designed to encompass the various parts of life in

modern society. Though, as Bauman would suggest, these axes do not operate in a

coherent manner between each other, they should be considered to be interrelated to the

extent that fragmentation on one is often associated with fragmentation on other axes.

However, as the literature suggests, behavior on one axis is not necessarily based upon

behavior in another part of one's life.

Because the behavior on the axes of fragmentation is not necessarily related, it is

difficult to create a measure that will encompass fragmentation within a society that

includes each measure. Such is also not the purpose of this dissertation, which seeks only

to demonstrate how a measure can be constructed to demonstrate fragmentation as a

valuable way of analyzing the social world. Thus, different types of data should be used

in order to illustrate the relationships between various variables relating to fragmentation

on specific types of fragmentation. Figure 1.b. suggests the general types of data that will

be used for analysis on each axis. A greater discussion can be found in the next chapter.

Types of Fragmentation for Analysis

A study involving all four of these axes of fragmentation would be cumbersome.

With ten types of fragmentation, even a preliminary analysis would be cumbersome.

Therefore, six types of fragmentation were selected for this research.

The two types of political fragmentation were not considered for final analysis. In

both the cases, operationalization would be nearly impossible. For example, within a

given country sub-national political division may not have the same power or

responsibilities (e.g., Maryland counties have their own police forces while sheriff's

departments in Pennsylvania have no law enforcement power), making it difficult to determine when a government would be considered fragmented. Likewise, because political parties and coalitions tend to be fluid in many countries, it is again difficult to determine if a country's party system is fragmented. While both of these types of fragmentation can be empirically understood, doing so in this research would add considerable length that might not add reliable analysis.

Within economic fragmentation, *fragmentation of class systems* was excluded from analysis because finding a definition of social class that would apply in both developing countries would prove to be cumbersome. *Fragmentation of labor markets* was excluded because prior cross-national research did not seem to be available. *Fragmentation of the production process,* on the other hand, was included because it is probably the classic form of globalization. *Fragmentation of markets* was also included because considerable background research could be found, and because shadow economies remain major concerns in developing nations.

Two types of social fragmentation were selected that are currently included in the public discourse: *fragmentation of the family*, and *fragmentation of cities*. *Fragmentation of normative systems* and *fragmentation of morality* were also included because they could be considered part of the United States' culture war, which the current President of the United States, Barak Obama, seeks to end.

Why Research Fragmentation?

Social divisions in general can weaken a society. In the past, divisions along the lines of race and class have demonstrated that divisions can cause discontent and make full social mobilization more difficult. Therefore any type of social division deserves to be researched.

Fragmentation is a concept that has been oft mentioned but rarely defined in sociology. When it has been defined, generally it has been defined in terms of a single social structure. However, if the same term is to be used across different research areas in sociology, research should determine if fragmentation is a single concept or if it is an ambiguous term that should be replaced. This dissertation seeks to accomplish this goal.

Chapter 2

Methodology

Because the purpose of this dissertation is to demonstrate that fragmentation is a useful

concept for understanding the social divisions of late modern society, the method must do

several things. First, an operational definition should clearly differentiate how this

conception of social division and fragmentation differs from other perspectives of social

division. Second, the method should involve a unit of analysis that presents a view of

divisions within societies as a whole, not just the differences between individuals in

societies. Third, the sample must include as many countries as possible. While it is true

that fragmentation has different effects in developed versus developing countries, if

fragmentation is to be viewed as a *process* that can be empirically understood, then only a

method that includes a large number of diverse countries can offer a valid way of

understanding the process. Otherwise, there can be no valid claim that fragmentation is a

universal process of modernity. Fourth, a statistical analysis strategy should examine the

relationships between possible fragmentation variables, but still take into account the

differing ways that fragmentation affects different types of societies.

Operational Definition

In formulating an operational definition of fragmentation, four distinct

perspectives on contemporary social divisions were examined: neo-Marxist, economic

sociology, cultural sociology, and dependency theories. Each theory provides a different

perspective on how and why social divisions occur. However, while each theory does

explain social division and most use the term fragmentation, researchers under each

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designation tend not to see fragmentation as a process but only as a state of society. Even then, many researchers do not have a precise way of defining fragmentation.

Neo-Marxists rarely use the term fragmentation and, as suggested in the previous section, in fact tend not to use the term fragmentation. Instead, social divisions, according to neo-Marxist theory, are caused by differential power structures between social classes. While their perspective on social differentiation is useful in understanding how power affects the structure of modern society, it is does not adequately explain how traditionally powerless groups are able to exert power in modern society. For example, neo-Marxist theory does not adequately explain how a black man with a single mother who was raised by his grandparents could become President of the United States. Another example that neo-Marxist theory does not adequately explain is how the religious right and extreme progressive elements can hold a disproportionately powerful place in the United States political system relative to their size. In addition, the class focus of neo-Marxism implies unity. It does not properly take into account that within a society, individuals may actually live in parallel societies where they feel successful within that society because they are achieving the 'good life' as defined by that society. In effect, it cannot explain why some people in traditional powerless groups of society may believe themselves to be very successful and happy.

As demonstrated by the previous literature, economic sociologists tend to see divisions in society in terms of access to economic resources. They differ from the true neo-Marxist interpretation of economic divisions in that they do not see economic class

position as necessarily immutable. To the contrary, many economic sociologists believe that access to the proper tools of economic development will allow more to participate in the main economy. This is illustrated by William Julius Wilson's assertions that the main problem in black urban America is related to the lack of jobs, rather than cultural or true class divisions. At the macro level, an example is to be found in many neo-liberal theories of economic development that suggest access to free markets allows for countries to better integrate themselves into the international economic system which in turn will allow for a higher standard of living for all members of the society. While the economic sociology perspective is useful in describing some aspects of fragmentation, few economic sociologists view fragmentation as a process. Instead, they see it as a state of society, an artifact of other economic factors. This view is limited in two ways. First, it does not take into account that society can be fragmented along lines that do not have a pronounced economic component. For instance, in the United States you can have members of conservative and progressive sub-societies working at similar jobs with similar income levels leading parallel lives with little contact outside of the economic sphere. Most notable to this example is that neither group would hold economic power over the other. A second limitation of the economic sociology position is that it does not see fragmentation as a factor of modernity. Some theorists do indeed view fragmentation as an artifact of capitalism and see it as gradually evolving; however, generally economic sociologists do not view it as a process inherent in itself.

Cultural sociologists talk about fragmentation from a societal point of view. The greatest concern for them is the inequality between cultural groups in modern society. Generally, when they do mention fragmentation, cultural sociology theories suggest that one or two cultures dominate a society subjugating those who are not part of those cultures because they cannot navigate the majority culture. Therefore, one or two cultures use their culture to create a hierarchical structure. The main limitation of cultural sociological theories as relating to fragmentation is that they suggest that cultural differentiations in societies almost necessarily create hierarchical structures. However, several examples from modern societies suggest that cultural differences may not fully explain the phenomenon of fragmentation. First, cultures exist where different cultural groups live separate but relatively equal lives. Perhaps this is not evident in modern societies where a dominant culture is enforced such as France; however, if one looks at groups such as religions in the United States, one finds that many exist peacefully without success in domination of others. In addition, movements such as the same-sex marriage movement demonstrate that even marginalized cultures can attempt to bring their practice and beliefs into what they consider to be the mainstream with certain levels of success. Another problem with cultural sociology is that their theories tend to see fragmentation as an end point of other processes as opposed to a process in and of itself. This is partly because cultures are often seen in somewhat static terms. While it is acknowledged that culture changes over time, there has been much less emphasis placed upon how modernity itself brings about cultural differences. For instance, while Manuel

Castells writes about the networked society, there is less research about how modern mass communications like the internet have spawned new cultures.

A final sociological perspective that confronts fragmentation is dependency theory. While most of the research of dependency theorists involves macro level analysis of domination between countries, there is also research that suggests this macro level domination in turn breeds domination of certain groups in society over others. Generally, it is viewed that politicians and business people who have access to the world system are able to control the power structures of society to the detriment of the entire rest of the population. There are some attractive elements to these theories. First, they see fragmentation as a process associated with globalization by observing that fragmentation in one country can affect another. Second, they suggest that access can affect fragmentation. This a key point of my theory of fragmentation in that people who are not able to experience different spatial, cultural, economic, or political ways of life will generally not become fragmented. A third attractive feature of dependency theories is that they do see fragmentation as something that happens over time. They tend to be of the opinion that in societies as dependency and external exploitation grows, fragmentation increases. While these are important points regarding fragmentation, there are some noteworthy limitations to dependency theories. First, they are focused upon the concept of exploitation, not leaving room for the possibility that non-exploitative fragmentation can exist. In addition, they tend to see fragmentation as a process in and effect of the

modern economic system, not leaving room for fragmentation in other levels of the social sphere.

My conception of fragmentation is more holistic for several reasons. First, it eliminates the dependence of fragmentation on capitalism. Instead, it supposes that fragmentation can be caused by any number of factors in modernity be they modern economic exchange, modern communication, modern transportation, or the modern idea of individual choice. The overarching point is that fragmentation is a factor of modern life, not only modern economic life.

Second, fragmentation is seen as a process as well as a state of society. The process operates in such a way that societies affected by modernity begin to fragment. This should not imply that the differences between fragments in society are necessarily more pronounced in societies that are more modern. Gulfs between groups in developing countries can seem even greater than those in developed nations. However, it can imply that there will be a greater diversity of fragments within modern societies, though those societies may have civil societies that allow for coexistence between fragments.

Third, my conception of fragmentation does not imply a hierarchal structure of society or exploitation of one group over another. When fragmentation is viewed as a process, one can observe that groups simply move apart. Coercion with the system is not necessary to the separation of different groups within society. Stratification can and does exist within fragmented societies. However, this is not an artifact of the fragmentation itself, but is can become associated with fragmentation.

Fourth, fragmentation within my conception is not dependent on the traditional divisions of society: class, race, ethnicity, and sex. However, it can be associated with any of those. The key to the theory is not that these groups are excluded or exploited. Fragmentation instead, follows patterns where members of disadvantaged groups become some of the first and most fragmented groups in society due to their previous and continuing exploitation.

This suggests the final advantage of my conception of fragmentation over other theories—access. My conception of fragmentation suggests that groups with more access to modern life, be it capitalist exchange, modern communications for the exchange of cultural ideas, modern transport to make spatial mobility possible, or the modern freedom of political association and activity, have the ability to fragment from the majority of society. If groups exist in a world where the only way of life one sees is the way of life in which all other members of the society are participating fragmentation cannot occur. Rather it is only in societies that have been touched by the freedom of economic exchange, that have viewed other ways of living, that have the ability to explore other political points of view and the ability to move freely that fragmentation can occur.

Taking these five factors into account an operational definition of fragmentation can be stated as: fragmentation is a process in modern society by which different groups form parallel structures within society, which have little or no consistent interaction between them over the full spectrum of the social experience; these groups can be based

upon traditional social distinctions, but are more closely related to where access to the tools of modern society can be found in the society.

Unit of Analysis

Three possible units of analysis can be used to understand fragmentation: the individual, the nation-state, and the geographic or cultural region. Like any unit of analysis in social research, each has advantages and disadvantages. Constructing a sound method in this case involves selecting a unit of analysis that will give a picture of how fragmentation is related to modernity. This will allow for exploration of the various types of fragmentation without assuming a priori that each type exists, but merely testing the theory that it does.

The individual is probably the most common unit of analysis in social research and can easily be applied to research on fragmentation, especially fragmentation of normative systems and fragmentation of morality. Research on the individual would allow for the clearest picture of how separate social factors are affected by fragmentation. The knowledge gained from research on the individual can then be used to make generalizations about fragmentation in regions and in nation-states. This is a compelling argument for using the individual as the unit of analysis. However, for the purposes of this research there are substantial drawbacks to doing so. First, to research individuals does have an a priori assumption that each type of fragmentation exists. Not enough quantitative research has been done on the subject to make this assumption. In fact, one of the purposes of this research is to empirically demonstrate fragmentation is a useful

and definable theory. Second, some types of fragmentation are not easily researched at the individual level. For instance, fragmentation of class systems refers more to the form of a social structure, having little to do with the individual experience of fragmentation. Finally, data regarding individuals from an international context are limited. While some datasets, such as the World Values Survey, do have an impressive international reach, they generally are not expansive enough to test many types of fragmentation.

Using the nation-state as a unit of analysis is useful in that it provides the ability to compare social structure among countries. Thus, fragmentation of class systems can be compared between developed and developing nation-states. This is important because this comparison can approximate the trajectory of how fragmentation develops. If fragmentation is truly a factor of modernity, as theory suggests, then it will be more pronounced in developed, and thus more modern, nation-states. Essentially, this tests the theory that fragmentation is a process associated with modernity. However, there are several drawbacks to using the nation-state as the unit of analysis. First, the nation-state is a modern concept that in most instances did not create a unified culture or society as intended. There have always been divisions in nation-states. In addition, with the development of transportation and communications technology, the nation-state may be losing its relevance as a social structure. In fact, some organizations, such as the European Union, seek to replace the nation-state with some other type of political and social organization. In addition, no one dataset exists that can be used to understand all the dimension of fragmentation. While the World Bank provides reasonably

comprehensive data for issues related to international development, it does not include data specific to values within countries. While the World Values Survey can address the latter, it does not address the former. Thus, using the nation-state as the unit of analysis necessitates combining data from many data sets. Finally, quantitative research involving nation-states provides inherently small sample sizes. Depending on how one defines a nation-state, there are just under or just over 200 such entities in the world. Few datasets provide data on every country in the world. Thus, small sample sizes would be the rule.

Using the region as a unit of analysis has many attractive features. Regions are smaller and in many ways more homogenous than artificially created nation-states. Thus, the effects of fragmentation would be clearer, since premodern divisions such as religion and ethnicity could be eliminated effectively as predictors. In addition, using the region as the unit of analysis has all of the advantages of using the nation-state. However, besides the fact that using the region as the unit of analysis has all of the drawbacks of using the nation-state other than the artificiality, the region has a fatal drawback. Generally, international data is not collected for regions only. International social research is most often done for a purpose other than gathering general knowledge (e.g., to assist with economic development). Because the world is politically organized into nation-states, data is generally gathered using the nation-state as the unit of analysis.

Taking the advantages and disadvantages of each unit of analysis into account, the most appropriate unit of analysis is the nation-state. There are two main reasons for this. First, using the nation-state as the unit of analysis actually addresses the purpose of this

research, which is to test if fragmentation can be quantified and studied empirically. Research regarding the effects of fragmentation on the individual would be appropriate only if it can be demonstrated that the phenomenon exists. Second, data is available regarding the nation-state. Even though data from disparate sources needs to be combined in order to perform an adequate analysis of different types of fragmentation, the data can be found nonetheless. While few variables asking direct questions about fragmentation are available, proxy variables can be found for many concepts related to fragmentation.

In essence, there is no perfect unit of analysis for testing the theory that fragmentation is a process associated with modernity. However, as research in this theory is in its preliminary stages, the nation-state is the best unit of analysis for understanding if the phenomenon exists and describing it if it does.

As a final note regarding the unit of analysis, it is a legitimate concern that nation-states in many cases are not actually individual societies, but are instead amalgamations of several societies. However, this is useful in the context of research on fragmentation. Some types of fragmentation, such as fragmentation of normative systems, may be influenced by premodern social structures such as religion and ethnicity. If fragmentation is a factor of modernity, premodern social structures will not be the strongest predictors of social divisions. Modern social structures will be the better predictor. However, in order to recognize that not all political entities are nation-states, the term country will generally be used instead.

Sample

After establishing the country as the unit of analysis, it is necessary to decide which countries are appropriate for studies in social fragmentation. However, this is problematic given that fragmentation appears differently within countries at different levels of development. This involves the countries being fragmented in different ways, as well as differing ways in which fragmentation is associated with social stratification. Thus, two approaches can be used to analyze the process of fragmentation: 1) a small sample of developed countries can be used in a small comparative study, which concentrates on commonalities in the effects of fragmentation; and 2) a larger sample of diverse countries where statistical processes are used in order to understand the relationships between variables that in theory lead to fragmentation and variables that are indicators of the presence of fragmentation.

The advantage to the former is that it identifies common patterns in like countries. This is important in observing what a fragmented society looks like. However, it is limited in that it only shows what a fragmented developed society looks like. Perhaps though, the most unattractive feature of such a sample for this study is that it looks at fragmentation only as an effect, not as a process. While comparative historical analysis can be used to describe how societies fragmented over time, the small relatively homogenous sample cannot be generalized to say how fragmentation operates as a distinct process inherent to modernity. Instead, it looks for one common path that countries take. My conception of fragmentation does not suggest that there is a common

path of fragmentation, only a common process. When selecting a sample this distinction is important.

The main advantage of using a larger sample of diverse countries is that it allows for a statistical analysis of the variables that hypothetically lead to fragmentation and those that hypothetically indicate it. Especially, it provides a way to compare the effects of the various relationships. This is extremely important to the view that fragmentation can be a process. If fragmentation is indeed a process affected by access to modern world systems, then it follows that in diverse countries access will be a key factor in the development of fragmentation. In other words, a large sample will provide a better understanding if there is a common social condition that will bring about fragmentations.

Because the nature of this study is to determine whether it is of value to understand fragmentation as a process in the modern world that is universal as a process, though not in path or in manifestation, it is only appropriate to see if there are commonalities in the variables that represent the social conditions in many societies that might relate to fragmentation. Using a smaller sample would unfortunately prevent any conclusions about what general conditions are necessary for a society to become fragmented. Therefore, a sample that includes all countries in the world will be selected.

Admittedly, not every data point from every country will be available. Some countries like Afghanistan and Somalia are in such desperate social conditions that no reliable data can be gathered from them. Other countries like the Holy See are so homogenous that any data from them would be of dubious worth. However, the analysis

strategy stated later in this chapter is constructed to adjust for such problems. In addition, since data is being gathered from sources with international reach (e.g., World Bank, International Monetary Fund, and the United Nations) most variables include data from both developed and developing countries.

Data Sources

As previously stated, no one data source provided all necessary variables. Therefore, data was drawn from numerous data sources in order to complete analysis. One limitation of this strategy is that different organizations gather data among different political entities. For instance, some data collection organizations categorize the British Crown Dependencies making up the Channel Islands as nation-states, while others do not. In order to account for this, only data from United Nations member states, along with the Palestinian Authority administered territories, were used in analysis.

A second limitation of using secondary data in this manner is that often data was missing. For instance, the United Nations does not provide data on the percent of urban dwellers living in slums for the most developed nations. In cases like this, alternative data was substituted when available and is noted in that particular instance. However, many times the analysis had to be limited to what was available.

The major data sets used in this research are:

- *World Bank World Development Indicators* (2008). As the main mission of the World Bank today is to assist in economic development, the World Bank's Data Group attempts to empirically assess projects and policies. To do so, they gather

various data that are supposed to indicate level of economic development. A summary of their methodologies and be found at go.worldbank.org/UWABM2F1J0. This data is not freely available on the world wide web, but can be downloaded for a fee from go.worldbank.org/UWABM2F1J0.

- *United Nations data sources* (2008). Various branches of the U.N. collect data. These range from United Nations Education Science and Culture Office (UNESCO) to United Nations Development Program. The data are archived at data.un.gov. Most U.N. data is available free of charge.

- *United States Census Bureau International Data Base* (2008). The U.S. Census Bureau calculates estimates of basic demographic data on numerous countries. This data is sometimes more reliable than that from U.N. or World Bank sources in that is not simply a compilation of data from other sources. Thus, it is not susceptible to the manipulation governments sometimes use in order to use vital statistics as political propaganda. The data is available free at www.census.gov/ipc/www/idb/index.html.

- *United States Central Intelligence Agencies World Factbook* (2008). The CIA gathers data from various official and academic sources in order provide general overviews of countries and regions of the world. This data is often redundant to other sources but is useful as a reference to such things as religion and ethnicity.

The data is available free at www.cia.gov/library/publications/the-world-

factbook/index.html.

- *World Values Survey* (2008). The WVS collects data regarding issues of values

  and morality from a wide variety of countries. The sample is supposed to provide

  a representative sample of different values systems found through the world.

  Though the data are collected on the individual level, the data can also be

  aggregated in order to use the country as the unit of analysis. The data is

  available, if referenced, at www.worldvaluessurvey.com.

Other data sources were used in this research. However, because they are used in very

specific instances, they are enumerated in the chapter in which they are used.

Analysis Strategy

As this research seeks to test a social theory using quantitative empirical methods,

its main concerns will be specifying, building, and testing models of the various types of

fragmentation. These models should be based on empirically verified theoretical

indicators of the process of fragmentation.

The first step in a sound strategy for analysis is specifying initial theoretical

models for each type of fragmentation. These models should be based upon the

theoretical developments and comparative historical research that has introduced the

concept of fragmentation. From that research, indicators should be drawn that represent

the various facets of a given type of fragmentation. Some indicators must represent the

causes of fragmentation while others should be proxies for the exclusion endemic to

fragmentation. The indicators should then be placed into a model showing the possible relevant relationships that might support or refute the concept of fragmentation.

To address this step in analysis, an extensive literature found that theoretical models could be created for the eight selected types of fragmentation that fall onto two axes of fragmentation. One of the major determinates of what types of fragmentation were selected was the availability of quantifiable country-level data to represent various indicators for each type of fragmentation. Selecting indicators involved a two-step process. First, the indicators were drawn from the theoretical models built from both the history and the existing theoretical literature on fragmentation. Second, various data sources were consulted to determine what existing variables could be used to represent these indicators. Some indicators were exactly represented by variables within the datasets, such as Male Labor Force Participation in fragmentation of the families. However, some indicators were not directly quantified in existing data and had to be created from existing data, such as the divorces to marriages data in fragmentation of the family. Finally, some indicators had to be represented by several proxy variables, such as normative divisions in fragmentation of normative systems being represented by four variables representing fragmentation on four specific values.

A second step in this strategy should be to test for relationships between the various indicators. However, it is important that the relationships be examined on more than a superficial level. Since the development of modernity is not a linear trajectory, and modernity has effected different societies at different rates (i.e., not everything happens at

one time), simply analyzing linear relationships will not be sufficient for determining if fragmentation exists as a phenomenon. Curvilinear relationships should also be evaluated.

Statistical Package for the Social Sciences versions 15 and 17 were used in order to calculate whether the linear, quadratic, or cubic models produced the best models for further analysis. While many types of curves could be specified by SPSS, three were selected for analysis: linear, quadratic, and cubic. These were selected because the first is the most basic relationship that can be found among data while the latter two are the most basic types of curvilinear relationship (Netter et al. 1996, 296 – 299). The models can be specified in the following manners:

Linear: $Y_i = \beta_0 + \beta_i x_i + \varepsilon_i$

Where: β_0 is the intercept, β_i is the linear function of the variable, and ε_i represents the error.

Quadratic: $Y_i = \beta_0 + \beta_i x_i + \beta_i x_i^2 + \varepsilon_i$

Where: β_0 is the intercept, β_i is the centered linear function of the variable, β_i^2 is the centered second order polynomial function (i.e., the quadratic responses function) of the variable, and ε_i represents the error.

Cubic: $Y_i = \beta_0 + \beta_i x_i + \beta_i x_i^2 + \beta_i x_i^3 + \varepsilon_i$

Where: β_0 is the intercept, β_i is the centered linear function of the variable, β_i^2 is the centered second order polynomial function (i.e., the quadratic responses function) of the

variable, β_i^3 is the centered third order polynomial function (i.e., the cubic responses

function) of the variable, and ε_i represents the error.

Centering is a process by which a variable is expressed as a deviation of each

score from the variables mean (i.e., $x - \bar{x}$). John Netter and his colleagues (1996) suggest

this process, stating:

The reason for using a centered predictor in the polynomial regression model is that X

and X^2 are often highly correlated. This, as we noted in Section 7.5, can cause serious

computational difficulties in the X´X matrix is inverted for estimating the regress

coefficients in the normal equations calculations. Center the predictor variable often

reduces the multicollinearity substantially, as we shall illustrate in an example, and tends

to avoid computational difficulties. (296)

 Using this process eliminates multicollinearity by effectively eliminating $\beta_i x_i$ from the

calculation as $\Sigma(x - \overline{x}) = 0$. This is because, given that $\beta_i = \frac{\Sigma(X - \overline{X}_i)(Y_i - \overline{Y}_i)}{\Sigma(X - \overline{X}_i)^2}$, the

calculation of the coefficient reduces to $\beta_i = \frac{\Sigma(0)(Y_i - \overline{Y}_i)}{\Sigma(X - \overline{X}_i)^2}$, and further reduces to $\beta_i =$

$\frac{0}{\Sigma(X - \overline{X}_i)^2}$. Thus, the average for x_i will always equal zero. This can cause problems with

further analysis, as a centered linear model is useless, adaptations in the models can be

made so that any of the estimated models can be used in other statistics.

After the linear and curvilinear relationships were calculated, each variable was

reassessed. Ones that did not have any utility (i.e., they had no statistical significance in

predicting the values of any later variable or in being predicted by any other variable)

were eliminated from further model description. This research seeks more than anything else to create models for the various types of fragmentation. There are three reasons a variable might not be useful in a second model. First, the variable may not be a good proxy for the indicator it is supposed to represent. These variables should be excluded from a more complete model because they introduce statistical error without lending any benefit to the analysis. Second, the variable may represent a proposed indicator, which in reality might not be an indicator of a given type of fragmentation. In such cases, the weakness in the model should be noted, and the model should be adjusted to account for the weakness. Third, some variables entered in the original models are only tenuously related to fragmentation (e.g., religion as predicting fragmentation of normative systems), but have been entered into the models because they are the cause of or result of premodern social divisions. In cases where such variables lacked significance, it is appropriate to exclude them from further analysis because their lack of significance has suggested the refutation of their continued influence as a cause of social fragmentation in a modern context.

Significant relationships that did not support fragmentation theory were not excluded from adjusted models. This is because they could serve as an internal challenge to fragmentation theory. If in subsequent research those relationships predict a large amount of the variability in the final relationships, then support for the existence of that given type of fragmentation is undermined. If the relationships that opposed a given type of fragmentation do not have a substantial influence on the final model, then the

existence of that type of fragmentation is supported. After the non-significant variables have been excluded, revised models are presented as a proposal for future research of the various types of fragmentation.

Concluding Points

Creating a method that determines the analysis of fragmentation as a process driven by certain societal conditions is difficult. Perhaps the question could be studied in numerous ways. However, because this research attempts to look at fragmentation a process based upon certain conditions, I feel it is only appropriate to look at a diverse group of countries to determine if fragmentation does occur when those conditions are present. To that end a large sample that can be statistically analyzed is most appropriate to use.

Chapter 3

Fragmentation of the Family

Abstract

Fragmentation of the family refers to the dissolution of the family as a unified economic entity into a loose union of individual members who play specific roles and are not necessarily permanently attached to family. This type of fragmentation exists in two dimensions, internal and external. The internal dimension refers to the development of gender roles, and the external dimension refers to the separation of members from the family unit. History suggests that with the advent of modernity and wage labor the European family changed from an egalitarian unit into a highly fragmented structure. The main influencing factors were first men then women entering the paid work force, the development of a true childhood, and emigration for economic reasons. A final indicator of fragmentation of families is high divorce rates. Curve analysis suggested that in the contemporary world male labor force participation predicted internal fragmentation of the family, while migration predicted external fragmentation of the family. Female labor force participation predicted external fragmentation as well. The model is sufficiently strong to serve as a basis for further research into fragmentation of the family.

*   *   *

Tina is a typical American teenager[4] from a rural part of the mid-Atlantic. She is curious, energetic, and is just beginning to discover boys. She likes science, but does not really like reading. In general, she is the average American girl at the start of adolescence. However, Tina is also the picture of the changing face of the American family.

Tina's parents, Mary and Harry, were not married when Tina was born. They were just out of high school and living together with Mary's mother and brother. Shortly after Tina's birth, Harry disappeared from Tina's life. Mary moved with Tina into an apartment on the other side of town and soon met Mike, whom she later married. Mike adopted Tina, and the family bought a house in yet another part of town. However, after a few years Mary and Mike divorced. After the divorce, Mary and Tina moved into a house not far from their old apartment. Mary then met Arthur who soon moved into the house.

Tina has had three 'fathers' in her life. Her primary male caregiver will probably marry her mother, but will be neither her biological nor legal father. Even though she does not have a strong relationship with Arthur, Tina considers herself lucky that many of Mary's male friends and family members have come into her life in positive ways. For example, she considers three of Mary's brother's friends as "uncles" because of the types of close relationships she has had with them. In fact, one is her designated guardian in case of Mary's death. Most importantly, Tina does not consider herself to be abnormal in this respect—many of her friends and classmates have grown up in similar situations.

<p style="text-align: center;">*   *   *</p>

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[4] Names have been changed.

On August 11, 2005 tragedy struck the Mayorga family. Cesar Mayorga, an immigrant day laborer from Guatemala, had been drinking with some friends in the parking lot of a Toys-R-Us in Langley Park, Maryland. Afterwards, several of the men fell asleep. (Klein 2005). At about 6:50 AM, someone slit the throats of Mayorga and two other men. Mayorga and one of the other men died almost instantaneously. As day laborers, the men would wait at the strip mall for construction or landscaping jobs. The killing left Mayorga's wife and children without their primary source of income, remittances from a relative in the United States. The loss of income is especially pronounced due to the fact that Mayorga's wife and children are not residents of the U.S., but had stayed behind while Mayorga migrated to a country where he could earn more money.

What is unclear is whether a family's dreams ended that morning. Perhaps Mayorga wanted to eventually return to Guatemala. Perhaps he wished to bring his family to the U.S. Perhaps he would have abandoned his Guatemalan family and built a new one in the U.S. What is clear is that he immigrated in search of opportunities to better support his family.

<p style="text-align:center">*   *   *</p>

On the surface, these two stories seem unrelated. However, both can be understood as examples of fragmentation of the family in different societies. The latter story describes one of the early stages of this process where family members travel or emigrate in order to improve the economic conditions of their families. The former is an

example of a later development where families in more affluent societies fragment for reasons of personal choice as opposed to economic reasons.

The concept of a family itself can be difficult to define, in that its form and meaning have varied throughout history and location. However, regardless of their variety, Anderson (1997) states that today almost all families throughout the world have been influenced by modernity. Thus they are all in transition. Furthermore, he states (p. *ix*) that

> As traditional families encounter the modern world they might fall apart, react
> with hostility and self-defense, or find some way to adapt to new circumstances.
> Very few families in the modern world of today exist in the same way as the
> families of their grandparents or great grandparents. Everywhere families have
> been forced to change.

Despite the fact that these changes are happening in almost all societies, the process of fragmentation is endemic to modernity and modernity grew out of European Enlightenment thought. Thus, for purposes of this research, the family will be defined in terms of the traditional European family. Premodern Christian beliefs defined the family as a unit comprised of a man and a woman raising children who in general were formally committed in the eyes of their community (Mitterauer and Sieder, 27-28). In addition, the traditional European family tended to have a mostly economic function. From this perspective fragmentation of the family will be defined as the dissolution of the family as a unified economic entity and the rise of the family as an aggregate of individuals who

provide multiple types of support for each other. In effect, the family should not be seen as disintegrating, but as changing in purpose and composition.

This chapter will place fragmentation of the family in a theoretical and historical context. From this context, several indicators will be drawn in order to demonstrate the progression of fragmentation of the family through time. Data analysis will then demonstrate that countries considered to be more developed, and thus more modern, will feature more fragmentation of the family. Finally, the chapter will speculate about the future developments of family as modernity progresses.

Fragmentation of the Family in Theory

Fragmentation of the family is not a one-dimensional process. Instead, it is a process that proceeds on two distinct dimensions. First, the internal dimension of fragmentation of the family involves changes in the roles of individual within the family. Specifically, the internal dimension refers to changes in gender roles, economic roles, and roles of children within the family. Historical review will demonstrate that as modernity progresses members of the family who originally were generalists participating in whatever home based production was needed became specialists, with men producing outside the home, women householding, and children preparing to be adults.

The external dimension, on the other hand, refers to the ways in which families fragment based upon members leaving the primary location of the family unit. In this sense, families tend to fragment in different stages due in a large part to how modern a society becomes. First, as wage labor became more important in European economies, family members, usually the males, began to leave the house for periods of time every

day in order to work for pay. The expectation was that they would return to the family later that same day. Next, as European countries and the United States industrialized, more wage labor was needed in cities on both sides of the Atlantic. Thus, migration to cities began in both the Europe and the United States. This migration often involved one or more family members traveling to a large industrial city or another country in order to earn higher wages. It was assumed that families would be separated for periods of time, but that the family would eventually be reunited either at the original home or in a new location. Next as societies became more affluent, the economic incentive for marriage began to disappear. Thus, individuals who found themselves dissatisfied in marriage were able leave the marriage and not worry about physical survival. For these families, there was no planned reunification after any period of time. As a final stage in the external dimension of fragmentation of the family, individuals stop making formal commitments to individuals of the opposite sex that hold a degree of permanence. This can be seen today in cohabitation, same sex marriages, or 'starter marriages'.

The internal and external dimensions of fragmentation of the family are intertwined in that fragmentation on one dimension can lead to fragmentation on the other dimension. For instance changes in the economic roles of family members influence when and how they leave the home. Conversely, changes in gender roles influence who leaves the home to pursue new economic opportunities. This can be demonstrated with a brief history of the Western family.

A Brief History of the European Family

Brenner (1985) suggests that prior to the modern era the Western family was an undifferentiated economic and social structure with the paramount goal of survival. In this context, husbands, wives, and children participated in all aspects of production. Referring specifically to the family in feudal Europe, Fossier (1996) states,

> The house… thus became the primary unit of production and consumption: all its occupants had to work together to maintain capital, feed the married couple and their children, and provide surplus to meet the demands of the lord in exchange for policing and protection (p. 412).

In such a family, gender roles were almost absent in that husbands helped with householding and wives helped with production. In addition, there were few age roles since children began to assume adult economic roles as soon as they were able to do so. In essence, the premodern Western family was much more egalitarian then the modern families. However, this should not suggest that premodern family life was a utopia because there was no conscious effort for equality. Instead, members of the family participated in as many roles as were necessary. If they did not do so, the family would not survive.

As a corollary premodern marriages were generally based upon the ability of each spouse to contribute to the family's economic success, not upon feelings of mutual affection. Lesthaeghe and Wilson (1986) observe that

> As a host of local studies have shown the formation of a new household through marriage was countenanced by society only if and when the potential members of that new household could establish independent and sufficient means of supporting themselves (p. 263).

In this sense, marriage did not guarantee survival. Instead, members were expected to be able to support themselves, and by extension the others with whom they formed a household.

There are many misperceptions about the premodern Western family. One is that large extended families lived in close quarters. In fact, families tended to be of a similar size as those of today (Mitterrauer & Sieder 1982). Three factors accounted for this. First, peasant and artisan families tended to breast feed their children which acted as a natural form of birth control. Second, men and women married at ages older than normally thought, according to Lesthaeghe and Wilson's (1986) observation about the necessity of individual self sufficiency before marriage. Thus, the majority of women had only a brief period of time to conceive children. Finally, infant and child mortality were relatively high. Therefore, family size was smaller than one might expect.

Another myth of the premodern European family is that land was scarce (Brenner 1985), and that large extended families lived together in one location. While crowding due to the scarcity of land was the rule in some places at some times, some areas of Europe, like what is now Poland, were sparsely populated with lords seeking emigrants to their realms. In addition, plague and famine often decimated parts of the population leaving land open for cultivation even in the most populous parts of Europe. Whether or not this land was utilized is a different question.

In sum, the premodern European family was similar to the modern family in certain important ways. First, it tended to be a nuclear family as opposed to a large extended family. Second, it was about the same size, with a husband, a wife, and a few

children. These similarities allow for a direct comparison between types of families.

However, there were also some key differences between the premodern and the modern

family. Specifically, the premodern family had one main purpose, economic survival. In

addition, this purpose led to an egalitarian structure where all worked for their own

survival and survival of the unit, as opposed to the survival of a specific other in the

family.

Family Entering the Modern Age

The situation of the European family began to change with the advent of wage

labor, both agricultural and industrial, as the primary means of economic support

(Brenner, 1985, 49). As Brenner (1985) stated when referring to the loss of peasant lands

in England,

> With the peasants' failure to establish essentially freeholder control over the land,
> the landlords were able to engross, consolidate and enclose, to create large farms
> and lease to capitalist tenants who could afford to make capital investments (p.
> 49).

Thus, the egalitarian peasant family that used home based enterprise to survive

essentially ended, and families had to migrate to the slums of crowded cities, such as

London and Manchester. In these new environments, husbands, sons, and sometimes

unmarried daughters would leave home to engage in work for pay. Usually, it was

expected that members of families would return home at the end of the day. However,

sometimes these absences would last longer if the family member became a servant for

an upper class family. This represents the first step in the external fragmentation of the

family, where individuals left the family unit for short periods of time in order to enhance the family's chance of economic survival. If the person permanently left the family, that economic survival would be threatened, so in most cases, there was no expectation of permanence in the absence.

With members of the family leaving during the day for wage labor, the household jobs that in previous generations were performed by all family members now fell to the wife, who became master of the home. Most importantly, wives took almost full responsibility for childrearing. This separated fathers from many aspects of their children's' lives. Thus, in response to the first appearance of external fragmentation of the family, the internal dimension of fragmentation of the family began to develop with family members assuming specific gender and age roles.

Brenner (1985) argues that the abolishment of serfdom and the rise of agricultural wage labor in Great Britain was one of the major causes of peasant migration to cities. This was because capitalist farming allowed for yeoman farmers to make technological improvements to their farming, which lessened the need for manual labor on farms. Thus, peasants in search of work were eventually forced to migrate to cities, where they worked in early factories and lived in working class slums. Over the next few centuries, the process spread from Britain, repeating itself in other parts of Europe as they modernized. However, this intranational migration rarely provided a tenable economic solution to a family's survival, no matter the country. Low wages, crowded conditions, and a general lack of social support made economic security tenuous at best. Thus, families turned to

international migration in order to secure a better life. This was the next step of the external dimension of the fragmentation of the family.

While there were many reasons for immigration, especially to the United States, economic survival was a driving force for many migrants. Shuck (2008) argues that

The vast majority of immigrants, in classical migration terms, have been pushed by the strained economic conditions of their country or origin and pulled by economic opportunities… presented by American society. (p. 349)

These opportunities were varied and could include owning land on which to farm, acquiring a better paying job in a factory, or working in mines. What they all had in common was that through these opportunities immigrants believed that they could better support their families by moving to locations with a different social order.

While sometimes families migrated as units, often they did not. In many cases, a son would leave his birth family in order to migrate, especially if things like inheritance did not keep him tied to his family's locale (Quale 1998, 196). For instance, when discussing the role of inheritance migration style from countries with equality in inheritance Quale (1998) observes that

Early Greek and Italian migrants to the Americas were often married men who left their wives behind to make that claim for them. Only then would it be decided on which side of the Atlantic the couple would reunite (p. 198).

In a way, this pattern of fragmentation of the family mirrored what happened with the rise of wage labor in that family members left the confines of the household to travel for work, while still anticipating an eventual reuniting of the original family. The migrating

members would usually send remittances to help the family that they had left behind. In addition, they would often attempt to save money to bring additional members of their family to their new country. Other times they planned to work for a period of time before returning to their country of origin. In either situation they anticipated the eventual reunion of the family; however, this was to be a long-term project as opposed to a short term goal.

It should be noted that the premodern egalitarian family did not return during the age of international migration. Wage labor was still necessary for the existence of the family. To that end, there was still a need for some family members to work outside of the home, as well as a need for some family members to work at home. Thus, gender roles continued. Internal fragmentation of the family did not disappear, but in fact grew larger.

During the early industrial revolution, children made up a significant part of the work force which prevented their participation in activities that are currently associated with childhood. For instance, specifically referring to schooling Mitterouer and Sieden (1992) state that

> Before general education was compulsory, only children in certain sections of the population attended school, and it was only in these sections that the period of education represented an identifiable phase in the family cycle. Even when education was compulsory, it was generally not enforced, … (p. 51)

However, as industrialization progressed, both labor organizations and social reformers succeeded in passing laws that eliminated child labor. These laws involved such things as

legislation mandating universal education for children and minimum wage legislation that allowed for families to survive on only the wages of adults. Essentially, children were no longer treated as little adults, but were treated as something entirely different. Childhood had become a stage of life in and of itself, where children learned about and practiced adult roles instead of assuming them. In the modernizing society, family roles were now differentiated by age and sex. Internal fragmentation of the family had produced what some see today as classic modern family.

Everything changed in the second quarter of the twentieth century. The stress of the Great Depression and the need for more labor during the Second World War changed the gender roles associated with wage labor in modern society as women were needed as part of the formal paid economy. The post-war economic expansion also brought a new demand for women's labor outside of the home. Thus, the division of labor within the family began to change and with it the internal fragmentation of the family evolved. Women were no longer limited to household labor, but in many cases took jobs outside of the home. This did not diminish their role as primary directors of childrearing, but often was an additional role (Tilly & Scott, 1987, 124).

As modernity has progressed, the individual has become a bigger focus of social organization in that the idea of individual happiness and actualization began to resonate more with much of Western society (Bauman 2001, 144-145). As part of this, many came to question the contemporary Western family structure dominated by men and the perceived detriment of their wives. With women in the workforce it became possible for

that family structure to change. When discussing how wage labor provides for more freedom for members of the family, Yorburg (1973) states,

> Family members are employed on an individual basis. The head of the family
> does not control the employment of his wife or children… Economic resources
> are in the form of money paid to individual members of the family (p. 108).

Women who entered the workforce had the resources to pursue their individual interests outside of that which their husband would support. Essentially, the traditional gender roles began to break down as husbands and wives were able to play similar gender roles with greater independence from each other.

The stresses on individual actualization and development of economic independence of family members had a profound influence on the Western family. Most importantly, the paradigm of the family of an economic unit was no longer accepted. As Quale (1998) states, "Economic necessity played a diminishing role in keeping couples together from the 19th century in particular after WWII" (p. 293). Instead, families started to become a forum for individuals to find companionship and pursue individual happiness to the point where Quale (1998, 293) argues that many individuals at all economic levels began to have "unrealistic expectation of personal satisfaction" arising from marriage. As Davies (1997) suggests modern society has become

> a society were individualism and self-love are dominant. Responsibilities are
> seen as repressions. Liberty means freedom from the restraints of the family…
> There are few distinctions between who is, and who is not a member of one's
> "family"—the very term has been stretched to include a variety of relationships
> well beyond its conventional meaning. (p. 133)

From this perspective, the family had become a collection of individuals as opposed to a unit unto itself.

If the utility of the family is determined by how much the family supports the desires of the individual, then it is logical that a family that does not support the needs of the individuals involved will dissolve. Before the cultural changes of the middle of the twentieth century, dissolution of marriage was in many ways difficult. When referring to the influence that that Church of England had over divorce law in the United Kingdom, Quale (1998) states that,

> it is not surprising that only in 1858 was divorce for adultery permitted by law to both men and women, nor is it surprising that it took another 80 years to add desertion, cruelty and insanity to the permissible reasons for divorce. (p. 215)

However, in the last third of the twentieth century the culture had changed so much that, as Fukuyama (1999) states referring to the marriage boom after World War II, "by the 1970's and 80's, however, the indicators began to turn dramatically downward. People began marrying later, stayed married less long, and remarried at lower rates" (p. 41). In addition, divorce was no longer a stigma as over time a greater number of people began to see divorce as acceptable. For instance, by 2001 59% of Americans saw divorce as morally acceptable, with the proportion jumping to 70% in 2008 (Saad 2008, 70). Rising divorce rates, thus, became the next step in the external fragmentation of the family, where family members who did not receive individual satisfaction from marriage left the family with no intention of eventual reunion. If members of the family were to make a future formal commitment it would be with somebody else. For instance, Steward (2007,

17) observes that in the U.S., "projections based upon the 1996 SIPP indicate that 88% of men and 66% of women will remarry after divorce."

The rise of the individual as it relates to the family has also changed the roles of children. For instance, the role of the child as a recipient of discipline began to erode. As Cunningham (2005) states in reference to studies on British working class mothers during the 1960's,

> Respondents were in no doubt that their parents had been much stricter disciplinarians than they themselves were. Many had found their own mothers remote and rigid, and not easy to talk to, and were seeking in their own parenting to encourage a closer companionship with their children. (p. 190)

Essentially, in the West the child began to again be treated like a little adult. In fact, the 1989 Convention on the Rights of the Child suggested that children should have decision making powers over their own welfare that in previous centuries were delegated to their parents (Cunningham, 2005, 193). In addition, children became more isolated from the traditional management of the household in that they did less housework and reserved more time for schooling and other activities outside of the home (Stearns, 2006, 98). Finally, it became easier for children to become more isolated from other family due to new attitudes towards divorce. Stearns (2006) astutely observed that, "many parents were deciding that their personal happiness was more important that keeping a family together for the sake of children, and this was a significant change in its own right." (p. 103) In all, the increased adult roles of the child, the isolation from family life, and the

irrelevance of children to the continuation of the family brought about a near full emancipation of the child from the traditional roles of the family.

Over the past few centuries the family has evolved from a premodern unit of production and economic survival to a formally committed unit of companionship and growth. These commitments do not have the assumption of permanence that was once common. In the same time, roles within the family have changed. Whereas at one time all members of the family worked to help the family survive, gender and age roles began to dominate family structure. However, the role of the husband as provider, wife as domestic, and child as learner also eroded. In the late modern era, roles became more ambiguous though the autonomy of the individual and the emphasis upon individual happiness increased. Members of the family, in essence, became autonomous members of a formally structured collective.

In the modern era, there was generally one constant in Western families, formal commitment. To break this commitment, families had to engage in a formal legal process in order to split. As the West enters a postmodern era, new changes to the concept of what makes up a family are leading to even greater diversity in how families are organized.

The Postmodern Family

The noted postmodern social theorist, Zygmunt Bauman (1995), described postmodern interactions as episodic in that

encounters are enacted as if they had no past history and no future; whatever

there is to encounter, tends to be begotten and exhausted in a span of the

encounter itself – starts, develops and ends in the course of it… (p. 49-50)

If the postmodern family is conceived as an encounter of two or more people, it too

should be episodic. That is, there should be little or no sense of permanence, but rather a

continued emphasis upon the needs and convenience for the individual in familial

relationships.

For several decades, there has been a growing acceptance of families where the

members never make formal commitments. Referring specifically to the rise of unmarried

couples living together, Rindfuss and VanderHeuvel (1990) observe that

The rise of cohabitation may be but another step in the long-term rise of

individualism relative to the decline of the institution of marriage and the family.

By this definition cohabitation required less "commitment" than marriage. (p.

136)

Thornton, Axinn, and Xie (2007) add,

Small numbers of couples view cohabitation as a long-term alternative, rather

than a prelude, to marriage. These couples may espouse a marriage-like

commitment to and love for each other, but place little or negative stock in the

blessings of the church and states and the legalities of a marriage registration and

certificate. (p. 311)

However, the cohabiting couple is only one form of the family without formal

commitment. This type of family can also take the form of a family where an unmarried

mother decides that the father of her children will not make an adequate father and will

not formally commit to him. It can also take the form of a child living with grandparents, relatives, or family friends who have not formally adopted the child. The key to the postmodern family is the lack of formal commitment that would bring about stability and permanence.

Today an even more episodic family structure is growing in popularity. It is characterized by families that do not form any expectation of permanence. In parts of Europe, couples will cohabitate for many years living as approximations of husband and wife with an expectation that at some point the relationship will end. Even couples who have children may only see the necessity of commitment as long as the children are young and need parental attention. When that period is over, the need for a commitment, formal or informal, ends.

There are probably many reasons for the growing lack of formality and lack of permanence in postmodern families. For instance, the decline of public moral power of the church in the West has removed one source of the unwed family taboo. More importantly, though, the growth of the social welfare state has eliminated many of the economic advantages of marriage. Specifically, it provides an alternative to couples marrying for economic security. In specifically referring to increasing divorce rates in the West, Bahr (1979) states, "It is possible that welfare does not encourage marital dissolution but that it provides an economic alternative to marriage if the marriage is unsatisfactory." (p. 559) In the same vein, if someone who is married does not want to marry and does not have an economic incentive to do so, it is much easier for the person to remain unmarried. Universal healthcare and generous disability benefits eliminate the

need for spousal support during periods of illness. Free primary and secondary education eliminate the need for parents to pool resources to educate their children. In sum, the welfare state has made it easier for one parent to raise a child alone.

Francis Fukuyama (1993) argues that these changes to marriage in the late modern era should not be interpreted as the end of the family, but rather as a change in what makes up the family. As the economic roles of the family vanish, individuals are free to pursue relationships as long as they are of benefit and to easily end relationships as social and personal benefits dissipate. However, these family styles are a relatively new phenomenon and are most common in Western societies. While different forms of families may exist in many societies, truly fragmented families are most likely endemic to the West.

Indicators of Fragmentation of the Family

There is great diversity in family structure throughout the world. However, the theory of fragmentation of the family suggests that some relationships will be present.

Home based industry, men: If it is true that the first step in external fragmentation of the family is the beginning of wage labor, then it follows that societies with a large amount of home based industry will have less fragmented families. In addition, theory suggests that the first members of a family to leave the home are men. Therefore, the first indicator of fragmentation of the family will be how many men participate in the labor force. This indicator will be measured using the variable "Labor force participation rate, male" as calculated by the World Bank using a five year average between 2003 and 2007. This is an appropriate variable because it gives a picture of how many men exit the home

during the day as wage laborers. The five year average corrects for missing data within that five year range. The weakness of the variable is that it may underestimate the proportion of individuals who participate in the labor force but within the informal economy. It is expected that countries with a greater proportion of men in the labor force will have more external fragmentation of the family.

Home based industry, women: If it is true that the first step in internal fragmentation of the family is the development of gender roles where men engage in wage labor and women do not, then it follows that in societies where women do not work outside of the home families will be less fragmented. Therefore, the greater proportion of women working outside of the home, the more fragmented families will be. This indicator will be measured using the variable "Labor force participation rate, women" as calculated by the World Bank using a five year average between 2003 and 2007. This is an appropriate variable because it gives a picture of how many have left home based labor in order to work for pay. The five year average corrects for missing data within that five year range. The weakness of the variable is that it may underestimate the proportion of individuals who participate in the labor force but within the informal economy. It is expected that countries with a greater proportion of men in the labor force will have more fragmentation of the family. It is expected that countries with a greater proportion of women in the labor force will have more internal fragmentation of the family.

Migration: If it is true that the second step of external fragmentation of the family involves one or more family members migrates in order send economic aid to their family, then it follows that countries that feature large amounts of migration will tend to

have more fragmented families. This indicator will be measured using the variable "Net number of migrants per 1,000 population" from the United States Census Bureau's International Data Base. The advantage of this data is that it is drawn not only from official government sources, but also from academic research and from non-governmental organizations. The weakness of the data is that the latest migration data, 2007, is not available for every country. In these cases, data from the most recent year was used. However, this necessitated some data being fairly old. Where the data available for Afghanistan was drawn from 2005, data from Bhutan could only be drawn from 1991. Despite this issue these data were selected due to the variety of sources from which the data were drawn and its completeness compared to data from sources like the United Nations. It is expected that a curvilinear relationship will exist where countries with the least and most net migrants per thousand will demonstrate the most fragmentation of families.

Migration for economic reasons: If, as theory suggests, migration to support ones family is an indicator of fragmentation of the families, it follows that countries that receive more remittances from abroad will demonstrate more fragmentation of the family. This indicator will be measured using the variable "remittances a percent of GDP" as provided by the International Fund for Agricultural Development. The advantage of this data is that the data is estimated from multiple sources. The organization's website (2008) states, "Central banks and other official governmental sources, money transfer companies, international organizations and academic institutions were used for reference support." Because international money transfers can be difficult to track and measure,

using multiple sources for estimates is helpful. There are several limitations to this data. First, it does contradict some official sources such as World Bank data, which appears to grossly underestimate the remittances received by countries in certain parts of the world (e.g., sub-Saharan Africa). In addition, remittances were not reported for many developed nations and for several petrol-states. Remittances as percent of GDP for these countries were entered as zero, as it is reasonable to assume that these countries are net senders or remittances.

Defined childhood: If it is true that the first step in internal fragmentation of the family is the creation of a separate childhood, then it follows that countries that have a period of time where children are assigned traditional childhood activities will have more internal fragmentation of the family. Perhaps the most traditional measure for whether a child is provided a childhood is whether a child is enrolled in primary school. Therefore, the greater the proportion of children enrolled in primary school, the more a country will have fragmented families. This indicator will be measured using the education variable "Total enrollment, primary (% net)" as calculated by the World Bank using a five year average between 2003 and 2007. This is an appropriate variable because it gives a picture of how many children have been removed from the economic production and given a traditional childhood role. The five year average corrects for missing data within that five year range. The weakness of this data is that it may overestimate the proportion of children in primary school since countries may over report then number of children in school. It is expected that countries with a greater proportion of children in primary school will have more internal fragmentation of the family.

Divorce: If rising divorce rates is an indicator of the next step in external fragmentation of the family, then it is reasonable to assume that nation-states with higher divorce rates will most likely have more fragmented families. Divorce rates are by nature dependent upon two factors. First, a nation must have formalized marriage for the majority of unions within their country, a lack of which means that divorce will not exist. Divorce rates are also dependent upon divorce being legal within a country. If divorce is not legally provided for, there will be no divorce. Divorce rates will be indicated by the ratio of the variables "Total divorces" and "Total marriages" as calculated by the United Nations using data from the latest year that both variables are available. The advantage of using this ratio is that it gives a picture of the relationship between two related social phenomena at a single point in time. In essence, it may represent societal attitudes towards marriage and divorce. However, this variable is very limited. First, it does not take into account the fact that some countries do not have legal divorce, but do have other ways of legally dissolving marriages, such as annulments. In addition, only 120 countries have divorce data recorded. Many of the countries without data are the least developed countries, most of which are in Africa. However, theoretically these countries may not even have modern marriages in the sense that it is a formalized relationship in the eyes of the state in that the people have not officially registered their marriage. Since this might be the case, countries with missing data will be treated as a separate category of analysis under the assumption that they most likely do not have modern marriages. It is expected that countries with a greater ratio of divorces to marriages will demonstrate a greater level of fragmentation of the family.

Hypotheses and Analysis

As this dissertation is a preliminary study of social fragmentation, it is most appropriate to describe the relationships between the various indicators of fragmentation of the family. The first step is to create a model including the hypothesized relationships between the predictor variables. The second step will use curve estimation to determine if the hypothesized relationships can best be described as linear or curvilinear relationships. Finally, structural equations models will be calculated taking into account the type of relationship between the variables described in column two.

Model Specification

Figure 3.1 demonstrates the model as specified in the initial relationships. The starting point of the model is the event which begins fragmentation of the family, men entering the paid labor force (i.e., Labor force participation rate, male; MLFP). The model then diverges into the two dimensions of fragmentation of the family. First, within internal fragmentation of the family, MLFP will predict both the development of a true childhood measured by the amount of primary school enrollment (i.e., Total enrollment, primary) and the proportion of women in the workforce (i.e., Labor force participation rate, female; FLFP); where higher MLFP predicts higher elementary enrollment and higher FLFP. The relationship between female labor force participation and the amount of children in primary school will be analyzed though no relationship will be hypothesized.

Within external fragmentation of the family, male labor force participation will predict both greater emigration (i.e., migrants per 1,000 population) and a greater amount

of remittances sent to a country (i.e., remittances a percent of GDP). Furthermore, higher emigration will predict a greater amount of remittances sent to a country. It is furthermore hypothesized that both higher immigration and lower the amount of remittances will predict increased divorce (i.e., divorce ratio) within a country, as these are signs of greater exposure of a country to modernity.

The internal and external dimensions of fragmentation of the family converge in that higher FLFP will also predict more increased divorce within a country, as women with more financial resources of their own will not be dependent upon a partner for survival.

Curve Estimation

For all hypotheses, three possible relationships were estimated: linear, quadratic, and cubic. The best model is assumed to be the linear relationship if it is the most parsimonious and significant model. The quadratic relationship is the best model if it is substantially more significant than the linear relationship or substantially improves upon the proportion of the dependent variable predicted by the independent variable as compared to the linear relationship. The cubic relationship is the best model if it is substantially more significant than the quadratic relationship or substantially improves upon the proportion of the dependent variable predicted by the independent variable as compared to the quadratic relationship. Table 3.1 presents the curve estimations for the hypothesized relationships within the hypothetical model.

MLFP to FLFP: All three of the relationships calculated were significant (linear: p =.001; quadratic & cubic: p = .003). The linear model (R^2 = .058) predicted a small

amount of the variation, and did was not substantially improved upon by the quadratic

model (R^2 = .066). Thus, the linear model was selected for further analysis. The data

indicate that as male labor force participation increases, female labor force participation

(about 55%) also increases until male participation is about 75%, when female labor

force participation begins to rise. When male labor force participation is about 95%,

female labor force participation is about 70%. This supports fragmentation of the family

theory in that it seems that men enter the paid workforce at an earlier point in the

development of a country, while women remain at home. This follows the pattern found

in the early modern European family.

MLFP to Elementary Enrollment: All of the models were significant (P < .001 for

all). The quadratic model (R^2 = .154) predicted as moderate amount of the variation and

improved upon the linear relationship (R^2 = .097), but was not improved upon by the

cubic (R^2 = .157). Therefore, the quadratic relationship was selected for further analysis.

The data indicate that as male labor force participation increases elementary school

enrollment gradual increases, but after about 80% of men are in the paid workforce

enrollment decreases. In a way, this is counter intuitive and may indicate that enrollment

in elementary school alone is not an adequate proxy for a defined childhood. However, it

might also indicate that in some developing countries where a large proportion of men are

in the formal workforce, the country still does not have enough resources to provide

universal primary education.

FLFP to Elementary Enrollment: The linear model (p = .146) was not significant,

while both the quadratic (p = .064) and model cubic (p = .093) were significant. The

quadratic model (R^2 = .037) predicted a small amount of the variation and improved upon

linear relationship (R^2 = .014). However, the cubic relationship (R^2 = .043) did not

substantially improve upon the quadratic relationship. Therefore, the quadratic

relationship was selected for further analysis. The data indicate that as female labor force

participation increases elementary school enrollment gradual increases, but after about

60% of men are in the paid workforce enrollment decreases. Like MLFP, this is

counterintuitive and may indicate that enrollment in elementary school alone is not an

adequate proxy for a defined childhood. However, it can also indicate the country does

not have the resources to provide for universal elementary education.

MLFP to Migrants: None of the relationships were significant. None of the

relationships predicted any of the variability (R^2 = .000 for all). This posed a unique

situation where no models were of any use. However, as a model had to be selected for

further analysis, the linear model was selected for the time being. However, it does not

seem as if male labor force participation has any effect upon the amount of migration.

MLFP to Remittances: None of the relationships were significant. The linear

predicted almost none of the variation (R^2 = .001), and was not improved upon by the

quadratic model (R^2 = .003). Thus, the linear model was selected for further analysis,

although it seem as if male labor force participation has little effect upon the proportion

of a countries GDP accounted for by remittances from abroad.

Migrants to Remittances: The quadratic (p = .008) and the cubic model (p = .015)

were significant. The quadratic model (R^2 = .014) predicted a small amount of the

variability and substantially improved upon the linear model (R^2 = .053), and was not

improved upon by the cubic model (R^2 = .058). Thus, the quadratic relationship was selected for further analysis. The data indicate that as the number of emigrants decreases, the portion of a country's GDP made up of remittances from abroad decreases. This trend continues throughout the majority of the range of migrants per 1000 of the population. However, at approximately 20 immigrants per 1000 of the population, the proportion of the GDP accounted for by remittances from abroad increases sharply. Apparently, these outliers have emigrants sending back large amounts of money, but also have a large number of immigrants. This could be a factor of countries that are receiving many migrants for non-economic reasons, but are none the less poor countries themselves. For instance, Timor-Leste has a ratio of 51 immigrants per thousand residents but also receives enough remittances to make up 71% of its GDP. However, this country has been riddled with conflict since the 1990's, and thus, had a many refugees. As these refugees return, there are few jobs to which they can return, leaving the country still dependent upon remittances for its economic survival. The data mostly supports fragmentation of the family theory in that the data suggest that many emigrants are sending money back to families. This follows similar trends to what was found in Europe during the era of migration.

Migrants to Divorce: All of the models were significant (linear: p = .094; quadratic: p = .036; cubic: p = .048). The cubic relationship (R^2 = .089) accounted for a small amount of the variation but improved upon the quadratic relationship (R^2 = .074), which improved upon the linear relationship (R^2 = .032). Thus, the cubic model was selected for further analysis. The data indicate that within the range of the majority of

data as the migrants per 1000 of the population as migrants increases the divorce to marriage ratio increases. In essence, there are proportionally more divorces in countries that receive more immigrants. This is in keeping with fragmentation of the family theory in that the finding indicates countries that receive more immigrants are likely to the next stage of fragmented families, those that have no anticipation of reunion. In other words, the temporary separation of migration has been replaced with the permanent separation of divorce.

Remittances to Divorce: All three relationships were significant (p < .001 for all). The quadratic relationship ($R^2 = .220$) accounts for a moderate amount of the variation and improves upon the linear model ($R^2 = .166$), and is not substantially improved upon by the cubic model ($R^2 = .222$). Thus, the quadratic model was selected for further analysis. The data indicate that as the amount of remittances as percent of the GDP increases the ratio of divorces to marriages also declines until remittances account for about 20% of GDP at which point the ratio begins to increase slightly. However, there are few countries that fit into this situation, and thus the general trend of countries with a small amount of remittances received have higher divorce rates is dominant. This theory supports fragmentation of the family in that countries where larger portions of the GDP are accounted for by remittance do not seem to have much of the permanent separation facing countries where remittances are less important.

FLFP to Divorce: All of the relationships were significant (linear: p = .003; quadratic: p = .009; cubic: p = .002). The cubic relationship ($R^2 = .166$) accounted for a small amount of the variation but improved upon the quadratic relationship ($R^2 = .111$),

which improved upon the linear relationship (R^2 = .107). Thus, the cubic model was selected for further analysis. The data indicate that in the majority of the range of the data, the divorce to marriage ratio increases as female labor force participation increases. However, when about 70% of women are in the workforce, the divorce rate starts to drop. This seems to provide support for fragmentation of cities theory in that when women have their own means of survival they are no longer dependent men. Thus, if they are not satisfied in marriage, they do not need to stay.

Curve Estimations: Discussion

The curve estimations provided limited support for fragmentation of the family. Out of eight relationships two were non-significant, two did not support their original hypotheses, but four did give strong support to the theory of fragmentation of cities.

The internal dimension of fragmentation of the family received limited support from the curve estimations. Male labor force participation did predict female labor force participation in a way that would be expected from the original theory. First, if internal fragmentation of the family did not exist, one would expect a linear relationship, where men and women tended to leave the home and work for wages at the same time. However, men entered the paid workforce first, while women's entry lagged somewhat behind. The point at which men were in the paid work force and women were not is the period of time where internal fragmentation was manifest in the strong gender roles that put men forth as the public face of the family while women were given dominion over the home.

Internal fragmentation of the family was not confirmed as it relates to elementary enrollment. In theory, countries with higher male labor force participation should have indicated a more developed childhood within a country. However, the opposite was found to be true. Also, it was expected that having more women in the paid workforce would indicate a more developed childhood. Again, the opposite seemed to be true. However, the data also appear to show that some of the countries with the lowest elementary enrollments have some of the highest levels of both male and female labor force participation. Thus, it can be inferred that these countries population with less home based industry, and are still at a level of poverty where multiple family members must work outside of the home. It is not unreasonable to infer that these countries have many children work in the paid labor force as well. In a way, this might indicate that these countries are at an earlier stage take out of an agricultural context. Perhaps, every member of the family must participate in production in order for the family to survive. Instead of working a field, the family members work for money.

The external dimension of fragmentation of the family received much more support. It is true that male labor force participation did not predict migration or remittances. However, male labor force participation is only theorized to precede international migration for work. In many contexts the first migrations were from the rural areas to cities within the same country during industrialization. Therefore, it may be the case that the complete lack of a relationship might be related to this step in external fragmentation of the family that is not being measured.

The reason that one can infer the migration being measured is related to external fragmentation of the family is that migration does predict remittances. Because the data indicate that the more migrants a country loses the more their GDP is accounted for by remittances, it is obvious that money is being sent back to somebody. The most reasonable assumption is that remittances are being sent to family members.

External fragmentation of the family is also supported by the fact that the number of migrants, the amount of remittance, and female labor force participation predicted divorce. First, because countries that received immigrants tended to have a larger divorce to marriage ratio it can be inferred that more developed, and thus more modern, countries have higher divorce rates. A similar finding between remittances as a percent of GDP and divorce to marriage ratio suggests the same interpretation. Taken together, the implication is that countries that have already experienced external fragmentation of the family for economic reasons have higher divorce rates. This finding would not be very noteworthy except that it intersects with the internal fragmentation of the family in that higher female labor force participation also predicts a sizable amount of the variation in divorce rate. Of course, one interpretation of this finding is that women have their own means and do not need to remain in a marriage in which they do not find satisfaction. This interpretation is heavily dependent upon one of the underlying assumptions of fragmentation of the family—when the family is no longer need as an economic unit, the needs and interests of the individuals involved gain precedence over the needs of the family as a whole. Thus, when the family does not serve the needs of the individuals

involved, it breaks apart with no assumption of reunification. This is strong confirmation for the theory of fragmentation of the family.

General Discussion

Fragmentation of the family theory states that as modernity progresses the family divides along two axes. Internally, a somewhat egalitarian family becomes divided into the positions of husband as breadwinner, wife as homesteader, and child as learner. Externally, the family becomes separated for economic reason; first, with individuals leaving for day labor followed by migration in search of better opportunities. Eventually, internal fragmentation of the family and external fragmentation of the family intersect with women leaving the home for paid labor, and divorce becoming more common.

This research generally supports this theory. The model is especially strong in showing the relationships between migration and permanent dissolution of families, as well as the relationship of labor force participation and permanent dissolution of families. It is not as strong illustrating current trends in sex roles and age roles in contemporary societies. This might partly be because of the logistical difficulties researching groups that live in traditional ways in developing countries. For instance, people in subsistence agricultural areas or primitive tribes would be more difficult to research for reasons of access. Thus, fewer egalitarian families might be available. In addition, the premodern European style family may simply not exist anymore as Europe and heavily European influenced countries (e.g., the U.S. and Australia) are some of the most developed countries in the world. However, there is still sufficient support for the theory to use as a basis for further research.

The proposed model does not fully explain every part of this proposed theory in that data on some facets of this type of fragmentation were not readily available (e.g., internal migration for economic reasons) and some of the data that was available only served as proxies for the concepts (e.g., migration did on exclusively include migration of economic reasons). However, the models provide a baseline for further analysis of the study of fragmentation of the family.

The implication of this research is that certain parts of fragmentation of the family can be empirically understood. This is important because as societies describe the breakdown of the family or attempt to 'strengthen the family', there should be an understanding of what is causing changes in traditional family structures. This would, in theory, allow countries to make interventions in multiple areas in order to engineer their society to develop the family in a way that is to their liking. However, because fragmentation of the family does seem to be a multistage process, a government would have to make structural changes in many parts of society in order to reduce fragmentation of the family. Thus, a country would have to have considerable political will to make changes that parts of their society may find to be unpopular or to make changes that might be detrimental to other parts of the social system.

Fragmentation of the family is a process, not something to be viewed as good or bad. It has advantages in that it provides for individuals to lead flexible lives where the lack of strong ties provide greater physical and social mobility in order to enhance their chances of their individual survival and achievement of happiness. This benefits society

in that multiple members of families can enhance their individual talents, which in theory might provide for a stronger society.

The disadvantage to fragmentation of the family is that strong ties among family members have traditionally provided for greater chances of the survival of individual in times of distress. For instance, if a major illness strikes a male in a family with two parents and children, the sick person has others to provide for and take care of him. On the other hand, if the same male is divorced and living alone, he will need to depend upon friends or paid services in order to get the same care. This in the short and long run can be more expensive to the individual. In addition, families provide for emotional support of members. Weaker ties in families might lead to more isolation among family members.

This analysis of fragmentation of the family is limited for two reasons. First, as previously stated it does not provide a model for every aspect of fragmentation of the family. In addition, for the sake of parsimony only certain aspects of certain indicators are included. For instance, childhood is only indicated by primary school enrollment, while child employment is excluded. With a sample of fewer than 200 countries any very complex model would have unreliable predictive power. Considering the fact that limited data are available, this limitation is hard to alleviate.

The second limitation of this study is that it does not suggest causation. It only suggests relationships that should be assessed in future research. This limitation is not as large as a concern in that causal modeling is possible, though not in the purview of the dissertation.

Future research should consist of two factors. First, path modeling or structural analysis should be used to determine causal patterns in the development of fragmentation of the family. This will demonstrate exactly what the necessary and sufficient conditions are for fragmentation of the family to occur. Second, more complete data needs to be found. Such data should be more focused to the actual indicators of fragmentation of families. Such data could be used to create a model that would indicate how fragmented families are within a given country. Any number assigned to fragmentation of families from the available data would be unreliable due to the use of so many proxy variables.

Conclusion

These analyses suggest that fragmentation of the family is a process that can be empirically modeled. It will serve as a basis for future research into how fragmentation of the family is influenced my macro-structural factors in society and how it affects the development of modernity.

Chapter 4

Fragmentation of Cities and Communities

Abstract

Fragmentation of cities refers to the division of cities and metropolitan areas into neighborhoods with weak bonds, effectively creating separate communities. Historical analysis will demonstrate that this process creates patterns of exclusion that can be used as proxies for fragmentation in general. Analysis of the literature suggests access to government services and access to the modern world system can be used to proxy fragmentation of cities. Literature also suggests that size of urban population along with its growth, types of employment, income distribution, and mobility to and from the cities can predict the proxies. Curve analysis suggests that the best predictors of fragmentation of cities have to do with poverty, where countries with a very small income share among the poor and many urban dwellers in slums live in what are probably the most fragmented neighborhoods.

*   *   *

The Reverend Willie Wilson, pastor of the Union Temple Baptist Church, contested the 2002 Democratic mayoral primary election in Washington DC against incumbent Anthony Williams. The sitting mayor was accused of serving the interests of downtown developers. Rev. stated that he entered the primary to fight for the needs of general Washingtonians. However, unsaid was that he only has certain residents in mind.

Rev. Wilson's strategy did not involve a large amount of campaigning in the affluent Upper Northwest sections of the city. Instead he concentrated on an 'East of Anacostia" strategy, which involved speaking to the issues of the primarily working class and poor African-American residents of Wards Seven and Eight, both lying on the eastern side of the Anacostia River. The strategy had been employed with great effect by the former Mayor Marion Barry during his later career.

Wilson's campaign demonstrated an ongoing problem for the District of Columbia—the fact that two cities exist. The most prominent DC is the slowly expanding Upper Northwest section made up of middle class and more affluent residents who work downtown or in the northern and western near suburbs. The residents tend to depend on those same areas for their social and entertainment activities. The other DC is the slowly shrinking Northeastern and Southeastern parts of the city. These residents tend to be working class or poor and have fewer job opportunities. They rarely travel to the Northwestern sections of DC, depending on their own neighborhoods and Prince George's County, Maryland for their social activities. In most cases, the suburbs of DC show similar demographic patterns, that is wealthier northern and western suburbs and poorer communities to the east.

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In 1990's the DuPont Circle neighborhood was the undisputed center of the Gay and Lesbian community in Washington, DC, drawing individuals from the entire metro area and even other cities. The neighborhood contained the greatest number of bars, nightclubs, bookstores, and other establishments that catered to the social needs of this

demographic group. On any given weekend various forms of activism and education occurred with the intention of creating a stronger Gay, Lesbian, Bisexual, and Transgender Community that was more integrated into the greater Washington metropolitan area. Though over the past few years the neighborhood has seen an increase in the number of business catering to a more non-identity based trendy clientele, DuPont Circle is still the major center of the Gay and Lesbian community in the DC area.

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It would be naïve, idealistic, and inaccurate to believe that cities have ever been unified entities. Instead, cities have always featured divisions. However, the types of divisions that exist in cities today are qualitatively different from those of the past. In their excellent review of the changes to modern European cities, Anderson and Van Kempen (2001, 1) state that cities have always been divided into advantaged and disadvantaged areas, but today those in the disadvantaged areas have become marginalized and excluded from the general life of the city.

This marginalization will prove to be a factor in several other types of fragmentation, but involves specific traits in the fragmentation of cities, where it parallels several types of exclusion. This marginalization is related to stratification, as marginalized groups tend to be ethnic minorities and members of lower-socioeconomic classes. These ethnic minority and poor neighborhoods often feature high unemployment, lower levels of education, and generally fewer social opportunities. Generally, it is almost impossible for these groups to leave the neighborhood.

An examination of the development of the modern city will demonstrate that three factors have brought about the current fragmentation of cities. First, the failure to integrate the slums of the early urbanized workforce set a precedent for the exclusion and marginalization of powerless classes within cities. Second, suburbanization has removed many of the more privileged groups from the interior of cites, leaving only the marginalized groups. Third, suburbanization has led to ghettoization, leaving marginalized groups concentrated in a few stagnant neighborhoods. Third, the failure to integrate immigrants from cultures divergent from that of the host country has resulted in ghettos with worldviews incompatible with those of society at large. Finally, identity neighborhoods, neighborhoods where individuals with similar identities (e.g., homosexual) congregate, are a post-modern development resulting from the reversal of some of these trends.

The Unified Town: Pre-modern Cities

Although there has never existed a fully integrated city, it could be argued that medieval cities are the closest representation of a fully integrated city. Originally, in about the eleventh and twelfth centuries, many cities began first as defenses and later as centers of commerce where occasional markets evolved. These markets were often located near fords in rivers, natural crossroads, or other central and convenient locations (Mundy and Riesenberg 1958, 34-36). Eventually, these markets became centers of artisans, nobility that no longer lived on agricultural lands, and local government. As towns began to grow, only three social classes were represented: merchants, artisans, and servants/employees, with the last group being generally quite small. Lower classes were

not present because there was no opportunity for an urbanized work force and most of the poor in society were still members of the agrarian peasantry. A true underclass did not really start to develop until around 1500 (Reynolds 1977, 158).

Cities at this time were small by modern standards. For instance, in England even the largest cities had only about 500 residents (Reynolds 1977, 16). While some cities were descendants of old Roman cities, most were planned by local lords looking to profit from the lands surrounding their estates (Nicholas 2003, 11; Pounds 2005, 12). Regardless of their origin, these towns tended to share certain traits. First, they were originally contained within city walls, which were expanded as the town grew (Pounds 2005, 25). Eventually they assumed a radial pattern in which older crafts and other high status functions like the clergy were near the city center (Nicholas 2003, 78; Saalman 1968, 28), but were still commercially integrated since all streets served as markets in one way or another (Saalaman 1968, 28). The cities themselves tended to be centers of commerce and often had high levels of occupational specialty, but industrial cities were not common until around 1700. Industrialization tended to be tied to the agricultural production in the surrounding areas. Industry that did exist tended to be located on the outskirts of the town, but was still mixed into residential areas (Nicholas 2003, 78). Though this is a common model for pre-modern European cities, Sjoberg (1960, 4-5) argues that this description can be applied to all pre-modern cities.

The Precursor: Early Modern Cities

The eighteenth century brought about a plethora of social changes. The largest of these was industrialization. This new mode of production was based upon wage-labor as

opposed to subsistence, so many workers who lived near the factory or mill were required for successful production. Thus, while cities had traditionally been centers of commerce and small scale production, they now became centers of industrial production (Nicholas 2003, 9-10).

Fragmentation Begins: The Modern City

While cities had traditionally been centers of commerce, cities started to become centers of industrial production (Nicholas 2003, 9-10). The modern city paralleled the development of capitalism as new styles of industry required workers to live in near proximity to factories (Brenner, 1985). In addition, the new style of commerce developed requiring more permanent centralized markets. Together, they led to the increase in size of cities and depopulation of the countryside.

The development of an urban wage-labor was especially important in changing society. Those who moved to cities did not immediately integrate into city life. Instead they formed slums near their places of employment. Often this housing was haphazardly placed near factories (Shelston and Shelston 1990, 38). These neighborhoods tended to be overcrowded and dangerous in numerous ways, as crime and disease were rampant (Brenner, 1985). The grim portrayal of these communities in literature, such as that of Charles Dickens, is essentially accurate.

However, these neighborhoods were not completely isolated from the rest of the city, and were not seen as separate from the rest of the city. Mollenkopf and Castells (1991, 9) argue that in New York of the nineteenth century, poor slums were seen as temporary way stations on the path to more affluence. Though the belief that inspired this

way of thinking was genuinely American, the disunity and permanence of certain parts of cities was a more universal assumption. In addition, cities began to create a sense of civic pride, where various classes began to see themselves as members of the same community (Shelston and Shelston 1991, 119). Some have even suggested that cities leveled class distinctions (Dyos as quoted in Shelston and Shelston 1991, 31).

Two factors began to influence the division of cities into neighborhoods segregated by class. The first of these was the growth in population. Shelston and Shelston (1991, 40) argue that as industry required more support workers, such as clerks and managers, that early suburbs developed as these people had the financial opportunity to escape more dangerous neighborhoods. On the other hand, those who did not have the necessary financial resources were trapped in deteriorating neighborhoods.

This new segregation influenced the divergence of culture in the growing cities. Pierre Bourdieu's theory of cultural capital is confirmed, at least in part, by Shelston and Shelston's (1991, 130-131) analysis of the divergence of middle class culture in English cities during the middle to late 19th century. They describe the middle class culture in the early suburbs as focusing home and upon organization that supported their class interests. The urban working class, on the other hand, focused their life around public houses, where basically community organization took place in the local bar.

Fragmentation Increases: The Development of Suburbs

For many reasons, cities became less attractive places to live. Suburban areas outside the city core had existed in Europe since the Roman era, and proto-industrial suburbs developed around industries undesirable for the center city, such as tanneries

(Haris and Larkham 1999, 4). However, the true modern suburb began to develop during the middle of the 18th century. The early industrial era was associated with the rise of the romantic era in literature and art. This movement prized that which was natural. Thus, early 'romantic' suburbs provided a place for individuals to retreat from the crowding and sometimes dirty city life in order to enjoy the illusion of being close to nature (Harris and Larkham 1999, 4).

The modern suburbs that developed during the industrial era created a template that could be used to describe suburbs for the next century. According to Thorn (1972, as quoted in Clapson 2003, 2) these suburbs had four common factors. First, they were outside the city but were in the general orbit of the city. Second, the suburbs were directly between the city and the countryside. Third, the suburbs were generally within commuting distance from the city center and most suburban workers commuted to the city. Finally, suburbs were dependent upon the city for commerce, services, and culture.

Fragmentation of cities increased as transportation from the outskirts of the city to inner-city improved. In fact, the growth of suburban areas was originally limited by the size and availability of mass transportation systems. (Wood 1958, 55). In 1863 the London Underground became the first system of public transportation that easily moved large numbers of individuals around a city. Mass transport such as this allowed workers to live further from their city-based jobs, which in turn allowed for growth in outer parts of cities. For instance, many parts of the Bronx were actually small hamlets when the New York City subway system opened. Mass transit helped these areas integrate into the greater city, by transporting workers from residential neighborhoods to jobs in

Manhattan. In fact, in the first few years after the subway opened, the population of northern Manhattan grew by 265% and that of the Bronx grew by 150% (Hood, 1993). As transportation allowed individuals to move further from the center of the city, commerce and employment eventually followed (Clapson 2003, 44).

However, transportation itself was not the reason for suburban growth. Rather, conditions in cities led to the outward migration of city residents. In his seminal work on post-WWII suburban life in America, Robert C. Wood (1958, 33-41) states that the American migration to suburbs was influenced by increasing corruption, staggering growth, and deteriorating conditions within cities. Furthermore, Mark Clapson (2003, 51-52) describes three characteristics of the aspiration for individuals to migrate to suburbs. First, suburbanites wanted to avoid the problems facing cities, which Wood described. Second, many individuals, especially those in the United States and other Anglo nations desired to own their own homes. In this regard, suburbs provided opportunities that cities did not. Third, suburbs offered the appeal of a high quality environment with better schools, lower population density, and more open space.

Still other factors influenced the growth of suburbs. Particular to the United States, small fragmented suburbs grew because large industrial cities necessitated governments to stop being responsive to the populace. Many who sought life in the suburbs moved there for those reasons. Even when technology was able to improve city life, the same technological improvements allowed for easier life in the suburbs. This stage in the fragmentation of cities was unstoppable.

Life in the American suburb was different from any community organization that had previously developed. Absent were the remnants of the premodern social organization where the primary community featured strong economic and social ties between members of a community (Wood, 1958). However, a uniquely American form of community developed in the American suburb. This community was characterized by the voluntary political participation and municipal organization of the community. Much like developments within the family at the same point in history, voluntariness became the rule. Economic survival disappeared from large parts of the American municipal organization.

In economic terms, the modern suburb was a net importer of goods and services (Stanback 1991, 6). Though some commerce had followed the migrants to the suburbs, most major commerce was still located in cities where most suburbanites worked. However, the disintegration of this economic organization led to the next phase of the suburban movement.

Further Fragmentation: The Rise of the Autonomous Suburb and Sprawl

By the late 20th century, suburbs had extended further and further from city centers. This sprawl was characterized by low-density, automobile-dependent population centers, which surrounded deteriorating cities. The development of these areas was uneven and some believed to be exclusionary (Squires, 2002, 2). The research suggests that the stereotype of the exclusionary suburb, where the residents are those who could afford to move away from the city, is somewhat exaggerated and far from universal. Working class suburbs were evident in the 19th century, and many continental European

suburbs consisted of undesirable classes excluded from the city (Harris and Larkham 1999, 5).

These migrants looked for communities where they could receive the best bundle of services (Squires 2002, 8). In keeping with Marx's concept of replication among elites, one of the services that was most demanded by the educated commuting work force was a strong educational system for their children. This led to a better-educated workforce developing in the suburbs, which would be a major factor in the realignment of the suburban/urban economies.

Stanback (1991, 6) describes two stages of suburban growth. The first involved the migration of workers to the suburbs. The second stage involved firms taking advantage of the better infrastructure and a more educated workforce by moving to the suburbs. In keeping with modern goal of efficiency, these moves led to the development of suburban industrial and office parks where companies could be closer to their workforces. In turn, workers were more easily able to take advantage of the services provided in their suburbs, as they needed less time to commute.

Thus, a realignment of the economic exchange between the city and suburbs occurred. According to Pisarski (1987) the biggest growth in commuting within the United States in the second half of the 20th century involved individuals commuting from one suburb to another suburb. This meant that even though many workers were still drawn into the center city, many more did not need the city for work. In addition, centers of commerce and culture began to appear in the suburbs in the form of shopping malls and multiplexes. It became possible for an individual to live in a suburb and never need

to enter the center of the city for any reason, allowing the suburb communities to develop their own home markets.

The general restructuring of the economy of many developed nations acted as a coup de grace for dependence of suburbs upon the city. As Western economies transitioned from industrial to service oriented economies, the higher levels of education in the suburbs were needed to fill many high-end service jobs. Thus, suburbs became net exporters of goods and services to cities (Stanback 1991, 6). This made cities more and more dependent upon their suburbs for the basic necessities of existence, while the economies in the center cities declined.

The Inner Fragment: What Was Left in Cities

Those who left in the center of cities were generally those who could not move out. In general, these were the poor service-dependent groups, immigrants not integrated into the larger society, and social groups that were not welcome in the growing suburbs (Dear and Wolch, 1987, Andersen and Vandempen 2001, 1).

In the United States, many factors influenced the fragmentation of cities so as not to allow marginalized groups to exit the center city. Dear and Wolch (1987) describe the inner cities of the U.S. as fully service dependent. Groups, such as the poor, the undereducated, and the mentally ill, needed public services in order to improve their place in life. However, after the stagflation of the 1970's many cities, states, and the federal government stopped providing funds to many of these services. Without educational, health, and financial resources, those left in cities were relegated to ghettos

of poverty and exclusion. Thus, high walls developed that prevented individuals from exiting these deteriorating neighborhoods. The culture of exclusion replicated itself.

Poverty may not be enough to explain how cities fragmented in the late 20th century. Though some describe the modern city as a 'dual city' made up of a rich front stage and a poor back stage (e.g., Castells and Mollenkopf 1991, 401), strictly poverty based models of the divisions within cities no longer captures the full picture of the divisions that have emerged in cities of the developed world. Andersen and Van Kempen (2001, 2) argue that "broad social, economic, demographic, cultural and political developments seem to contribute the segregation processes," of which fragmentation is one.

Today, poor neighborhoods are not simply poor and excluded. Instead, many are poor, different, and excluded. For instance, a neighborhood where most residents are poor, may also involve a lower emphasis on the traditional nuclear family as female-headed one parent households may dominate. Furthermore, many of these neighborhoods may not have access to the same quality education as a suburban neighborhood might. In essence, many marginalized neighborhood replicate a culture of exclusion, where differences from the 'main-stream' culture are assumed to be normal within that community. In general, individuals in these neighborhoods do not hold the same middle-class aspirations that dominate the rest of modern society (Friedrichs and Vranken 2001, 25). Similarly, excluded neighborhoods might be seen as lacking financial, social, cultural, and political capital (Van Kempen 2001, 61).

The Postmodern City: Improved Experience?

In some ways, cities today are becoming less rational and more fragmented. In his discussion of contemporary Los Angeles, California, Michael Dear suggests that developments such as gentrification and historical preservation have blocked the further modernization of cities (2000, 110-114). Instead, he suggests that cities are embracing diversity that has already existed.

One way in which cities are embracing this diversity is through the development of the identity neighborhood, which is a neighborhood that has developed culturally, economically, and commercially in order to accommodate a demographic grouping of individuals who identify along a common factor. An example of this is the Dupont Circle neighborhood of Washington, DC, which from the 1960's to the 1990's developed into the center of the gay and lesbian culture in the city. While these neighborhoods may not have demarcated physical borders, they often have definite cultural borders with adjacent parts of the cities. In essence, identity neighborhoods are areas where like-minded individuals can exercise their culture in a central location. They do not need to live in that specific area, but that area is where they engage in their cultural practices.

Another example of postmodern diversity in cities, is quite possibly the opposite of an identity neighborhood. Some cities, such as Washington, DC, are developing what amount to 'theme neighborhoods'. These neighborhoods are usually redeveloped neighborhoods that keep the name of and the façade of old neighborhood, but are modified so that many segments of society can practice their cultures in that area. The classic example of a 'theme neighborhood' is any Chinatown where few residents are of East-Asian extraction and Asian restaurants are outnumbered by large national chains.

Fragmentation of Cities in Theory

If one were to take a snap shot of many cities in the developed world today, one would find some traits common to most. First, a city will have distinct neighborhoods with distinct purposes. For instance, a city will have residential districts separate from industrial areas. Many of the residential areas of these cities will be populated with marginalized groups, which will have developed separate cultures from the rest of the metropolitan area. Cities may also include areas of specific cultural practice, identity neighborhoods, or areas enchanted to look like an identity neighborhood, 'theme neighborhoods'. As one looks from the city towards the suburbs, the density of the population will thin. The area is no less fragmented, simply more spread out. Industrial parks will be set apart from subdivisions, which are set apart from retail areas. Many of these areas are self-governing communities, wherein local resources are used to fine-tune the package of service which that particular community desires.

However, a physical description of the fragmented city does not fully capture what it means for a city to be fragmented. According to some theorists (e.g., Friedrichs and Vranken 2001, 23; Van Kempen 2001, 62) these physical divisions are also associated with cultural, moral, and normative divisions. In essence, fragmentation of cities interacts with other types of fragmentation to exclude certain groups from the larger societies. Specifically, as cities fragment, social cohesion disappears and large fault lines appear between the different areas of the city (Friedrichs and Vranken 2001, 23). Included neighborhoods are able to mobilize resources in order to replicate their

advantages, while excluded neighborhoods lack almost everything (Van Kempen 2001, 53-57).

Indicators of Fragmentation of Cities

It is inherently difficult to measure fragmentation of cities using countries as the unit of analysis in that countries can have some cities that are fragmented while others are not. One would need to perform separate analyses upon all major cities in a country in order to determine if in general cities were fragmented. However, there are some general trends within nation-states that do indicate the presence or the possibility of the presence of fragmented cities.

Urban Population: In order for cities to become fragmented, there needs to be a sizable urban population. Therefore, the proportion of a country's population that is urbanized will predict the fragmentation of cities within that country. This indicator will be measured using the variable "Urban population (% of total)" as calculated from World Bank data using a six year averages between 2002 and 2007. This is an appropriate variable in that it provides for a standardized picture of the living arrangements for residents of various countries. Its main weakness though is that the World Bank measures only urban and rural populations. Suburban populations are included with urban populations. It is expected that countries with highly urbanized populations will display greater social fragmentation.

Type of Employment: As stated previously, early suburban growth was primarily fueled by the need for service employees to support the modern industrial economy (Shelston and Shelston, 1991). This coupled with the lack of a suitable variable

representing the degree of suburbanization in a population suggests that the variable

representing the amount of service employment within a country can serve as a proxy

variable for suburbanization. To this end, a variable representing the ratio of the variables

"Employment in service (% of total employment)" to "Employment in industry (% of

total employment)" calculated from World Bank data using six year average between

2002 and 2007 will be included, where countries with larger service sectors will have

ratios above zero, while those with larger industrial sectors will have ratios below zero.

The advantage of this variable is that it represents the ratio of the two major types of

urban employment. If either industrial employment or service employment were to be

used as a variable itself, it would assume that all employment not within that category is

important to fragmentation of cities. This is not true in that countries do have workers

involved in agriculture. Thus, even using both variables in the model would inadvertently

place agricultural employment into the model. Using a ratio of the two types of

employment of interest to this type of fragmentation is the best indicator. The weakness

of the variable is that it does not distinguish between the two types of service

employment, skilled and unskilled. The first suburbs grew based upon the development

of skilled service workers such as managers and lawyers. Unskilled service employees

today are not very likely to live in suburban areas. However, the weakness of this

variable is tempered in that many of the unskilled service employees today are in

fragmented neighborhoods in the inner cities while the skilled service employees are still

to be found in suburban areas occupied by other skilled service employees. In theory, the

higher the proportion of service employees as compared to industrial employees will indicate greater fragmentation of cities.

Class: Fragmentation of cities is in a large part brought about by socioeconomic class. Therefore, distribution of social classes within a society should indicate fragmentation of cities. However, this indicator cannot be captured within one variable. The World Bank calculates five variables that measure the distribution of wealth held by the various income quintiles of countries: "Income share held by highest 20%", "Income share held by highest 20%", "Income share held by second 20%", "Income share held by third 20%", "Income share held by forth 20%", and "Income share held by lowest 20%". Ratios of these variables can be used to gain a picture of the distribution of wealth in a country. In theory, countries with a good deal of wealth concentrated in the highest income brackets will have the greatest amount of fragmentation of cities. This is because the rich within that country will be the only ones able to leave the cities. Socioeconomic class will be indicated using four ratios: the ratio of "Income share held by the highest 20%" to "Income share held by third 20%", "Income share held by the second 20%" to "Income share held by third 20%", "Income share held by the fourth 20%" to "Income share held by third 20%", and "Income share held by the highest 20%" to "Income share held by lowest 20%". "Income share held by the third 20%" will thus be the reference category under the assumption that this is a middle class to which other groups can be compared. These variables are calculated from World Bank data using ten-year averages between 1997 and 2007.

Urban growth: Cities become more fragmented as they grow. Therefore, urban growth should be taken into account when measuring fragmentation of cities. This indicator will be measured using the variable "Urban population growth (annual %)" as calculated from World Bank data using six year averages between 2002 and 2007. This variable is appropriate to use in that it is a standard measure of how much cities are growing in a given country. It is limited in that it does not take into account movement from cities to suburban areas. Since there is a trend towards urbanization throughout the world, in theory countries with low rates of urban growth should prove to have more fragmented cities.

Transportation: Because suburban areas grew when transportation between residential areas outside the city center and jobs within the downtown became easier, countries that have more utilization of transportation infrastructure will feature more fragmented cities. This utilization is indicated using two variables: "Railways, passengers carried (million passenger/km)" and "Roads, passengers carried (million passenger/km)". Both are calculated from World Bank data using six-year averages including 2002 to 2007. This variable is useful in that it takes into account how many people utilize the available transportation, instead of simply calculating the amount of transportation infrastructure. In essence, it should indicate the amount of workers commuting to their jobs. The variables have two main weaknesses. First, some large developed countries my have a sizable amount of transportation infrastructure connecting cities that are not utilized for commuting (e.g., the interstate highway system in the United States). This might artificially lower the number of passengers per kilometer. Second, this data is

missing for many countries. However, there is a wide selection of both developed countries (e.g., Italy) and less developed countries (e.g., Sudan) for which data is reported. In theory, countries that have more commuters will have more fragmented cities.

Slum dwellers: Perhaps the classic examples of fragmented neighborhoods outside of suburban areas are slums. Thus, the proportion of urban dwellers living in slums must be included in a model of fragmentation of cities. This is indicted using a variable "Slum population as percentage of urban" gather from 2001 United Nations data. This variable is appropriate because it measures the proportion of urban dwellers that live in fragmented neighborhoods. However, its weakness is that the UN only provided this data for developing countries.

Social Inclusion: Perhaps the biggest indicator of the fragmentation of cities is social inclusion. Countries with low levels of social inclusion may feature higher amounts of social inclusion in that they have greater populations that are in neighborhoods that do not have access to the general social system of a country. Again, this indicator is difficult to capture in one variable. Thus, three variables have been selected as proxy variables for social inclusion: "Improved water source, urban (% of urban population with access)", "Improved sanitation facilities, urban (% of urban population with access)", and "Internet users (per 100 people)". All three are calculated from World Bank data using six-year averages including 2002 to 2007. These are appropriate variable in that they measure access to the amenities of modern life afforded to socially included areas of nation-states. Their weakness is that they do not capture

civic and political inclusion. In theory, countries with more urban residents with lack of improved sanitation or improved water will indicate greater fragmentation of cities in that they probably include more socially excluded areas of cities. Conversely, countries with a low number of internet users per 100 residents will feature greater fragmentation of cities in that fewer will have access to the main access point to the world economy and world society.

Hypotheses and Analysis

As this dissertation is a preliminary study of social fragmentation, it is most appropriate to describe the relationships between the various indicators of fragmentation of the cities. The first step is to create a model including the hypothesized relationships between the predictor variables. The second step will use curve estimation to determine if the hypothesized relationships can best be described as linear or curvilinear relationships. Finally, structural equations models will be calculated taking into account the type of relationship between the variables described in column two.

Model Specification

Figure 4.1 demonstrates the model as specified in the initial relationships. The starting point of the model includes the variables for urban population percent, service/industry employment ratio, and income distribution, which is predicted by the employment ratio. All of the variables predict the variables representing living arrangements: slum dwelling, commuting by rail, and commuting on roads. These are also predicted by urban growth, which previously is predicted by urban population

percent. All of the starting variables and the living arrangement variables predict the social inclusion variables.

It is hypothesized that a larger urban population will predict a lower level of urban growth, as many of the people who would to move to the city is already there. In addition, a greater population percent will predict more people living in slums, more commuting by rail, and more commuting on roads. Higher urban growth will also predict greater numbers of individuals in slums, but lower numbers commuting by rail and commuting by roads. Finally, a greater urban population will predict more access to improved water, sewage, and internet access.

For the income distribution variables, high ratios for the $1^{st}/3^{rd}$ and $5^{th}/3^{rd}$ variables will indicate a greater number of individuals living in slums, but lower numbers of individual commuting by rail or by road. In addition, high ratios for the $1^{st}/3^{rd}$ and $5^{th}/3^{rd}$ variables will predict less access to improved water, improved sewage, and internet access.

Curve Estimation: Results

For all hypotheses, three possible relationships were estimated: linear, quadratic, and cubic. The best model is assumed to be the linear relationship if it is the most parsimonious and significant model. The quadratic relationship is the best model if it is substantially more significant than the linear relationship or substantially improves upon the proportion of the dependent variable predicted by the independent variable as compared to the linear relationship. The cubic relationship is the best model if it is substantially more significant than the quadratic relationship or substantially improves

upon the proportion of the dependent variable predicted by the independent variable as compared to the quadratic relationship. Substantial improvement is defined as increasing the R^2 by more than .01 (i.e., accounting for 1% more of the variability between the two variables. If a higher order model improves upon the previous model, but the model loses significance, the lower order model is chosen for further analysis. Finally, the level of significance of the research is .10 as some of the comparisons use fewer than 100 cases.

Urban Population to Urban Population Growth: (n = 195) All of the models were significant (p < .001 for all). While the linear model did predict a large portion of the variability (R^2 = .205) the quadratic model did substantially improve upon the predictive power (R^2 = .228), but the cubic model did not improve upon the quadratic (R^2 = .230). Therefore, the quadratic model was selected as the best model. The data show that countries with a smaller urbanized population demonstrate higher rates of urban population growth. This is more than reasonable because as countries with most people living in cities have fewer people who can move to cities. This supports fragmentation theory in that the first stage of fragmentation of cities involved certain members of families moving to cities in search of work, where they ended up living in slums.

Urban Population to % in Slums: (n = 102) All of the models were significant (p < .001 for all). The linear model accounted for a moderate amount of the variability (R^2 = .193) and was not improved upon by the quadratic model (R^2 = .193). Therefore, the linear model was selected as the model for further analysis. The data demonstrate that as urban population increases, the percent of people living in slums decreases. This is a surprising finding in that the initial growth in British and American cities was in poor

working class slums. However, the World Bank includes many suburban areas as urban in their calculation. Thus, this finding could be based upon the fact that as cities grow, eventually suburbs will grow, as well lowering the population living in slums. In addition, data from the World Bank's Human Development Index shows a strong positive relationship between urban population percent and development ($r = .709$). In other words, developed countries have larger urban population and may have more resources to improve their cities.

Urban Population to Passengers Carried by Rail: ($n = 96$) None of the models were significant. The linear model accounted for almost none of the variation ($R^2 = .010$), and the quadratic model ($R^2 = .010$) did not improve upon it. Therefore, the linear model was selected for further analysis. However, there is no real relationship between the two variables implying that railway transportation is not a good proxy for suburbanized population.

Urban Population to Passengers Carried on Roads: ($n = 48$) Like the previous relationship, none of the models were significant. The linear model predicted a very small amount of the variability ($R^2 = .036$), and it was not improved upon by the quadratic model ($R^2 = .040$). Thus, the linear model was selected as the best model for further analysis. However, there is no real relationship between the two variables implying that road transportation is not a good proxy for suburbanized population.

Urban Growth to % in Slums: ($n = 100$) All of the models were significant at the ($p < .001$ for all), and predicted a large amount of variability in the relationship ($R^2 = .422$, $R^2 = .444$, and $R^2 = .478$ respectively). Because the cubic model improved upon the

quadratic, which in turn had improved upon the linear model, the cubic model was selected as the best model for further analysis. The data demonstrate that as the urban population growth rate increases the percent of urban dwellers living in slums increases sharply. However, once the growth rate exceeds about 5% the percent of people living slums drops precipitously. The cubic relationship is hard to explain. The initial upswing of people living in slums supports fragmentation theory because it is consistent with the initial growth of British and American cities where most of the people who moved there were an urban working class. However, the precipitous drop is harder to explain. Further research is necessary to determine the cause of the drop in rate of growth.

Urban Growth to Passengers Carried by Rail: (n = 88) None of the models were significant. In addition, the quadratic model accounted for almost none of the variation (R^2 = .008), and did not improve substantially upon the linear model (R^2 = .000). The linear model was selected as the model for further analysis. However it does not seem as if urban growth influences transportation by rail.

Urban Growth to Passengers Carried by Road: (n = 48) None of the models were significant. However, the quadratic model predicted a small amount of the variation (R^2 = .028) and substantially improving upon the linear model (R^2 = .013), but was not improved upon by the cubic model. Therefore, the quadratic model was selected for further analysis. It does not seem as if urban growth effects transportation by road.

Employment Ratio to % in Slums: (n = 37) None of the models were significant. However the cubic model accounted for a very small amount of the variation (R^2 = .032) and substantially improved upon the quadratic model (R^2 = .019), which improved upon

the linear model ($R^2 = .003$). Therefore, the cubic model was selected for further analysis. Essentially, it does not seem as if the ratio of service to industrial employment predicts the proportion of people living in slums.

Employment Ratio to Passengers Carried by Rail: ($n = 67$) All of the models were significant (linear: $p = .051$; quadratic: $p = .008$; cubic: $p < .001$). In addition though it predicted very little of the variation, the cubic model ($R^2 = .032$) substantially improved upon the quadratic model ($R^2 = .019$), which improved upon the linear model ($R^2 = .003$). Thus, the cubic model was selected for further analysis. As the ratio of service employees increases, passengers carried by rail initially decrease until about a 2 to 1 ratio, then increases until about a 3.5 to 1 ratio, then decreases again. This finding seems to support fragmentation theory in that as the proportion of service employees increased rail transportation also increased, which possibly implies people commuting from suburbs to urban jobs in cities. The downturn in rail transportation in countries with the highest service to industrial employment could indicate that these countries have suburbanizing industries with declining cities. While further research is necessary to understand this relationship, it seems to support fragmentation theory.

Employment Ratio to Passengers Carried by Road: ($n = 44$) None of the models were significant. The cubic model accounted for a small amount of the variation ($R^2 = .082$) substantially improved upon the quadratic model ($R^2 = .061$), which improved upon the linear model ($R^2 = .048$). Thus, the cubic model was selected for further analysis. It does not seem as if ratio of service employment to industrial employment predicts transportation by road.

Top 20% Income to % in Slums: (n = 64) Only the linear model was significant (p = .061), and accounted for a small amount of the variation (R^2 = .054). The quadratic model did not improve upon it. Thus, the linear model was selected for further analysis. The data indicate that as the income share held by the wealthiest fifth of the population increased, the percent of urban dwellers in slums decreased. The implications of this finding are unclear as they relate to fragmentation theory. One interpretation might be that it is possible that countries with the greatest share of income in the wealthiest portion of the population simply have less urbanized population to live in slums.

Top 20% Income to Rail Transportation: (n = 70) None of the models were significant. The linear model accounted for almost none of the variation (R^2 = .023), and was not improved upon by the quadratic model (R^2 = .026). Thus, the linear model was selected for further analysis. It seems as though the income share held by the wealthiest 20% of the population had no effect on rail transportation.

Top 20% Income to Road Transportation: (n = 40) None of the models were significant. While only predicted a small amount of the variability, the quadratic model (R^2 = .053) did improve upon the linear model (R^2 = .010), and was not improved upon by the cubic model (R^2 = .054). Thus, the quadratic model was selected for further analysis. However, it does not seem as if the share of income held by the wealthiest 20% of the population affects road transportation in a country.

2nd 20% Income to % in Slums: All of the models were significant (linear: p = .003; quadratic: p = .099; cubic: p = .098). The linear model (R^2 = .071) accounted for a small portion of the variability and was not improved upon by the quadratic model (R^2 =

.073). Thus, the linear model was selected for further analysis. This finding does not seem to support the theory of fragmentation of cities. If the second 20% of wealth holders in a country are considered to be an upper middle class, then it would be expected that a larger upper middle class would indicated fewer slum dwellers. However, this is not the case. Further research is necessary to understand this relationship.

2nd 20% Income to Rail Transportation: (n = 70) None of the models were significant. The linear model (R^2 = .026) accounted for almost none of the variation, and was not improved upon by the quadratic model (R^2 = .028). Thus, the linear model was selected for further analysis. However, it does not seem as if the income share held by the upper middle class effects rail transportation.

2nd 20% Income to Road Transportation: (n = 40) None of the models were significant. While it only accounted for a small amount of the variation, the quadratic model (R^2 = .048) improved upon the linear model (.014), and was not improved upon by the cubic model (R^2 = .044). Thus, the cubic model was selected for further analysis. However, it does not seem as if the income share held by the upper middle class effect the amount of road transportation.

3rd 20% Income to % in Slums: None of the relationships were significant. The linear model (R^2 = .041) accounted for only a very small portion of the variation, but was not improved upon by the quadratic model (R^2 = .042). Thus, the linear model was selected for further analysis. If the third 20% of wealth holders are considered to be middle class, it does not seem as if the income share held by the middle class has any effect upon the proportion of people living in slums.

3rd 20% Income to Rail Transportation: (n = 70) None of the models were significant. The linear model (R^2 = . 022) accounted for almost none of the variability, but was not improved upon by the quadratic model (R^2 = .029). Thus, while the linear model was selected for further analysis, it does not seem as if the income share held by the middle class effect the amount of rail transportation in countries.

3rd 20% Income to Road Transportation: None of the models were significant. The quadratic model (R^2 = .039) accounted for a very small portion of the variability, and substantially improved upon the linear model (R^2 = .003), but was not improved upon by the cubic model. Thus, the quadratic model was selected for further analysis. However, it does not seem as if the share of wealth held by the middle class effects the amount of road transportation in countries.

4th 20% Income to % in Slums: (n = 64) None of the models were significant. The linear model (R^2 = .000) accounted for none of the variability, but was still not substantially improved upon by the quadratic model (R^2 = .002). Thus, the linear model was selected for further analysis. If the fourth 20% of income holders are considered to be lower middle class, it does not seem as if the income share held by the lower middle class effects the proportion of people living in slums.

4th 20% Income to Rail Transportation: (n = 70) None of the models were significant. While it only predicted a small amount of the variation, the quadratic model (R^2 = .024) did improve upon the linear model (R^2 = . 012), and was not improved upon by the cubic model (R^2 = .023). Thus, the linear model was selected for further analysis.

However, it does not seem as if the income share held by the lower middle class effects the amount of rail transportation in a country.

4th 20% Income to Road Transportation: (n = 40) None of the models were significant. Though it predicted almost none of the variability, the liner model (R^2 = .004) was not improved upon by the quadratic model (R^2 = .007), and was thus selected for further analysis. However it does not seem as if the income share held by the lower middle class effect the amount of road transportation in a country.

5th 20% Income to % in Slums: (n = 64) None of the hypotheses were significant. While it accounted for almost none of the variation the linear model (R^2 = .000) was not substantially improved upon by the quadratic model (R^2 = .002). Thus, it was selected for further analysis. However, if the lowest 20% of wealth holders in a country are considered to be the lower class, it does not seem as if the income share held by the lower class has an effect upon the proportion of people the live in slums.

5th 20% Income to Rail Transportation: (n = 70) None of the models were significant. While it did only predict a small amount of the variability, the cubic model (R^2 = .066) none the less improved upon the quadratic model (R^2 = .052), which in turn improved upon the linear model (R^2 = .015). While that meant the cubic model was selected for further analysis, it does not seem as if the income share held by the lower class had an effect the amount of rail transportation in a given country.

5th 20% Income to Road Transportation: (n = 40) None of the models were significant. The cubic model (R^2 = .135) predicted a moderate amount of the variation and improved upon the quadratic model (R^2 = .059), which in turn improved upon the

linear model ($R^2 = .042$). While that meant the cubic model was selected for further analysis, it does not seem as if the income share held by the lower class had a reliable effect the amount of rail transportation in a given country.

Urban Population to Access to Improved Water: (n = 178) All of the models were significant (p < .001 for all). While the cubic model ($R^2 = .193$) substantially improved upon the quadratic model ($R^2 = .170$), the quadratic did not improve upon the linear model ($R^2 = .169$). Therefore, the linear model was selected for further analysis. Data indicate that countries with a larger portion of their population that is urbanized also have a great amount of their urbanized population with access to improved water. In order to understand this relationship better, a correlation was calculated between the World Bank's Human Development Index and percent of urbanized population that turned out to be strong and positive (r = .709). In other words, the more developed a country, the more urbanized. The implication of this finding is that poorer countries are still in the process of urbanization. It is likely that the poor in those cities are limited to neighborhoods without basic services such as modern water systems. This is in keeping with fragmentation theory.

Urban Population to Access to Improved Sanitation: (n = 164) All of the models were significant (p < .001 for all). The linear model predicted a large amount of the variability ($R^2 = .306$) and was not substantially improved upon by the quadratic model ($R^2 = .306$). Thus, the linear model was used in further analysis. Data indicate that countries with a larger portion of their population that is urbanized also have a great amount of their urbanized population with access to improved sewage. As with the

relationship between urbanized population and access to improved water, the correlation between urbanization and the HDI is illuminating. In other words, the more developed a country, the more urbanized. The implication of this finding is that poorer countries are still in the process of urbanization. It is likely that the poor in those cities are limited to neighborhoods without basic services such as modern sewage systems. This is in keeping with fragmentation theory.

Urban Population to Internet Access: (n = 197) All models were significant at the p < .001 level. All three models predicted a larger portion of the variability, with the quadratic (R^2 = .372) substantially improving upon linear model (R^2 = .422). The cubic model did not improve upon the quadratic model. Essentially, access to the internet initially falls as urbanization increases, but the rises after urbanization reaches about 30%. In keeping with fragmentation theory, this finding is not surprising as countries that are only recently urbanizing probably do not have communication systems that have can serve a large part of the population. In other words, many city dwellers might be excluded.

Employment Ratio to Access to Improved Water: (n = 100) None of the models were significant. The cubic model (R^2 = .040) substantially improved upon the quadratic model (R^2 = .025), which substantially improved upon the linear model (R^2 = .000). Thus, the cubic model was selected for further analysis. However, it does not appear as if the ratio of service employment to industrial employment influences access to improved water systems.

Employment Ratio to Access to Improved Sanitation: (n = 88) None of the models were significant. The quadratic model (R^2 = .036) improves upon the linear model (R^2 = .001) but was not improved upon by the cubic model. Thus, the quadratic model was selected for further analysis. However, it does not appear as if the ratio of service employment to industrial employment influences access to improved sewage systems.

Service Employment to Internet Access: (n = 107) Only the linear model (p = .068) was significant, and it (R^2 = .033) was also not improved upon by the quadratic model (R^2 = .038). Thus, the linear model was selected as the best model. Data indicate that as service employment increases, access to the internet increases. This is not surprising in that people who work in service industries need to be connected to the global system. As the data does not specify if access is personal or otherwise, it can be assumed that service employees would have better access. However, this explanation is not in keeping with fragmentation theory in that poor service workers should be more excluded from the benefits of modern society.

Top 20% Income to Access to Improved Water: (n = 104) All of the models were significant (linear: p = .021; quadratic and cubic p = .010). The quadratic model (R^2 = .087) predicted a small amount of the variation and substantially improved upon the linear model (R^2 = .051), but was not improved upon by the cubic model (R^2 = .087). Thus, the quadratic model was chosen for further analysis. The data indicate that countries where the upper class has the smallest income share, which tend to be more developed, have larger portions of their urban population with improved water access. The proportion with access drops as the income share of the upper class increases until

55% of income is in the hands of the upper class. At that point, the proportion of the urban population with access to improved water again increases. This is in keeping with fragmentation theory in that countries with the longest developed cities have better access to improved water, where as countries with less money in the hands of the lower classes have more urban areas without such access. In other words, there are more neighborhoods isolated from the benefits of the rest of the city.

Top 20% Income to Access to Improved Sewage: (n = 96) All of the models were significant (linear: p = .003; quadratic & cubic: p < .001). The quadratic model (R^2 = .160) accounted for a moderate amount of the variation, and substantially improved upon the linear model (R^2 = .089). It was not improved upon by the cubic model (R^2 = .160). Thus, the quadratic model was selected for further analysis. The data indicate that in countries with the least income share held by the upper class (~35%) has the greatest proportion of urban dwellers with access to improved sewage (~100%). There is a moderate decline in the proportion of people with access to improved sewage as the income share held by the upper class increases, to the point where only about 70% of people have access when the upper class's income share reaches 55%. From there is access increase to the point where when the upper class's income share is approximately 63% about 80% of urban dwellers have access to improved sewage. This conforms to fragmentation theory in that countries with the longest developed cities, the most developed countries, have the best access to sewage. Countries where wealth is concentrated in the hands of the upper class tend to have parts of cities without access to modern sanitation.

Top 20% Income to Internet Use: (n = 109) All of the models were highly significant (p < .001 for all). The quadratic model (R^2 = .306) accounted for a large portion of the variability and improved upon the linear model (R^2 = .197), and was not improved upon by the cubic model (R^2 = .306). Thus, the quadratic model was selected for further analysis. The data indicate that at the in countries where the upper class has a lower share of income, internet use is relatively high. As the income share of the upper class increases, internet use falls sharply until only about 5% of the population has access in countries where 55% of income is concentrated in the upper class. At that point, internet use begins to rise again. This conforms to fragmentation theory in that while more developed countries have more people using the internet countries with income more concentrated in the hands of the wealthy have few people able to use the internet. The upturn in internet use in countries where the upper class has the largest income share is unanticipated though.

2nd 20% Income to Access to Improved Water: (n = 104) All the models are significance (linear: p = .041; quadratic: p = .048; cubic = .044). The quadratic model (R^2 = .092), which accounts for a small amount of the variation, substantially improved upon the linear model (R^2 = .041), and was not improved upon by the cubic model (.093). Thus, the quadratic model was chosen as the model for further analyses. The data indicate that countries with the least income share held by the upper middle class (~6%) high access to improved water. However, access drops as the income share held by the upper middle class falls until when the income share is approximately 10% when access is only about 90%. Access then increases dramatically to where countries with the largest upper

classes have almost 100% access. This somewhat conforms to fragmentation theory in that the countries with the largest upper middle classes are the ones that have the best access to improved water. This could be interpreted as fewer urban dwellers living in areas isolated from basic infrastructure.

2nd *20% Income to Access to Improved Sewage*: (n = 96) None of the models were significant. The quadratic model (R^2 = .026) accounted for very little of the variation, but none the less improved upon the linear model (R^2 = .000). It was not improved upon by the cubic model (R^2 = .026). While this meant that the quadratic model was selected for further analysis, it does not seem as if income share held by the upper class influences access to improved sewage.

2nd *20% Income to Internet Use*: All of the models were highly significant (p < .001 for all). The cubic model (R^2 = .319) predict a large amount of the variation and substantially improved upon the quadratic model (R^2 = .306), which in turn improved upon the linear model (R^2 = .192). Thus, the cubic model was selected for further analysis. The data indicated that in countries with the smallest amount of the income shared by the upper middle class internet usage was quite low (20 per 100 people). As the income share held by the upper middle class increased, internet usage decreased until income share reach about 10% where internet usage was about 10 people per 100. A dramatic increase in usage followed, where at 14% income share for the upper middle class internet usage was at approximately 70 users per 100 people. This conforms to fragmentation theory in that countries with more wealth held by lower classes have citizens with better access to the modern system.

3rd 20% Income to Access to Improved Water: (n = 104) All of the models were significant (linear: p = .012; quadratic: p = .005; cubic = .004). The quadratic model (R^2 = .101) accounted for a moderate amount of the variability and substantially improved upon the linear model (R^2 =.060) . The cubic model (R^2 = .102) did not improve upon it. Thus, the quadratic model was selected for further analysis. The data indicates that countries with the smallest income share in the middle class tended to have lower access to improved water (e.g., at 10% share, about 95% access). The rate of access actually declines slightly as income share increases (e.g., at 14% share, about 90% access). Access to improved water then increases so that countries with the largest income share in the middle class have almost 100% access to improved water. This finding is in keeping with fragmentation theory in that countries with a richer middle class do not have the same problems with isolation from service that urban dwellers in countries with poorer middle classes do.

3rd 20% Income to Access to Improved Water: (n = 96) All of the models were highly significant (p < .001 for all). The quadratic model (R^2 = .186) accounted for a moderate amount of the variability and substantially improved upon the linear model (R^2 =.161). The cubic model (R^2 = .189) did not improve upon it. Thus, the quadratic model was selected for further analysis. The data indicate that countries with a smaller income share in the middle class had lower rates of access (e.g., at 10% income share, about 80% access). Initially, as income share increased there was a marked decrease in access (e.g., at 14% income share, about 60% access). Subsequently there was a sharp increase in access to where countries with the largest income share in the middle class had almost

100% access. This finding is in keeping with fragmentation theory in that countries with a richer middle class do not have the same problems with isolation of urban residents from services that countries with poorer middle classes do.

3rd *20% Income to Internet Usage*: (n = 109) All of the models were highly significant (p < .001 for all). The quadratic model (R^2 = .350) accounted for a large amount of the variability and substantially improved upon the linear model (R^2 = .229). The cubic model (R^2 = .357) did not improve upon it. Thus, the quadratic model was selected for further analysis. The data indicate that countries with a smaller income share in the middle class had lower rates of internet usage (e.g., at 10% income share, about 20%). Initially, as income share increased there was a marked decrease in internet usage (e.g., at 13% income share, about 10% usage). Subsequently there was a sharp increase in internet usage to where countries with the largest income share in the middle class had very high internet usage (e.g., at 18% income share, about 60% usage). This is in keeping with fragmentation theory in that people in countries with smaller income shares concentrated in the middle class seem to have less access to modern communication systems than countries with richer middle classes.

4th *20% Income to Access to Improved Water*: (n = 104) All models were significant (linear: p = .004; cubic & quadratic: p = .014). The linear model (R^2 = .079) predicted a small amount of the variation, and was not improved upon by the quadratic model (R^2 = .081). Thus, the linear model was selected for further analysis. The data suggest that when the income share held by the lower middle class is smaller access to improved water is lower (e.g., at 18% income share, about 90% access). In countries with

larger income shares held by the lower middle class access is much higher (e.g., at 23%
income share, about 95% access). This is in keeping with fragmentation theory in that
countries with richer lower middle classes do not seem to have as many urban residents
in areas isolated from modern services like water.

4th *20% Income to Access to Improved Sanitation*: (n = 96) All of the models were
highly significant (p < .001 for all). The quadratic model (R^2 = .157) accounted for a
moderate amount of the variability and substantially improved upon the linear model (R^2
= .143). The cubic model (R^2 = .157) did not improve upon it. Thus, the quadratic model
was selected for further analysis. The data indicate that in countries where the lower
middle class has a smaller share of the income access to improved sanitation is relatively
low (e.g., at 18% income share, about 60% access). Access stays relatively low until the
income share of the lower middle class is about 20%, when access begins to increase. In
countries with the highest income share held by the lower middle class, access is almost
100%. This is in keeping with fragmentation theory in that countries with poorer lower
middle classes seem to have more urban dwellers in isolated areas that do not have the
benefits of modern services such as sanitation systems.

4th *20% Income to Internet Usage*: (n = 109) All of the models were highly
significant (p < .001 for all). The quadratic model (R^2 = .311) accounted for a large
amount of the variability and substantially improved upon the linear model (R^2 = .224).
The cubic model (R^2 = .312) did not improve upon it. Thus, the quadratic model was
selected for further analysis. The data indicate that in countries where the lower middle
class has a smaller share of the income internet usage is relatively low (e.g., at 18%

income share, about 10% usage). As income share increases, internet usage actually

decreases slightly and stay low (e.g., at 20% income share, about 5% usage). Usage then

increases sharply. At in the countries where the lower middle class has the largest income

share, internet usage is higher (e.g., at 23% income share, about 40% usage). This is in

keeping with fragmentation theory in that countries with a richer lower middle class

should have fewer people isolated from the most modern world communication systems.

Bottom 20% Income to Access to Improved Water: (n = 104) Only the quadratic

model was significant (p = .099). It (R^2 = .045) accounted for a very small portion of the

variation, but substantially improved upon the linear model (R^2 = .022). It was not

improved upon by the cubic model (R^2 =.047). The data indicate that in countries with

the lowest income share in the lower class, urban dwellers have relatively low access to

improved water (e.g., at 2% income share, about 95% access). Access drops slightly as

income share rises until it is about 6% (90% access), at which time access begins to rise.

In countries where the lower class has the largest income share access is almost universal

(e.g., at 10% income share, about 100% access). This supports fragmentation theory in

that countries with wealthier lower classes have fewer areas where urban dwellers do not

have access to the basic infrastructure of modern life.

Bottom 20% Income to Access to Improved Sewage: All of the models were

significant (linear: p = .079; quadratic: p = .041; cubic: p = .082). The quadratic model

(R^2 = .067) accounted for a small amount of the variability and substantially improved

upon the linear model (R^2 = .032). The cubic model (R^2 = .070) did not improve upon it.

Thus, the quadratic model was selected for further analysis. The data indicate that in

countries with the lowest income share in the lower class, urban dwellers have relatively low access to improved sanitation (e.g., at 2% income share, about 90% access). Access drops slightly as income share rises until it is about 6% (70% access), at which time access begins to rise. In countries where the lower class has the largest income share access to improved sanitation is almost universal (e.g., at 10% income share, about 100% access). This supports fragmentation theory in that countries with wealthier lower classes have fewer areas where urban dwellers do not have access to the basic infrastructure of modern life.

Bottom 20% Income to Internet Usage: (n = 109) All models were significant (linear & quadratic: p = .001; cubic: p = .003). The quadratic model (R^2 = .117) accounted for a moderate amount of the variability and substantially improved upon the linear model (R^2 = .096). The cubic model (R^2 = .126) did not improve upon it. Thus, the quadratic model was selected for further analysis. The data indicate that in the countries where the lower class had the smallest income share internet usage was low (e.g., 2% income share, about 10% usage). Usage remained steady as the income share increased, until income share reached about 4%. At that point, usage increases sharply. In the countries where the poor had the largest income share, internet usage was much more wide spread (e.g., 10% income share, about 40% usage). This supports fragmentation theory in that countries with the wealthiest lower class have the most people with access to modern communication systems.

% in Slums to Access to Improved Water: (n = 98) All models were significant (p < .001 for all). In addition, all models predicted a large amount of the variation, but while

the quadratic model $(R^2 = .371)$ improved upon the linear model $(R^2 = .327)$, it was not improved upon but the cubic model $(R^2 = .371)$. Thus, the quadratic model was selected for further analysis. Data indicate that as a greater percent of the population lives in slums the less access there is to improved water. For example, in countries with a slum percentage of about 10% access is approximately 90%, but for countries with a 90% slum percentage access is about 80%. This is fully in keeping with fragmentation theory in that people in slums do not have the same access to the amenities of modern cities.

% in Slums to Access to Improved Sanitation: (n = 95) All models were significant (p < .001 for all). In addition, all models predicted a large amount of the variation, but while the quadratic model $(R^2 = .575)$ improved upon the linear model $(R^2 = .563)$ it was not improved upon but the cubic model $(R^2 = .575)$. Thus, the quadratic model was selected for further analysis. The data indicate a relationship similar to that of access to improved water. For example in countries with a 10% slum percentage access to improved sanitation is about 90%; however, in countries with a 90% slum percentage access is only about 30%. Again, this is in keeping with fragmentation theory in that slums are isolated from the benefits of the modern city.

% in Slums to Internet Use: (n = 102) All models were significant (p < .001 for all). The quadratic model $(R^2 = .284)$ did not improve upon the linear model $(R^2 = .284)$, which did account for a large amount for the variation. Thus, the latter was selected for further analysis. The data indicate that the relationship is similar to that of access to improved water and access to improved sanitation. For example, in countries with a 10% slum percentage internet usage is approximately 15%, whereas in countries with a 90%

slum percentage internet usage is almost non-existent. Thus, the interpretation is similar and in keeping with fragmentation theory.

Passengers Carried by Rail to Access to Improved Water: (n = 86) No models were significant. The cubic model (R^2 = .068), which accounts for a small amount of the variation, substantially improved upon the quadratic model (R^2 = .061) which improved upon the linear model (R^2 = .009). Thus the cubic model was selected for further analysis. However, it does not appear as if rail transportation effects access to improved water.

Passengers Carried by Rail to Access to Improved Sanitation: (n = 77) The quadratic model (p = .099) and the cubic model (p = .070) were both significant. In addition, the cubic model (R^2 = .091), which accounted for a small amount of the variation, model (R^2 = .091) substantially improved upon the quadratic model (R^2 = .061) which improved upon the linear model (R^2 = .002). Thus, the cubic model was selected for further analysis. Data indicate that in countries with very few passengers carried access to improved sanitation was relatively high (i.e., about 80%). However, as passengers carried increases access does as well (e.g., at 50,000 million passengers/km, access was about 100%). However, access was much lower for the other four countries above that level. Earlier in this chapter, it was suggested that rail transportation might not be a good proxy for suburbanization. Thus, it is hard to draw conclusion from this finding. However, there can be no doubt that there is a large outlier effect.

Passengers Carried by Rail to Internet Use: (n = 89) The cubic and quadratic models were both significant (p = .008 for both). However, the cubic model (R^2 = .129) accounted for a moderate amount of the variation substantially improved upon the

quadratic model (R^2 = .106), which improved upon the linear model (R^2 = .000). Thus, the cubic model was selected for further analysis. Data indicate that in countries with very few passengers carried internet usage was low (i.e., about 15%). However, as passengers carried increases access does as well (e.g., at 50,000 million passengers/km, access was about 40%). However, access was much lower for the other two countries far above that level. The same caveat applies that because rail transportation might not be a good proxy for suburbanization. Thus, it is hard to draw conclusion from this finding.

Passengers Carried by Road to Access to Improved Water: (n = 46) None of the models were significant. While the quadratic model (R^2 = .039) , which accounted for a very small portion of the variation, improved upon the linear model (R^2 = .014) it was not improved upon by the cubic mode (R^2 = .039). Thus, the quadratic model was selected for further analysis. However it does not seem as if road transportation influences access to improved water systems.

Passengers Carried by Road to Access to Improved Sanitation: (n = 39) None of models were significant. While the quadratic model (R^2 = .030), which accounted for a very small portion of the variation, improved upon the linear model (R^2 = .018) it was not improved upon by the cubic mode (R^2 = .030). Thus, the quadratic model was selected for further analysis. However, it does not seem as if road transportation effects access to improved sanitation.

Passengers Carried by Road to Internet Use: (n = 39) All models were significant (linear: p = .045; quadratic and cubic: p = .040). While the quadratic model (R^2 = .133), which accounted for a moderate amount of the variation, improved upon the linear model

($R^2 = .084$) it was not improved upon by the cubic mode ($R^2 = .133$). Thus, the quadratic model was selected for further analysis. One outlier may have affected this analysis, but in the range of the majority of data, internet usage increased as passengers carried by road increased. This in keeping with fragmentation theory in that as more people commute from suburbs, so does access to the global communications systems.

Curve Estimations: Discussion

The curve estimations provide many important findings regarding fragmentation of normative systems. First among these is the lack of utility of the service employment to industrial employment ratio. Of six possible relationships, only two were significant. One supported fragmentation theory and one did not. However, the non-supportive relationship may have had a confound in that service employees may actually have access to the internet where they work. In addition, the World Bank does not specify what types of jobs are considered to be part of the service sector. Thus, professional jobs may be grouped with low paying service jobs. In general, the service employment to industrial employment ratio may not be a very good variable as it may not be a valid as to measuring the development of post-industrial low paying service jobs. Therefore, the service to industrial employment ratio has been dropped from further analysis.

Also interesting is the lack of utility for the transportation variables. Originally, these were hypothesized to be proxy variables for suburbanization. However, when the transportation variables were treated as dependent variable, only one significant relationship occurred. When the transportation variables were used as predictor variables for the social inclusion variables, they were a bit more useful. Rail transportation

provided two significant relationships, and road transportation provided one more. However, the lack of utility cannot be denied. Therefore, road transportation was excluded from any further analysis. Rail transportation, on the other hand was maintained. However it became a predictor variable since the service to industrial employment ratio has been dropped from further analysis.

The relationships in which slums were a dependent variable were also puzzling. Out of four significant relationships, only population growth supported fragmentation of cities. Theory is that as cities grew slum population did as well. Otherwise, the finding were opposite of the original hypotheses. However, this does not necessarily refute fragmentation of cities. The relationship between urban population size and the Human Development Index suggests that less developed, that is poorer, countries have smaller urban population, so this finding might mean that poor countries simply cannot support the cities they do have. Income distribution further confused the issue of predicting the amount of slum dwellers. In this case, it was hypothesized that countries with more income concentrated in the upper classes would have more individuals in slums. This was not the case. Perhaps, the countries with the greatest proportion of the population living in cities might not have much urban poverty. If only the rich can afford to live in cities, then only the rich will live in cities. However, one finding that is indisputable from the data is that countries experiencing large amounts of urban growth have more slums. This is in keeping with fragmentation of cities theory because the original growth of Western cities involved migrants living in slums. Taking these three findings together, a picture of fragmentation of cities can be developed. In countries that are still mostly rural, cities

tend to be less fragmented, as were premodern European cities. As cities grow fragmentation increases. However, at a certain point fragmentation is alleviated. This interpretation is highly dependent upon the United Nation's definition of urbanization. At some point data comparing the size or rural, urban, and suburban population need be developed.

As a group, the proxy variables for social inclusion gave strong support to fragmentation of cities theory. Access to the highest improved water systems among urban residents was found in the countries with the largest urban population percents. Taking the HDI correlation to urban population into account, this makes sense in that these are the countries that are the most developed. However, the cubic relationship also indicates that there is not a direct relationship between the percent of the population that is urbanized and access to improved water. Instead, there is a large range where countries have smaller urbanized populations and access to improved water systems actually decreases or remains relatively level. In other words, having a larger urban population does not necessarily improve access. Perhaps as urban population grows access cannot always keep up. A similar interpretation is probably true for access to improved sanitation.

All three income categories supported fragmentation of cities theory in regards to their association with urban dwellers access to improved water and access to improved sanitation. This makes perfect sense in that countries where income is distributed more evenly between the various social classes will have cities where cities have fewer areas

where the poor are excluded. Thus, countries with the most income concentrated in the rich will be most fragmented.

Probably the least surprising relationship is found between the percent of urban population living in slums and the percent of urban dwellers with access to improved water and sanitation. Slums are by definition excluded areas without many of the benefits of modern society. Thus, countries with more people living in slums will demonstrate less access to the amenities of modern cities. In other words, more people will be in fragmented areas or cities.

The final access variable requires the most caution. Internet usage is not calculated for urban dwellers only, and it is a reasonable assumption that people living in rural areas will have less access to internet because of their location, not because of their poverty. However, the fact that the quadratic relationship between urban population percent and internet users per 100 people is flat for a substantial range of data most likely indicates that there is not a direct relationship between the two variables. Instead, urbanization precedes internet access. Therefore, it can be inferred that in those countries that have a larger urban population but low internet usage there are many people who are in areas isolated from the most modern communication.

When the income variables are compared to the number of internet users per 100 people, it makes sense that countries with a more balanced class structures will have more people with access to the most modern means or communication. This finding would be meaningless though outside the context of the other access variables. Because the pattern is similar to that of access to improved water and sanitation, it is reasonable to

assume that in countries with a more unequal distribution of income there will be large segments of cities where access to modern communication is lacking. These would be considered fragmented from the rest of the city.

It is fully reasonable that slums will not have adequate access to the internet. By definition, slums are fragmented areas, so the lack of internet usage in countries with many slum dwellers is very strong support for fragmentation of cities theory.

The relationships between rail transportation, which is supposed to be a proxy variable for suburbanization, do indicate that to a certain point countries with higher amounts of passengers carried by rail do have better access to improved sewage and higher internet usage. This would support both the utility of the use of rail transportation as a proxy for suburbanization and fragmentation theory. The support for the latter comes from the fact that countries with larger suburban population will have more people living in areas near urban areas that have the benefits of a developed society, but do not live in cities themselves. However, this begs the biggest limitation of this research.

Because there were no variables specifically representing suburbanization, this research could only confirm fragmentation of cities theory to a certain point. As previously argued, a major source of fragmentation of cities in later modernity is the fact that people who can are moving to less populated areas. As Dear and Wolch (1987) argue, the people left in cities are the marginalized who are unable to leave. In essence, this research ends where suburbanization would begin. If distinctions were made between the proportion of countries that are suburbanized and those who are urbanized, one could directly measure the effects of fragmentation. This is not the case so proxy variables had

to be selected. However, when a proxy variable does not support a theory it might not necessarily mean there is no effect. Sometimes proxy variables are just bad proxies. Therefore, until data can be gathered looking at the distinctions between rural, suburban, and urban populations research on fragmentation of cities will have substantial limitations.

With the adequate confirmation of fragmentation of cities theories, the results of the curve estimation were next used to build a second theoretic model, which could be used in a structural equation model.

General Discussion

Fragmentation of cities theory states that as cities grow and become more modern, greater divisions develop between neighborhoods regarding access to the benefits of modern society. This chapter attempts to show how non-linear regression can be used to understand relationships between macro-structural variables and variables representing access to the benefits of cities. Some of the concepts representing access are difficult to capture in existing variables. For instance, no data were available regarding political access within cities. Political access variables, instead, were measured for the entire nation-state, confounding political access with urban versus rural access. Thus, only variables regarding physical access to services and communication were used as proxies for fragmentation of cities.

Two types of variables represented the types of fragmentation described in the literature. Fragmentation of cities theory as it regards physical location was partly supported by this research. Specifically, almost every macro-structural variable predicted

the percent of urban dwellers that lived in slums. This is important because slums generally have less access to the benefits of modern society.

However, theory also suggests that fragmentation occurs between suburban areas and urban areas. As no variables were available representing the portion of a country's population that lived in suburban areas, proxies were used to approximate commuting. However, these had little or no utility. Suburbanization is a major factor in fragmentation of cities, as several of the cited researchers suggest. However, this research suggests that suburbanization cannot be approximated using macro-structural factors. This suggests that factors such as income distribution in a country may not predict geographically where people tend to live, but the type of area in which they tend to live. A country might have affluent suburbs, such as in the United States, or it may have slum-like suburbs, as in France. The implication of this is that fragmentation of cities must be understood as a process relating to a whole metropolis, not just to a city proper.

Three variables were used as proxies for the access to the amenities of modern cities. Two, access to improved water and access to improved sanitation, can be seen as the most basic necessities of modern cities. On the other hand, access to the internet can be seen as one of the most advanced benefits of modern life. Most of the macro-structural variables were inconsistent in predicting access to the basic amenities of the modern city, while almost all predicted access to the internet. This implies that when fragmentation of cities is examined on the national level, access to services is not a good predictor. This might be the case for two reasons. First, developed nations might make a concerted effort to bring access to the services to all regions of their cities. Second, in developing

countries cities tend to be some of the most modern areas. Thus, residents of cities in such countries may in general have better access to services as compared to others in the same countries. Access to the internet on the other hand was predicted by every macro-structural variable implying that access to the most modern communication, and the most important for access to the world social, economic, and political systems, is a good way of looking at fragmentation as it applies to the amenities of urban life.

The proxy variables for suburbanization did not have any utility in predicting access to the basic services founding modern cities, while living in a slum had some of the greatest predictive power regarding these variables. This implies that it is the type of living situation, not geographically where people live, that determines their access to service.

In general, the model did suggest that macros-structural factors can play a role in determining the type of areas in which a person lives. In other words, the structure of the social system can determine whether people live in slums, which by definition are economically and socially isolated. However, the structure of the social system may not directly predict access to services. Instead, macro-structural factors may work through the types of living situation in which urban residents find themselves.

This research is limited for two reasons. The first limitation is that the model shows only relationships between one predictor and one dependent variable at a time. Thus, it cannot show the exact way in which the model works sin its predictive path. Thus, it is susceptible to collinearity. Some variables, especially the income distribution variables, may actually overlap in their relationships to other variables. More advanced

modeling is necessary to determine causal and path relationship for fragmentation of cities.

The second limitation of this research is that it attempts to model only one dimension of fragmentation of cities, access to services and amenities. It is possible that as countries attempt to modernize and the international community makes a concerted effort to improve access to services, for instance through the millennium development goals, the effect of fragmentation on access to services will lessen. Thus, lack of access will no longer be able to represent fragmentation of cities. A better model would take into account the differences in access to the political system. The literature suggests that individuals in fragmented neighborhoods are not truly represented by the political system. They do not have the same access to capital needed to improve educational systems; they do not have the same access to jobs. This model does not account for such lack of access that defines fragmentation.

Future research mainly needs to address these two limitations. For instance, structural equation analysis could be used to determine exactly how the various factors involved in a model, such as the one analyzed in this research, affect the overall levels of fragmentation of cities in a given country. In addition, data must be developed that will account for access to political, economic, and social systems within cities. Confronting these two limitation will allow for the creation of a measure of overall amount of fragmentation of cities within a given nation-state.

Conclusion

This chapter suggests that fragmentation of cities is a process that can be empirically modeled. Though the model created is incomplete in regard to this process, it can serve as a basis for future research into fragmentation as a process in the development of modern society.

Chapter 5

Fragmentation of Normative Systems

Abstract

Fragmentation of Normative Systems refers to declining normative unity within a country leading to decline in the cohesion within a country's value system. For analysis, fragmentation of normative systems can be proxied by the distribution of opinion on several social issues. A review of the literature suggests that ethnicity, religion, distribution of social classes, and access to education will help to determine whether a country's normative system is fragmented. Inductively, presence of a common language for the transmission of values and access to modern international communication systems are also suggested to predict normative fragmentation. Curve estimation suggests that having a dominant ethnic group, lack of a common language, income distribution, education, and access to the internet predict fragmentation of normative systems. The analysis suggest that fragmentation of normative systems can be understood empirically

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Sakamochi let him finish. Then he said, "Hey, Kawada. You're still a kid. It looks like you guys had some talks, but I want you to think a little more. This is a marvelous country. It's the most prosperous country in the world. Well, you might not be able to travel abroad much, but its

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industrial exports are unsurpassed. The government's slogan is telling the truth when it claims our per capita production is the best in the world. The thing is though, this prosperity only comes as a result of unifying the population with a powerful government in the center. A certain degree of control is always necessary. Otherwise… we'll decline into a third-rate country, like the American Empire. You know, right. That country is in turmoil from all kinds of problems like drugs, violence, and homosexuality. They're living off their past glory, but it'll only be a matter of time before they fall apart."

(An excerpt from Koushun Takami's novel *Battle Royale*.)

*   *   *

Washington, DC, USA is home to two major Catholic universities with subtle but important differences in their mission statements.

As a Catholic university, it desires to cultivate and impart an understanding of the Christian faith within the context of all forms of human inquiry and values. *It seeks to ensure, in an institutional manner, the proper intellectual and academic witness to Christian inspiration* (emphasis added) in individuals and in the community, and to provide a place for continuing reflection, in the light of Christian faith, upon the growing treasure of human knowledge. (Statement Aims and Goals of the Catholic University of America, 2008)

The vision of John Carroll continues to be realized today in a distinctive educational institution -- a national University *rooted in the Catholic faith* (emphasis added) and Jesuit tradition, committed to spiritual inquiry, engaged in the public sphere, and invigorated by religious and cultural pluralism. (Georgetown's Catholic and Jesuit Identity, 2008)

Though the described missions of the Universities are similar, the Catholic University subtly stresses Catholicism more than Georgetown: two universities, one faith, two missions.

*   *   *

Fragmentation of normative systems refers to the lack of coherent patterns of values within a society, with values referring to the principles that describe general societal goals. On the individual level, these goals describe how individuals achieve 'the good life'. On the societal level, these goals determine how to organize a good society. In other words, normative systems provide a society with the principles and values needed to improve itself.

This chapter focuses on how the lack of common values within modern society can impair social cohesion. First, normative unity will be contrasted with fragmentation of normative systems. Next, the effects of fragmentation of normative systems upon social cohesion will be discussed. A brief discussion of the fragmentation of normative systems follows. NextThen, data analysis will enumerate the distinct relationships between indicators that identify societies with fragmented normative systems. Finally, the

chapter will conclude with a discussion of the real world effects of fragmentation of normative systems.

Normative Unity versus Fragmentation of Normative Systems

Normative unity is a difficult subject to define in that one can argue that the values a society holds are based upon the ethos to which the society subscribes. However, having a common ethos may not be sufficient to describe how a society is held together by certain values. For instance, while most groups within a society may enumerate the same values, the accepted expression of the value can differ remarkably (Hunter 1991, 56). Patriotism to one group might mean uniting behind the leadership of a country, while to other groups patriotism may involve non-violent dissent.

Perhaps the best way to describe normative unity is that it has a common ethos wherein the interpretation of values enumerated by that ethos is enforced by institutions such as a government or a church. The important part of this unity is that individuals do not define their own values; rather, individuals are subject to the values originating outside themselves. For instance, when referring specifically to the social organization of the modern nation-state Zygmunt Bauman (2002) uses the analogy of a sculptor to claim that values in society have traditionally been highly regulated. He states,

> The major concern of the state had therefore to be the withdrawal of carving tools
> form the high-street shops and wiping out their cottage industry. Hence the claim
> to the monopoly on the production and use of the means of 'legitimate coercion'
> – that objective being explained as the enforcement of the preferred … model of
> reality. (3)

When states, churches, tribes, or other social entities enforce uniformity of values, they become truly normative.

Normative unity is functional. For instance, Stinchcombe (1965) states that formal organizations with a common purpose have strong solidarity and, therefore, a greater ability to control the behavior and beliefs of their members. Thus, organizations have a better chance of staying together. However, organizations that lose their common values (e.g., their common goal has been achieved) tend to dissolve or fragment. In addition, many classic works in sociology describe values as unifying factors in non-formal organization such as class (Marx ; Durkheim ; Bourdieu). Liah Greenfeld (2001) even argues that at the national level it was common values of 'Britishness' brought about by nationalism that allowed Great Britain to develop the first true capitalist economy by stating,

> The effect of nationalism on the economy in England was prodigious, for it was
> the redefinition of the English society as a nation which allowed the economy's
> emergence from its traditionally subordinate position in relation to political and
> religious institutions and its establishment –or institutionalization—at the top of
> the value hierarchy. (57)

Essentially, normative unity has traditionally been of great importance to the organization of societies.

If one accepts the premise that society itself is a social organization, then values matter. More properly, a commonly held normative system will allow a society to

mobilize to obtain a goal. For instance, Robert Putnam (1995) when referring to his study

of successful local governments in Italy states:

> The norms and networks of civic engagement also powerfully affect the
>
> performance of representative government… Systematic inquiry showed that
>
> quality of governance was determined by longstanding traditions of civic
>
> engagement (or its absence)… In fact, historical analysis suggested that these
>
> networks of organization reciprocity and civic solidarity, far from being an
>
> epiphenomenon of socioeconomic modernization, were a precondition of it. (65)

In essence, the societies that held the value of civic engagement, which in and of itself is

a space for negotiating what values a society should hold and how it should express them

(Hunter 1991, 56), were able to improve society for the benefit of all members. Thus, at

the most basic level, a society with normative unity has goals around which to mobilize.

The lack of normative uniformity makes societal mobilization more difficult.

Fragmentation of Normative Systems and Social Cohesion

Imagine a small sociology department that does not share a common goal.

Perhaps some of the faculty want to have a very academic focus so that can prepare

masters level students for doctoral work, while other faculty members want to have a

professional focus to prepare those students to enter professions after graduation. In this

hypothetical situation, the different faculty members assign different values graduate

education. They differ on the value of what preparing M.A. students should be. In reality,

they disagree about what normative system to create for their department. In such a

situation, the department will face difficulty making changes in curriculum, hiring new

faculty, and even deciding which students to admit. It would be very hard for the department to become non-stagnant.

While this example takes place on the micro level, fragmentation of normative systems can also harm societies. Referring to a divide between nation and state that he perceived to be developing in the modern world, Bauman (2002) states that

> Having 'outsourced' many of its most demanding functions (economic, cultural, and to a growing extent social and biopolitical) to manifestly non-political, 'deregulated' market forces, the state has only limited and no more than occasional use for the awesome mobilizing potential thanks to which nations used to be a welcome, indeed indispensable companion of the state struggling for legitimation… Mass conscription and its necessary accompaniment – the mobilization of popular emotions – are definitely out. (11)

Societies that lack normative unity divide into groups whose values conflict with those of other groups. Like the hypothetical sociology department, a society that has conflicting values cannot coherently define a good society. In such an environment, groups cannot unify to work towards social goals, as common goals do not exist. Thus, fragmentation of the society's normative system creates an environment in which different groups pull society in different directions, competing for cultural hegemony (Hunter 1991, 57). Any alliances between groups will not bring about social cohesion as the bonds between groups are weak. As Bauman states (2002) in reference to 'imagined communities'

> In a world of fluid and temporary coalitions…, durable and unbreakable engagements wrapped into the dense web of institution portend an uncertainty of fate, rather than security of status. This applies to all union, as the endemic

volatility of engagements renders the convenience for whose sake the unions are

entered frail and transient. (11)

Here returns the concept of ethos. In the later modern society, individuals are

exposed to such varied information that their worldview becomes increasingly

differentiated from others. Using the related concept of 'life strategies', Bauman (2001)

argues that

> Articulation of life stories is the activity through which mean an purpose are
>
> inserted into life. In the kind of society we live in articulation is and needs to
>
> remain an individual task and individual right. This is, though, an excruciatingly
>
> difficult task and a right not easy to vindicate. To perform the task and to
>
> exercise the right in full, we all need all the help we can get… (13)

Often individuals turn toward groups with similar values in order to help construct life

strategies and reinforce their worldviews. Thus, the ethos to which an individual

subscribes becomes more specified to the groups with which he or she identifies. Then as

values become more individualized, chasms develop between what the individual feels is

important in life and versus the normative assumptions or other. Groups within society

begin to entrench themselves, identifying their values as those upon which society should

be based, while other groups object. Moreover, individuals who identify with many

groups become progressively more alienated. Thus, a culture war develops (Hunter 1991,

57).

Fragmentation of normative systems can be insidious. Societies are built upon

implicit organizational principles, upon specific values. Without common values,

societies can stagnate and eventually disintegrate. Marx and Engels (1967) identified the

cause of oppression of the working class as based upon the fact that capitalists valued profit more than anything else — values far different from those of labor. In *The Manifesto of the Communist Party*, they theorized that the contradictions of capitalism would eventually cause the Bourgeois values to fail. At that point, society would be torn apart with many capitalist elites abandoning the illogical fetish for profit. Society would then be rebuilt upon a universal normative system, the values of the proletariat. From their work, it is clear that they saw weakness of the modern capitalist economy being based upon a fragmented normative system.

Samuel Huntington (1996) is equally pessimistic in his view of values dividing society. When comparing the ethos of countries throughout the world, he defined eight different civilizations, each of which had different views of history and of what was valuable to society 45-48). While he believed that there was room for compromise between civilizations, some differences were so wide that they would be insurmountable (291).

When fragmentation of normative systems is not present, social cohesion is more attainable. For instance, Louis Hartz (1965) attributes the unique stability of the United States republic to the fact that there is only one ideology – liberalism. In his opinion, certain normative assumptions with liberalism's subversion of the feudal order are opposed by socialism and classic conservatism. Because the United States lacks both of the latter ideological movements, there is a common political ethos, and therefore common political values. Thus, all United States political actors are playing on a

relatively narrow field, creating a social environment where there is little room for radical change in the U.S. system. Liberal values keep the country stable.

A Brief History of Modern Values and Fragmentation of Normative Systems

If values influence stability within a society, it is important to examine whether fragmentation of normative systems has increased throughout the history of modernity. If this is the case, social cohesion will weaken. This may develop to the point where there are very weak bonds in the late modern world.

Values in the Premodern West

Values are culturally dependent. Because different societies faced different factors as they develop, different societal goals were appropriate in the different environments. Since modernity developed from Western society, it is appropriate to base a history of normative fragmentation upon the history of values in Europe and the United States.

Like morality, values in premodern Europe were externally defined. However, it would be incorrect to assume that like morality, the Western Christian church was the major dictator of values. Instead, values accepted by a culture were often a synthesis of religiously defined values and traditional values associated with their pre-Christian ethnic affiliation. This can still be seen in the way countries modernize today as Mariano Grondona (2000) states,

> It is possible to construct two ideal value systems: one including only values that
>
> favor economic development and the other including only values that resist. A
>
> nation is modern as far as it approaches the former system; it is deemed
>
> traditional as it approaches the latter. (46)

In premodern cultures, the maintained values often served the function of keeping peace in a society to enhance the community's chance of survival (Durkheim 1984, 330). The premodern values were often enforced by shaming and even expelling the individual from the community (Durkheim 1984, 331). In the undeveloped society of medieval Europe, isolation within or outside of the community would greatly decrease an individual's chance of survival.

Values, however, were not truly uniform across any society. The norms that one was expected to follow differed based upon physical and social location. For instance, the prosperous cities near the Mediterranean espoused values akin to nationalism, but directed towards the city-state, while these values were absent in areas in the Northern part of the continent. In addition, different values were accepted among the nobility and peasantry. When speaking of the influence of social stratification on values and morality, Ossowska (1970) states that

> The privileged were, in this case, characterized by a way of life of their own,
> which was not easy to adopt but which was necessary for anyone wishing to
> belong to their group. They usually despised economic activity, manual labor,
> and artistic achievements connected with manual work, such as sculpture. (64)

An example of this was that the value of a husband's fidelity to his wife was nonexistent among the upper classes. Among the nobility, marriages were arranged in order to increase a family's prosperity and wealth; thus sexual relationships with other women were tolerated. Children of these adulterous unions were not excluded from high social

status, but often rose to high levels of power. William the Conqueror, for example, was illegitimate, but already the Duke of Normandy when he invaded England in 1066.

The Values of Modernity

Values in society changed with the advent of modernity. While some of these changes were associated with the loss of power for churches in Europe, other changes were associated with social changes such as the development of true nationalism. In addition, values became even more associated with class.

Perhaps the best example of values changing based upon religious changes can be found in the development of the modern economic system, capitalism. Max Weber argued that the most important development during the rise of modernity was the development of Reformed Protestant thought. Specifically, the values of hard work and thrift combined to create a culture where individuals could amass capital but avoid spending it upon frivolities. Profit could be used to create and improve businesses. This can be contrasted with Catholic areas of Europe where the main social value was piety in search of redemption, and thus, immortality. In such a culture, profit and saving were seen as hoarding, thus sinful. It was much more valued to give money to the poor as opposed to improving a business. While some have argued that these values were insufficient to explain development (Greenfeld 2001, 20; Novak 1993,), and even Weber refined his theory of capitalist development to deemphasize the role of Protestantism (Collins ,) there is no doubt that the Reformation did bring about a values divide in Europe.

Another example of the changes in values associated with modernity is the rise of nationalism (Greenfeld 2001, 23). Before the modern era, society was more localized with both the upper-class and peasantry focusing on the needs and goals of their communities. However, with the rise of the nation-state many states began to propagate values associated with building a strong national identity. As Leah Greenfeld states (2001),

> As a rule, individualistic-civic nationalisms, which define the nations as associations of individuals, will value economic achievement simply because of its significance, and the importance of economic activity in general, for large numbers of individuals. Therefore, they are likely to include economic growth among national interests. (23-24)

For example Greenfeld also states that in the United Kingdom, Britishness was no longer associated with an ethnicity, but rather with one doing 'British' things (2001, 57). In Germany, Bismarck attempted to create a Pan-German identity where one never previously existed (????). The reason behind this new focus on the nation-state was so that individuals within a country would no longer be focused on their local needs, but instead would focus upon the interests of the larger society. Essentially, the countries attempted to create normative unity within their borders while differentiating their values from other countries.

Another important change in normative systems that developed along with modernity is the increasing class division of values. Many have discussed the changes in values associated with the rise of the middle class (e.g., Marx 1967; Ossowska, 1970).

For instance, Weber (2002) describes the premodern values of the resourced classes to be those of consumption and opulence. However, starting with the Reform Protestants, the values of hard work and thrift developed to encompass the entire middle class ethos (Ossowska 1970, 165). With the rise of modernity, the value of community also declined among the middle class (Ossowska 1970, 159). Instead members of the middle class increasingly focused upon their own happiness and affairs. Egoism became the rule. [5] Other values associated with the bourgeois were caution, utility, temperance, rigor, and severity (Ossowska 1970, 157-160).

However, the new values of modernity were not confined to the middle class. Marx (1967,) noted that with the rise of capitalism the working class developed a new class-consciousness that became associated with new values. The greatest of these to develop was the value of democratic communalism, where workers believed that democratic control of all resources would allow for the maximum amount of freedom for all people. This implies that the working class developed the values of fairness and equality, focusing on the betterment of all people, as opposed to the middle class value of egoistic individualism.

The modern ethos saw its values as universal. For instance, Marx (1967,) believed that all of the working class would eventually subscribe to the values he enumerated, and that those values would eventually be accepted by most of the bourgeois. In addition, Enlightenment thinkers such as Adam Smith believed that their

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[5] Some would debate this. For example, in *Democracy in America*, de Tocqueville (1969) argues that the United States is a nation of voluntary organizations.

liberal values should apply to all people. As he states in *The Theory of Moral Sentiments* (2006),

> And hence it is, that to feel much for others, and little for ourselves, that to
>
> restrain our selfish, and to indulge our benevolent, affections, constitutes the
>
> perfection of human nature; and can alone produce among mankind the harmony
>
> of sentiments and passions in which consist their whole grace and propriety. (20)

The Enlightenment thought would culminate in the American Declaration of Independence (The National Archives, 2008) stating, "We hold these truths to be self-evident, that *all men* [emphasis added] are created equal, that they are endowed by their Creator with certain unalienable Rights." Even today, many believe that in order for countries to develop, they must adopt values associated with Western capitalism (e.g., Harrison & Huntington, 2001[6]).

Modernity and Fragmentation of Normative Systems

The ideas of individualism and choice are endemic to modernity. The past few centuries have seen values based upon religion and traditional mores deemphasized. As Bauman (1993) states.

> Ours is the era of unadulterated individualism and the search for the good life is
>
> limited solely by the demand for tolerances (when coupled with the self-
>
> celebratory and scruple-free individualism, tolerance may only express itself as
>
> indifference. (3)

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[6] This volume is based upon a symposium held at Yale University including mostly like-minded intellectuals. Jeffery Sachs was a notable exception. While it does not truly present both sides of the discussion, it does give a sample of opinions that the values of modernity are indeed needed for development.

Instead, values became the province of individual choice, although governments did try

to fill what could be seen as a vacuum of externally defined values (Bauman 1993, 6).

However, in many ways, their efforts were unsuccessful.

In fact, as the modern world presented individuals with more groups from which

they could draw norms. Values associated with the nation-state were indeed created, as

seen in Bismarck's attempt to build a pan-Germanic culture. However, religious values

never fully disappeared (Bauman 1993, 45). In some places, like the U.S., religion

continued to play a significant place in the public discourse (Hunter 1991, 57). In others,

religion was seen as part of the identity of the state (Huntington 1996, 47-48). In yet

others, religion were seen as a one of many legitimate determiners of values (Bauman

1993, 45). In addition, class values were even more pronounced (Ossowska 1970, 48-49).

Even the professions influenced values in that as professions grew more specified, they

developed independent ethical systems (Ossowska 1970, 54). Thus, at the confluence of

more and more identities and group memberships, the individual was exposed to more

possible ways of determining what his or her goals in life should be. As Anthony Giddens

(1991) states,

> Systems of accumulation of expertise – which form important disembedding
>
> influences – represent multiple sources of authority, frequently internally
>
> contested and divergent in their implications. In the setting of what I call 'high'
>
> or 'late' modernity – our present-day world – the self, like the broader
>
> institutional contexts in which it exists, has to be reflexively made. *Yet this task*
>
> *has to be accomplished amid a puzzling diversity of options and possibilities.*
>
> [emphasis added] (3)

For better or for worse, individuals were free to choose what values were important to them. As Bauman (1988, 4) states, "… free will of the individual appeared a mixed blessing. With everybody pursuing their interests only, common interests could find themselves poorly served."

Individuals in modern society have experienced a compression of space and time. As Rifkin (2002) states,

> The time taken to travel distances was shortened, and human exchanges—of both a social and commercial nature—were sped up. Just a few hundred years ago, the average human being, isolated in rural villages and small walled towns, might come in contact with no more than a few hundred people in a lifetime. (95)

With this compression, individuals are constantly exposed to a greater number of opinions about what the proper goal of life should be. For instance, media, such as television and magazines, present a novel ways of thinking about the world. A small minority group that catches the sympathies of a producer or editor can have a forum from which to argue that their goals are valid in the majority culture or are superior to the majority values. In essence, individuals are no longer limited in the reach of what they can incorporate into their normative systems. Instead, they are free to experiment with different ways of looking at the world.

As individuals begin to refine their normative system based upon the values they discover, the normative systems become more individualized. In referring to this as a state of ambivalence, Bauman (2001) states,

> Like so many other aspects of contemporary society, the dangers of ambivalence
> have undergone a process of deregulation, and the task of coping with the results
> (though not necessarily the resources which the task requires) has become
> privatized… We are – most of us – free to enjoy our freedom, but unfree to avoid
> the consequences of that enjoyment. (69)

Thus, individuals can become alienated from others when they do not hold as many values in common—there is less normative unity. When individuals have fewer values around which they can unite, normative agreement becomes difficult if possible. When normative agreement disappears, social cohesion is harmed in that different groups and different individuals in society do not have a common conception of the direction in which society should move. As Bauman (2002) laments,

> There seems to be no market for long-term visions of the 'good society'. There
> are few suppliers, and not many more prospective buyers. Interest in the
> government of a country and its works, if there is any such interest left, tends to
> be as short term as the ministers' crisis-management campaigns. There is little
> enthusiasm for changing a more distant future as no connection can be seen
> between the current actions of citizens (or citizen's apathy) and the shape of
> things to come. (74)

As a dogsled will not move if the dogs are pulling in different directions, lack of normative unity can paralyze a society.

Consumption: the Late Modern Universal?

If there is one value that defines modernity more than any other does, that value is consumption. In many ways, it is the ultimate expression of the increasing affluence of

the most developed capitalist societies. On the other hand, it is also a signal of the transition between the bourgeois values of early capitalism and the semi-aristocratic values of the upper middle and upper classes of the post modern age.

> Consumption is not a new value. As Bauman (2007) states,
>
> Throughout human history, consumer activities or consumer-related activities (production, storage, distribution and disposal of the objects of consumption) have offered a constant supply of the 'raw material' from which the variety of forms of life and patterns of interhuman relations could be and indeed were molded with the help of cultural inventiveness driven by imagination. (26)

For instance, during the Edwardian era capitalists were accepted into the mainstream of the upper class when the government of the United Kingdom began to grant titles of nobility to people who were not of noble lineage, bur were rich and powerful. In addition, weight was seen as a sign of affluence in that the heavier person was the higher the status they were assumed to have. Those who were large had the means to consume more. While high levels of consumption were not achievable for most of society even in the early modern era, the values persisted. For instance, in 1928 Herbert Hoover campaigned using the slogan "a chicken in every pot, a car in every garage". Even in the waning years of the great depression, Paul Hanly Furfey (1937,) criticized the growing consumption among the middle class.

After World War II consumption became more achievable. Developments within the production process allowed for more people to buy more goods. Rifkin (1995) describes this as a cycle where

> … falling prices resulting from productivity advances stimulate consumer
>
> demand for goods being produced. Greater demand in turn stimulates additional
>
> production, fueling demand again, in a never-ending cycle of expanding
>
> production and consumption. (16)

Items such as automobiles and houses that were once outside the budget of many in the middle class became more affordable. At the same time, values such as efficiency, standardization, and mechanization that were always present in modernity became more influential to the point that they began to dominate the organization of businesses and other organizations (Ritizer 2000,). Thus, consumption became the rule in modern society. In a way, Furfey's concerns had been fulfilled.

However, consumption cannot be look at as fully universal. Furfey (1937) refers to a modern phenomena he calls the 'success ethic', which describes a fetish for consumption in order to raise one's status in society. This achievement can be economic, educational, social, or athletic. The key concept in the success ethic is that one rises to the top of a chosen endeavor. However, while individuals consume goods, education, and the like in order to demonstrate their superiority, they must choose a certain field in which to emphasize this consumption. In this way, consumption may be universal, but its expression may not.

In sum, the consumer culture, endemic to the West and now spreading to other regions as well, has become the one recognizable norm of late modern society. As Bauman (2007) states,

… the *society* of consumers stands for a peculiar set of existential conditions

under which the probability is high that most mend and women will embrace the

consumerist rather than the other culture, and that most of the time they will obey

its precepts to the best of their ability. (52)

Postmodern Values, or Lack Thereof

Unlike the modern assumption of universal values, postmodernity rejects

universal normative metanarratives. Therefore, postmodernity rejects the existence of

universal values. The most basic class of values can be seen at the macro level.

Huntington (1996, 45-48) argues against normative unity throughout the world by

identifying eight different cultures each having different values. While some of these

cultures do have enough values in common to form common alliances between cultures,

others cannot be reconciled (Huntington 1996, 310-311). From this schema one can argue

that development, human rights, and issues of war and peace will never be universal

unless one culture conquers the others. It was once the assumption that Western values

would come to dominate the world (e.g., Fukuyama 2002,); however, if this is to be the

case, it will only happen in the distant future (e.g., Fukuyama 2007,).

Fragmentation of values is not only demonstrated between cultures. Within

Western society, there are major fault lines between values held by different groups. In

his study of the American 'culture war' James Davidson Hunter (1991, 42-43), argues

that the United States major political divide today is based upon values. Cutting across

denominational, ethnic, and gender lines, he argues that the most vocal politically active

Americans subscribe to either an orthodox worldview or a progressive worldview, which

are created by radically different understandings of reality. These lead to mutually exclusive and irreconcilable views about how society should be organized.

Looking beyond Hunter's theory, the United States in many ways is the picture of extreme fragmentation of normative systems. The United States is pluralistic; it has no state religion or true dominant religion; and it has a decentralized educational system with little federal control. In essence, the United States has no means for regulating the values of its citizens. However, the effects of fragmentation of normative systems are somewhat moderated in the U.S. by the lack of true ideological diversity (Hartz,).

Perhaps Europe is a better example of postmodern normative fragmentation taken to an extreme. Before the middle of the 20th century, Europe had a strong tradition of regulating culture found in their enforcement of state churches, standardization of national languages, and the forcible integration of ethnic minorities. In essence Crouch (2008) argues for an intolerant Europe by stating,

> Although such cultural mixing has always been a characteristic of many
> European countries, this longer European history has also been marked by major
> episodes of intolerance and bloodshed. Elements of this continue to dog the
> creation of multicultural societies today, as dominant majorities and immigrant or
> post-immigrant minorities try to come to terms with each other. (34)

World War II and the accompanying Nazi atrocities changed everything. In many ways, Europe developed into the best representation of ideological diversity. Inglehart (2008) describes this shift in terms of a change from materialist to postmaterialist values by observing

In the shift from materialist to post-materialist values, the massive differences

between the values of young and old that were present in 1970 have dwindled.

The birth cohorts born before World War II continue to place significantly more

emphasis on materialist values than do the younger cohorts in Western Europe…

(145)

Strong socialist and conservative movements allowed for normative choice based upon

class ideology. As Pierre Bourdieu posited in his theory of cultural capital, tastes and

preferences are determined by socioeconomic location. Values are included among these.

In addition, the further erosion of the power of national churches allowed normative

choice to be based upon minority religion or non-religious views (Crouch 2008, 35-36).

Furthermore, increased migration coupled with a trend against forced integration, allowed

for even more freedom of normative choice. Finally, the social welfare state has allowed

individuals to pursue any value system that they choose without economic repercussions

(Rifkin 2004, 269-270).

Europe today is even more relativistic. There the philosophical contributions of

the contextualists and deconstructionists have developed stronger roots where many,

especially elites, do not view Western modernity as any more valid than any other way of

organizing society. This extreme relativity affects not only the desire to export Western

values to developing nations, but also is an excuse for countries to avoid integrating

immigrants who hold very different views of reality. For example, some argue that the

United Kingdom allows Islamic religious leaders to immigrate so that they can condemn

the British way of life.

In essence, the most modern parts of the world have developed the most fragmented normative systems. Such is the contradiction of modern values. When the sole determinant of norms is objective reality, everyone must perceive reality as the same. However, unity in worldview rarely exists in a modern society because individuals reason to different values based upon different perspectives on reality. Thus, the more modern a society the less normative unity exists.

Indicators of Fragmentation of Normative Systems

Many factors determine if a country's social system is normatively unified or normatively fragmented. In addition, it is difficult to determine if a country is divided over certain values in that 1) there is no satisfactory research on public opinion research of values in many countries; 2) because a specific value many not be applicable in all societies, agreement on any one given value may not actually represent normative unity in the society. In other cases, data that could serve as proxies for normative fragmentation are not readily available for a large number of nation-states. However, there are several theoretical indicators of normative fragmentation among which relationships should be examined and several indicators that can serve as proxies for concepts which may represent somewhat universal values.

Ethnicity: In theory, ethnically homogenous countries will likely have more unified normative systems, since the population shares culture, traditions, and beliefs passed down over time. Countries with greater ethnic diversity will most likely have more fragmented normative systems. In this study, the ethnic make-up of countries will be analyzed using two variables. Both are drawn from data published by the United

States Central Intelligence Agency in their World Factbook. First, countries will be assessed as to whether they have a majority ethnic group, which is defined as 50% or more of the population being members of one ethnic group. Second, countries will be assessed as to how many other ethnic groups may have influence in a society. This variable is coded as a count of ethnic groups listed that represent over 5% of the population in a given country. Using both variables, one can gain an understanding of the effect of both a dominant ethnic group and the dispersion of ethnicity within a county as regarding normative fragmentation. However, there are several weaknesses to these variables. First, because the CIA gathers data on ethnicity from mainly public sources, ethnicity was defined differently in different countries. For example, Kenya's data enumerates specific tribes to which individuals belong, whereas the United States data is based upon race. However, this data is appropriate in that ethnic divisions in countries will be manifest differently in different countries. In a country like the U.S. racial divisions are paramount, whereas in Bosnia and Herzegovina race is irrelevant as conflict occurs between Caucasian ethnic groups (i.e., Serbians, Croatians, and Bosniaks). In theory, countries with a majority ethnic group will demonstrate a less fragmented normative system; and countries with more ethnic diversity will demonstrate a more fragmentation of normative system.

Religion: Religions generally include a system of values which is supposed to provide a direction to how to construct a good society. Therefore, countries with a dominant religion will tend to have more unified normative systems, while countries with more religious diversity will demonstrate more normative fragmentation. In this study,

the religious make-up of countries will be analyzed using two variables. Both are drawn

from data published by the United States Central Intelligence Agency in their World

Factbook. First, countries will be assessed as to whether they have a majority religious

group, which is defined as 50% or more of the population being members of one religious

group. Second, countries will be assessed as to how many other religions may have

influence in a society. This variable is coded as a count of religions listed that represent

over 5% of the population in a given country. Like data on ethnicity, this data has several

flaws. First, because the CIA gathered it from official sources, religions are defined by

the given country. This may represent some conflicts in the data. For instance, Austria

places all Protestants into one category where as Belize divides Protestants by

denomination. However, the data was used as presented in the Factbook, based upon the

assumption that the countries define religion in a way that is appropriate for describing

their own culture[7]. Theoretically, countries with one majority religion will demonstrate

less fragmentation of normative systems, while those with more religious diversity will

demonstrate more fragmentation of normative systems.

    Language/Literacy: Values are expressed and passed on using language.

Therefore, if a country has a common language, it should have a more unified normative

system. However, common language is hard to define. For instance, French is the official

language of Mali, but 80% of the population primarily speaks Bambara. In addition,

countries such as the United States have no official language at all, though they do have

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[7] One exception was made to this coding scheme. The United States groups all Protestants into one group. However, because Hunter (1990) argues that two Protestantisms exist in the U.S., a progressive one and an orthodox one. Therefore, an extra point was added to the U.S. on the second variable in order to account for this division.

one language that is commonly spoken. Another aspect of language as a medium for transmitting values is literacy. Countries that have an official language or a predominant language can have high illiteracy rates. Thus, materials that transmit values, such as newspapers and books, may not be accessible to all people. Because of these considerations, a complex coding scheme was created using data from the CIA World Factbook. Common language was calculated by taking into account data from two variables. First, countries that had one official language or a language spoken by over 90% of the population were coded as having a common language. Next, countries with an official language but less than 90% literacy were recoded as not having a common language. This change takes into account the fact that that official language may not be the lingua franca of that country. The major weakness of this data is that it takes into account only primary language spoken by individuals within a country. Countries like Canada that demonstrate a large amount of bilingualism among their linguistic minorities are still coded as not having a common language. This will provide error in the analysis. However, because values are learned at the youngest ages, the primary language an individual speaks is probably going to have the most influence on his or her values. In theory, countries without a common language will be more likely to demonstrate fragmentation of normative systems.

Education: Public school systems are one of the primary ways in which a country transmits its official or quasi official values to its population. Two values were used to examine the effect of education on fragmentation of normative systems, "School enrollment, primary (% of net)" and "School enrollment, secondary (% of net)". Both

were calculated from World Bank data using six-year average between 2002 and 2007. The two variables were used in order to represent two different aspects of education that could produce different effects of socialization. In theory countries that have low secondary enrollment will demonstrate more fragmented normative systems. This will be intensified for countries with low primary school enrollment.

Class: As Bourdieu argued, values are associated with social class. Therefore, distribution of social classes within a society should indicate fragmentation of normative systems. However, this indicator cannot be captured within one variable. The World Bank calculates five variables that measure the distribution of wealth held by the various income quintiles of countries: "Income share held by highest 20%", "Income share held by highest 20%", "Income share held by second 20%", "Income share held by third 20%", "Income share held by forth 20%", and "Income share held by lowest 20%". The first two and last two of these variables were added to the analysis in order to represent class divisions, "Income share held by the third 20%" was used as a reference category, as it can be inferred this is a middle class of some kind. In theory countries with large class divisions will have greater fragmentation of normative systems.

Internet use: The more individuals are exposed to globalized communications, the more normative systems they will experience. Therefore, how much access residents of a country have to globalized communications will indicate fragmentation of normative systems. The variable "Internet users (per 100 people)" as calculated by the World Bank data using six-year averages including 2002 to 2007 represented this indicator. In theory,

as the number of internet users in a country increases, the amount of fragmentation of normative systems will increase as well.

Values: Because there is no one variable that can determine whether a country features normative fragmentation, four variables were selected from the World Values Survey in order to approximate this concept. The following questions were selected because they represent views on religion, family, and work, which are concepts common to all societies. First, whether religion is important to live was recoded into two categories important and not important. Second, when people should love their parents was recoded into the categories "always" and "not always". Third, whether marriage is an out-dated institution was recoded into "agree" and "disagree". Finally, whether work is a duty towards society was recoded to "agree" and "disagree/neither agree or disagree". For every country available, the difference between the two categories was calculated on all four variables. The absolute values of these scores were used to produce four new variables representing the residual scores between the groups. These four variables were further recoded into four variables representing fragmentation on the variable, where countries with residual scores between 81 and 100 were coded as '1 = not fragmented'; those with residual scores between 61 and 80 were coded as '2 = slightly fragmented'; those with residual scores between 41 and 60 were coded as '3 = somewhat fragmented'; those with residual scores between 21 and 30 were coded as '4 = fragmented'; and those with residual scores between 0 and 20 were coded as '5 = very fragmented'. In theory each of these variables represents a value that is can be held be a culture in theory countries with fragmented normative systems will demonstrate high levels of

fragmentation on all of these variables. However, the weakness of these variables is that the World Values Survey only includes data from 53 countries. Even though almost all regions of the world are represented, this is still a sample that is too small to make reliable generalizations about all countries.

Hypotheses and Analysis

As this dissertation is a preliminary study of social fragmentation, it is most appropriate to describe the relationships between the various indicators of fragmentation of the normative systems. The first step is to create a model including the hypothesized relationships between the predictor variables. The second step will use curve estimation to determine if the hypothesized relationships can best be described as linear or curvilinear relationships. Finally, structural equations models will be calculated taking into account the type of relationship between the variables described in column two.

Model Specification

Figure 4.1 demonstrates the model as specified in the initial relationships. The model includes six predictors of fragmentation of normative systems including eight variables, and four variables representing a fragmented normative system. Each of the variables makes a direct prediction of fragmentation of normative systems, although for the sake of parsimony Figure 4.1 displays only one arrow per indicator. The exception to this is from the indicator education, where elementary enrollment predicts secondary enrollment as well as having a direct prediction of the four dependent variables representing fragmentation of normative systems.

Because the theory suggests that ethnic diversity increases fragmentation of normative systems, it is hypothesized that countries with a majority ethnic group will demonstrate lower scores on the fragmentation scales for all dependent variables. Conversely, countries with larger numbers of ethnic groups will demonstrate higher scores on the fragmentation scales for all dependent variables.

This theory also suggests that religious diversity increases fragmentation of normative systems. Thus, the hypotheses for religion are similar to those of ethnicity. Countries with majority religions will demonstrate lower scores on the fragmentation scales for all dependent variables. Conversely, countries with larger numbers of religious groups will demonstrate higher scores on the fragmentation scales for all dependent variables.

Because presence of a common language would allow for the easier dissemination of normative ideas, countries without a common language will demonstrate higher scores on the fragmentation scales for all dependent variables.

Income distribution is an interesting case in that there are four variables providing contrast from a theoretical middle class. In theory, if one class is dominant there will be less fragmentation of the normative system. Therefore, it is hypothesized that increases in any one of the four income distribution variables will demonstrate lower scores on the fragmentation scales for all dependent variables for a given country.

Because education is a way of socializing children and youth to a certain values it is hypothesized that more education will reduce fragmentation of normative systems. Specifically, the countries with greater elementary enrollment will demonstrate lower

scores on the fragmentation scales for all dependent variables. Furthermore, countries with greater secondary enrollment will demonstrate lower scores on the fragmentation scales for all dependent variables.

Finally, in countries with high levels of internet usage demonstrate higher scores on the fragmentation scales for all dependent variables.

Curve Estimation: Results

For the hypotheses dealing with number of ethnicities, number of religions, income, education, and internet usage, three possible relationships were estimated: linear, quadratic, and cubic. The best model is assumed to be the linear relationship if it is the most parsimonious and significant model. The quadratic relationship is the best model if it is substantially more significant than the linear relationship or substantially improves upon the proportion of the dependent variable predicted by the independent variable as compared to the linear relationship. The cubic relationship is the best model if it is substantially more significant than the quadratic relationship or substantially improves upon the proportion of the dependent variable predicted by the independent variable as compared to the quadratic relationship. Substantial improvement is defined as increasing the R^2 by more than .01 (i.e., accounting for 1% more of the variability between the two variables. If a higher order model improves upon the previous model, but the model loses significance, the lower order model is chosen for further analysis. The variables dealing with majority ethnic group, majority religion, and presence of a common language were dichotomous. Thus, only linear models could be calculated, and were always assumed to

be the best model. For all hypotheses, the level of significance of the research is .10 as some of the comparisons use fewer than 100 cases.

Majority Ethnicity to Importance of Religion: (n = 79) The linear relationship was significant (p = .005) and predicted a moderate amount of the variation. The data suggest that countries with a majority ethnic group tend to be more fragmented regarding whether religion is important to life. The change is quite large with countries with a dominant ethnic group tending to be somewhat fragmented when countries without a dominant ethnic group tend to be between not fragmented and slightly fragmented. This is contrary to the hypothesis that ethnic diversity leads to fragmentation of normative systems. It does suggest that as a premodern social structure, race does not lead to this type of fragmentation.

Majority Ethnicity to Marriage Out-Dated: (n = 77) The linear relationship predicted almost none of the variation (R^2 = .007), and was not significant. It did not seem as if having a majority ethnic group has an effect upon fragmentation regarding the belief that marriage is an out-dated institution.

Majority Ethnicity to Love Parents Always: (n = 65) The linear relationship predicted a very small amount of the variability (R^2 =.030), and was not significant. It does not seem that as if having a majority ethnic group has an effect upon fragmentation regarding whether individuals should always love their parents.

Majority Ethnicity to Work as Duty: (n = 74) The linear relationship predicted a very small amount of the variability (R^2 =.091), and was significant (p = .015). Countries having a dominant ethnic group tended to have higher amounts of fragmentation

regarding whether individuals should always love their parents. However, the fragmentation for either group was relatively low (dominant ethnic group = slightly fragmented, no dominant ethnic group = not fragmented). Thus, although this relationship does not support the hypothesis that having a dominant ethnic group leads to less fragmentation of normative systems, the low levels of fragmentation make the implications of the finding unclear.

Number of Ethnicities to Importance of Religion: (n = 77) All of the models were significant (linear: .014; quadratic: .035; cubic: .065). The linear model (R^2 = .078) was not improved upon by the quadratic model (R^2 = .087). Thus, it was selected for further analysis. The model suggests that countries one major ethnic group tend to be somewhat fragmented regarding the importance of religion while countries with more ethnic groups tend to be less fragmented (e.g., countries with eight ethnic groups tend to be not at all fragmented). This finding is contrary to the hypothesis that ethnic diversity increases fragmentation regarding whether religion is important to life. However, it implies that a premodern social structure, ethnicity, does not cause fragmentation.

Number of Ethnicities to Marriage Out-Dated: (n = 75) Only the quadratic model was significant (p = .096). It (R^2 = .065) predicted a small amount of the variability, improving upon the linear mode (R^2 = .003). Even though it was improved upon by the cubic model (R^2 = .078), the latter was not significant. Thus, by rule the quadratic model was selected for further analysis. The data suggest that countries with one ethnic group tend to be slightly fragmented regarding whether marriage is out-dated. As the number of ethnic groups increases, fragmentation increases until there are approximately four ethnic

groups at which point countries tend to be between slightly and somewhat fragmented on the issue. From that point fragmentation declines. This lends some support to the hypothesis that ethnic diversity increases fragmentation of normative systems. One possibility for the late downturn in fragmentation is that only one country has over six ethnic groups. Perhaps, the downward curve is an outlier effect. More research is needed on this relationship.

Number of Ethnicities to Love Parents Always: (n = 65) None of models are significant. The quadratic model (R^2 = .048) accounted for a very small amount of the variability, and improved upon the linear model (R^2 = .017), but was not improved upon by the cubic model (R^2 = .048). Thus, the quadratic model was selected for further analysis. However, it does not seem as if the number of ethnic groups has a reliable effect upon fragmentation regarding whether individuals should always love their parents.

Majority Religion to Love Parents Always: (n = 79) The linear model was not significant and predicted almost none of the variation (R^2 = .002). It does not seem as if having a majority religion has an effect upon fragmentation regarding whether individuals should always love their parents.

Majority Religion to Work as Duty: (n = 76) The linear model was not significant and predicted almost none of the variation (R^2 = .018). It does not seem as if having a majority religion has an effect upon fragmentation regarding whether one sees work as a duty to society.

Number of Religions to Importance of Religion: None of the models were significant. The cubic model (R^2 = .064) accounted for a small amount of the variation,

and improved upon the quadratic model ($R^2 = .027$), which improved upon the linear

model ($R^2 = .007$). Thus, though the cubic model was selected for further analysis, the

data suggest that the number of religions in a country does not effect fragmentation

regarding whether religion is seen as important.

Number of Religions to Marriage Out-Dated: None of the models were

significant. The linear model ($R^2 = .000$) predicted none of the variation, but was not

improved upon by the quadratic model ($R^2 = .008$). Thus, though the linear model was

selected for further analysis, the data suggest that the number of religions in a country

does not affect fragmentation regarding whether marriage is viewed as out-dated.

Number of Religions to Love Parents Always: (n = 66) None of the models were

significant. The quadratic model ($R^2 = .037$) predicted a very small amount of the

variation, and improved upon the linear model ($R^2 = .010$), but was not improved upon

by the cubic model ($R^2 = .037$). Thus, though the cubic model was selected for further

analysis, the data suggest that the number of religions in a country does not affect

fragmentation regarding whether one should love their parents always.

Number of Religions to Work as Duty: (n = 76) None of the models were

significant. The linear model ($R^2 = .025$) predicted a small amount of the variability, and

was not improved upon by the quadratic model ($R^2 = .030$). Thus, though the linear

model was selected for further analysis, the data suggest that the number of religions in a

country does not affect fragmentation regarding whether work is seen as a duty to

society.

Common Language to Importance of Religion: (n = 79) The linear model was significant (p = .003), and predicted a moderate amount of the variation (R^2 = .106). Countries **with** a common language tend to be slightly fragmented regarding whether religion is important to life while those that do have one tend to be somewhat fragmented. This relationship, does make sense in that the variable for common language strongly correlates with the World Bank's Human Development Index (HDI; r = .84). Therefore, many countries with a common language are probably developed enough to have imposed a common language on their people. However, these modern countries would also be more fragmented. Thus, while this finding is opposite of the original hypothesis, it may actually support the theory of fragmentation of normative systems.

Common Language and Marriage Out-Dated: (n = 66) The linear model was not significant and predicted almost none of the variation (R^2 = .002). Thus, it does not seem as if having a common language influences fragmentation regarding whether marriage is seen as outdated.

Common Language to Love Parents Always: (n = 76) The linear model was significant (p = .006) and predicted a moderate amount of the variation (R^2 = .112). The data indicate that countries without a common language tend to be just below slightly fragmented regarding whether individuals should always love their parents, while countries with a common language are between slightly and somewhat fragmented and fragmented. This finding does not support the original hypothesis. However, the change between the two categories is not really that large, and may not be substantively significance. However, as stated above many countries with common languages are more

modern and have had time to impose a common language. Thus, this relationship may be spurious in that each of these variables is associated with modernization.

Common Language to Work as Duty: (n = 76) The linear model was significant (p = .030) and accounted for a small amount of the variation. The data seem to indicate that countries without a common language tend to be somewhat fragmented regarding whether work is a duty to society, while countries without a common language tend to be fragmented. Like the relationship between common language and whether individuals should always love their parents, this might be a spurious effect associated with modernization.

Top 20% Income and Importance of Religion: (n = 61) All of the models were significant (p < .001 for all). The quadratic model (R^2 = .368) accounted for a large amount of the variation, and improved upon the linear model (R^2 = .283), but was not improved upon by the cubic model (R^2 = .368). The data suggest that countries with the smallest income share held by the upper class (about 35%) are highly fragmented regarding the importance of religion. The amount of fragmentation decreases as the proportion of income share increases to a point where when the upper class holds about 55% of the income the country is less than slightly fragmented on this issue. Fragmentation then increases again to the point where when the upper class holds a 60% income share, countries are somewhat fragmented. This is an interesting relationship that strongly supports fragmentation of normative systems. There is a moderate negative correlation between income share held by the upper class and the World Bank's Human Development Index (HDI), r = -.31. This suggests that the countries that are the most

developed have the most fragmentation of normative systems. Essentially, this lends strong support to fragmentation being associated with development. In this particular case, developing countries may not have been affected as much by secularization as their more developed peers.

Top 20% Income to Marriage Out-Dated: (n = 60) None of the models were significant. The quadratic model (R^2 = .050) accounts for a small amount of the variation and improves upon the linear model (R^2 = .014), but is not improved upon by the cubic model (R^2 = .050). Thus, while the quadratic model was selected for further analysis, it does not seem as if income share held by the upper class influences fragmentation regarding whether marriage is out-dated.

Top 20% Income to Always Love Parents: (n = 54) All of the models were significant (p = .001 for all). The quadratic model accunted for a larger amount of the variation (R^2 = .245) and improved upon the linear model (R^2 = .200), but was not improved upon by the cubic model (R^2 = .245). The data suggest that countries with the least amount of income share held by the upper class (approximately 35%) tend to be between somewhat fragmented and fragmented regarding whether individuals should always love their parents. Fragmentation then declines as income share increases to about 55% income share where countries are barely above not at all fragmented. There is then a gradual increase in fragmentation. This finding also supports the association between fragmentation and development in that the most modern countries are more divided on this issue.

Top 20% Income to Work as Duty: (n = 60) All of the models were significant (linear: p = .001; quadratic and cubic p < .001)). The quadratic model (R^2 = .237) accounts for a moderate amount of the variation, and substantially improved upon the linear model (R^2 = .176), but was not improved upon by the cubic model (R^2 = .240). Thus the quadratic model was selected for further analysis. The data indicate that countries where the upper class holds the lowest share of income (about 35%) countries are extremely fragmented regarding whether work is a duty to society. Fragmentation on this issue then declines to a point where countries with about 55% income share held by the upper class are between slightly and somewhat fragmented. Fragmentation then increases to a point where at about 63% income share held by the upper class, countries are somewhat fragmented. This again supports the hypothesis that fragmentation is associated with modernity in that the most modern countries feature the most fragmentation of this value.

2nd 20% Income to Importance of Religion: (n = 61) All of the relationships were significant (p < .001). The quadratic model (R^2 = .237) accounts for a large amount of the variation, and improves upon the linear model (R^2 = .261), but is not improved upon by the cubic model (R^2 = .327). The data indicate that in countries with where the upper middle class hold the smallest share of income (just over 6%) countries tend to be slightly fragmented regarding whether religion is important to life. There is then a gradual decline in fragmentation on this value to the point where in countries where the upper middle class holds about 8% of the income the country is less than slightly fragmented. There is then a sharp increase in fragmentation to where countries with the largest income share

held by the upper middle class (about 14%) are very fragmented. This finding lends strong support to the theory that fragmentation of normative systems is associated with modernity. There is a moderate positive relationship between income share held by the upper middle class and the HDI (r = .28). Thus, fragmentation of normative systems increases as the upper middle class is more developed. Since the most developed countries have the most developed middle classes, the development of a middle class seems to breed fragmentation.

2nd *20% Income to Marriage Out-Dated*: None of the models were significant. The quadratic model ((R^2 = .013) accounted for a small amount of the variation, and improved upon the linear model (R^2 = .057), but was not improved upon by the cubic model (R^2 = .057). Thus, though the quadratic model was selected for further analysis, it does not appear as if the income share held by the upper middle class influences fragmentation regarding whether marriage is out of date.

2nd *20% Income to Always Love Parent*: (n = 54) All of the models were significant (linear p < .001; quadratic and cubic p = .001). The quadratic model (R^2 = .231) accounted for a larger amount of the variation, and improved upon the linear model (R^2 = .210), but was not improved upon by the cubic model (R^2 = .057). Thus, the quadratic model was selected for further analysis. The data indicate that countries with the smallest income share held by the upper middle class (about 6%) are between slightly fragmented and not at all fragmented. Fragmentation remains steady until the income share held by the middle class is about 9% at which point income share held by the upper middle class increases sharply. When the upper middle class holds about 14% of the

income share, countries tend to be fragmented. This strongly supports the hypothesis that

fragmentation is a function of modernity in that the most developed countries have the

most fragmentation on this issue.

2nd 20% Income to Work as Duty: All models were significant (linear: P = .002;

quadratic and cubic: p = .003). The quadratic model (R^2 = .189) accounted for a moderate

amount of the variation, and improved upon the linear model (.185), but was not

improved upon by the cubic model (R^2 = .185). Thus, the quadratic model was selected as

the best model for further analysis. The data indicate that in countries with the smallest

income share held by the upper middle class (about 6%) countries tended to be somewhat

fragmented regarding whether work was a duty to society. Fragmentation on this value

then decreases to where countries where income share held by the upper middle class is

at about 8% are between slightly and somewhat fragmented. Countries with the largest

income share held by the upper middle class (about 14%) tended to be very fragmented.

This strongly supports the association between fragmentation and modernity in that the

most developed nations featured the most fragmentation on this issue.

3rd 20% Income to Importance of Religion: (n = 61) All models were significant

(linear: P < .001). The quadratic model (R^2 < .421) accounted for a moderate amount of

the variation, and improved upon the linear model (.329), but was not improved upon by

the cubic model (R^2 = .427). Thus, the quadratic model was selected as the best model for

further analysis. The data indicate that in countries where the middle class holds the

smallest amount of income share (approximately 10%), countries are only slightly

fragmented as to whether religion is important to life. Fragmentation regarding this value

then decreases slightly to the point where countries with a 13% income share held by the middle class are between not fragmented and slightly fragmented. Fragmentation then increases sharply so that the countries with the largest income share held by the middle class (approximately 18%) are very fragmented. Because there is a moderate positive relationship between the HDI and the income share held by the middle class (r = .36), this finding lends strong support to the hypothesis that fragmentation is associated with modernity. Essentially, since countries that are more developed seem to have more fragmented normative systems.

3rd 20% Income to Marriage Out-Dated: (n = 60) None of the models were significant. The quadratic model (R^2 = .052) accounted for a small amount of the variation, and improved upon the linear model (.009), but was not improved upon by the cubic model (R^2 = .052). Thus, the quadratic model was selected as the best model for further analysis even though it does not appear as if the income share held by the middle class influences fragmentation on whether marriage is out-dated.

3rd 20% to Always Love Parents: (n = 54) All models were significant (p = .001 for all). The quadratic model (R^2 = .238) accounted for a moderate amount of the variation and improved upon the linear model (R^2 = .199), but was not improved upon by the cubic model (R^2 = .238). Thus, the quadratic model was selected as the best model for further analysis. The data indicate that countries where the middle class has the least income share (approximately 10 %) feature almost no fragmentation regarding whether individuals should always love their parents. This relationship stays relatively stable until about the middle class holds approximately 14% of the income, at which time

fragmentation increases so that countries with the largest income share held by the middle class are between somewhat fragmented and fragmented. This supports the theory that fragmentation is associated with modernity because of the relationship between income share held by the middle class and development. Essentially, there is more normative fragmentation in more modern countries.

3rd *20% to Work as Duty*: (n = 60) All models were significant (p < .001 for all). The quadratic model (R^2 = .320) accounted for a large amount of the variation and improved upon the linear model (R^2 = .224), but was not improved upon by the cubic model (R^2 = .316). Thus, the quadratic model was selected as the best model for further analysis. The data indicate that countries where the middle class has the least income share (approximately 10 %) tend to be somewhat fragmented as to whether work is a duty to society. Level of fragmentation until about the middle class holds approximately 14% of the income at which point countries are only slightly fragmented. Then fragmentation increases so that countries with the largest income share held by the middle class (approximately 18%) are between very fragmented. This once again supports the theory that fragmentation is a function of modernity because the most modern countries seem to feature more normative fragmentation.

4th *20% Income to Importance of Religion*: (n = 61) All models were significant (p < .001 for all). The quadratic model (R^2 = .389) accounted for a large amount of the variation and improved upon the linear model (R^2 = .319), but was not improved upon by the cubic model (R^2 = .389). Thus, the quadratic model was selected for further analysis. The data indicate that countries where the lower middle class holds the least share of the

income (approximately 18%) tend to be just below somewhat fragmented regarding whether religion is important to life. Fragmentation on this variable then decreases to where countries with 19% of income share held by the lower middle class are between slightly and somewhat fragmented. Fragmentation then increases sharply so that countries with the largest share of income held by the lower middle class (approximately 23%) tend to be very fragmented. This lends strong support for fragmentation being a function of development and modernity, since income share held by the lower middle class and HDI are moderately positively correlated (r = .43). Essentially, the more income the lower middle class has, the more likely a country is to be normatively fragmented.

4th 20% Income to Marriage Out-Dated: (n = 60) None of the models were significant. The quadratic model (R^2 = .065) accounted for a small amount of the variation, and improved upon the linear model (.000), but was not improved upon by the cubic model (R^2 = .065). Thus, the quadratic model was selected as the best model for further analysis even though it does not appear as if the income share held by the low middle class influences fragmentation on whether marriage is out-dated.

4th 20% Income to Always Love Parents: All models were significant (linear: p = .005; quadratic: p = .009; cubic: p = .004). The quadratic model (R^2 = .195) accounted for a moderate amount of the variation and improved upon the linear model (R^2 = .140), but was not improved upon by the cubic model (R^2 = .197). Thus, the quadratic model was selected for further analysis. The data indicate that countries where the lower middle class holds the least share of the income (approximately 18%) tend to be slightly fragmented regarding whether individuals should always love their parents.

Fragmentation on this variable then decreases sharply to where countries with 20% of income share held by the lower middle class are between slightly and not at all fragmented. Fragmentation then increases sharply so that countries with the largest share of income held by the lower middle class (approximately 23%) tend to be between fragmented and very fragmented. This strongly supports the theory that fragmentation is related to development because countries with a richer lower middle class feature more fragmentation of normative systems on whether one should always love their parents.

4th 20% Income to Work as Duty: (n = 60) All models were significant (p < .001 for all). The quadratic model (R^2 = .343) accounted for a large amount of the variation and improved upon the linear model (R^2 = .254), but was not improved upon by the cubic model (R^2 = .341). Thus, the quadratic model was selected as the best model for further analysis. The data indicate that countries where the lower middle class holds the least share of the income (approximately 18%) tend to be somewhat fragmented regarding whether religion is important to life. Fragmentation on this variable then decreases sharply to where countries with 20% of income share held by the lower middle class are only slightly fragmented. Fragmentation then increases sharply so that countries with the largest share of income held by the lower middle class (approximately 23%) tend to be very fragmented. This strongly supports the theory that fragmentation is related to development because countries with a richer lower middle class feature more fragmentation of normative systems.

Bottom 20% Income to Importance of Religion: All models were significant (linear: p = .003; quadratic: p = .009; cubic: p = .012). The linear model (R^2 = .142)

accounted for a moderate amount of the variability, and was not improved upon by the quadratic model (R^2 = .149). Thus, the linear model was selected for further analysis. The data indicate that in countries where the lower class has the least income share (approximately 3%) countries end to be between not fragmented and slightly fragmented regarding whether religion is important to life. As income share increases, fragmentation increases to the point where countries in which the lower class has the largest share of income (approximately 9%) tend to be between somewhat fragmented and fragmented. This supports the theory that fragmentation is associated with modernity because income share held by the lower class is positively correlated with the HDI (r = .16). Thus, countries that are more developed tend to demonstrate more fragmentation on this value.

Bottom 20% Income to Marriage Out-Dated: None of the models were significant. The linear model (R^2 = .036) accounted for a very small amount of the variation, and was not improved upon by the quadratic model (.037). Thus, the linear model was selected for further analysis even though it does not appear as if the income share held by the lower class influences fragmentation regarding whether marriage is out-dated.

Bottom 20% Income to Always Love Parent: Only the linear model was significant (p = .059). The linear model (R^2 = .060) accounted for a very small amount of the variation, and was not improved upon by the quadratic model (.060). Thus, the linear model was selected for further analysis. The data indicate that countries with the lowest income share held by the lower class (approximately 3%) tended to be not at all fragmented regarding whether individuals should always love their parents.

Fragmentation increases as income share held by the lower class to the point where countries where the lower class has the highest income share held by the lower class (approximately 9%) tend to be somewhat fragmented. This supports the idea that fragmentation is associated with modernity in that countries with a more prosperous poor are more developed. Because more economically developed countries seem to have more fragmentation on this value, it is reasonable to assume that developed countries have more fragmented normative systems.

Bottom 20% Income to Work as Duty: All models were significant (linear: $p = .005$; quadratic: $p = .020$; cubic: $p = .031$). The linear model ($R^2 = .140$) accounted for a moderate amount of the variation, and was not improved upon by the quadratic model (.142). Thus, the linear model was selected for further analysis. The data suggest that countries in which the poor hold the least income share held by the lower class (approximately 3%) tend to be between slightly and somewhat fragmented. Countries with the highest income share among the lower class (9%) tend to be fragmented. This supports the theory that fragmentation is a function of modernity in that the more developed countries, which have the wealthier poor, also demonstrate the most normative fragmentation

Primary Enrollment to Secondary Enrollment: (n = 140) All models were highly significant (p < .001 for all). The quadratic model ($R^2 = .542$) accounted for a large portion of the variability and substantially improved upon the linear model ($R^2 = .525$), but was not improved upon by the cubic model ($R^2 = .549$). Thus, the quadratic model was selected for further analysis. This relationship is not surprising as primary enrollment

is seen as a bench mark of development, while at this time secondary enrollment is does not hold the same priority in developmental circles.

Primary Enrollment to Importance of Religion: (n = 71) All models were significant (p < .001 for all). The quadratic model (R^2 = .221) accounted for a large amount of the variation and improved upon the linear model (R^2 = .192), but was not improved upon by the cubic model (R^2 = .221). Thus, the quadratic model was selected as the best model for further analysis. The data suggest that in countries with very low primary school enrollment (approximately 40%), fragmentation regarding importance of religion in life is non-existent. This trend continues until primary school enrollment reaches about 70% at which point fragmentation rises sharply so that countries with 100% primary school enrollment are fragmented. This does not confirm the initial hypothesis that countries can use the educational system to build normative unity. On the other hand, it implies that countries with more educated populations tend to be more fragmented. This is not unreasonable because education is one of the primary ways of modernizing society. Thus, more educated societies would be more fragmented.

Primary Enrollment to Marriage Out-Dated: (n = 69) None of the models were significant. The linear model (R^2 = .011) accounted for almost none of the variation, and was not improved upon by the quadratic model (R^2 = .016). Though this meant that the linear model was selected for further analysis, it appears that primary school enrollment has little effect upon fragmentation on whether marriage is out-dated.

Primary Enrollment to Always Love Parents: (n = 56) All of the models were significant (linear: p = .032; quadratic and cubic: p < .001). The quadratic model (R^2 =

.257) accounted for a large amount of the variation, and improved upon the linear model $(R^2 = .083)$, but is not improved upon by the cubic model $(R^2 = .256)$. Thus, the quadratic model was selected for further analysis. The data indicate that at the lowest levels of primary school enrollment (approximately 60%) countries tended to be somewhat fragmented regarding always loving ones parents. Fragmentation then fell drastically to where countries with approximately 80% enrollment were not at all fragmented. Fragmentation on this value then increased sharply so that countries with full primary school enrollment tended to be fragmented. A caveat here is important. Of the three countries with very low enrollment, one of them was fragmented regarding always loving ones parents while the other two were not at all fragmented. Thus, there is no doubt an outlier effect. If one looks within the range of most of the data, fragmentation increases dramatically. This lends support to the idea that education serves to modernize and thus fragment a society as opposed to creating a unified normative system.

Primary Enrollment to Work as Duty: $(n = 79)$ All of the models were significant $(p < .001)$. The linear model $(R^2 = .249)$ accounted for a large amount of the variation, and was not improved upon by the quadratic model $(R^2 = .256)$. Thus, the linear model was selected as the best model for further analysis. Data indicate that at the lowest levels of enrollment primary (approximately 50%) countries tended to be not at all fragmented regarding whether work is a duty. As enrollment increases fragmentation does as well so that when enrollment reaches 100% countries are fragmented on this value. This also seems to support the idea that education serves more as a modernizing influence as opposed to a normatively unifying institution.

Secondary Enrollment to Importance of Religion: (n = 63) All of the models were significant (p < .001 for all). The quadratic model (R^2 = .490) predicted a large amount of the variation and improved upon the linear model (R^2 = .432), but was not improved upon by the cubic model (R^2 = .494). Thus, the quadratic model was selected for further analysis. The data indicate that countries with relatively low secondary school enrollment are not at all fragmented on whether religion is important to life. Fragmentation remains non-existent until enrollment reaches about 45% when there is a drastic increase to the point where countries with almost 100% enrollment are very fragmented on this value. This does not support the idea that education can be used to build common values. Instead, its modernizing effect tends to breed fragmentation.

Secondary Enrollment to Marriage Out-Dated: (n = 60) Only the linear model (p = .057) was significant. It (R^2 = .061) predicted a small amount of the variation, and was not improved upon by the quadratic model (R^2 = .066). Thus, the linear model was selected as the best model for further analysis. The data suggest that countries with the lowest secondary school enrollment (approximately 10%) tend to be just below slightly fragmented on whether marriage is out-dated. Fragmentation increases gradually to the point where countries that have almost universal secondary enrollment are between slightly and somewhat fragmented. This supports education as a modernizing, and thus fragmentation, institution. However, it must be noted that the effect is very small. Thus, it may not be substantively significant though it is statistically significant.

Secondary Enrollment to Always Love Parents: (n = 48) All models were highly significant (linear: p = .002; quadratic & cubic: p < .001). The cubic model (R^2 = .382)

accounted for a large portion of the variation, and improved upon the quadratic model (R^2 = .360), which in turn improved upon the linear model (R^2 = .193). Thus, the cubic model was selected for further analysis. The data indicate that countries at the lowest levels of secondary school enrollment (approximately 20%) are just below slightly fragmented regarding always loving ones parents. Fragmentation then decreases until enrollment is about 60% when countries are between not fragmented and slightly fragmented. As enrollment continues to rise, fragmentation increases sharply to the point where countries with full enrollment are very fragmented on this value. This again supports the proposition that education modernizes, and thus fragments, a population.

Secondary Enrollment to Work as Duty: (n = 58) All of the models were significant (p < .001 for all). The quadratic model (R^2 = .417) accounted for a large amount of the variation, and improved upon the linear model (R^2 = .387), but is not improved upon by the cubic model (R^2 = .417). Thus, the quadratic model was selected for further analysis. The data indicate that at the lowest levels of secondary school enrollment (approximately 10%) countries tended to be slightly fragmented regarding always work as a duty to society. Fragmentation remains relatively steady until enrollment reaches about 40% when after which it begins to rise. At full enrollment countries tend to be very fragmented on this value. This, once again, supports the idea that education does not help bring about normative unity, but fragments society.

Internet Access to Importance of Religion: (n = 76) All models were significant (p < .001 for all). The quadratic model (R^2 = .381) accounted for a large amount of the variation, and improved upon the linear model (R^2 = .315), but is not improved upon by

the cubic model (R^2 = .386). Thus, the quadratic model was selected for further analysis. The data indicate that countries where almost no people per hundred are internet users tend to be not at all fragmented on whether religion is important to life. Fragmentation increases to the point where when a country has approximately 40 users per hundred people it tends to be fragmented on this value. After that point fragmentation declines until countries with the highest number of users per 100 people (60 per 100) tend to be between somewhat fragmented and fragmented. This finding mostly supports fragmentation of normative systems being associated with modernity. The internet is the pinnacle of modern communications where individuals can be exposed to countless different normative systems. Thus, it follows that the more people using the internet, the more fragmentation there will be regarding the importance of religion in life. The downturn at the highest range of the data is somewhat surprising, but could represent highly developed, highly secularized countries that have high levels of internet usage.

Internet Access to Marriage Out-Dated: (n = 81) The linear model (p = .061) and quadratic model (p = .057) were both significant. The quadratic model (R^2 = .381) accounted for a small amount of the variation, and improved upon the linear model (R^2 = .315), but is not improved upon by the cubic model (R^2 = .386). Thus, the quadratic model was selected for further analysis. The data indicate that countries with almost no internet users per 100 people tend to be slightly fragmented regarding whether marriage is outdated. Fragmentation gradually increases to the point where at 40 users per 100 people countries tend to be between slightly and somewhat fragmented. Fragmentation gradually decreases to the point where at the highest levels of internet usage (i.e., 70 uses

per 100 people) countries are just above slightly fragmented. While this does support the association between normative fragmentation and modern communications, the effect is so slight one can only question the substantive significance.

Internet Access to Always Love Parents: (n = 79) All relationships where significant (p < .001 for all). The cubic (R^2 = .378) model accounted for a large amount of the variation and substantially improved upon the quadratic model (R^2 = .346), which in turn improved upon the linear model (R^2 = .288). Thus, the cubic model was selected as the best model for further analysis. The data suggest that at the lowest levels of internet usage (0 users per 100 people) countries tend to be slightly fragmented regarding whether individuals should always love their parents. Fragmentation on this values increases until there approximately 30 users per 100 people when countries tend to be fragmented. The level of fragmentation remains steady until about 55 users per 100 people when it begins to increase. Countries with the highest levels of internet usage (i.e., approximately 70 users per 100 people) tend to be very fragmented as to whether one should always love their parents. This finding supports the idea that exposure to modern mass communication exposes individuals to many normative systems, and thus leads to fragmentation of normative systems within countries.

Internet Access to Work as Duty: (n = 66) All of the models were significant (p < .001 for all). The linear model (R^2 = 412) accounted for a large amount of the variation, and was not improved upon by the quadratic model (R^2 = .419). Thus, the linear model was selected for further analysis. The data indicate that countries featuring no internet users tended to be just above not at all fragmented, while countries with the highest levels

of internet usage (approximately 70 users per 100 people) were fragmented. This again supports the proposition that exposure to the most modern forms of communication will most likely expose individuals to greater number of normative systems, leading to fragmentation of normative systems within their country.

Curve Estimation: Discussion

The curve estimations provide many important findings for fragmentation of normative systems. Most importantly, the fact that three of the variables representing fragmentation demonstrated some significant relationships suggests that they are adequate proxy variables for fragmentation of normative systems. As stated earlier, what is considered a value differs between countries. However, the variables chosen to represent values of religiosity, filial piety, and work ethic seemed to have utility across different culture and levels of development. However, the variable representing fragmentation regarding whether marriage is out-dated proved to have almost no utility. From over 12 variables representing six indicators of fragmentation of normative systems, only three relationships were significant, and they were barely significant. Essentially, it does not seem as if countries are really divided regarding this value. Because of its lack of utility, fragmentation regarding whether marriage is outdated will be excluded from any further analyses.

On the other side of the equation, the variables representing having a common religion and religious diversity showed no utility in that they produced no significant relationships. In some ways, this is not surprising. Religion is a premodern construct, producing social divisions that would precede fragmentation. Therefore, it may not

produce the kinds of social division that would be associated with modernization. In addition, the effect that Hunter found in the United States, where denominations were becoming less relevant to how individuals built normative and moral systems, could be occurring in other places. For instance, a country could have three major Christian denominations. If each of those is divided between an orthodox and a modernist camp, one would not expect a variable representing denominations to have any effect. Though the reason for the lack of utility of the religious variables requires more research, it can safely be said that they provide no improvement to these models. Therefore, they will be excluded for all further analysis.

The ethnicity variables demonstrate a different problem. First, having a dominant ethnic group was hypothesized to predict more normative unity. For fragmentation regarding the importance of religion in life and fragmentation regarding whether individuals should always love their parents, the opposite proved to be true. The variable representing fragmentation regarding whether work is a duty to society was non-significant. Second, greater religious diversity was supposed to predict increased fragmentation of normative systems for fragmentation regarding whether religion is important to life. The relationships involving fragmentation regarding whether individuals should always love their parents and fragmentation regarding whether work is a duty to society were non-significant. Taken together these results seem to contradict the theoretical development of the model for fragmentation of normative systems. While that is true, there may be an explanation that can better illuminate the relationship between fragmentation and modernity. If one conceives ethnicity itself as a modern concept, it is

possible that modern countries, which are more developed and should feature more fragmentation, would define ethnicity in a broader manner than one would find in a less developed country. One of the weaknesses of these variables is that they are fully dependent upon how countries record race and ethnicity for themselves. For instance, Guinea-Bissau is recorded as having five ethnic groups based upon the fact that there are five major tribes. There is no Guinea-Bissauan ethnic designation. On the other hand, France has one major ethnic group, French. Citizens are not recorded as being for Basque or Britton. France does not even record the race of their citizens. Thus, the unexpected finding may actually indicate that more developed countries, which are more fragmented, may dominate the culture within their borders enough that they delegitimize any ethnicity other than citizenship in the state.

The relationships between common language and the fragmentation variables, except for marriage out-dated, where opposite from what would be expected. Based upon Hunter's ideas about divides in symbolic language preventing public debate of values in the United States, it was hypothesized that lack of a common language would lead to more fragmentation of normative systems. The opposite was true. Countries with a common language tended to be more fragmented than those without one. While this does reveal a weakness in the original theory, the finding may actually support the relationship between modernization and fragmentation. From the relationship between the HDI and having a common language, it is reasonable to assume that more modern countries can enforce a common language. This would be another example of how the modern nation-state can monopolize the culture within its borders. However, another explanation for the

finding could be that many of the more developed countries, which should be more fragmented, are small countries, many of which are in Europe. Thus, having a common language would be easier than it would be for a larger post-colonial African country where the linguistic groups have not reasonable justification for being part of the same country. Since, there is no adequate way of understanding why having common language predicts more fragmentation of normative systems, the only conclusion that can be reached is that Hunter's theory cannot be translated from symbolic language to actual language.

Perhaps the strongest finding within fragmentation of normative systems is that the more modern a class system, the more fragmented a country was on the variables representing fragmentation of values, except for fragmentation regarding marriage as out-dated. This assumes that a modern class system is one in which income is spread more evenly throughout all economic classes, most likely through the existence of the modern welfare state. Essentially, countries with a more income concentrated in the hand of the rich demonstrated less fragmentation of normative systems, while countries with richer lower classes showed more. This relationship supports Ossowska's view that economic class has a larger effect on the values that an individual holds. However Bourdieu's theory of habitus might be a better explanation in that individuals of each class are given different opportunities that allow them to develop different tastes and preferences for material items, behaviors, and even values. Thus, if no one class can culturally dominate a society by monopolizing economic resources then fragmentation will occur with different classes understanding different values in different ways. This lends strong

support to the theory of fragmentation of normative systems in that modern classes breed fragmentation, while premodern class structures superimposed on a modernizing society do not.

It is no surprise that both primary school enrollment and secondary school enrollment increase fragmentation of normative systems. While it was hypothesized that school could be used to indoctrinate people into a government-regulated system of values, it proved to be true that education actually increased fragmentation. The original hypothesis was an extension of Bauman's ideas that in modern society governments try to regulate values and morals. As governments usually try to educate their people, then it would be reasonable to believe that they would use schools to propagate these values. However, it actually seems that exposing youth to new ideas through education helps to fragment the normative systems within countries. In a way, this could be seen as a triumph of the liberal education, which holds the goal of teaching students to think critically about society as opposed to teaching them rules and strictures of a faith or culture. Essentially, this finding suggests that the goal is achieved. This also implies that countries may not be able to teach young people to read, write, and do basic math without taking the chance that large segments of the population will start thinking about values in very different ways than the rest of society.

It is also not surprising that increased internet usage predicts increased fragmentation on the normative fragmentation variables, except for fragmentation regarding whether marriage is out-dated. Internet users are exposed to an almost unlimited number of different normative perspectives, any of which they can decided to

adopt themselves. In addition, internet usage is more common in more developed countries, which are also more fragmented. Both explanations support the relationship between modernization and fragmentation of normative systems.

The curve estimation suggest that three indicators of fragmentation of normative systems a modern class system, presence of a modern educational system, and presence of modern mass communication can be used to predicted increased fragmentation. In addition, one variable, presence of a common language, may be closely associated with modernization. Thus, it is possible that it could be used in order to predict increased fragmentation of normative systems. Finally, ethnicity showed some utility in prediction of fragmentation of normative systems, though it did not operate in the expected manner. Thus, with the adequate confirmation of fragmentation of normative systems theory, the results of the curve estimation can used to build a second theoretic model to be used as a structural equation model.

General Discussion

Fragmentation of normative systems theory states that as countries modernize, values that once unified a country defining its direction towards a 'good society' disappear. The social structures that traditionally determined what values a society should hold, such as religion, are forced from the public sphere. Governments then attempt to fill the void left by the lack of normative regulation. Eventually though, all external definition of values become untenable, and individuals are left to created their own normative systems. This, in theory, prevents societies from mobilizing members in order to work towards certain goals.

This research provides strong support for the argument that fragmentation of normative systems is something that can be empirically molded. The key to this analysis is the creation of values that show the fragmentation of values within a society, by examining how much division there is on given social norms.

The most important finding regarding the fragmentation of normative systems found in this analysis is that premodern social structures, ethnicity and religion, did not seem to predict normative fragmentation. In theory, countries that are not diverse in regards to premodern social structures should feature more normative unity. However, when these variables did have predictive power, they did not support the theory. The most likely interpretation of this is that indeed fragmentation is a process associated with modernization.

An equally important find is that every modern social structure did predict fragmentation of normative systems. Countries with a common language, a modern class system, mass education, and high levels of access to modern communications all featured more normative fragmentation. This supports the general hypothesis that social fragmentation is a process inherent to modernity. If this were not the case, either premodern normative divisions would be the largest predictors of lack of normative unity or there would be no patterns in how countries develop normative divisions. These findings are possibly the most clear in regards to any type of fragmentation included in this research.

Normative fragmentation has benefits and detriments. One of the primary assumptions of modernity is that the individual should have the right to live their life in

whatever manner they want as long as it does not violate the rights of others. Though theorists like Adam Smith assumed that a common rational set of values would replace those put forth by religions and traditional taboos, freedom to choose ones own values was considered necessary to the new social order. Normatively fragmented societies do probably provide for the greatest opportunity for members to choose their own value systems. In these societies it seems as if members are given resources, such as mass education and access to mass media, which allow them to explore different ways of understanding the world. In addition, modern class solidarities may inform individuals of what values are of benefit to them. If freedom of thought and choice are valued in society normative fragmentation is a net benefit.

However, if it is true that modern societies must unite based upon values, as de Tocqueville suggests, then normative fragmentation can be detrimental to society. At best individuals from different normative groups will not be able to relate to the values of other groups by either failing to understand why a value is important to the other group or by not understanding the nuances of the other group's belief. At worst, groups with different value system can actively work to undermine other group's value systems. As Hunter stated, this can be done by attempting to control educational systems, mass media, and the like. When societies become divided along normative lines it could prevent them from mobilizing to confront social problems in that it may be hard to define if something is an actually problem or what the end game of any social intervention could be.

This analysis is limited in several ways. First, the variables representing religion and ethnicity may not be reliable. As previously stated they are based upon what the

countries themselves report. Thus, a country that wants to portray itself as more homogenous, it can. For the research to be improved, more consistent and reliable data must be developed. Second, like other models, this analysis does not show causation of account for possible collinearity among the variables. More sophisticated analysis is needed before definitive causal paths can be created.

This analysis leaves interesting possibilities for future research. Besides addressing the two primary limitation of this analysis, research should be conducted on the sub-national level to determine if subgroups within societies experience fragmentation in the same ways that countries seem to experience it. Such research could be important in understanding how countries could alleviate social strife caused when different groups have different ideas of what traits a 'good society' would feature. Perhaps this could create a path to building social stability in such countries.

Conclusion

This chapter provides strong support for the argument that fragmentation of normative systems can be empirically modeled. In addition, it provides strong support that the key factor in fragmentation of normative systems is the development of modern social structures. It also provides a framework for future research into social divisions brought about by normative divisions within a society.

Chapter 6

Fragmentation of Morality

Abstract

Fragmentation of morality refers to growing divides within societies regarding what is considered proper social behavior. This divergence is the result of a disappearance of a common ethos. Review of literature suggests that fragmentation of morality can be assessed using divergence of opinion regarding a selection of moral issues. The literature also suggests that common culture, religion, distribution of socioeconomic classes, education, and ideology predict fragmentation of morality. It can be inferred that presence of a common language and access to modern world communication systems do so as well. Curve analysis suggests that education and access to the internet are the strongest predictors of moral divides within a country, suggesting that fragmentation of morality is most closely related to modern structure of dissemination of knowledge.

<p style="text-align:center">*   *   *</p>

On August 11, 2007, washingtonpost.com listed a story by the Associated Press (Brown, 2007) that High Point Church in Arlington, Texas canceled a memorial service for Cecil Howard Sinclair, a veteran of the first Gulf War. The cancelation was not for logistical purposes, or because he was not a member. It was not because he had been a soldier at a time when antiwar feelings were running strong. It was because he was openly gay. The High Point Church believes that homosexuality is a sin. In explanation

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of the cancelation, pastor Gary Simons stated "We did decline to host the service not based on hatred, not based on discrimination, but based on principle."

Sinclair's family was of course disappointed by the outcome. They did not view their relative as doing something sinful. Instead they viewed him as a family member they loved who found his happiness in a way that worked for him.

The United States of American is polarized on many moral issues. Homosexuality might be one of the most divisive ones. Battles over issues such as same-sex marriage and adoption by same-sex couples are fought in the courts, with judges declaring what the moral standards of a society will be.

<p style="text-align:center">*　　　*　　　*</p>

In the short story, "Hills Like White Elephants" Earnest Hemingway (1997) offers a conversation between a man and a woman as they travel though Spain so she can procure and abortion. At one point the woman states,

"We'll be fine afterwards. Just like we were before"

"What makes you think so?"

"That's the only thing that bothers us. It's the only thing that's made us unhappy."

The girl looked at the bead curtain, put her hand out and took hold of two of the strings of beads.

"And you think we'll be alright and be happy?"

"I know we will. You don't have to be afraid. I've know lots of people that have done it."

"So have it," said the girl. "And afterward they were all so happy".

"Well," the man said, "if you don't want to you don't have to. I wouldn't

have you do it if you didn't want to. But I know it's perfectly simple."

"And you really want to?"

"I think it's the best thing to do. But I don't want you to do it if you don't

really want to."

"And if I do it you'll be happy and things will be like they were and

you'll love me?" (52)

As one can see from this passage, even in the 1920's people struggled with

whether abortion, a defining aspect of the moral debate in the U.S. today, was right or

wrong.

*   *   *

Morality is the "quality of being in accord with the standards of right or good

conduct," (*American Heritage College Dictionary* 1997, 886). In other words, morals can

be seen as rules proscribing certain behaviors as wrong and encouraging some as right.

Implicitly in this definition is the necessity of free choice. It implies the necessity of an

individual having developed an opinion of that which is good versus that which is bad.

Most of all, it implies the primacy of the individual in deciding what behavior most in

accord with an amorphous "good". As morality implies choice, it implies individualism.

Thus, it also implies the possibility of differences of opinion.

This chapter discusses fragmentation of morality, which can be defined as a state

in which opinions held by individuals regarding what is good and what is evil become so

divergent that society as a whole cannot agree upon which behaviors should be

proscribed. It creates a lack of moral agreement in which hiders the ability of a society to

have a cohesive view of what should be allowed in society. In turn, this makes regulation of society by governments impossible.

This chapter will be divided into several sections. First, it will describe the difference between fragmentation of morality and the somewhat related fragmentation of normative systems. Next, a brief discussion of the history of morality through the modern and into the postmodern era will follow. Subsequently, indicators of fragmentation of morality will be developed from the history. Analysis of data from the World Bank, United Nations, and World Values Survey will find patterns in the fragmentation of morality between different countries. Finally, these patterns will be interpreted in the context of fragmentation theory.

Morality versus Values

Morals and values can easily become confused. Often in the common vernacular, the terms are sometimes used interchangeably. However, for academic purposes there is definite difference. For this research in particular, morality refers to any judgments between what is right and what is wrong, whereas values are general principles about what is important. Also for the context of this research, morality is examined in a public sense – what do societies in general consider to be right and wrong. Values, as stated in the previous chapter, refer generally to what societies hold as important (e.g., the dependent values religion, filial piety, marriage, and work found in said chapter).

While morality has been empirically defined in many ways, the definition used for this work is drawn from the cultural psychological approach taken by Richard

Shweder. In this sense he rejects narrow definitions of what is moral. Contrasting his

views with those of other psychologists, he states,

> Turiel and I disagree about many things: about whether there is a single
>
> true natural moral law, or whether there are several; about whether natural law is
>
> epistemic (dependent on our conceptual choices); about whether moral law
>
> extends beyond issues of harm, rights, and justice. I subscribe to the view (and
>
> Turiel does not) that there is more than one true natural moral law, that natural
>
> law is "epistemic," and that moral law extends beyond issues of harm, rights, and
>
> justice. (Shweder 1990, 2060)

This definition is in keeping with sociological research on morality and allows for an

analysis of more issues that could be considered part of a country's public morality.

Fragmentation of Morality

Many factors have been proposed as causes of the fragmentation of morality.

Maria Ossowaska, (1970, 61-64) proposes class and wealth as a create moral differences,

stating that "each class has a moral system of its own" (63), which is in keeping with

classic social theories (e.g., Durkheim 1984) Others, such as James Davidson Hunter,

suggest that moral division is strongly based upon ideology and cultural divides (1990,

107). There is no doubt that modern class division, ideology, and the like have brought

about greater diversity about what is moral in modern society.

In general, these differences become intensified by the growing diversity of social

groups in modern society, where each group has its own ethos. Here, Bourdieu's (1977,

80) theory of habitus is informative, in that he states that different forms of capital

including cultural, economic, and social shape the practices and worldviews of social

groups. Habitus creates the dispositions humans have towards beliefs. If moral beliefs are seen as dispositions of this sort, then there should be numerous factors that drive moral ideas. As individuals are bombarded by different ideas that come from different social groups to which they belong, their moral dispositions change. Figure 6.1 illustrates some possible moral groups that can lead to fragmentation of morality. As an example, an affluent member of a Korean immigrant evangelical protestant congregation has at least three major influences upon his or her ethos. First, the individual will have certain sensibilities associated with being affluent, including certain behaviors associated with the proper way to approach commercial activities that a less affluent person would not need to confront. The individual would also have been socialized into certain beliefs and traditions common within the Korean immigrant community, many of which serve to reinforce the 'Koreanness' of member of the community. Finally, another piece of the individual's ethos would be defined by his or her evangelical beliefs, where certain assumptions about what behaviors are needed to be a good Christian will influence his or her ethos. Because of the confluence of different social identities, the ethos of such a member of the Korean immigrant community would be radically different from that of a less affluent Korean immigrant, or a non-religious Korean immigrant, or a reach evangelical Caucasian, and so forth. Thus, neither class nor culture is sufficient to explain fragmentation of morality. Many factors are involved.

From this perspective, moral behavior in the modern pluralistic society cannot be seen as a choice between morality and immorality. Instead, moral frameworks should be seen as synthesized habitus drawn from an increasing number of social groupings by

which individuals define themselves. As Bauman states, "Any kind of social order could be represented as a network of channels through which the search for life meanings is conducted and the life-meaning formulation conveyed." (2001, 4) Thus, the greater the number of social groups by which individuals define themselves, the more specific each individual's ethos will be. In the extreme, individuals will have moral systems that are in many ways unique from those of other individuals. This is fragmentation of morality.

Moral Unity versus Fragmentation of Morality

The fragmentation of morality is the antithesis of moral unity, which can be defined as a situation in which assumptions about morality are generally common throughout the majority of members of a society. In other words, there is little dissent from the dominant ethos of a society as it relates to morality. Durkheim (1984) suggests that this kind of unity may have existed in premodern societies, but that it is impossible in a developed society, one that in his terminology is not based upon mechanical solidarity (i.e., the solidarity of sameness). In reference to the trend away from mechanical solidarities in modern society, he states,

> morality corresponding to this type of society has lost influence, but without its
> successor developing quickly enough to occupy the space left vacant in our
> consciousness. Our beliefs have been disturbed. (339)

Thus, societies that allow for freedom of association, conscience, and thought will never have moral unity.

However in theory, the diversity of social groupings in modern society should not preclude moral unity. James Davidson Hunter (1990) describes how this is possible by

describing the interaction of public and private culture, where he describes private culture as bringing forth personal interests that are scrutinized in the public sphere in order to create a common moral framework for a society (55-56). In describing this process he states,

> … private culture provides the context in which public culture become a reality intelligible and personally relevant to ordinary people. Public culture becomes a realm that can be understood and influenced, a sphere of activity in which individuals and communities can present and advocate their particular interests, the place in which the various voices of private interest can press their particular claims as public discourse. To the degree that public and private cultures interact in this way, the authority of democratic regimes achieves its measure of popular consent. Such is the moral foundation of the modern liberal state. (56)

Adam Smith (2007) posits how this process operates on the individual level when discussing how moral sentiment bringing about moral unity when he states,

> Generosity, humanity, kindness, compassion, mutual friendship and esteem, all the social and benevolent affections, when expressed in the countenance or behavior, even towards those who are not peculiarly connected with ourselves, please the indifferent spectator upon almost every occasion. His sympathy with the person who feels those passions exactly coincides with his concern for the person who is the object of the. The interest, which, was a man, he is obliged to take into the happiness of this last, enlivens his fellow—feeling with the sentiments of the other, whose emotions are employed about the same object. (36)

Thus, from a theoretical perspective public morality can be negotiated and codified, providing a template for what is proper behavior in a society.

However, the theory is not how public morality actually operates. Instead, public morality becomes a game of domination. In large part, this is due to the openness of the society. When morality is a matter of public debate many groups get to argue for their moral vision, but will not necessarily be accommodated because groups try to apply their moral standards to the whole of society. As Hunter (1990) states,

> … the right to shape the public culture, or at least the right to have a voice in how public culture will be shaped, confers enormous benefits. The essential benefit is the right to pursue individual and community interests. Those who have no voice may be defined as illegitimate—and their interests may be deemed irrelevant. The very survival of minority moral community is at risk, unless all have the right to help shape public culture. In real life, of course, the many different voices that contribute to the shaping of public culture are not of equal volume or authority. Many voices may be heard, but the historical tendency has been for one voice to dominate. (56)

Thus, morality is not negotiated, but instead is dictated by whomever is in power at the time. Because social groups will not necessarily be dominated and assimilated, their groups become marginalized. Society becomes morally fragmented.

In the face of external domination, many groups within those societies seek to enforce moral unity, even if it requires coercive measures. For instance in opening paragraphs of this section, the story of Cecil Howard's funeral and the High Point Church is presented. In essence, the church banned a dead man from their premises based upon

the fact that he lived a lifestyle that the organization found to be immoral. In essence, the church sought to exclude someone whose behavior did not conform to its ethos. From this example, it is apparent that the struggle for moral unity is not only played out on the societal level, but on the group level as well. Group leaders seek to dominate the moral ethos of their groups, just as dominant groups try to dictate the ethos of an entire society.

However, the goal of moral unity in smaller groups within the larger society becomes harder as societies change. Few social groups can completely cut themselves off from the rest of society. Thus, as new moral ideas enter society, they are presented to the members of said groups. With the challenges to the prevailing ethos of a group, the morality unity becomes weaker. In the end, social groups become morally fragmented as well.

Moral Fragmentation and Moral Cohesion

Morally unified social groups tend to have higher levels of moral cohesion. Here moral cohesion refers to the ability of a social group to stay morally unified, where cohesive groups tend to have stronger bonds and non-cohesive groups are more prone to division and fragmentation. Groups with common organizing principles are much more resilient to the attack of modernity. In his discussion of habitus, Pierre Bourdieu states that

> If the practices of the members of the same group or class are more and better
> harmonized than the agents know or wish, it is because, as Leibniz puts is,
> "following only [his] own laws", each "nonetheless agrees with the other". The
> habitus is precisely this immanent laws, *lex insita*, laid only for the co-ordination

of practices but also for practices of co-ordination, since the corrections and

adjustments of the agents themselves consciously carry out presuppose their

mastery of a common code and since undertakings of collective mobilization

cannot succeed without a minimum of concordance between the habitus and the

mobilization agents (e.g., prophet, party leader, etc.) and the dispositions of those

whose aspirations and world-view they express. (80-81)

In essence, Bourdieu is arguing that groups with a common habitus, practices and ways

of thinking based upon shared history, have a built in ability to mobilize based upon a

common set of underlying beliefs about what should and should not be done in social

situation. This is akin to morality, which Durkheim insists is a purely social phenomena

(1984, 332). Bourdieu also points out that groups with a common understand of what is

right and wrong are more easily steered by their leaders because they have a common

code of understanding. Taking Bourdieu's point of view into account it is reasonable to

believe that groups with a common ethos, in other words morally unified ones, will have

a great ability to stay together while those without a common moral ethos will be more

prone to fragmentation.

An example of a group losing much of its reason for unity because of the loss of a

common ethos is the Anglican Communion, which currently is being strained by the issue

of homosexuality. Branches of the Anglican Church are found throughout the world,

mainly in the former British colonies some of which are highly modern and some of

which are still modernizing. In the United States and Canada, the branches feel that

homosexuality is natural. Thus, generally their churches tolerate open homosexuality.

However, branches in the developing world feel that homosexuality is specifically forbidden in the Christian Bible. Therefore, tolerance of homosexual acts is a modern innovation that endorses serious sin. After years of debate, in 2005 the communion asked the U.S. and Canadian branches to voluntarily withdraw from the Communion due to the disunity they had created (Banerjee and Lavery 2005). In essence, when the Anglican Communion began to fragment regarding whether a particular action is immoral the group essentially split into competing groups. As the ethos split, fragmentation developed.

Durkheim argues that as society evolves, traditional bonds of morality loosen (1984, 333). Thus, on the societal level, moral fragmentation is the rule. Societies characterized by high levels of individualism allow members to accept many different moral perspectives. As Bauman states in his discussion of morality in the postmodern era,

> With the world-wide, efficient network of communication and illusion of immediacy arising from the mostly visual form which information assumes, it is all too easy for even small-scale, local one-off events to become 'national', or even world-wide – in their notoriety, if not impact. The media-transmitted patterns for copy-cat imitation has the power to sustain 'crowds' of enormous sizes (thought brittle structure) by the expedient of simultaneous 'replay' of action in places located at vast distances from each other. (142)

In essence, moral ideas need not be local to affect individuals. Thus, without a church or official philosophy guiding the formation of laws or moral norms, individuals are free to approach moral issues in an Ala Carte fashion. For instance, in the United States two major social issues are abortion rights and embryonic stem cell research. Both require the

destruction of a zygote, embryo, or fetus that, in theory, can develop into a human being.

However, it is not uncommon for individuals who oppose abortion right to favor

embryonic stem cell research, depending upon what medical situations they have

confronted in their lives. They see purposeful destruction of potential life as immoral, but

destruction that could bring about healing as moral. However, ala Carte moral

frameworks do not allow for a large amount of social cohesion. If, as Bauman (1993, 9)

states, legislatures do try to regulate morality within nation-states, the ala Carte nature of

morality will mean that the majority in a legislature will end up enforcing its moral

framework on upon an unwilling part of the population, which will further strain the

bonds of society. This brings about the social marginalization of moral minorities Hunter

feared (1990, 56-57). From this point of view social cohesion, and thus moral

fragmentation, is self-reinforcing. Lack of moral cohesion in society makes moral

agreement increasingly unlikely. With the Western style of win-or-lose legislating, more

individuals will become morally marginalized.

Pre-morality: Right and Wrong before the Individual

Throughout all of human history, there has been a need to define behaviors from

which people are proscribed. Over one and one half millennia before the Common Era,

the Code of Hammurabi gave strict and immutable punishments for certain actions,

implying that those in the Babylonian society should hold those actions to be improper

behavior. The Torah, the Bible, the Koran, and the holy books of numerous other

religions also provide rules that a person should follow. However, the rules are not

properly moral principles.

Bauman (1993) argues that morality is a uniquely modern phenomenon. In *Postmodern Ethics* he states,

> If 'moral' came to be set apart as the aspect of human thought, feeling and action that pertains to the distinction between 'right' and 'wrong', this was by and larger the accomplishment of the modern age. Throughout most of human history, little difference was seen or made between now strictly separated standards of human conduct, such as 'usefulness', 'truth', 'beauty', 'propriety'. (4)

Thus, true morality could not exit before the Enlightenment because the idea of choosing between right and wrong was not part of the common worldview. Propriety of behavior, in the premodern era, was not seen as something interpreted based upon the experiences an individual had lived, but as immutable rules set forth, by a higher power, be it a deity, a philosophy, or a tradition. In theory, these rules applied to all member of a society, and often could be generalized to the entire world. For example, the Gospel of Matthew in the Christian Bible quotes Jesus as saying, "Go, therefore, and make disciples of all nations, baptizing them in the name of the Father, and of the Son, and of the Holy Spirit, teaching them to observe all that I have commanded you." (Matthew 28: 19-20 [NAB]) In other words, all the regulation on behavior that Jesus taught were to be placed upon all people, not just some laws and not just some people. The only freedom of thought was discouraged in that, choice would often lead to immoral actions. Bauman (1993) describes this mind set as,

> Free will, if it existed at all could only mean – as St Augustine insisted and the Church repeatedly hammered home – freedom to choose wrong over right – that is to breach Good's commandments: to depart from the way of the world as God

ordained it; and anything that visibly deflected from custom was seen as such a

breech. Being in the right, on the other hand, was not a matter of choice: it

meant, on the contrary, avoiding choice – following the customary way of life.

In this respect, the correctness of behavior was stratified based upon ones station in life,

what was expected of a noble was different from what was expected of a peasant (Rifkin

2004, 101). In many ways, right was what helped a society survive, and what was wrong

was that which hindered society's ability to continue (Bauman 1993, 4). In a premodern

world, when societies were small and survival was precarious, it is logical that people

would agree to principles that would help them to survive.

If one considers the state of postmodern Europe with diseases, wars, and famines

often unchecked, it is understandable that a code of behavior that highly regulated how

people behaved towards each other was supremely important. In times of any of the

aforementioned problems, the entire community needed to work together to endure

mutual survival. It would have been impossible for these communities to unite if there

were no common code of behavior among them. The rules given by the Christian Church

gave an unambiguous declaration as to whether an act was beneficial or non-beneficial to

the community. If member of the community accepted the rules, less strife would develop

because all members shared a common belief about how society should be run.

Scholasticism: Right and Wrong outside the Church

Though many trace the development of a modern morality to Enlightenment

thought, it is important to recognize that the Enlightenment did not develop randomly. In

terms of morality, the enlightenment and thus modern assumptions about morality were

built upon a framework of thought created by philosophers and theologians within the Catholic Church in the middle-ages. Most importantly, the scholastic movement provided a view that what was proper behavior could be achieved outside the teaching of the Church.

In *Summa Theologica* (1981), Thomas Aquinas attempted to synthesize Catholic Theology with Philosophies and theologies of other traditions. In that work, he offered two arguments which would eventually free morality from the control of the Church. First, Aquinas argued that much Truth could be found through reason. Specifically he argued that the existence of God could be based upon reason. For instance, in the twelfth article of the twelfth question, he states,

> Hence from the knowledge of sensible things the whole power of God cannot be known; nor therefore can His essence be seen. But because they are His effects and depend on their cause, we can be led from them so far as to know of God *whether he exists*, and to know of Him What must necessarily belong to Him, as the first cause of all things, exceeding all things caused by him. (58)

In other words, while God could not be comprehended by reason, his existence could be demonstrated. Second, as a corollary to his view regarding reason and Truth, Aquinas suggested that humans were naturally predisposed to understand the good based upon reason. He states,

> Because the good understood is the proportionate object of the will; while sensitive or imaginary good is proportionate not to the will but to the sensitive appetite; since the will can tend to the universal good, which reason apprehends; whereas the sensitive appetite tends only to the particular good, apprehended by

sensitive power. Therefore the goodness of the will depends upon reason, in the

same way as it depends upon the object. (673)

Thus, even those who had not been exposed to the teachings of the Gospels could do good based upon a rational understanding of the world.

The first implication of Aquinas's theories was that there could be a universal morality, one that did not have to be learned. If right and wrong were only determined based upon the teachings of the Church, those who had never been exposed to the teachings of the Church could not be expected to act morally. However, if at least some rules of behavior could be achieved by use of reason, then individuals anywhere, no matter their creed, could be expected to behave in certain ways. Key to this was that individuals would make a conscious decision to behave properly. The first traces of freedom had dawned.

The second, and perhaps more important, implication was that morality was not necessarily the province of one organization. It is true that the Church had always held that its moral teaching originally came from God, and the Catholic Church still holds itself to be the supreme arbiter of God's message. However, Aquinas's works state for the first time that the beliefs of the Church can be found through means other than the teachings of the Church. Be it an innate sense of right and wrong or morality fully through reason, the Church's control over morality had been loosened by one of the most revered intellectuals of the Church.

The Enlightenment, Reason, and Universal Morality

By the time of the enlightenment, Aquinas's view that the divine could be understood using reason, had led to the view that society could be understood rationally. Moreover, philosophers and revolutionaries believed that if freed from the restrains of religion, a just society could be organized along the principles of reason. As Bauman (1993) states when referring to legislatures stepping into the void left by secularization,

> They earnestly believed that the void left by the now extinct or ineffective moral supervision of the Church can and ought to be filled with a careful and artfully harmonized set of rational rules; that *reason* can do what *belief* was doing no more; that with their eyes wide open and passions put to rest, men can regulate their mutual relationships no less, and perhaps more and better (in a more 'civilized', peaceful, rational manner) than at the time when they were 'blinded' by faith and when their untamed undomesticated feelings ran wild. (6)

Society would then be based upon the human nature or justice or costs versus benefits. The only principles that would not be included were those of past superstitions.

Thus, one of the main effects of the Enlightenment was to remove the defining of good and evil from the grasp of religion. According to Bauman (1991, 4) this is when true morality developed. Specifically, to make a true moral decision, he argues, it must be an individual choice—a reasoned decision based upon the analysis by a specific individual. Bauman (1991) describes this as developing

> … with the casting of those men and women in the position of *individuals*, endowed with identities not-yet-given, or given but sketchily – and thus facing the need for 'constructing' them, and *making choices in the process*. (4)

The rise of the individual as an autonomous being pursuing his or her own moral agenda was one of the keystrokes of the enlightenment.

There is of course debate as to exactly how the individual received the right to define his or her own moral framework. In *The Protestant Ethic and the Spirit of Capitalism*, Weber (2002) argued that proper behavior in the modern economy developed out of the secularization of Reform Protestantism. Specifically, the theology of predestination allowed individuals to focus on their business in the material world without having to fret for the afterlife. However, virtuous behavior was seen as a sign of election. Thus, individuals tried to behave in a moral manner to demonstrate their faithfulness. However, individuals who came to believe that nothing they could do would affect their salvation secularized. Thus, religion disappeared, leaving the individual as the sole arbiter of morality.

In the modern age, morality has developed into a fully individualized process. As Bauman (2001) states,

> 'Inside' of the moral party there is just me, with my responsibility, with my care, with the command which commands me and me along – and the Face, the catalyst and the midwife of all that. (176)

However, what was seen as moral was neither universal nor fully individual. What a person thought to be right or wrong was based on many determinants. Ossowska (1970) for instance identified 21 different social structures that influenced what an individual determined to be moral (27 – 82). In essence, an individualized and internalized ethos based upon many categories of identity became the focus of moral decisions. However,

as modernity progressed, individuals began to have more experiences novel from those of others around them. As more individualized experience permeated human life, the chance of having a common ethos we diminished.

Postmodern Morality?

The postmodern ethos is characterized by moral fragmentation, where an individualized means-ends approach where individuals may adopt a stringent or malleable moral code free from cultural or governmental influence. Bauman (1993) states,

> It is one of the most seminal characteristics of the postmodern era that the state
> has no more capacity, need nor want of spiritual (and this includes moral)
> leadership. The state 'lets go', by design or by default, the counter-structural
> powers of sociality. (138)

Without a church or state controlling the moral debate within a country, morality become less focused on social cohesion, and emphasizes the actualization of the individual's needs and desires. In essence, postmodern individuals believe that what is good for the individual is good for society as a whole.

From a post modern view point, there can be no other focus of morality than the benefit of the individual. Bauman (1993) states

> Issues have no predetermined solutions nor have the crossroads intrinsically
> preferable directions. There are no hard-and-fast principles which one can learn,
> memorize and deploy in order to escape situations without a good outcome to
> spare oneself the bitter after-taste (call it scruples, guilty conscience, or sin)
> which comes unsolicited in the wake of the decision taken and fulfilled. Human

> reality is messy and ambiguous – and so moral decisions, unlike abstract ethical
>
> principles are ambivalent. (32)

Thus, the final decision of what is moral does not necessarily depend upon who will be or how many will be hurt. In other words, morality in the postmodern era does not have an overall metanarrative to define a 'good' outcome. For instance, if a man finds out that his close friend is having an affair, the man is confronted with a moral choice. He may tell the spouse that his friend is cheating, which will hurt the friendship. On the other hand, he may decline to tell the spouse which could hurt the spouse emotionally or even physically (e.g., sexually transmitted diseases). Whatever the man's decision, at least one of the other parties will ultimately be unhappy. Thus, when individual happiness is the focus of morality, any moral decision will have a negative effect on at least one party. Essentially, the postmodern is not concerned with set rules of behavior. Instead, as Bauman (2001) stats,

> Morality does not need codes or rules, reason or knowledge, argument or
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> conviction. It would not understand them anyways; morality is 'before' all that…
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> It sets its standards as it goes. It does not know of guilt or innocence – it is pure
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> in the only true sense of purity: the purity of naivety. (175-176)

In other words, postmodern morality is, to speak proverbially, make up on the fly. Its goal is to prevent any damage that the actor wants to prevent, ambivalent to any collateral damage of social action.

The irony of the postmodern rejection of universal moral metanarratives is that this point of view is an ethos in and of itself. Not all groups with modern society agree

that morality should be defined by individualized codes. Most notably, radical Islamists believe that contemporary Western society allows for individuals to behave in any way in which they want to behave, even if that behavior is against the will of Allah. Thus, they reject the postmodern worldview in favor of restoring a Caliphate that would use the coercive power of the state to enforce a moral code upon the people. To a lesser extent Conservative Christians seek to restrict personal choice on issues such as abortion; environmentalists seek to restrict personal choice in consumption of resources; and other group pressure legislatures to enforce their views on morality, no matter if other groups in society agree with them or not. While the postmodern ethos has entered the moral discourse, many groups cling to modern or premodern ethos. However, as individuals define themselves by membership in a greater number of social groups, they become more isolated from other members of their own social groups. In a way, even those who reject postmodern society the most back into a fragmented postmodern morality.

Indicators of Fragmentation of Morality.

Many factors can contribute to the ethos of individuals within a society. Therefore, may factors can influence whether a country's has enough different ethos to be considered morally fragmented. In addition, there are substantial challenges to modeling fragmentation of morality on the country level. First, there is often not satisfactory research on whether individuals consider themselves to be part of the moral mainstream within their country. In addition, an issue that could be considered of moral consequence in one country may not be part of the national moral debate within another. Finally, what data is available regarding morality from cross-national samples is generally gathered on

the individual level and is not gathered for a large number of countries. However, using the concept of ethos, and what various researchers have suggested makes up a person's ethos, several theoretical indicators of moral fragmentation can be used to determine which relationships are of most value in determining whether a society is morally fragmented.

Class: Ossowska suggests that social class is one of the biggest determinants of the moral values one holds. Therefore, distribution of social classes within a society should indicate fragmentation of morality. However, this indicator cannot be captured within one variable. The World Bank calculates five variables that measure the distribution of wealth held by the various income quintiles of countries: "Income share held by highest 20%", "Income share held by highest 20%", "Income share held by second 20%", "Income share held by third 20%", "Income share held by forth 20%", and "Income share held by lowest 20%". While each of these variables is related, they are not necessarily dependent upon each other in absolute terms, in that the while the proportion of income share held in any one groups does provide a maximum amount of income share held by all the other groups, it does not determine the distribution of income share held in the other groups as a whole. Therefore, it is not appropriate to use a reference category. In theory, countries with large class divisions will feature more fragmentation of morality.

Ethnicity: If it is true that ethnicity influences ethos, then ethnically homogenous countries will likely be more morally unified, since the population shares culture, traditions, and beliefs passed down over time. Countries with greater ethnic diversity will

most likely demonstrate more fragmentation of morality. In this study, the ethnic make-up of countries will be analyzed using two variables. Both are drawn from data published by the United States Central Intelligence Agency in their World Factbook. First, countries will be assessed as to whether they have a majority ethnic group, which is defined as 50% or more of the population being members of one ethnic group. Second, countries will be assessed as to how many other ethnic groups may have influence in a society. This variable is coded as a count of ethnic groups listed that represent over 5% of the population in a given country. Using both variables, one can gain an understanding of the effect of both a dominant ethnic group and the dispersion of ethnicity within a county as regarding normative fragmentation. However, there are several weaknesses to these variables. First, because the CIA gathers data on ethnicity from mainly public sources, ethnicity was defined differently in different countries. For example, Kenya's data enumerates specific tribes to which individuals belong, where as the United States data is based upon race. However, this data is appropriate in that ethnic divisions in countries will be manifest differently in different countries. In a country like the U.S. racial divisions are paramount, where as in Bosnia and Herzegovina race is irrelevant as conflict occurs between Caucasian ethnic groups (i.e., Serbians, Croatians, and Bosniaks). In theory, countries with a majority ethnic group will demonstrate a less fragmented normative system; and countries with more ethnic diversity will demonstrate a more fragmentation normative system.

Religion: Religions have traditionally be strong purveyors of moral laws which describe how one should lead a good life. Therefore, countries with a dominant religion

will tend to feature more moral unity, while countries with more religious diversity will demonstrate more moral fragmentation. In this study, the religious make-up of countries will be analyzed using two variables. Both are drawn from data published by the United States Central Intelligence Agency in their World Factbook. First, countries will be assessed as to whether they have a majority religious group, which is defined as 50% or more of the population being members of one religious group. Second, countries will be assessed as to how many other religions may have influence in a society. This variable is coded as a count of religions listed that represent over 5% of the population in a given country. Like data the on ethnicity, this data has several flaws. First, because the CIA gathered it from official sources, religions are defined by the given country. This may represent some conflicts in the data. For instance, Austria places all Protestants into one category where as Belize divides Protestants by denomination. However, the data was used as presented in the Factbook based upon the assumption that the countries define religion in a way that is appropriate for describing their own culture[8]. Theoretically, countries with one majority religion will demonstrate less fragmentation of morality, while those with more religious diversity will demonstrate more fragmentation of morality.

Ideology: Ideology has been suggested as a factor that contributes to ethos. Therefore, ideology should be examined in its relationship to fragmentation of morality. Two variables were selected from the World Values Survey to serve as proxy variables

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[8] One exception was made to this coding scheme. The United States groups all Protestants into one group. However, because Hunter (1990) argues that two Protestantisms exist in the U.S., a progressive one and an orthodox one. Therefore, an extra point was added to the U.S. on the second variable in order to account for this division.

for ideology. First, a variable representing each respondent's self-positioning on a political scale (1 = left, 10 = right) was used to find an average ideology score for each participating country. In theory, countries with an average near the middle of the scale would be the most ideological diverse as they do not have a dominant right-wing or left-wing movement. However, the variable has a weakness in that it is not directly measuring ideological divides within a country; it is only approximating it. However, it does provide a useful proxy for a variable not easily measured. The second variable serving as a proxy for ideology tried to capture the economic ideology of the countries by asking whether countries should attempt to make income more equal or if larger income differences serve as incentives for productivity (1 = more equal, 10 = larger difference). This variable has the same advantages and disadvantages of the previous variable. However, it is especially useful in that economic ideology seems paramount the late modern era. In both cases, countries with ideologies near the middle of the data range should have the most division in ideology and thus will demonstrate more fragmentation of morality.

Education: Public school systems are one of the primary ways in which a governments can build an ethos to enforce their moral ideas. Two values were used to examine the effect of education on fragmentation of normative systems, "School enrollment, primary (% of net)" and "School enrollment, secondary (% of net)". Both were calculated from World Bank data using six-year average between 2002 and 2007. The two variables were used in order to represent two different aspects of education that could produce different effects of socialization. In theory, countries that have low secondary enrollment will demonstrate more fragmented morality as the government's

ethos cannot be easily transmitted. This will be intensified for countries with low primary school enrollment.

Language/Literacy: James Davidson Hunter was referring to a symbolic language that is necessary for the public negotiation of morality. However, it is conceivable that not having a common language of communication within a country may prevent moral negotiation. Common language is hard to define though. For instance, French is the official language of Mali, but 80% of the population primarily speaks Bambara. In addition, countries such as the United States have no official language at all, though they do have one language that is commonly spoken. Another aspect of language as a way of transmitting values is literacy. Countries that have an official language or a predominant language can have high illiteracy rates. Thus, materials that transmit values, such as newspapers and books, may not be accessible to all people. Because of these considerations a complex coding scheme was created using data from the CIA World Factbook. Common language was calculated by taking into account data from two variables. First, countries that had one official language or a language spoken by over 90% of the population were coded as having a common language. Next, countries with an official language but less than 90% literacy were recoded as not having a common language. This change takes into account the fact that that official language may not be the *lingua franca* of that country. The major weakness of this data is that it takes into account only primary language spoken by individuals within a country. Countries like Canada that demonstrate a large amount of bilingualism among their linguistic minorities are still coded as not having a common language. This will provide error in the analysis.

However, because moral rules are learned at the early ages, the primary language an individual speaks can most likely have a large influence on his or her moral development. In theory, countries without a common language will be more likely to demonstrate fragmentation of morality.

Internet use: The more an individuals are exposed to globalized communications, the more moral ideas they will be experience. Therefore, how much access residents of a country have to globalized communications will indicate fragmentation of morality. The variable "Internet users (per 100 people)" as calculated by the World Bank data using six-year averages including 2002 to 2007 represented this indicator. In theory, as the number of internet users in a country increases, the amount of fragmentation of morality will increase as well.

Morality: As stated at the beginning of this section, what is considered a moral issue varies between countries. However, the World Values Survey features a section of questions regarding whether certain acts are ever justified that include moral issues that are generalizable to many countries. Three of these were selected for this research: justifiable to cheat on taxes, homosexuality justifiable, and prostitution justifiable. Each of the variables was measured on a one to ten scale (1 = never justifiable, 10 = always justifiable). The variables were recoded into dichotomous variables where those who scored between one and five were considered to tend towards not justifiable, and those who scored between six and ten were considered to tend towards justifiable. Percentages were determined for the proportion of members in each category. The different between the percentages in the categories was calculated. The absolute values of these scores were

used to produce three new variables representing the residual scores between the groups.

These three variables were further recoded into four variables representing fragmentation

on that moral question, where countries with residual scores between 81 and 100 were

coded as '1 = not fragmented'; those with residual scores between 61 and 80 were coded

as '2 = slightly fragmented'; those with residual scores between 41 and 60 were coded as

'3 = somewhat fragmented'; those with residual scores between 21 and 30 were coded as

'4 = fragmented'; and those with residual scores between 0 and 20 were coded as '5 =

very fragmented'. Thus, each of these variables represents a moral that can be held by a

culture. In theory, countries with fragmented normative systems will demonstrate high

levels of fragmentation on all of these variables.

Hypotheses and Analysis

As this dissertation is a preliminary study of social fragmentation, it is most

appropriate to describe the relationships between the various indicators of fragmentation

of morality. The first step is to create a model including the hypothesized relationships

between the predictor variables. The second step will use curve estimation to determine if

the hypothesized relationships can best be described as linear or curvilinear relationships.

Finally, structural equations models will be calculated taking into account the type of

relationship between the variables described in column two.

Model Specification

Figure 6.2 demonstrates the model as specified in the initial relationships. The

model includes eight indicators of fragmentation of morality, measured in 15 independent

variables. Fragmentation of morality is itself measured in three variables. Each variable

itself makes a direct prediction of fragmentation of morality, although for the sake of parsimony Figure 6.2 displays only one arrow per indicator. The exception to this is from the indicator education, where elementary education enrollment predicts secondary enrollment as well as having a direct prediction of the three dependent variables representing fragmentation of morality.

Because theory suggests that ethnicity contributes to ethos, two variables were measured in order to capture the effect of ethnicity. In theory, because ethnic diversity increases the diversity of ethos, and thus fragmentation of morality, it is hypothesized that countries with a majority ethnic group will demonstrate lower scores on the fragmentation scales for all dependent variables. Conversely, countries with larger numbers of ethnic groups will demonstrate higher scores on the fragmentation scales for all dependent variables.

Theory also suggests that religion also influences ethos. Thus, religious diversity should increase the number of ethos in a country, and thus would increase fragmentation of morality. It is hypothesized that countries with majority religions will demonstrate lower scores on the fragmentation scales for all dependent variables. Conversely, countries with a larger number of religious groups will demonstrate higher scores on the fragmentation scales for all dependent variables.

Theory also suggests class influences ethos, so the five variables representing social class also influenced ethos. In theory, if there is a dominant class within a country, there will be less fragmentation of morality in that the morals of that class will suppress the morality of other classes. Therefore, it is hypothesized that as the size of any social

class increases there will be little change fragmentation of morality until a point at which that class become the dominant class, at which point fragmentation of morality will decrease.

Because presence of a common language would allow for the easier dissemination of moral ideas, countries without a common language will demonstrate higher scores on fragmentation scales for all dependent variables.

Because education is a way of socializing children to certain moral ideals, it is hypothesized that countries with greater enrollment in schools will feature less moral fragmentation. However, the effect of education might also be the opposite, where education exposed individuals to more ways of thinking about the world; thus, diversifying their ethos. If this hypothesis is correct, countries with higher school enrollment will feature more moral fragmentation.

Finally, because the internet allows individuals to explore a greater number of moral ideas, high levels of internet usage may diversity ethos within a country. Therefore, it is hypothesized that countries with greater number of internet users will have more fragmentation of morality.

Curve Estimation: Results

For the hypotheses dealing with number of ethnicities, number of religions, income, education, internet usage, ideology scale, and income equality scale, three possible relationships were estimated: linear, quadratic, and cubic. The best model is assumed to be the linear relationship if it is the most parsimonious and significant model. The quadratic relationship is the best model if it is substantially more significant than the

linear relationship or substantially improves upon the proportion of the dependent

variable predicted by the independent variable as compared to the linear relationship. The

cubic relationship is the best model if it is substantially more significant than the

quadratic relationship or substantially improves upon the proportion of the dependent

variable predicted by the independent variable as compared to the quadratic relationship.

Substantial improvement is defined as increasing the R^2 by more than .01 (i.e.,

accounting for 1% more of the variability between the two variables. If a higher order

model improves upon the previous model, but the model loses significance, the lower

order model is chosen for further analysis. The variables dealing with majority ethnic

group, majority religion, and presence of a common language were dichotomous. Thus,

only linear models could be calculated, and was always assumed to be the best model.

For all hypotheses, the level of significance of the research is .10 as all of the

comparisons use fewer than 100 cases.

Majority Ethnicity to Cheating on Taxes: (n = 81) The linear relationship was not

significant, and predicted none of the variation (R^2 = .000). It did not seem as if having a

majority ethnic group has an effect upon fragmentation regarding whether it is ever

justified to cheat on ones taxes.

Majority Ethnicity to Homosexuality: (n = 82) The linear relationship was not

significant, and predicted almost none of the variation (R^2 = .008). It did not seem as if

having a majority ethnic group has an effect upon fragmentation regarding whether

homosexuality is ever justified.

Majority Ethnicity to Prostitution: (n = 74) The linear relationship was not significant, and predicted almost none of the variation (R^2 = .002). It did not seem as if having a majority ethnic group has an effect upon fragmentation regarding whether homosexuality is ever justified.

Number of Ethnicities to Cheat on Taxes: (n = 79) All of the models were significant (linear and cubic: p = .001; quadratic: p = .006). The cubic model (R^2 = .223) predicted a moderate amount of the variation and improved upon the quadratic model (R^2 = .171). However, the quadratic model did not improve upon the linear model (R^2 = .170). This presented a challenge to the rule for improvement of the model. However, the magnitude of the difference between the quadratic and the cubic models necessitates making an exception to the rule. Therefore, the latter model was selected for further analysis. The data indicate that countries with only one major ethnic group demonstrated no fragmentation regarding whether it is ever justified to cheat on ones taxes. Fragmentation on this issue increases so that countries that have three major ethic groups tend to be somewhat fragmented. Level of fragmentation remains steady until countries have six major ethnic groups when fragmentation increases sharply to the point where countries with eight major ethnic groups are very fragmented. A caveat is important. Only one country in this sample, Uganda, has eight ethnic groups, and it is very fragmented. No countries have seven ethnic groups. Only one country has six ethnic groups, the Philippines, and it is only somewhat fragmented. Because of the large difference between these two countries, an outlier effect may be operating on this

variable. However, the relationship may be in keeping with the initial hypothesis in that as the number of ethnic groups increases fragmentation does as well.

Number of Ethnicities to Homosexuality: (n = 80) None of the models were significant and the quadratic model (R^2 =.007) did not improve upon the linear model (R^2 = .002). Even thought it predicted almost none of the variability, the linear model was selected for further analysis. It seems as if there is no relationship between number of ethnicities in a country influences fragmentation regarding whether homosexuality is ever justified.

Number of Ethnicities to Prostitution: (n = 72) None of the models were significant. The linear model (R^2 = .003) predicted almost none of the variability, but was not improved upon by the quadratic model (R^2 = .007). Thus, the quadratic model was selected for further analysis. However, it does not seem as if the number of ethnicities in a country influences fragmentation regarding whether prostitution is every justified.

Majority Religion to Cheating on Taxes: (n = 83) The linear relationship was not significant, and predicted almost none of the variation (R^2 = .007). It did not seem as if having a majority religion has an effect upon fragmentation regarding whether it is ever justified to cheat on ones taxes.

Majority Religion to Homosexuality: (n = 84) The linear relationship was not significant, and predicted none of the variation (R^2 = .002). It did not seem as if having a majority religion has an effect upon fragmentation regarding whether homosexuality is ever justified.

Majority Religion to Prostitution: (n = 74) The linear relationship was not significant, and predicted very little of the variation (R^2 = .010). It did not seem as if having a majority religion has an effect upon fragmentation regarding whether homosexuality is ever justified.

Number of Religions to Cheat on Taxes: (n = 83) None of the relationships were significant. The linear model (R^2 = .014) accounted for a very small amount of the variation, and was not improved upon by the quadratic model (R^2 = .014). Thus, even though it predicted almost one of the variability, the linear model was selected for further analysis. However, it does not seem as if the number of religions in a country influences fragmentation regarding whether cheating on taxes is ever justified.

Number of Religions to Homosexuality: (n = 84) Only the linear model was significant (p = .079). It (R^2 = .045) accounted for a small amount of the variation, and was not improved upon by the quadratic model (R^2 = .048). Thus, the linear model was selected for further analysis. The data indicate the countries with one major ethnic group tend to be between somewhat fragmented and fragmented. The amount of fragmentation regarding whether homosexuality is ever justifiable declines until countries with the most ethnic groups, six, tended to be only slightly fragmented. The implication of this find are not clear since the original hypothesis stated that within a given country, the more the religious diversity, the more moral fragmentation would be present. More research on this topic is required.

Number of Religions to Prostitution: (n = 76) None of the models were significant. The linear model (R^2 = .007) predicted a small portion of the variation, and

was not improved upon by the quadratic model ($R^2 = .012$). Thus, the linear model was selected for further analysis, even though it does not appear as if the number of religions in a country influences fragmentation regarding whether homosexuality is ever justified.

Common Language to Cheat on Taxes: (n = 83) The linear model ($R^2 = .007$) was not significant and predicted almost none of the variation. It does not seem as if having a common language influences fragmentation regarding whether cheating on taxes is ever justified.

Common Language to Homosexuality: (n = 84) The linear model was significant (p = .001), and accounted for a small amount of the variation ($R^2 = .035$). The data indicate that countries without a common language tend to be somewhat fragmented, while countries with a common language tend to be fragmented in regards to whether homosexuality is ever justified. While this hypothesis runs counter to the original hypothesis, it might be explained by modernization in that the variable for common language strongly correlates with the World Bank's Human Development Index (HDI; r = .84). Essentially, countries with a common language are more developed, and thus should demonstrate more fragmentation of morality.

Common Language to Prostitution: (n = 76) The linear model was not significant and predicted a very small amount of the variation ($R^2 = .036$). It does not seem as if having a common language influences fragmentation regarding whether prostitution is ever justified.

Top 20% Income to Cheat on Taxes: (n = 65) Only the quadratic model (p = .071) and the cubic model (p = .069) were significant. The quadratic model ($R^2 = .101$

accounted for a moderate amount of the variability, and improved upon that linear model ($R^2 = .001$), but was not improved upon by the cubic model ($R^2 = .101$). The data indicate that countries with the least income concentrated in the hands of the upper class (approximately 37%) tend to be fragmented regarding whether homosexuality is ever justified. The amount of fragmentation decreases sharply until countries where the upper class has a 49% income share are only slightly fragmented on this issue. Fragmentation then increases to the point where countries with the largest income share held by the upper class (approximately 63%) tend to be close to very fragmented. This finding partially supports the original hypothesis that class has an effect upon fragmentation of morality. Because income share held by the upper class is moderately negatively correlated with the HDI ($r = -.31$), it can be assumed that countries with the smallest income share held by the upper class are the most modern and thus should be more fragmented. However, the upswing in fragmentation as income share increase is harder to understand. Perhaps there is a cultural interaction of some type. More research is needed to determine why this is a quadratic relationship.

> *Top 20% Income to Homosexuality*: (n = 65) None of the models were significant. The quadratic model ($R^2 = .040$) explained a small amount of the variation, and improved upon the linear model ($R^2 = .000$). It was not improved upon the cubic model ($R^2 = .039$). Thus, the quadratic model was selected for further analysis, even though it does not appear as if a country having more wealth concentrated in the upper class influences fragmentation regarding whether homosexuality is ever justified.

Top 20% Income to Prostitution: (n = 60) None of the models were significant. The quadratic model (R^2 = .044) explained a small amount of the variation, and improved upon the linear model (R^2 = .003). It was not improved upon the cubic model (R^2 = .041). Thus, the quadratic model was selected for further analysis, even though it does not appear as if a country having more wealth concentrated in the upper class influences fragmentation regarding whether prostitution is ever justified.

2nd 20% Income to Cheat on Taxes: (n = 65) None of the models were significant. The linear model (R^2 = .009) predicted almost none of the variation, and was not improved upon by the quadratic model (R^2 = .013). Thus, the linear model was selected for further analysis, even though it does not appear as if a country having more wealth concentrated in the upper middle class influences fragmentation regarding whether cheating on taxes is ever justified.

2nd 20% Income to Homosexuality: (n = 65) The quadratic model (p = .063) and the cubic model (p = .071) were significant. The quadratic model (R^2 = .105) explained a moderate amount of the variation, and improved upon the linear model (R^2 = .001). It was not improved upon the cubic model (R^2 = .101). Thus, the quadratic model was selected for further analysis. The data indicate that countries with the smallest share of income held by the upper middle class (approximately 6%) are very fragmented on whether homosexuality is ever justified. Fragmentation on this issue then declines precipitously until the upper middle class hold about 10% income share when countries are only slightly fragmented. Countries with the most income share concentrated in the upper middle class (approximately 14%) tend to be fragmented. This is a surprising trend in that

income share held by the upper middle class and the HDI are moderately correlated ($r =$ .28). If modernization does bring about fragmentation then countries with a developed middle class should be more modern and thus more fragmented. This was only half true in that countries with the smallest income share concentrated in the upper middle class tended to be even more fragmented that the most developed countries. The reasons for this are unclear, and more research is needed on this relationship.

2nd *20% Income to Prostitution*: ($n = 60$) None of the models were significant. The quadratic model ($R^2 = .028$) explained a small amount of the variation, and improved upon the linear model ($R^2 = .000$). It was not improved upon the cubic model ($R^2 = .028$). Thus, the quadratic model was selected for further analysis, even though it does not appear as if a country having more wealth concentrated in the upper middle class influences fragmentation regarding whether prostitution is ever justified.

3rd *20% Income to Cheat on Taxes*: ($n = 65$) None of the models were significant. The linear model ($R^2 = .015$) predicted almost none of the variation, and was not improved upon by the quadratic model ($R^2 = .016$). Thus, the linear model was selected for further analysis, even though it does not appear as if a country having more wealth concentrated in the middle class influences fragmentation regarding whether cheating on taxes is ever justified.

3rd *20% Income to Homosexuality*: ($n = 65$) The quadratic model ($p = .041$) and the cubic model ($p = .035$) were significant. The quadratic model ($R^2 = .120$) explained a moderate amount of the variation, and improved upon the linear model ($R^2 = .003$). It was not improved upon the cubic model ($R^2 = .125$). Thus, the quadratic model was selected

for further analysis. The data indicate that countries in which the middle class holds the smallest income share (approximately 10%) tend to be very fragmented regarding whether homosexuality is ever justifiable. Fragmentation on this issue then decreases until countries in which the middle class hold approximately 14% of the income share are only slightly fragmented. There is then an increase in fragmentation to the point where countries in which the middle class hold approximately 18% of the income share are fragmented on this issue. The high levels of fragmentation among the countries with the highest income share concentrated in the middle class is expected, in that income share and the HDI are moderately correlated ($r = .36$). Thus, the more developed countries, which are most likely more modern, do have higher levels of fragmentation. However, the high levels of fragmentation among countries with the smallest income share held by the middle class were unexpected. Thus, this finding requires more research.

3rd *20% Income to Prostitution*: (n = 60) None of the models were significant. The quadratic model ($R^2 = .058$) explained a small amount of the variation, and improved upon the linear model ($R^2 = .000$). It was not improved upon the cubic model ($R^2 = .059$). Thus, the quadratic model was selected for further analysis, even though it does not appear as if a country having more wealth concentrated in the middle class influences fragmentation regarding whether prostitution is ever justified.

4th *20% Income to Cheat on Taxes*: (n = 65) None of the models were significant. The linear model ($R^2 = .030$) predicted almost none of the variation, and was not improved upon by the quadratic model ($R^2 = .031$). Thus, the linear model was selected for further analysis, even though it does not appear as if a country having more wealth

concentrated in the lower middle class influences fragmentation regarding whether cheating on taxes is ever justified.

4th *20% Income to Homosexuality*: (n = 65) Both the quadratic model (p = .055) and cubic model were significant (p = .051). The quadratic model (R^2 = .109) predicts a moderate amount of the variation, and improves upon the linear model (R^2 = .004). However, the cubic model (R^2 = .112) does not improve upon it. Thus, the quadratic model was selected for further analysis. The data indicate that for countries with a smaller lower middle class (approximately 18%) are very fragmented regarding whether homosexuality is ever justifiable. The amount of fragmentation drops until countries with about 21% of income concentrated in the lower middle class are only slightly fragmented. The amount of fragmentation then increases until countries with about 23% of income concentrated in the lower middle class are somewhat fragmented. The implications of this finding are unclear. If member of a lower middle class held more traditional morality, then it would seem that the larger the lower middle class, the less fragmentation there should be. On the other hand if the lower middle class enjoyed the same advantages of modernity that higher classes did, perhaps there would be less need for a class based ethos making fragmentation increase. Perhaps, both of the interpretations are true. In countries, with a weaker lower middle class there might not be a strong class consciousness. However, as the income share, and thus the power, of the lower middle class, increases, it is possible that a class consciousness develops that is generalized to other income groups within a society, thus, alleviating fragmentation. Then as the income

share of the lower middle class increases it achieves the benefits of modernity (e.g., education) that increase fragmentation in a society.

4th 20% Income to Prostitution: (n = 60) Both the quadratic model (p = .042) and cubic model were significant (p = .035). The quadratic model (R^2 = .132) predicts a moderate amount of the variation, and improves upon the linear model (R^2 = .005). However, the cubic model (R^2 = .138) does not improve upon it. Thus, the quadratic model was selected for further analysis. The data indicate that for countries with a smaller lower middle class (approximately 18%) are very fragmented regarding whether homosexuality is ever justifiable. The amount of fragmentation drops until countries with about 21% of income concentrated in the lower middle class are between slightly fragmented and not at all fragmented. The amount of fragmentation then increases until countries with about 23% of income concentrated in the lower middle class are somewhat fragmented. Like the other relationships with class and moral fragmentation, this finding is unclear. Because of the relationship between the classes and the HDI, it should seem that the most developed countries would have the most moral fragmentation. The data do suggest that. However, it would also suggest that the countries with the smallest share of income concentrated in the middle class would have the least fragmentation of morality. This did not prove to be the case. Further research is needed to address this discrepancy.

Bottom 20% Income to Cheat on Taxes: (n = 65) None of the models were significant. The linear model (R^2 = .001) accounted for almost none of the variability, but was not improved upon by the quadratic model (R^2 = .006). Thus, the linear model was selected for further analysis, even though it does not appear as if a country having more

wealth concentrated in the lower class influences fragmentation regarding whether cheating on taxes is ever justified.

Bottom 20% Income to Homosexuality: (n = 65) None of the models were significant. The cubic model (R^2 = .035) accounted for a small amount of the variability, and improved upon the quadratic model (R^2 = .015), which in turn improved upon the linear model (R^2 = .002). Thus, the cubic model was selected for further analysis although it does not seem as if the income share held by the lower class influences fragmentation regarding whether homosexuality is ever justifiable.

Bottom 20% Income to Prostitution: (n = 60) None of the models were significant. The linear model (R^2 = .007) predicted almost none of the variation, but was not improved upon by the quadratic model (R^2 = .007). Thus, the linear model was selected for further analysis, even though it does not appear as if a country having more wealth concentrated in the lower class influences fragmentation regarding whether prostitution is ever justified.

Primary Enrollment to Secondary Enrollment: (n = 140) All models were highly significant (p < .001 for all). The quadratic model (R^2 = .542) accounted for a large portion of the variability and substantially improved upon the linear model (R^2 = .525), but was not improved upon by the cubic model (R^2 = .549). Thus, the quadratic model was selected for further analysis. This relationship is not surprising as primary enrollment is seen as a bench mark of development, while at this time secondary enrollment is does not hold the same priority in developmental circles.

Primary Enrollment to Cheat on Taxes: (n = 74) None of the models were significant. The linear model (R^2 = .009) predicted almost none of the variation, but was not improved upon by the quadratic model (R^2 = .016). Thus, the linear model was selected for further analysis, even though it does not appear as if a elementary school enrollment influences fragmentation regarding whether cheating on ones taxes is ever justified.

Primary Enrollment to Homosexuality: (n = 74) All of the models were significant (linear: p = .004; quadratic and cubic: p = .001). The cubic model (R^2 = .231) predicted a moderate amount of the variation, and improved upon the quadratic model (R^2 = .212), which in turn improved upon the linear model (R^2 = .136). Thus, the cubic model was selected for further analysis. The data indicate that countries with the lowest primary school enrollment (approximately 40%) tend to be between slightly and somewhat fragmented as to whether homosexuality is ever justifiable. Fragmentation then declines until enrollment is about 70% where countries are not at all fragmented. Finally, fragmentation climbs sharply so that countries with almost full enrollment are very fragmented. Of the two proposed hypotheses for the relationship between primary school enrollment and moral fragmentation, the second generally holds to be true in that countries with lower levels of enrollment are less fragmented as to whether homosexuality is ever justifiable than those with near universal enrollment. This is an important finding in that it implies that the more educated a population, the more likely it is to have divisions over moral issues. The higher amount of fragmentation in the

countries with the least primary education does not conform to this hypothesis, but may be an outlier effect.

Primary Enrollment to Prostitution: (n = 66) None of the models were significant. The quadratic model (R^2 = .035) accounted for a very small portion of the variation, and substantially improved upon the linear model (R^2 = .013), but was not improved upon by the cubic model (R^2 = .036). Thus, the quadratic model was selected for further analysis although it does not seem as if primary school enrollment has an effect upon fragmentation regarding whether prostitution is every justifiable.

Secondary Enrollment to Cheat on Taxes: (n = 74) None of the models were significant. The cubic model (R^2 = .076) accounted for a small amount of the variability, and improved upon the quadratic model (R^2 = .003). What quadratic model did not substantially improve upon the linear model (R^2 = .002), but due to the magnitude of the difference between the quadratic and cubic models, the latter was selected for further analysis. However, it does not seem as if secondary school enrollment has any effect upon fragmentation regarding whether cheating on ones taxes is ever justified.

Secondary Enrollment to Homosexuality: (n = 74) All of the models were significant (linear: p = .001; quadratic: p = .002; cubic: p = .005). The quadratic model (R^2 = .230) accounted for a moderate amount of the variation, and improved upon the linear model (R^2 = .197), but was not improved upon by the cubic model (R^2 = .236). Thus, the quadratic model was selected for further analysis. The data indicate that in countries with the lowest secondary school enrollment (approximately 10%) countries tend to be between not at all and slightly fragmented regarding whether homosexuality is

ever permissible. Levels of fragmentation remain relatively steady until enrollment reaches about 40%, at which point they increase. When enrollment is near universal, countries tend to be very fragmented. Like the relationship between elementary enrollment and fragmentation regarding whether homosexuality is ever justifiable, this finding supports the hypothesis that education increases fragmentation of moral systems. Modern education exposes students to large amounts of information, including different ways of thinking about the world. Thus, countries that have more students attending school will have had a greater portion of their population exposed to different moral systems. It follows that these countries would be the most fragmented.

Secondary Enrollment to Prostitution: (n = 66) None of the models were significant. The linear model (R^2 = .030) accounted for a very small amount of the variation, and was not improved upon by the quadratic model (R^2 = .032). Thus, the linear model was selected for further analysis although it does not seem as if secondary school enrollment has any effect upon fragmentation regarding whether prostitution is ever justified.

Internet Usage and Cheat on Taxes: (n = 83) None of the models were significant. The linear model (R^2 = .030) accounted for a very small amount of the variation, and was not improved upon by the quadratic model (R^2 = .030). Thus, the linear model was selected for further analysis although it does not seem as if the number of internet users per 100 people has any effect upon fragmentation regarding whether cheating on ones taxes is ever justified.

Internet Usage to Homosexuality: (n = 74) All of the models were significant (p < .001 for all). The quadratic model (R^2 = .320) accounted for a moderate amount of the variation, and improved upon the linear model (R^2 = .308), but was not improved upon by the cubic model (R^2 = .329). Thus, the quadratic model was selected for further analysis. The data suggest that in countries with almost no internet users per 100 people fragmentation regarding whether homosexuality is ever justified is non-existent. Fragmentation on this issue then increases until countries have about 50 users per 100 people, at which point they tend to be fragmented. Fragmentation is then steady as usage increases. This finding strongly supports the hypothesis that countries with more exposure to modern communication increase fragmentation of morality. Similarly to how education probably works on morality, individuals who use the internet, or other mass media, are exposed to a variety of different moral frameworks. Once they know these exist, they can adopt new moral perspectives if they feel it will be of benefit to them.

Internet Usage to Prostitution: (n = 76) All of the models were significant (linear: p = .010; quadratic: p = .031; cubic: p = .058). The linear model (R^2 = .111) accounted for a moderate amount of the variation, and was not improved upon by the quadratic model (R^2 = .117). Thus, the linear model was selected for further analysis. The data suggest that countries with almost no internet users per 100 people are between not at all and slightly fragmented regarding whether prostitution is ever justified. When internet usage is at its highest point (approximately 70 uses per 100) countries tend to be somewhat fragmented. This finding confirms the hypothesis that societies which use more modern communications will experience more fragmentation. Like the relationship

between internet usage and whether homosexuality is ever justifiable, the finding suggests that countries where individuals can be exposed to a greater number of moral frameworks will demonstrate greater amount of moral fragmentation.

Income Equalization to Cheat on Taxes: (n = 63) None of the models were significant. The linear model (R^2 = .003) accounted for almost none of the variation, and was not improved upon by the quadratic model (R^2 = .003). Thus, the linear model was selected for further analysis although it does not appear that where a country falls on the ideology of income equalization has an influence upon fragmentation of morality.

Income Equalization to Homosexuality: (n = 62): All of the models were significant (linear: p = .004; quadratic and cubic: p = .001). The quadratic model (R^2 = .214) accounted for a moderate amount of the variation, and improved upon the linear model (R^2 = .132), but was not improved upon by the cubic model (R^2 = .208). Thus, the quadratic model was selected for further analysis. In theory, countries towards the middle of this particular ideological scale should demonstrate more fragmentation regarding whether homosexuality is justified because they are the most likely to have ideological diversity, while those countries that are more to the extremes ideologically will have less fragmentation. Results suggested that this is true. Countries with the lowest scores on the income equalization side of the ideological scale (approximately 4) tend to be between slightly and somewhat fragmented. Fragmentation increases to the point where countries at the exact middle of the scale (approximately 5.5) are between somewhat fragmented and fragmented. Fragmentation then drops precipitously so that countries near the top of the not equalized side demonstrate almost no fragmentation regarding whether

homosexuality is ever justified. This strongly supports the theory that ideology helps to create an ethos, where differences in ethos lead to fragmentation of morality. Countries with moderate scores tended to be more fragmented, which most likely implies that they have a greater diversity of ethos.

Income Equalization to Prostitution: (n = 55): Only the linear model was significant (p = .083), though it accounted only a small amount of the variability (R^2 = .056). Thus, it was selected for further analysis. Countries with the lowest scores on the income equalization side of the ideological scale (approximately 4) tend to be between somewhat fragmented regarding whether prostitution is ever justifiable, while countries at the non-equalized extreme (approximately 8) were not at all fragmented. This does not support the hypothesis that ethos inspired by ideology influences fragmentation because the low levels of fragmentation are only found at one ideological extreme. However, it is interesting that countries with more of a left wing consensus in terms of income redistribution are more divided regarding whether prostitution is ever justifiable. More research is necessary to understand this relationship.

Ideology Scale to Cheat on Taxes: (n = 67) None of the models were significant. The linear model (R^2 = .005) accounted for almost none of the variation, and was not improved upon by the quadratic model (R^2 = .009). Thus, the linear model was selected for further analysis although it does not appear that where a country falls on the ideology scale has an influence upon fragmentation of morality.

Ideology Scale to Homosexuality: (n = 64) The linear model (p = .061) and the cubic model (p = .038) were significant. The cubic model (R^2 = .130) accounted for a

moderate amount of the variation, and improved upon the quadratic model ($R^2 = .072$), which in turn improved upon the linear model ($R^2 = .055$). Thus, the cubic model was selected for further analysis. The data indicate that countries at the left most extreme of the ideology scale (approximately 3.5) were not at all fragmented regarding whether homosexuality is ever justified. Fragmentation levels then increased sharply until countries at the middles of the scale (approximately 5.5) were between somewhat fragmented and fragmented. There was then a sharp decline in fragmentation levels to the where countries with a score of about 7.5 were not at all fragmented. This supports the theory that ideological uniformity creates a common ethos in a country, which in turn helps to bring about normative unity. Countries closer to the center of the ideological scale probably have more ideological diversity, thus no common ethos. The lack of that common ethos will increase moral fragmentation.

Ideology Scale to Prostitution: (n = 56) None of the models were significant. The linear model ($R^2 = .036$) accounted for a small amount of the variation, and was not improved upon by the quadratic model ($R^2 = .038$). Thus, the linear model was selected for further analysis although it does not appear that where a country falls on the ideology scale has an influence upon fragmentation of morality.

Curve Estimation: Discussion

The curve estimations demonstrated several important findings. First, whether it is ever justifiable for one to cheat on their taxes is of no utility in studying fragmentation of morality. The variable was calculated based upon data from the World Values Survey which classifies the question as a moral issue. However, the mean of the difference

between whether it is justifiable or not justifiable was relatively high (78.94%), which represents the very bottom of the range for slightly fragmented. Thus, there generally is moral agreement regarding whether one should pay their taxes. Further exploratory analysis suggests that on average 89% of people in each country feel it is never justified for one to not pay taxes. In other words, cheating on taxes is a moral issue that resonates throughout the world, but the overwhelming majority people in each country feel that it is immoral. Essentially, this was a poor variable to choose to represent moral fragmentation because there is simply not that much moral division on the issue. Because of its lack of utility this variable will be excluded from further analysis.

A similar effect is observed for fragmentation regarding whether prostitution is ever justifiable, where the mean of the difference between whether it is justifiable or not justifiable was relatively high (71.33%). Thus, on average countries are only slightly fragmented. While this is not quite so bad a variable to use in researching fragmentation of morality, it does not appear to have enough variability with which to build and adequate model. However, four predictor variables did show significant effects. Those will be discussed below.

The findings of the curve estimations did not support ethnicity as helping to form an ethos that in turn influences fragmentation of morality. If ethnicity does help to form ones ethos, then it would be expected that countries with few ethnicities would be more likely to have a common ethos, and thus have greater moral unity. However, on the two fragmentation variables that demonstrated some utility, homosexuality justifiable and prostitution justifiable, neither ethnicity variable demonstrated a significant relationship.

Essentially, there is no evidence that ethnicity has an effect of either increasing or decreasing moral fragmentation. Previously it was noted that the ethnicity data is wholly dependent upon the definition of ethnicity each country uses for itself. Thus, the variable may not actually be measuring the effect of one concept. Future research will need to be performed using a better measure of ethnicity in order to determine if ethnicity does actually have any effect upon fragmentation of morality. Because of their lack of utility, these variables will be excluded from further analysis.

The findings do not support religion as part of an ethos that contributes to or prevents moral fragmentation. In theory, countries with greater religious diversity should have greater diversity in ethos and thus greater moral fragmentation. However, on the variable representing fragmentation regarding whether homosexuality is ever justifiable, the opposite proved to be true. Countries with more religions demonstrate less fragmentation on that moral. The implications of this finding are unclear. In addition, none of the other relationships between the religion variables and the fragmentation variables are non-significant. Because of its general lack of utility, it is tempting to eliminate the religion variables from any further analysis. However, that would in effect remove a relationship that does not support the theory, which is not a methodologically sound option. However, since it did not show any utility, the variable regarding countries having a majority religion will be eliminated. The variable representing religious diversity will be retained.

Class is another factor that is said to influence the development of ethos. These curve analyses lent some support to the theory that class influenced ethos contributes to

fragmentation of morality. For all of the class variables except for income share held by the bottom 20% of people, countries with a more developed class system seemed to demonstrate a greater amount of moral fragmentation. This supports Ossowska's theory that class the modern class system causes different social classes to have different values and morals based upon what access they have to resources. Moreover, the findings support Bourdieu's view of ethos flowing from habitus. Because different classes have different social experiences, their ideas of what is proper or improper behavior vary – their moral frameworks are different. Essentially, the various social classes choose to follow morals based upon what is appropriate for their own situations. When a society many classes creating moral frameworks specific to themselves, those societies will become fragmented. That seems to be, at least in part, what is happening here.

The final indicator representing a possible contributor to ethos is ideology. Of the two variables representing ideology, the variable representing self-placement on the ideological scale supported the theory that countries with more ideological diversity have more ethoses, and thus have increased moral fragmentation. The key to this relationship is that countries with ideological uniformity have less fragmentation, while countries that seem to have more ideological diversity are more fragmented. This is perfectly in keeping with the idea that ideology underlies moral decision making.

The second variable associated with ideology was whether incomes should be equalized. This variable was selected specifically to address leftwing versus rightwing economic ideology. The ideal relationship supporting an ideology based ethos was found when this variable was compared to whether homosexuality is ever justifiable. In this

case, the extremes did show less fragmentation of morality. However, the same trend was not observed regarding whether prostitution is ever justified. In that case, the least fragmentation was seen in the most right wing countries. Leftwing countries, on the other hand, demonstrated the most fragmentation. The implication of this second relationship is unclear, though it may be possible that the left may see prostitution as a necessary evil some must use to survive. However, that is merely speculation and further research would be needed understand this relationship. However, taken with the findings regarding the ideology scale, it does seem as if ideology helps to form an ethos that creates a moral framework. Countries with more ideological diversity have multiple ethos, and thus more moral fragmentation.

Several variables associated with modernization were also considered, though they were not thought to influence ethos. First, the education variables showed that as educational levels increased, fragmentation regarding whether homosexuality is ever justifiable increased. This suggests that education serves as a force to expand diversity of thought in a country, which in turn increases moral fragmentation. Bauman argued that in modernity people do not wish to receive moral dictates. With education exposing more students to a greater number of perspectives about morality, the desire for individuals to make their own way must increase. Thus, countries with higher levels of education are most likely educating their citizens to adopt their own moral frameworks, no matter what governments try to enforce. This is the great irony of modernity. As the state steps forward to assume the responsibilities previously held by churches, they form social

institution that eventually undermine their ability to monopolize the culture within their borders.

The relationships between internet usage and the moral fragmentation variables provided strong evidence that countries in which citizens have greater access to global communications tend to be more fragmented. An internet search for almost any lifestyle could yield thousands of results. Countries with greater access to such a powerful tool of knowledge dissemination are bound to be more morally fragmented if for no other reason than their citizens simply have access to more perspectives on how to live a good life.

Finally, having a common language did support the idea that modern countries demonstrate more fragmentation of morality because the countries with a common language were the more modern countries and had greater amounts of fragmentation of the variable regarding whether homosexuality is ever justified.

In all, three of the four indicators related to the ethos had some predictive power for fragmentation regarding whether homosexuality is ever justified. The variables had much less success predicting fragmentation regarding whether prostitution is ever justified, in that only two ethos indicators and one modernization indicator had utility. In essence, fragmentation regarding homosexuality was a much better proxy for fragmentation of morality than fragmentation regarding prostitution was. This was because the former simply had more variability. However, both of those variables will be included in further analyses.

Taken together the curve estimations suggest that both ethos and modernization in general may play a role in the fragmentation of morality. Next, structural equation models will be used to determine how they are related.

General Discussion

The theory of fragmentation of morality suggests that as countries modernize agreement of what is proper behavior in society disappears due to the deterioration of a common ethos. As churches and traditional taboos are removed as the arbiters of public morality, modern social structures such as class and ideology become the determiners of a private ethos. Though governments often attempt to regulate the ethos by creating national a national metanarrative, individual choice prevents countries from achieving moral unity.

The research provides limited confirmation for fragmentation of morality as a process that affects modern countries. The key to this analysis is the creation of values that show moral fragmentation within a society, by examining how much division there is regarding opinions of what is proper behavior in a society. However, before interpretation of the results it is important to note that the three moral issues selected as dependent variables did not demonstrate the same amount of fragmentation. Specifically, there was considerable fragmentation regarding whether homosexuality is permissible but almost none regarding whether it is ever permissible to cheat on ones taxes. What is essential to understand when interpretation the results is that the model does not predict whether a country's population tends to support or oppose the permissibility of these behaviors; it predicts disunity in beliefs. Thus, a country where people overwhelmingly feel that

cheating on taxes is a natural part of ones experience with government will demonstrate similar amounts of fragmentation to those where the vast majority of the population opposes tax fraud. All results must be seen through the prism of moral disunity in a country.

An especially noteworthy finding is that in most cases the premodern social structures of race and religion held little predictive power in terms of fragmentation of morality. This suggests that fragmentation of morality is indeed a process endemic to modernity and not strongly influenced by premodern social divisions. Thus, countries traditionally seen as diverse will not necessarily have great moral divisions.

Probably the most important finding is that the best predictors of moral division have to do with the dissemination of knowledge throughout society. Mass education is the primary that societies prepare individuals for success in the modern economic system. Educational systems are also an important means of socializing children to participate in their societies. In theory, it is a normative experience where a country's mythos and ideology are transmitted replicated. The findings of this chapter suggest otherwise. The results indicate that counties that provide mass education to their populations tend to have less moral unity. Thus, education seems to allow certain segments of populations to hold heterodox beliefs regarding what behaviors are permissible in society. In essence, that transmission of greater amounts of knowledge to large segments of a population in fact works against creating a common ethos, as members of a society have a great amount of knowledge about the world from which they can decide what is wrong and right.

Internet use turned out to be the single strongest predictor of fragmentation regarding whether homosexuality and prostitution are ever permissible. This is fully in keeping with the interpretation of the results suggesting that moral fragmentation is strongly related the expose to knowledge of member of a society. Like countries with mass education, countries with mass exposure to the internet featured a great amount of fragmentation of morality. The only explanation of this finding is that because the internet allows for exposure to massive amounts of knowledge regarding how different groups within society define what is right and what is wrong. Therefore, individuals can find moral ideas to which they can best relate. In essence, they have a great ability to define their own ethos.

The hypotheses suggested that class divisions should have demonstrated a larger effect upon fragmentation of morality. While effects were present, they did not have the strong effect that Ossowska's theories would suggest. While this might seem inconstant with established theory and previous research, a better interpretation is that on the macro-structural level class distribution may not have a strong effect upon moral fragmentation it may have an effect on the micro level. In other words, within given country class may matter, but when comparing countries class may have a lesser effect. Further research could clarify this finding.

The final implication of these results is that ideology does play a part in moral fragmentation, the theory of which states that ideology is a component that makes up ethos. If one accepts Marx's premise that ideology underlies all understanding of the world, then this finding is strong confirmation of his point. Though the variable used

suggests the general tendency of ideology in a country not whether there is ideological division, it nonetheless implies that moral decision are made at least partly within a political context. However, the results as presented do not reveal if ideology precedes morality or morality precedes ideology. Further research is necessary in order to specify this relationship.

Fragmentation of morality should not be seen as either good or bad, but as a challenge for societies. Countries with fragmented morality demonstrate the greatest amount of freedom of thought, which is one of the cornerstones of the modern ideology of individuality. However, as Hunter suggests, countries with strong social division over moral issues may have troubling amounts of social conflict about morality. If it is true that the most modern, most developed countries have the most fragmentation of morality, then it is possible that the countries with the most influence in the contemporary world system will also be the countries with the most moral conflict. In order for these countries to continue to direct development in a modern direction they will need to find ways to negotiate moral divisions to allow for fragmentation without alienation from the country's social system

This research is limited in several respects. First, as with fragmentation of normative systems the variables representing religion and ethnicity may not be reliable. As previously stated they are based upon what the countries themselves report. Thus, a country that wants to portray itself as more homogenous, it can. For the research to be improved, more consistent and reliable data must be developed. In addition, better measures of ideology must be located for a large number of countries. Ideally, variables

could be used to represent the economic and political dimensions of ideology. A general variable such as the one use here may not capture the nuances of what a country's most prominent ideology. A second limitation of this research is that it does not suggest causation but only shows one way relationships between the variables. Path analysis or structural equation analysis could be used to better understand these relationships.

The most important part contribution of further research would be to address these limitations. This would be difficult in that for successful cross national comparisons better more specific data would need to be collected. However, better data would allow for the successful creation of causal models. These models could be used as a basis for research regarding the micro- and meso- level analysis of moral conflict in societies.

Conclusion

This chapter provides strong support for the argument that fragmentation of morality can be empirically modeled. It also provides strong support for the amount of knowledge accessible to members of a society being a primary influence on social divisions. It also provides a framework for future research into social divisions brought about by moral divisions within a society.

Chapter 7

Fragmentation of Markets

Abstract

Fragmentation of markets refers to strong divides between formal and informal markets within a country. Literature suggests that both individuals and businesses participate in the formal economy in order to maximize economic advantage. Fragmentation of markets can be assessed using the size of a country's informal economy and how often firms avoid taxes in order to maximize profits. Literature suggests that distribution of workers in various sectors of the economy, number of migrants, distribution of socioeconomic classes, and legal-structural issues predict participation in the informal economy. It can also be inferred that minorities might be more marginalized from the formal economy and those who have access to the internet might avoid the restrictions of formal economies. Curve analysis suggests that all of these factors influence general participation in the informal economy, while only the strong predictors of tax avoidance have to do with the ease of doing business in a country. In sum, the results strongly support the theory that fragmentation of markets is a function of modernization.

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Jamie is an escort in the Washington, DC area, and has several rules regarding how she conducts business. Her advertisement states:

276

Hello Gentlemen,

Ready to knock your socks off,and [sic] take your dreams straight to reality?

My name is Jamie, I am All American Beauty [sic] standing at a perfect 5'3" and

110lbs. I have blonde hair and exotic hazel eyes. My 32C's accents my petite

frame.

I provide nothing but five star treatment,so [sic] expect the best. Look no

further,what [sic] you really want and need is right before your eyes,so [sic]

come and get it! I am an elite, attractive, refined, independent companion who

provides upscale companionship services to generous gentlemen.

I look forward to spending some time by your side and embarking on all sorts of

fun adventures. I really enjoy giving you the attention you crave. I take pleasure

in making my acquaintances feel comfortable & relaxed,

You wont [sic] forget this experience and you [sic] keep coming back!!!!

***Please have donations and/ or gifts labled [sic] gift and place in a noticable

[sic] place.****

The last line, set off in asterisks, shows that she works in the informal economy. Placing

the "donation" in an envelope implies that payment must be in cash and that she does not

want to "know" what is in the envelope. In other words, she now has plausible

deniability for engaging in a criminal act. In addition, no one except Jamie knows how

much money she earns in a year.

<p style="text-align:center">*   *   *</p>

An adjunct professor at a large Washington, DC area university receives after tax

compensation of around $2250 per semester for teaching one course in statistics. She is

expected to work for 20 hours per week, but often spends more time on the course. The same individual can tutor statistics privately for $50 per hour. If she sees one client twice a week for one semester her total compensation for the semester would be around $1200. If she accepts cash only, it is possible to keep that entire amount. The former job is an example of working in the formal economy, the latter of the informal economy. For this individual, it is obvious that informal employment is more lucrative.

<p style="text-align:center">*   *   *</p>

In a modern capitalist economy almost anything can be commoditized, and most things are available in a regulated formal market. However, as markets are regulated, governments can decide which commodities should be limited and which commodities should be forbidden. For instance, many countries assess large "sin taxes" to items such as cigarettes and alcohol. In addition, many jurisdictions completely forbid the buying or selling of some goods and services like heroin or sexual activities. The fact that some commodities are not legally available does not mean that there is no demand for them. In fact, there is often high demand for illegal commodities. Given that many individuals do not wish to pay high prices associated with severely regulated goods and services, individuals will seek some commodities outside of the formal regulated economy.

Fragmentation of markets occurs when a nation-state does not have a unified formal market for the exchange of goods and services. Specifically, it refers to the division between formal and informal markets that exists in all modern economies, be they capitalist or socialist. In most countries, the majority of commerce takes place in the formal economy. However, in some countries certain social groups or certain commodity

markets are so marginalized that they create a parallel informal economy completely outside of government control.

This chapter seeks to create an empirical model for fragmentation of markets. It begins with a contrast of formal versus informal markets, which includes the reasons why some people may choose to participate in informal exchange. Second, a brief history of the modern market illustrates why some countries demonstrate more fragmentation in their market system than others. Finally, the previous sections will be used to create indicators for fragmentation of markets.

Formal versus Informal Markets

National economies exist both inside and outside of state control. Formal markets are the parts of the economy that operate under the control of government authorities. They determine which commodities can legally be traded, which can be traded with restriction, and which are forbidden. Thus, the informal market includes any transactions that fall outside the purview of government control. Enzo Mingione (1991) adds specificity to this definition when he states,

> The term 'informal' sector was first used by (Hart, 1973) in socio-economic
> anthropological studies of the Third World cites. Increasing interest has been
> shown in the fact that the impressively persistent wave of urbanization and urban
> growth has been accompanied by the development of a variegated 'popular
> economy'. This appears as a combination of multifarious activities undertaken
> for direct subsistence and for low monetary income. The most important
> activities include animal rearing in overcrowded slums, street-vendors and food
> stalls, hawkers rickshaw operators, garbage collection, rudimentary self-help

building and repairs, traditional handicraft workshops, industrial homeworking in

subcontracting chains, domestic services and laundering for the middle classes,

as well as illegal activities. (87)

The informal market can be further divided into two parts. The first includes markets for

goods and services that are legally available in the formal economy, but through

processes such as householding or bartering are conducted in a way that excludes the

government from the transaction. This part of the informal market can be referred to as

the shadow market because it performs the same function as the formal market but

operates outside of government control. Examples of the shadow economy include

children raking leaves from their neighbors' yards in exchange for cash that they do not

report to the government for tax purposes. The second part of the informal market allows

for the exchange of goods and services which are forbidden in the formal economy. This

part of the informal market can be referred to as the illegal economy because exchange of

these commodities is forbidden by law. Examples of the illegal economy are trade for

prostitution and narcotics.

Countries generally benefit from having most exchange take place within the

formal markets. Thus, countries seek to control as much commerce within their borders

as they can. Jeremy Rifkin (2004) enumerates some of the benefits of exchange within

formal markets when he argues that the modern nation-state developed in order to

achieve these benefits. He states,

National markets increased the pace, speed, flow, and density of exchange of

property between people, while the territorial nation-state created and maintained

the rules and regulations necessary to ensure an efficient flow of property over a unified and expansive geographic plane. (166)

Additionally, a major reason for countries to formalize as much of the market within their borders as possible is to collect taxes on exchange. However, countries are never able to fully regulate all exchange within their borders. For example, householding is almost impossible regulate, as the British found out with Gandhi's protest against the salt tax. The presence of a shadow economy or illegal economy by itself does not mean that a country has fragmented markets. National markets are considered fragmented only if large sections of economies are found in the informal sector.

Fragmentation of markets occurs when a government attempts to formalize a shadow market or eradicate an informal market, while at the same time businesses attempt to operate with fewer government controls, often by forming informally or becoming informal. There are two main reasons that governments wish to formalize as much of the market as possible. First, they seek to draw revenue through taxation. As Rifkin (2004) states when referring to early nation-states,

> The difficult challenge for the budding nation-state was how to eliminate all the internal pockets of resistance to free trade in a national market while at the same time enlisting the emotional support of its subjects—later its citizens—in the collective tasks of society, including the collection of taxes and the conscription of armies to protect national interests. (167)

Part of protecting national interests involved controlling the national markets to the exclusion of foreigners. Liah Greenfeld (2001) speaks in theory of the relationship between nationalism and development when she argues that

> … because of the members' investment in the dignity of the nation—that is, its
>
> prestige—which is necessarily assessed in relation to the status of other nations,
>
> nationalism implies international competition. (23)

A second reason countries seek to regulate commerce is to assure that business is

conducted in ways that the government sees as the best for the political economy. As

Greenfeld (2001) states in her discussion of the paradox between 17th century England's

expulsion of foreign trading organizations, while increasing free trade within England,

> If there was an adverse reaction to the material plight brought upon the English
>
> by their new ideal commitments, it expressed itself in the sentiments against
>
> monopolies and regulated companies and for free trade *in England*, meaning the
>
> freedom of all Englishmen to trade. (37) [emphasis added]

In addition, a government's desire to regulate the economy might include protection of

contracts or ensuring that only certain classes of individuals may engage in some

commerce. Finally, in more established modern economies governments also attempt to

regulate wages for labor, product safety, and the like. In order to achieve any of these

goals, countries must formalize as much of their economy as possible.

In exchange for state oversight, business and individuals receive certain benefits.

Hernando de Soto (2000) enumerates six of these: fixing the economic potential of assets

(49), integrating dispersed information into one system (52), making people accountable

(54), making assets fungible (56), networking people (58), and protecting transactions

(61). In addition, formally registered business and other property allows access to public

infrastructure necessary for successful commerce, such as electricity, sanitation, and

communications infrastructure. Finally, formally registered businesses are able to use the

previously enumerated benefits to mobilize capital in order to improve their operations and grow. Thus, there are definite benefits to operating in the formal economy.

However, there are also numerous reasons that business might remain in the informal economy. For instance, registering a business might be difficult in some areas, with red tape extending the process for years or profit taking by government officials making the process expensive due to the need for extensive bribes. In addition, business may remain part of the informal economy to avoid taxes. Companies that are only marginally profitable sometimes try to avoid paying taxes simply to survive. Other businesses operate in countries with crushing tax burdens, and may need to avoid taxes in order to be profitable. Businesses may also remain part of the informal economy because they are not allowed to compete against or are put at a competitive disadvantage against powerful established or government run enterprises. Finally, businesses may avoid formalization because the goods or services are illegal. For example, if one tried to incorporate a brothel in Washington, DC, one would be arrested for pandering prostitution. All of these reasons for informal markets may be incorporated into de Soto's basic statement about why many migrants enter extralegal arrangements. In *The Mystery of Capital* (2004) he states,

> This extralegal sector is a gray area that has a long frontier with the legal world, a
> place where individuals take refuge when the cost of obeying the law outweighs
> the benefit. The migrants became extralegal to survive: They stepped outside the
> law because they were not allowed inside. In order to live, trade, manufacture,

transport, or even consume, the cities' new inhabitants had to do so extralegally.
(87)

Whether it is intentional or unintentional, countries do prevent some businesses and individuals from playing by the established rules of the commercial game.

A special mention should be made of the informal housing market, which is perhaps the largest informal economy throughout the world. Generally, the advantages of having formally registered housing, which are similar to the benefits to formalizing a business, outweigh the disadvantages. However, there are special cases where people cannot afford to or are not permitted to build legal housing. In such cases, extralegal neighborhoods might grow in a similar manner to established legal neighborhoods. For instance, de Soto (2004) contrasts neighborhoods of illegal housing in the developing world with slums in the West when he states,

> The extralegal settlements the migrants inhabit may look like slums, but they are quite different from the inner-city slums of advanced nations. The latter consist of once-decent buildings falling apart from neglect and poverty. In the developing world, the basic shelters of the poor are likely to be improved, built up, and progressively gentrified, whereas the houses of the poor in advanced nations lose value over time, the buildings in the poor settlements of the developing world become more valuable, evolving within decades into the equivalent of working-class communities in the West. (89)

In addition, in many parts of the world peasants occupy land that that they have worked for years, but do not officially own, so they develop the land to their own needs outside

of government control. In essence, the housing market, like any other market, will find a way to exist with or without government sponsorship.

<div align="center">*A Brief History of Markets*</div>

It is difficult to argue that markets were ever fully unified structures. In reality, there have always been forces that pushed markets towards either formality or informality. In addition, before the rise of the nation-state one cannot describe markets operating on the macro level. Instead, the history of fragmentation of markets must be seen through the prism of the development of the modern market as a social structure. From such a perspective, markets will rise as more or less unified structures, then fragment, while never fully removing the informal elements.

The Medieval Market

Though modern markets developed in part from the medieval market, there are major differences between the two phenomena. The most important of these differences is related to the permanence of markets as places of exchange. The medieval market tended to exist in a physical location where it was convenient to occasionally trade surplus goods. Rifkin (2004) describes the medieval market as such

> While markets existed far back into antiquity, they were always marginal to
> social life. Most economic activity was traditionally based in the household. In
> fact, the very term "economy" comes from the Greek *oikos*, which means
> "home". Members of an extended family produced what they needed for
> themselves, bartered with nearby neighbors, and occasionally sold any surplus
> production in open-air markets, which were held infrequently. Large markets,

like the Frankfort Fair in late medieval times, were annual events that drew

itinerant merchants from far afield. (161)

Thus, markets tended to come and go, with householding being the main form of

economic activity.

There were many reasons why the medieval market was not organized on a larger,

more permanent scale. First, the lack of adequate transportation was stifling to trade

when most production was agricultural; produce would decay if transportation took too

long. Reflecting on the change from primitive power to modern forms of propulsion,

Rifkin (2004) states,

After ten thousand years of society relying on human and animal power and the

wind and currents to propel itself, steam power now afforded a qualitative leap in

harnessing of the Earth's energy. (95)

During the era of premodern transportation, attempting to sell agricultural products

anywhere but locally would be unprofitable. Second, in medieval Europe there was little

diversity in the goods needed for survival. Few peasants could afford goods other than

what was necessary for day-to-day life, and most of the necessary goods could be

produced by householding or local exchange. Thus, there was no real home market for

excess goods. In addition, it was unusual for peasants to be able to produce excess goods,

even though the nobility desired them. When writing about the effects of this, Robert

Brenner (1985) states,

It is in this context, trade expanded largely in relationship to growing ruling-class

consumption needs, fuelled especially by the expanding requirements of political

accumulation. It facilitated a circuit of production essentially involving the

exchange of artisan-produced luxury and military goods for peasant-produced

necessities (food) extracted by the lords… Nevertheless, in the long run, the

growth of this form of social division of labor on a European scale was

disastrous. It meant a growing disproportion between productive and

unproductive labor in the economy as a whole (for little of the output of the

growing urban centers went "back into production" to augment the means of

production or means of consumption of the direct peasant producers). (241)

The trade Brenner describes did not take place in the local marketplace, but was akin to

modern day special orders. Thus, there was no local trade in the goods.

However, the main reason for lack of a national market was the political system

of medieval Europe, a system that David Landes (1999) describes as "a big complex of

customs, laws, practices, attitudes and values—the work of centuries…" (238). The

traditional empire system was incredibly decentralized, and though the feudal system in

theory organized political relationships over large areas, the reality was that actual

political control was localized. The only law that most areas knew was the law of the

local lord or of the community itself. In addition, the feudal system was not conducive to

markets, because it deemphasized surplus production. The system of social relationships

stipulated that most production would be given to the local lord, and that peasants were

not allowed to make profit from their land and work. As Landes further states

Typically the peasant was tied to the soil, not free to leave without the consent of

his lord. Serfdom sometimes also implied a personal, "bodily" tie of serve to

master, so that the lord could move the peasant about, and the peasant, even

leaving with permission, continued to owe dues. (238)

Thus, most peasants were unable to mobilize a large amount of goods to bring to market.

Rise of the Nation-State

Perhaps no event had a greater effect on the development of markets than the rise of the nation-state. In contrast to the medieval empire system, nation-states sought to control the economy and society within their borders in hopes of creating a unified economy and culture. It was in this context that the unified national market began to develop.

Some argue that control over markets was the major force in the development of the nation-state. Rifkin (2004), for one, equates the development of the nation-state with the idea of individual property, transferred to the macro level, when he argues that

> Like each of the autonomous individuals who claimed sovereignty over his own personal property domain, the nation-state claimed sovereignty over the larger territory of which all the individual free agents were part. (166)

From this point of view, countries claimed ownership of all commerce within their borders, just as the individual claimed ownership of all goods and services he or she traded. From this claim, governments attempted to exploit the markets within their borders to their advantage. One facet of this was the development of direct taxation upon commerce, which became an important source of national revenue. Under the empire system, taxes reached the central government through lower level nobles, which gave the local lords power over trade and commerce. Max Weber (1978) describes the effects of direct taxation under the empire system by saying

> The limitations on the financial rights of the ruler were particularly severe. Apart
>
> for the tutelary utilization of a fief by a lord, these rights consisted mostly in the
>
> vassal's obligation to subsidize the lord in certain cases of need; the lord would
>
> have liked to turn these obligations into a comprehensive right of taxation, but
>
> the vassals set out to turn them into definitely fixed occasional tributes. (1084)

When referring specifically to levies on transportation placed by local authorities, David

S. Landes states that,

> The maximizing strategy of these brigands-in-guise-of-officials may be inferred
>
> from their policy of deliberate uncertainty. Even where tariffs were set, the toll-
>
> takers would make it a point not to publish them, the better to levy as opportunity
>
> offered. (246)

Direct taxes, on the other hand, weakened the power of nobles. Referring to the

centralization of tax policy, Landes further states,

> From the seventeenth century on, the centralizing tendency of European
>
> monarchies worked against this racket. One of the primary goals of the new
>
> bureaucracies was to erase these levies and interferences, seen not only as
>
> restraints of trade, hence tax-eater, but also as poaching, as *lèse-majesté*. (246)

As central governments needed revenue, they sought to secure the flow of money to their

treasuries by both subverting the old nobility and securing their borders against the

intrusion of other governments into their spheres of influence.

The founding of the nation-state also aided in the development of markets in that

the political economy developed. The political economy encompassed the strategies that

nation-states used to build their economies by manipulating markets for their political

advantage. In other words, nation-states began to harness their markets to gain and maintain power. For instance, in the late 16th century, England expelled all foreign influence in its economic system. Greenfeld (2001) describes the effect of this when she states that

> The expulsion of the Hanseatic merchants from the English export trade was a triumph for the English nation, and whatever inconveniences resulted from the loss of extensive imperial markets in consequence had to be borne cheerfully by "all the well-willers and lovers of the Commonwealth and State of England and all the good subjects of her Majesty … lest unawares they join hands with the common enemy." Happily, such patriotic exertion was required only briefly. Before long, Hanseatic towns—Stade in 1607 and Hamburg in 1611—animated by commercial good sense rather than consideration of communal dignity, broke ranks and opened the German market to the Merchant Adventures. (40)

This strategy of defending national markets continued through the later empire era when Great Britain used the mercantile system to prevent other countries from profiting from their colonies. As Landes (1999) states,

> Mercantilism was not a doctrine, nor a set of rules. It was a general recipe for the political economic management: Whatever enhanced the state was right. (443)

In essence, the modern system of nation-states allowed countries to secure their borders in order to compete in a non-military way when determining superiority within the world economic system.

Uneven Development within Nation-States

Though nation-states sought to control the markets within their borders and to build national economies, they were not always able to develop markets and industry throughout their entire territory. This led to uneven development within nation-states, which in turn led to some parts of countries being more prone to informality than others were.

One important factor leading to uneven development within nation-states is geography. Jeffery Sachs (2000, 30), when writing about differences in development between countries, states,

> Certain parts of the world are geographically favored. Geographical advantages might include access to the sea—navigable rivers, proximity to other successful economies, advantageous conditions for agriculture, advantageous conditions for human health. (30)

These factors are easily applicable within countries as well. Especially in large countries, certain areas have better access to natural resources than others. In general, development occurs where resources are abundant and easy to transport to population centers. Agricultural areas often develop sites for commodity exchange, such as the 'cow towns' in the Western United States. In addition, development has occurred near areas where other natural resources can be gathered. For instance, much of northeastern Pennsylvania developed around the anthracite coal industry. Industry, on the other hand, developed near population centers; for instance London in the 19th century was the largest and most industrial city in England. Additionally, development occurs near major transportation routes. For instance, Chicago grew because it was the intersection of several major

railways. Finally, existing markets become even more important during economic development as they are natural centers for the exchange of capital and resources. Conversely, areas without any of these advantages tend to develop less. For instance, well into the 1930's the Tennessee River Valley in the United States was massively underdeveloped compared to the population centers of the eastern United States because its natural resources were not easily accessible. Not until Franklin Roosevelt's New Deal did the area become something other than a swampy wasteland. Areas with favorable geography become more developed, thus, more fully integrated into national markets, while geographically disadvantaged areas are often left outside of government control. De Soto (2000) describes this phenomenon in the development of the American west by stating,

> The governments and judiciary of the young states, not yet so legally united, were trying to cope with the law and disorder of migrants, squatters, gold diggers, armed gangs, illegal entrepreneurs, and the rest of the colorful characters who made the settling of the American West so wild, and if only in hindsight, so romantic. (107)

It was only by incorporating the law and traditions of the informal economy in undeveloped areas into the national legal framework that the areas were incorporated into the national economy. As de Soto continues,

> What U.S. politicians eventually learned, as Francis Philbrick put it, was that the "forces that change the law in other than trivial ways lie outside it." Even the celebrated Homestead Act of 1862, which entitled settlers to 160 acres of free land simply for agreeing to live on it and develop it was less an act of official

generosity than the recognition of a fiat accompli: Americans had been settling—

and improving—the land extralegally for decades. Their politicians gradually

modified the law to integrate this reality into the official legal system and won

some political points in the process. (108)

Some have also argued that culture plays an uneven role in development within

nation-states. In *The Protestant Ethic and the History of Capitalism* (2002), Weber

argued that areas of nation-states with Reform Protestant values tend to develop while

areas with Catholic values do not[9]. For instance, when describing the benefits of ascetic

Protestantism to capitalist development, he suggests

… it was also apparent in Holland, where a strict Calvinism ruled for only seven

years. The greater simplicity of life that dominated the Dutch regions of ascetic

Protestantism, led, among the enormously wealthy, to an excessive desire to

accumulate capital. (117)

In Germany, as well, Protestants were more likely to enroll their children in educational

programs geared towards business, while Catholics were generally less educated and

became the working class (5). More contemporary writings on the role of culture and

development have focused less on religion. For example, Grondona (2000) lists 20 values

that societies need in order to develop. Among these are: religions that promote wealth

(47), a moral imperative that complies with obedience of the law (48), values that stress

the importance of competition (49), a belief that questioning the system is not heresy

(50), and a focus on rationality (51). From either point of view, areas of countries and

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[9] It should be noted that later in his career Weber revised his theory to emphasize the role of bureaucratization of the state in the development of capitalism. Religion, thus, became only one part of the development process. (Collins, 1992)

countries as a whole that are not conducive to development are more likely to develop informal markets in order to supply the needs of individuals who cannot fulfill their needs in the formal economy.

Another major factor in affecting the uneven development of markets within nation-states is class. A creation of the modern era, the modern class structure gives some better access to the resources of development than to others. In both developed and developing nations, the rich tend to have better access to education, training, and other tools of prosperity, and thus have a greater ability to replicate their wealth in the formal economy. Poverty in the lower classes replicates itself as well. Anthony Giddens (1973) sums up this perspective by stating,

> The basic reason is that the distribution of talents and capacities in a society (that is to say, of 'internal inequalities') is itself heavily conditioned by variations in family organization; but in addition, studies of social mobility demonstrate quite unequivocally, that the family of origin influences the chances of occupational mobility even where manifest ability is held constant. (272)

An example of this disparity between classes is that a student from a wealthy family may attend an expensive preparatory school and private universities, which generally provide better education and allow the student access to more advantageous social networks. Eventually, this will help the student get a better job. A poor student, on the other hand, may have to end education early in order to earn money to help his or her family survive. Thus, the poor are at a constant disadvantage. Even when the poor do own property, if it

is not part of the formal economy it cannot be used to increase the next generation's life chances. De Soto (2000) observes that the poor

> … do have things, but they lack the process to represent their property and create capital. They have homes but not titles; crops but not deeds; businesses but not statuettes of incorporation. It is the unavailability of these essential representations that explains why people who have adapted to every other Western invention, from the paper clip to the nuclear reactor, have not been able to produce sufficient capital to make their domestic capitalism work. (7)

When the poor have to exist in the informal economy they cannot borrow against property in order to acquire more education for their children or to open a business for themselves. This creates a circular current that keeps a generation born into informality in the informal economy.

Another reason that markets do not develop uniformly throughout a country is that markets may not develop to serve minorities. Many nation-states feature a dominant ethnic group (e.g., Caucasians in the United States, Russians in the ethnically diverse Russian Federation, Han Chinese in the People's Republic of China), which will tend to steer markets to their own needs and tastes. When referring specifically to consumer markets, Joel Waldfogel (2007) claims,

> But an actual tyranny of the majority is possible in the product markets. That is, more members of one group can actually harm members of the other group. When fixed costs become high enough so that the market supplies only one variety, the question becomes: where will this product locate? Location matters because consumers are more satisfied as the product is closer to their favorite. To

add a layer of realism, suppose that consumers will purchase only if the product

is "close enough" to their favorite color. Then the firm's targeting decision

affects its revenue. (18)

In other words, often minorities cannot find the goods and services they need in the

formal economy because the market is geared towards the tastes of the majority. When

coupled with discrimination in economic opportunities, minorities are often forced to

participate in informal economy because there is nowhere else to satisfy their needs.

A final reason for uneven development within nation-states is immigration.

Immigrants are not automatically integrated into the national economy. Cultural,

language, and educational differences often relegate new immigrants to low paying jobs

and exclude them from the dominant social system. Thus, new immigrants are often

ghettoized into communities with little access to the formal economy, most for the same

reasons that other minorities may have limited access. Immigrants can indeed become

integrated into the dominant economy, but this usually necessitates government action.

Globalization and Uneven Development

As modernity has progressed and technology has improved, time and space have

become compressed. Regarding the compression of space, Bauman (1998) states,

… one can with growing confidence speak presently of the 'end of geography'.

The distances do not matter any more, while the idea of a geophysical border is

increasingly difficult to sustain in the 'real world'. It suddenly seems clear the

divisions of continents and of the globe as a whole were the function of distances

made once imposingly thanks to the primitiveness of transport and the hardships

of travel. (12)

Regarding the emancipation of time from space in the modern era, he (Bauman 2000) argues,

> The relation between time and space was to be from now on processual, mutable and dynamic, not preordained and stagnant. The 'conquest of space' came to mean faster machines. Accelerated movement meant larger space, and accelerating the moves was the sole means of enlarging space. To maximize the value, it was necessary to sharpen the instruments: much of the 'instrumental rationality' which, as Max Weber suggested, was the operative principle of modern civilization, focused on designing was to perform tasks faster, while eliminating 'unproductive', idle, empty and so wasted time… (112-113)

This compression has allowed markets to become more independent of location, which in turn has allowed a network of cross-national markets to form. Manuel Castells (1996) states,

> To open up new markets, linking in a global network valuable market segments of each country, capital required extreme mobility, and firms needed dramatically enhanced communication capabilities. Deregulation of markets and new information technologies, in close interaction, provided these conditions. (84-85)

Thus, the networks and declining importance of the geographical aspect of markets ushered in an era of economic globalization, a process in which the organization of markets based upon national boundaries is replaced by markets organized transnationally. These relationships can be regional (e.g., the European Union or The North Atlantic Free Trade Association) or global (e.g., the World Trade Organization).

Globalized markets are fragmented from their inception. Any trade agreement

between a developed nation and a developing nation results in an asymmetrical

relationship in which the less developed country cannot compete in most industries.

Usually, the less developed countries are relegated to the production of raw materials that

are sent to developed nations. Wallerstein (1974) provides an example of this process in

the 16th century by observing,

> Thus, in the geo-economically peripheral areas of the emerging world-economy,
>
> there were two primary activities: mines, principally for bullion; and agriculture,
>
> principally for certain goods. (100)

Value is added in the developed nation. Most of the finished goods needed for production

in developing nations must then be imported from developed nations. Thus, capital is

accumulated in the more developed nations.

The process of globalization and capital concentration that creates fragmented

markets throughout the world also enhances them within nation-states. Not everyone

within a country has access to the networks needed to profit from the global economy. In

developed countries, access to these networks is greater, but not universal. In developing

nations, access is impossible for most people, leaving only the elites able to capitalize on

the global economy. In either developed or less developed countries, those without access

to global markets are forced to rely more on informality if products they need are not

readily available within the local or national market.

There are several theories as to why some nations fail to fully integrate into global

markets. The first group focuses on the effects of culture on the development of

capitalism, and the integration into global capitalist markets. First among these is the application of Weber's theories from *The Protestant Ethic and the Spirit of Capitalism* (2002). Just as Protestant and Catholic areas of 19th century Europe could not develop a capitalist system, so parts of the contemporary world that do not hold Reform Protestant values may not develop a capitalist system. Others have enumerated other values associated with underdevelopment (e.g., the aforementioned Grondona 2000), some even criticizing specific cultures (e.g., Montaner (2000) criticizes Latin American values; Etounga-Manguelle (2000) suggests Africa needs a cultural readjustment program). In general, these theories suggest that countries not adhering to the values traditionally associate with the West will always be on the outside looking in at a fragmented world economic system. Countries with a culturally diverse population then will have greater portions of their population participating in informal markets.

Other theories blame the structure of the world system for unequal access between nations. Specifically, Wallerstein's (1974) World Systems Theory suggests that countries at the periphery in the world system are not usually able to build economies based upon resource gathering and low value production. He observes,

> The periphery of a world-economy is the geographical sector of it wherein
> production is primarily of lower-ranking goods (that is, goods whose labor is less
> well rewarded) but which is an integral part of the overall system of the division
> of labor, because the commodities involved are essential for daily use. (301-302)

Thus, wealth becomes centralized in core countries, within which the most value is added to commodities. From this perspective, countries at the periphery of the transnational

markets will be net losers in terms of development since they cannot mobilize capital needed for development. The peripheral countries become more alienated, and therefore fragmented from the world economic system. The people living in peripheral countries will not have stable access to the benefits of the modern economy and will be dependent upon informal markets for a greater proportion of their economic exchange.

A third theory regarding uneven access to the world economic system between countries involves Alexander Gerschenkron's (1962) theory of backwardness, in which he describes a natural trajectory of development that can be stymied by a country's socio-economic decisions. He describes the pre-developmental state in non-developed countries as,

> The typical situation in a backward country prior to the initiation of considerable industrialization processes may be described as characterized by the tension between the actual state of economic activities and the existing obstacles to industrial development, on the one hand, and the great promise inherent in such a development, on the other. (8)

He then suggests that countries make choices that stymie development; among these are trying to industrialize too quickly with stress on large-scale production (26), and developing of social tensions hostile to development, such as established banks being reluctant to cooperate with industrialization (28). Countries that have made developmental choices such as these are left behind in the globalized economy, giving the population less access to the global economic system. The fewer people with access to the world system, the more fragmented a country's economy will be.

Globalization also increases fragmentation of markets within countries. For instance, access to global markets is physically limited, in that businesses must be able to mobilize large amounts of resources in order to enter the world system. Often, only the largest corporations can do this. As de Soto (2000) argues, businesses that are not part of the formal economy have little chance of participating in the formal economy. In addition, in developing countries only the richest people would have any hope of access to the world system at all. While most citizens would have to participate in global markets as consumers, they would not benefit from production for the global market. Joseph E. Stiglitz (2003) provides an example when he writes, "opening up the Jamaican milk market to U.S. imports in 1992 may have hurt local dairy farmers but it also meant poor children could get milk more cheaply." (5)

Perhaps the greatest limitation to accessing global markets is associated with class. Poorer individuals are limited in their access to national markets. Often the poorer classes have received a substandard education and cannot get jobs that could be relevant within world markets. As Stiglitz (2003) suggests,

> A growing divide between the haves and the have-nots has left increasing number in the Third World in dire poverty, living on less than a dollar a day. Despite repeated promises of poverty reduction made over the last decade of the twentieth century, the actual number of people lifting in poverty has actually increased by almost 100 million. (5)

Additionally, if individuals are already limited in their access to formal markets and are forced into informal economic exchange, the will not be able to enter world markets.

Thus, fragmentation brought about by the globalization of markets increases because fewer individuals are able to access the world system.

In sum, globalization tends to replicate fragmentation of markets within countries. First, those who have access to the formal national markets tend to more easily gain access to world markets, as they are already transacting within an organized and regulated market structure. They do not have a difficult time transitioning to transnational exchange—they are almost already there. In addition, those who have limited access to formal national markets have their places in the world economic system replicated because they cannot mobilize the capital to compete in globalized markets.

Indicators of Fragmentation of Markets

Determining whether a country's markets are fragmented is a somewhat straightforward process. Because fragmentation of markets is defined as a sharp divide between formal and informal markets, where a larger portion of a national economy is not formalized, it follows that indicators referring to the size of informal markets or the frequency of a component of informal markets will serve as an adequate dependent variable. In addition, the history of markets and fragmentation of markets can provide various predictors for fragmentation of markets.

Size of Informal Economy: There is no straight forward indicator of fragmentation of markets than the size of the informal economy. Though reliable data is difficult to find regarding this concept, as shadow markets and illegal markets are generally outside of government view, Friedrich Schneider (2002) provides estimates for a large number of countries. In his article "Size and Measurement of the Informal Economy in 110

Countries Around the World," he compiles estimates of the size of the informal

economies as a proportion of Gross National Product for various countries representing

all continents and developmental levels. This measure is appropriate in that it seems to be

the most scholarly measure of this concept. While Schneider freely admits that his

estimates are calculated in different ways depending on which organization was

calculating the estimates, it is probably the most comprehensive account of the size of

informal economies, and is thus the best data available. In theory, countries with larger

informal economies have more fragmented markets.

Businesses Avoiding Taxes: One of the major reasons that businesses may

avoid formalization is to avoid paying taxes. Even firms that are legally registered may

keep some of their transactions off the books in order to maximize their profitability. The

indicator will be measured using the variable "Firms that do not report all sales for tax

purposes (% of firms)" as calculated by the World Bank. In order to maximize the

number of countries measured, six year averages were calculated from 2002 to 2007.

This variable is appropriate in that it provides a rudimentary measure of companies that

participate in both formal and informal exchange within their country. Its main weakness

is that the data are only available for 95 countries, and some major countries like the

United States are not included in the sample. However, it is the only readily available

indicator. In theory, countries with fragmented markets will have more firms that avoid

paying all taxes.

Employment Markets: Research suggests that certain sectors of the economy are

more prone to informal market arrangements. Thus, it follows that countries with

different proportions of workers in different sectors of the economy will have different

levels of fragmentation within the market system. Differences in employment distribution

are measured using three variables calculated from the World Bank data using six-year

averages (2002 to 2007), including: "Employment in agriculture (% of total

employment)", "Employment in industry (% of total employment)", and "Employment in

services (% of total employment)". In theory, high levels of employment in both

agriculture and services will indicate more fragmentation of markets, because the goods

and service exchanged are easier to hide from the government. However, greater

employment in industry will indicate less fragmentation of markets.

Ethnicity: Because it is theorized that a dominant ethnic group can prevent the

entry of other ethnic groups into the national economy, ethnicity must be included as an

indicator of fragmentation of markets. In this study, the ethnic make-up of countries will

be analyzed using two variables drawn from data published by the United States Central

Intelligence Agency World Factbook. First, countries will be assessed as to whether they

have a majority ethnic group, which is defined when 50% or more of the population is

part of one ethnic group. Second, countries will be assessed as to how many other ethnic

groups may have influence in a society. This variable is coded as a count of ethnic groups

listed that represent over 5% of the population in a given country. Using both variables,

one can gain an understanding of the effect of both a dominant ethnic group and the

dispersion of ethnicity within a county on access to formal national markets. However,

there are several weaknesses to these variables. First, because the CIA gathers data on

ethnicity from mainly public sources, ethnicity is defined differently in different

countries. For example, Kenya's data enumerates specific tribes to which individuals belong; whereas the United States' data is based upon race. However, this data is appropriate in that ethnic divisions in countries will manifest differently in different countries. In a country like the U.S., racial divisions are paramount, whereas in Bosnia and Herzegovina race is irrelevant as conflict occurs between Caucasian ethnic groups (i.e., Serbians, Croatians, and Bosniaks). It is theorized that having a dominant ethnic group will indicate a larger informal sector, as that group may prevent smaller ethnic groups from entering formal markets. However, the absolute number of ethnic groups should have no effect.

Migration: If it is true that migrants are often marginalized and unable to enter formal national economies, then it follows that countries with a greater number of immigrants will feature greater fragmentation of markets. This indicator will be measured using the variable "Net number of migrants per 1,000 population" from the United States Census Bureau's International Data Base. The advantage of this data is that it is drawn not only from official government sources, but also from academic research and from non-governmental organizations. The weakness of the data is that the latest migration data from 2007 is not available for every country. In these cases, data from the most recent year was used. However, this necessitated some data being fairly old. While the data available for Afghanistan was drawn from 2005, data from Bhutan could only be drawn from 1991. Despite this issue these data were selected due to the variety of sources from which the data were drawn and its completeness compared to data from sources like

the United Nations. It is expected that countries with more immigration will have larger informal economies.

Class: Much of the literature on fragmentation of markets maintains that poorer classes are more likely to participate in informal markets. Therefore, distribution of social classes within a society should indicate fragmentation of markets. However, this indicator cannot be captured within one variable. The World Bank calculates five variables that measure the distribution of wealth held by the various income quintiles of countries: "Income share held by highest 20%", "Income share held by highest 20%", "Income share held by second 20%", "Income share held by third 20%", "Income share held by fourth 20%", and "Income share held by lowest 20%". While each of these variables is related, they are not necessarily dependent upon each other in absolute terms, in that while the proportion of income share held in any one group provides a maximum amount of income share held by all the other groups, it does not determine the distribution of income share held in the other groups as a whole. Therefore, it is not appropriate to use a reference category. In theory, countries with a smaller amount of income in the lower class will demonstrate greater fragmentation of markets.

Internet use: Bauman and others have established that access to the world economy is associated with the integration of individuals into formal national economies. Therefore, it follows that fragmentation of markets will be indicated by access to the world economic system. The variable "Internet users (per 100 people)" as calculated by the World Bank data using six-year averages including 2002 to 2007 represented this indicator. While the internet is not always used for commerce, it can be assumed that

countries with more internet users have more internet commerce. Thus, this is a reasonable variable to use to measure the effects of globalization on fragmentation of markets.

Structural Factors: de Soto suggests that some companies' and individuals' participation in informal markets is due to structural problems with their country's legal system. Specifically, he mentions complications in registering businesses and registering property. Four variables will measure these legal issues "Procedures to register property (number)", "Time required to register property (days)", "Start-up procedures to register a business (number)", and "Time required to start a business (days)". All are calculated from the World Bank data using six-year averages including 2002 to 2007. In theory, countries where formalization of property and businesses takes more time and effort will have more businesses operating in the informal economy and more informally owned property.

<center>*Hypotheses and Analysis*</center>

As this dissertation is a preliminary study of social fragmentation, it is most appropriate to describe the relationships between the various indicators of fragmentation of markets. The first step is to create a model which includes the hypothesized relationships between the predictor variables. The second step will use curve estimation to determine if the hypothesized relationships can best be described as linear or curvilinear relationships. Finally, structural equations models will be calculated taking into account the type of relationship between the variables described in column two.

Model Specification

Figure 7.1 demonstrates the model as specified in the initial relationships. The model includes six indicators of fragmentation of markets, measured in 16 independent variables. Fragmentation of markets is itself measured in two variables. Each variable makes a direct prediction of fragmentation of markets, although for the sake of parsimony Figure 7.1 displays only one arrow per indicator. The exception to this is legal complications in formalization, where procedures for registering property predict time needed to register property and procedures for registering a business predict time registering a business, in addition to predicting the two dependent variables.

Theory suggests that employment in certain types of jobs will predict an increase in fragmentation of markets. Therefore, it is predicted that the percent of the workforce employed in agriculture will indicate increases in the size of the formal economy and the proportion of businesses not paying all their taxes. A similar effect will be observed for the percent of the workforce employed in services. However, because industrial work is harder to hide from the government, it is hypothesized that countries with a greater proportion of their workforce employed in industry will demonstrate a smaller informal economy and fewer businesses avoiding taxes.

Since in theory countries with a dominant ethnic group will be able to keep other ethnic groups out of the formal national economy, it is hypothesized that countries with one dominant ethnic group will show a larger informal economy and will show more businesses avoiding some taxes. However, because the number of ethnic groups will not have any effect if there is not one dominant ethnic group, it is hypothesized that the number of ethnic groups in a country will not affect either dependent variable.

Because it is often hard for immigrants to integrate into formal economies, it follows that countries with high numbers of immigrants will feature larger informal economies. However, many emigrants come from poor countries where informal markets are a major means of survival. Thus, countries with high numbers of emigrants will also demonstrate larger informal economies.

Since the poor are often forced to participate in informal markets, it follows that the greater the income share held by the lower classes the greater the fragmentation of markets. Thus, it is hypothesized the less income concentrated in the bottom 20% and fourth 20%, the greater the size of the informal economy and the more businesses will avoid paying taxes. As a greater income share is concentrated in every higher 20%, the greater the size of the informal economy and the more businesses will avoid paying taxes.

Because access to the world system lessens the need to participate in informal economic exchange, it follows that greater access to the internet will lessen fragmentation of markets. Thus, it is hypothesized that countries with more internet users per 100 people will demonstrate small informal markets and few businesses avoiding taxes.

Since de Soto's theories suggest that the more barriers there are to registering a business or property, it can be assumed that countries with more barriers will demonstrate more fragmentation of markets. Thus, countries with more procedures for registering property or a business will have larger informal economies and more business avoiding taxes. In addition, countries where registration of property or business is more time consuming will demonstrate larger informal economies and more firms avoiding taxes. In addition, the number of procedures needed to register property will predict the length of

time registering property. A similar relationship will be found for procedures needed to register a business and length of time needed to register a business.

Curve Estimation: Results

Linear, quadratic, and cubic relationships were estimated for the hypotheses regarding workforce in various sectors of the economy, number of ethnicities, number of migrants, proportion of the income, internet usage, and legal obstacles to formalization. The best model is assumed to be the linear relationship if it is the most parsimonious and significant model. The quadratic relationship is the best model if it is substantially more significant than the linear relationship or substantially improves upon the proportion of the dependent variable predicted by the independent variable as compared to the linear relationship. The cubic relationship is the best model if it is substantially more significant than the quadratic relationship or substantially improves upon the proportion of the dependent variable predicted by the independent variable as compared to the quadratic relationship. Substantial improvement is defined as increasing the R^2 by more than .01 (i.e., accounting for 1% more of the variability between the two variables). If a higher order model improves upon the previous model, but the model loses significance, the lower order model is chosen for further analysis. The variable regarding majority ethnic group was dichotomous. Thus, only a linear model could be calculated, and was always assumed to be the best model. For all hypotheses, the level of significance of the research is .10 as some comparisons involved fewer than 100 cases.

Procedures Registering Property to Time Registering Property: (n = 171). All of the models were significant (linear: p = .077; quadratic: p = .057; cubic: p = .039). The

cubic model ($R^2 = .049$) predicted a small amount of the variability, and improves upon the quadratic model ($R^2 = .034$), which in turn improved upon the linear model ($R^2 = .018$). Thus, the cubic model was selected for further analysis. The data indicate that the countries with few procedures for registering property (approximately two) took almost no days to register property. The days needed for registration increases so that when a country requires about seven steps to register property, it takes about 100 days to register property. The amount of time needed for registration remains relatively steady until there are approximately 15 steps needed to register the business, at which point the amount of time needed begins to increase again. This demonstrates that any affect that the procedures needed for registering property must be considered as working though the amount of time needed for registration.

Procedures Registering Business to Tine Registering Business: (n = 171) All of the models were significant (p < .001 for all). The linear model ($R^2 = .158$) accounted for a moderate amount of the variation, and was not improved upon by the quadratic model ($R^2 = .159$). Thus, the former was selected for further analysis. The data indicate that in countries that require fewer than three steps to register a new business it takes almost no time to register the business. The amount of time increases so that in countries that require twenty steps, one needs almost 200 days to register the business. This suggests any effect of the procedures for registering a business must be considered as working though the amount of time needed to register the business.

Percent Agriculture to Informal Economy: (n = 85) All of the models were significant (p < .001 for all). The cubic model ($R^2 = .328$) predicted a large amount of the

variability, and improves upon the quadratic model ($R^2 = .317$), which in turn improves upon the linear model ($R^2 = .241$). Thus, the cubic model was selected for further analysis. The data indicate that countries with a small percent of people employed in agriculture (approximately 0%) tend to have relatively small informal markets (about 15% of GDP). As the portion of workers employed in agriculture increases, the size of the informal market increases until a point where when approximately 25% of the workforce is employed in agriculture, about 40% of the GDP comes from the informal market. The size of the informal market then remains relatively steady as the proportion of workers in the agricultural sector increases. This supports the hypothesis that because agricultural production is easy to hide from the government, the amount of agricultural employment is greater and the markets will be more fragmented in these countries.

Percent Industry to Informal Economy: (n = 85) All of the models were significant (p < .001 for all). The quadratic model ($R^2 = .174$) accounts for a moderate amount of the variation, and improves upon the linear model ($R^2 = .154$), but is not improved upon by the cubic model ($R^2 = .175$). Thus, the quadratic model was selected for further analysis. The data indicate that in countries where about 5% of the workforce is employed in industry, over 50% of the GDP is accounted for by the informal economy. The portion of the GDP accounted for by the informal economy decreases as the percent of workers employed in industry increases until industrial employment is approximately 30%, at which point only about 25% of the GDP is accounted for by the informal economy. After that point, the size of the informal economy remains steady. This supports the hypothesis that because industrial output is harder to hide from the

government, the larger the portion of the workforce employed in industry the smaller the

informal economy will be.

Percent Service to Informal Economy: (n = 85) All of the models were significant

(linear and quadratic: p < .001; cubic: p = .001). The cubic model (R^2 = .263) predicted a

large amount of the variability, and improves upon the quadratic model (R^2 = .239),

which in turn improves upon the linear model (R^2 = .166). Thus, the cubic model was

selected for further analysis. The data indicate that in countries where employment in

services was about 20%, the informal economy accounted for about 30% of the GDP. As

the portion of workers involved in service employment increased the size of the informal

economy also increased until a point where when about 40% of workers were employed

in service, the informal economy accounted for about 40% of the GDP. From that point

on, as service employment increases the size of the informal economy decreases until

about 80% of workers are employed in services and the informal economy accounts for

about 20% of the GDP. This only partially confirms the theory that economies with a

large amount of service employment have larger informal economies. This may be a

factor of what types of service jobs are found in economies with high amounts of service

employment. High-paying service jobs such as medicine and law will not necessitate an

individual's entering the informal economy for survival.

Majority Ethnic Group to Informal Economy: (n = 103) The linear model was

significant (p = .069) and accounted for a small amount of the variation. Countries

without a majority ethnic group tended have about 40% of their GDP accounted for by

the informal economy, whereas countries with a majority ethnic group tend to have about

35% of their GDP account for by the informal economies. This is contrary to the original hypothesis in that having a majority ethnic group seems to predict less fragmentation of markets. However, the effect is relatively small, and thus may not be substantively significant.

Number of Ethnic Groups to Informal Economy: (n = 101) All of the models were significant (linear: p = .010; quadratic: p = .033; cubic: p = .073). The linear model (R^2 = .066) accounted for a small amount of the variation, and was not improved upon by the quadratic model (R^2 = .067). Thus, the former was selected for further analysis. The data indicate only one major ethnicity about 30% of the GDP is found in the informal economy. The proportion increases gradually until a country has about six ethnic groups at which time the informal economy accounts for about 40% of the GDP. This is somewhat contrary to the original hypothesis that there would be no relationship between the number of ethnic groups and fragmentation of markets. More research is needed to clarify this finding.

Migrants per 1000 to Informal Economy: (n = 108) All of the models were significant (p < .001 for all). The cubic model (R^2 = .212) predicted a moderate amount of the variability, and improves upon the quadratic model (R^2 = .166), which in turn improves upon the linear model (R^2 = .143). Thus, the cubic model was selected for further analysis. The data indicate that when a country features approximately five emigrants per 1000 of the population, the informal economy accounts for approximately 40% of the GDP. Throughout the main range of the data the portion of the informal economy decreases until a country has about ten immigrants per 1000 of the population

when the informal economy accounts for a less than 20% of the GDP. This is partly contrary to the original hypothesis in that while countries with high emigration did feature larger informal economies, countries with high immigration did not have large informal sectors. This might mean that developed countries do a fairly good job of integrating immigrants into formal markets.

Top 20% Income Share to Informal Economy: (n = 89) All of the models were significant (linear: p = .001; quadratic and cubic: p = .003). The linear model (R^2 = .122) accounted for a moderate amount of the variation, and was not improved upon but the quadratic model (R^2 = .126). Thus, the former was selected for further analysis. In countries with the lowest income share held by the upper class (approximately 30%) only about 25% of GDP is accounted for by the informal economy. As the income share held by the upper class increases, the size of the informal economy increases as well until a point where when about 65% of income share is held by the upper class, about 45% of the GDP comes from the informal economy. This supports the hypothesis that in countries where more money is concentrated in the hands of the wealthy, markets tend to be more fragmented.

2nd 20% Income Share to Informal Economy: (n = 89) All of the models were significant (linear: p = .001; quadratic and cubic: p = .003). The linear model (R^2 = .126) accounted for a moderate amount of the variation, and was not improved upon by the quadratic model (R^2 = .127). Thus, the former was selected for further analysis. The data indicate that in countries with the smallest portion of income share held by the upper middle class (approximately 6%), about 45% of the GDP is accounted for by the informal

market. As income share increases, the size of the informal market decreases to a point where when the upper middle class hold 14% of income share, about 30% of the GDP comes from the informal economy. This supports the hypothesis that as classes other than the upper class have more money, they will have more access to the formal economy.

3rd 20% Income Share to Informal Economy: (n = 89) All of the models were significant (linear: p = .001; quadratic and cubic: p = .002). The quadratic model (R^2 = .135) accounts for a moderate amount of the variation, and improves upon the linear model (R^2 = .123), but is not improved upon by the cubic model (R^2 = .134). Thus, the quadratic model was selected for further analysis. The data indicate that when the middle class holds about 10% of the income share, the informal economy accounts for approximately 40% of the GDP. As income share increases, the size of the informal economy remains relatively steady until the middle class shares about 13% of income, at which point the size of the informal economy begins to shrink. When the middle class holds about 18% of income share, only about 20% of the GDP is accounted for by the informal economy. This also supports the hypothesis that the richer the classes other than the upper class are, the less fragmentation of markets will be present.

4th 20% Income Share to Informal Economy: (n = 89) All of the models were significant (linear: p = .005; quadratic and cubic: p = .002). The quadratic model (R^2 = .137) accounts for a moderate amount of the variation, and improves upon the linear model (R^2 = .086), but is not improved upon by the cubic model (R^2 = .136). Thus, the quadratic model was selected for further analysis. The data indicate that when the lower middle class hold approximately 18% of income share, the informal economy accounts

for approximately 30% of a country's GDP. As income share increases the size of the informal economy increases to a point where when the lower middle class hold about 20% income share, about 40% of GDP is accounted for by the informal economy. At that point, the size of the informal economy contracts as income share increases to a point where when the lower middle class holds 23% of income share, only about 20% of the GDP is accounted for by the informal economy. Generally, this supports the hypothesis that as classes other than the upper class have more financial resources, there will be less of a need for individuals to use informal markets.

Bottom 20% Income Share to Informal Economy: (n = 89) All of the models were significant (linear: p = .003; quadratic: p = .010; cubic: p = .006). The linear model (R^2 = .095) accounted for a moderate amount of the variation, and was not improved upon but the quadratic model (R^2 = .102). However, the cubic model (R^2 = .137) did account for a substantially larger amount of the variation than the linear model. Thus, an exception was made so that the cubic model was selected for further analysis. The data indicate that when approximately 2% of income share is held by the lower class, almost 70% of the GDP is accounted for by the informal economy. The size of the informal economy then decreases until about 5% of income is held by the lower class when the portion of the GDP remains steady at about 35%. At approximately 8% income share, the size of the informal economy again decreases until when about 9% of income is concentrated in the lower class, only 10% of the GDP is accounted for by the informal economy. This lends strong support to the hypothesis that when the poor have more money, they are better able to integrate into the formal economy.

Internet Usage to Informal Economy: (n = 108) All of the models were significant (p < .001 for all). The linear model (R^2 = .398) accounted for a large amount of the variation, and was not improved upon by the quadratic model (R^2 = .401). Thus, the former was selected for further analysis. Countries that have almost no internet users tend to have about 40% of their GDP accounted for by the informal economy, whereas countries with about 60 internet users per 100 people tend to have only about 15% of their GDP accounted for by the informal economy. This lends very strong support to the hypothesis that countries in which a greater proportion of individuals have access to the world system will have less fragmented markets.

Procedures Registering Property to Informal Economy: (n =108) All of the models were significant (p < .001 for all). The cubic model (R^2 = .168) predicted a moderate amount of the variability, and improves upon the quadratic model (R^2 = .158), which in turn improves upon the linear model (R^2 = .143). Thus, the cubic model was selected for further analysis. The data indicate that countries with one procedure to register property have only about 10% of their GDP accounted for by the informal economy. As the number of procedures increases, the size of the informal economy increases until there are about seven procedures, at which point about 35% of a country's GDP is accounted for by the informal economy. The size of the informal economy then remains steady until a country has about 15 procedures. Then the size of the informal economy begins to increase again. This lends strong support to the hypothesis that the more bureaucratic procedures needed to formalize property will force more businesses into the informal economy.

Time Registering Property to Informal Economy: (n = 108) The quadratic (p = .023) and the cubic model (.010) were significant. The cubic model (R^2 = .103) predicted a moderate amount of the variability, and improves upon the quadratic model (R^2 = .069), which in turn improves upon the linear model (R^2 = .024). Thus, the cubic model was selected for further analysis. The data indicate that in countries that require almost no days to register property, about 25% of the GDP is accounted for by the informal economy. As the amount of time needed increases, the size of the informal economy also increases until when about 150 days are needed, 40% of the GDP is accounted for by the informal economy. At that point, the size of the informal economy begins to decrease. Essentially, this does support the hypothesis that the more time becomes an obstacle to property registration, the more likely it is that countries will develop fragmented markets.

Procedures Registering Business to Informal Economy: (n = 108) All of the models were significant (p < .001 for all). The cubic model (R^2 = .159) predicted a moderate amount of the variability, and improves upon the quadratic model (R^2 = .145), which in turn improves upon the linear model (R^2 = .134). Thus, the cubic model was selected for further analysis. The data indicate that in countries with only about two procedures for registering a business, about 15% of the GDP is found in the informal economy. As the number of procedures increases, the size of the informal economy increases sharply until about five procedures are necessary, when about 30% of the GDP is accounted for by the informal economy. The size of the informal economy the increases more gently until about 15 procedures are necessary, where about 40% of a country's GDP is accounted for by the informal economy. At that point the size of the

informal economy increases sharply again. Essentially, this supports the hypothesis that the more bureaucratic hurdles that are put in the way of formalizing a business, the more of the market will be forced into informality.

Time Registering Business to Informal Economy: (n = 108) All of the models were significant (linear: p = .012; quadratic: p = .002; cubic: p = .003). The cubic model (R^2 = .124) predicted a moderate amount of the variability, and improves upon the quadratic model (R^2 = .114), which in turn improves upon the linear model (R^2 = .058). Thus, the cubic model was selected for further analysis. The data indicate that in countries where registering a business takes only a few days, the informal economy accounts for only about 15% of the GDP. As the amount of time needed increases, the size of the informal economy increases until when about 60 days are needed to register a business, approximately 35% of the GDP is accounted for by the informal economy. At that point the size of the informal economy is relatively steady through the rest of the range of the data. Once again, this supports the hypothesis that the harder it is for businesses or individuals to participate in the formal economy, the larger the informal sector will be.

Percent Agriculture to Firms Avoiding Taxes: (n = 60) None of the models were significant. The quadratic model (R^2 = .068) accounts for a small amount of the variation, and improves upon the linear model (R^2 = .042), but is not improved upon by the cubic model (R^2 = .070). Thus, the quadratic model was selected for further analysis. However, it does not appear as if the percent of workers employed in agriculture has an effect upon whether firms attempt to avoid paying taxes.

Percent Industry to Firms Avoiding Taxes: (n = 60) None of the models were significant. The linear model (R^2 = .038) accounted for a very small amount of the variation, and was not improved upon but the quadratic model (R^2 = .045). Thus, the former was selected for further analysis. However, it does not appear as if the percent of workers employed in industry affects whether firms attempt to avoid paying taxes.

Percent Service to Firms Avoiding Taxes: (n = 60) None of the models were significant. The linear model (R^2 = .030) accounted for a very small amount of the variation, and was not improved upon by the quadratic model (R^2 = .035). Thus, the former was selected for further analysis. However, it does not seem as if whether firms attempt to avoid paying taxes is related to how much of the workforce is involved in the service industry.

Majority Ethnic Group to Firms Avoiding Taxes: (n = 89) The linear model was significant (p = .082) and accounted for a small amount of the variation. Countries without a majority ethnic group reported having about 65% of their firms avoiding taxes, whereas countries with a majority ethnic group tended to report about 45% of their firms avoiding taxes. This is contrary to the original hypothesis in that a majority ethnic group seems to predict less fragmentation of markets. More research is needed on this relationship.

Majority Ethnic Group to Informal Economy: (n = 89) The linear model was significant (p = .002) and accounted for a moderate amount of the variation (R^2 = .102). Countries without a majority ethnic group tended have about 40% of their GDP accounted for by the informal economy, whereas countries with a majority ethnic group

tended to have about 35% of their GDP accounted for by the informal economies. This is contrary to the original hypothesis that a dominant ethnic group seems to predict less fragmentation of markets. However, the effect is relatively small, and thus may not be substantively significant.

Number of Ethnic Groups to Firms Avoiding Taxes: (n = 89) Only the linear model was significant (p = .078). The linear model (R^2 = .035) accounted for a small amount of the variation, and was not improved upon but the quadratic model (R^2 = .035). Thus, the former was selected for further analysis. The data indicate that countries with only one ethnic group tend to have about 45% of their firms avoiding at least some taxes, where as countries with six ethnic groups tend to have about 55% of their firms avoiding taxes. This does not support the hypothesis that the number of ethnic groups has no bearing on fragmentation of markets.

Migrants Per 1000 to Firms Avoiding Taxes: (n = 94) None of the models were significant. The linear model (R^2 = .002) accounted for almost none of the variation, but still was not improved upon but the quadratic model (R^2 = .002). Thus, the former was selected for further analysis. However, it does not seem as if migration has an effect on whether firms attempt to avoid taxes or not.

Top 20% Income Share to Firms Avoiding Taxes: (n = 76) None of the models were significant. The quadratic model (R^2 = .054) accounts for a small amount of the variation, and improves upon the linear model (R^2 = .025), but is not improved upon by the cubic model (R^2 = .056). Thus, the quadratic model was selected for further analysis.

However, it does not appear as if the income share held by the upper class is associated with whether firms attempt to avoid paying taxes.

2nd 20% Income Share to Firms Avoiding Taxes: (n = 76) None of the models were significant. The quadratic model (R^2 = .052) accounts for a small amount of the variation, and improves upon the linear model (R^2 = .027), but is not improved upon by the cubic model (R^2 = .051). Thus, the quadratic model was selected for further analysis. However, it does not appear as if the income share held by the upper middle class affects whether firms attempt to avoid paying taxes.

3rd 20% Income Share to Firms Avoiding Taxes: (n = 76) None of the models were significant. The quadratic model (R^2 = .058) accounts for a small amount of the variation, and improves upon the linear model (R^2 = .026), but is not improved upon by the cubic model (R^2 = .055). Thus, the quadratic model was selected for further analysis. However, it does not appear as if the income share held by the middle class is related to whether firms attempt to avoid paying taxes.

4th 20% Income Share to Firms Avoiding Taxes: (n = 76) None of the models were significant. The linear model (R^2 = .009) accounted for almost none of the variation, and was not improved upon by the quadratic model (R^2 = .016). Thus, the former was selected for further analysis. However, it is apparent that the income share held by the lower middle class does not affect the amount of firms that attempt to avoid paying taxes.

Bottom 20% Income Share to Firms Avoiding Taxes: (n = 76) None of the models were significant. The quadratic model (R^2 = .037) accounts for a very small amount of the variation, and improves upon the linear model (R^2 = .025), but is not improved upon

by the cubic model (R^2 = .038). Thus, the quadratic model was selected for further analysis. However, it does not seem as if the income share held by the lower class is associated with the number of firms that attempt to avoid paying some of their taxes.

Internet Usage to Firms Avoiding Taxes: (n = 94) The linear model (p = .045) and the quadratic model (p = 059) were significant. The quadratic model (R^2 = .060) accounts for a small amount of the variation, and improves upon the linear model (R^2 = .043), but is not improved upon by the cubic model (R^2 = .061). Thus, the quadratic model was selected for further analysis. The data indicate that in countries with almost no internet users, approximately 55% of firms attempt to avoid paying taxes, whereas in countries with about 50 users per 100 people about 35% of firms attempt to avoid taxes. This suggests that countries where more people are connected to the world communications system have less need for informality in business operations.

Procedures Registering Property to Firms Avoiding Taxes: (n = 94) None of the models were significant. The cubic model (R^2 = .051) predicted a small amount of the variability, and improves upon the quadratic model (R^2 = .038), which in turn improves upon the linear model (R^2 = .023). Thus, the cubic model was selected for further analysis. However, it does not appear as if the procedures needed to register property are related to whether firms attempt to avoid paying taxes.

Time Registering Property to Firms Avoiding Taxes: (n = 94) None of the models were significant. The linear model (R^2 = .001) accounted for almost none of the variation, but nonetheless was not improved upon by the quadratic model (R^2 = .005). Thus, the

former was selected for further analysis, even though the time needed to register property did not have any effect on whether firms attempt to avoid paying taxes.

Procedures Registering Business to Firms Avoiding Taxes: (n = 94) All of the models were significant (linear: p = .004; quadratic: p = 014; cubic: p = 023). The linear model (R^2 = .087) accounted for a small amount of the variation, and was not improved upon by the quadratic model (R^2 = .089). Thus, the former was selected for further analysis. The data indicate that in countries with five procedures needed to start a business only about 25% of firms attempted to avoid paying taxes. In countries with 15 procedures, almost 55% of firms attempted to avoid paying taxes. This finding lends very strong support to the idea that the more hurdles are placed in the way of formalizing business, the more they will turn to various aspects of the informal economy in order to make a profit. In this case, they attempt to avoid taxes.

Time Registering Business to Firms Avoiding Taxes: (n = 94) The linear model (p = .041) and the quadratic model (p = .081) were significant. The linear model (R^2 = .045) accounted for a small amount of the variation, and was not improved upon by the quadratic model (R^2 = .054). Thus, the former was selected for further analysis. The data indicate that in countries where registering a business only takes a few days, about 40% of firms attempt to avoid paying taxes, whereas in countries where registration takes about 150 days, 60% of firms attempt to avoid paying taxes. This finding also confirms that as more obstacles are placed in the way of businesses formalizing, the more they will turn to aspects of the informal economy.

Curve Estimations: Discussion

The findings from the curve estimation include some important conclusions related to fragmentation of markets. First, when a model is created to predict a single element of fragmentation of markets, businesses avoiding taxes, the factors that influence whether a country includes such informality are limited. Both of the variables that confirmed their initial hypotheses regarding firms avoiding taxes related to structural hurdles facing business registration. Essentially, if the process to register a business is long and difficult, firms will seek to enhance their profits by not paying some taxes. As de Soto's research suggests, companies engage in informal economic transaction in order to survive.

It is also noteworthy which variables were not associated with firms avoiding taxes. The five class variables did not relate directly to businesses. Instead, they regarded where individuals fall on a social hierarchy. Essentially, where individuals fall on the social spectrum does not confront businesses. The factors that will drive a business to informal transactions relate mainly to their profit. Similarly, a business's decision to engage in this form of informality does not depend upon what sector of the economy in which most people in a country work. If employment distribution does not affect a business's profits, it will have no bearing on whether a business attempts to avoid taxes.

It should be noted that three relationships did not fully support their hypotheses. First, it is unclear why countries with a majority ethnic group seemed to have few firms that avoided taxes. In addition, it is unclear exactly why the number of ethnic groups had any affect at all. The original hypothesis was that a single majority ethnic group could use its numbers and assumed political power in order to prevent other ethnic groups from

entering the business arena, thus sending their businesses into the informal economy. Perhaps it is the case that majority ethnic groups can be so dominant that they in general prevent anyone else from entering the business arena. However, more research is needed regarding these relationships.

The finding that was partly confirmed for firms avoiding taxes was access to the internet. The original hypothesis was confirmed in that countries which had more people connected to the most global means of communications did have small informal economies. Thus, it is defensible to assume that firms and individuals in these countries are connected enough that they do not need to engage in informal exchange. However, for the specific aspect of the informal economy measured by this variable, the connection between connectedness and paying taxes is tenuous at best. It may be more likely that businesses in countries with high levels of technological development can be more easily watched by the tax authorities, and thus do not cheat on their taxes. More research is needed for this relationship.

When the informal economy is taken as a whole in order to proxy fragmentation of markets, most of the initial hypotheses were confirmed. For instance, agriculture is the industry most amenable to informal market activity, as householding is very easy and untaxed cash transactions are relatively free from government view. Industry, on the other hand, is much harder to hide from government eyes. Because industrial businesses can be very dependent upon government utilities for their survival, it is harder to hide any type of exchange. Thus, countries with more people working at industrial jobs will generally give their workers and businesses fewer opportunities to engage in informal

exchange. The relationship between the proportion of workers employed in service industries and the size of the informal economy is somewhat less straightforward. In essence, in countries with low levels of service employment, the more service employment, the more informal market activity. However, at a certain point increasing service employment suggests a small informal economy. As previously stated, this may have to do with the types of service jobs. Perhaps, in the most developed countries with the largest service industries, there is just less of a need for informal markets.

The most interesting relationships with the size of the informal economy have to do with social class. De Soto specifically states that countries where money is concentrated in the hand of the rich, where the poor have little stake in the formal national markets, will have larger segments of their national economy driven to informality. Essentially, that is what these data suggest. When income is concentrated in the hands of the wealthiest members of a society, the informal economy grows. Obviously, this suggests that everyone else is being pushed into informal markets where they can find more beneficial terms regarding their transactions. On the other hand, with every other economic class, when they have more income the country in general has a smaller informal economy. Essentially, in such countries the non-rich have enough resources to participate in formal exchange.

Internet usage predicts smaller informal economies. This suggests that connectedness plays a role in participation in the formal economy. If one assumes that those with access to transnational exchange of information, and most likely goods and services as well, also have more access to intranational exchange, then it follows that

only countries with many people connected to the world system will have more individuals connected to the national economic system. Thus, they will have a greater proportion of people engaged in formal economic activity.

The legal/structural variables confirm several of de Soto's ideas about informality. First, countries that make it hard to own property drive exchange into the informal economy. Second, countries that make it hard to legally operate a business drive exchange into the informal economy. In either case, when businesses or individuals are prevented from satisfying their needs in the formal economic system, they will become part of the informal economy. As de Soto stated, they engage in informal exchange in order to survive.

It should be noted that the data regarding migration and size of an informal economy only partly confirmed the initial hypothesis. It was believed that informality would be high in countries with high levels of emigration because they tended to be less developed, but would also be high in countries with high levels of immigration because it would hard to immediately integrate those immigrants into the national economy. Only the first part of this hypothesis was confirmed. More research is needed in order to understand this finding.

Finally, the ethnicity variables found results either opposite what was expected or found an effect when none was expected. As previously stated, the reason for this is not clear, and more research is needed into the subject.

For the sake of parsimony, the models should be reduced as much as possible before building structural equation models. For the percent of GDP accounted for by the

informal economy, it is not possible to remove any effects, as everything was significant. However, for the variable regarding businesses avoiding taxes, all of the non-significant relationships will be excluded because none of them directly relate to business. Therefore, in reality there should not be expected to have any effect.

General Discussion

Fragmentation of markets theory suggests that in early modern Europe as countries modernize they strove to develop unified markets. However, even though nation-states were generally able to regulate who participated in their national markets, they were never able to fully integrate members of their societies into their national markets. As countries continued to modernize, segments of their population were denied access to the formally regulated markets and began to participate in various forms of informal economic exchange.

This research provides strong support for the supposition that macro-structural factors can be used to predict fragmentation of markets by predicting size of a country's informal markets. However, when examining one specific business related aspect of fragmentation of markets, only business related factors predict informal exchange.

For high levels of informality to exist, a country's economic system must be structured in a way that is amenable to informal exchange. This is confirmed in that countries with segments of their economies where exchange is easily hidden from government view featured larger informal economies. While countries that are more developed with larger industrial sectors and with the largest service sectors had smaller informal markets. These two findings suggest that in order for the population of a country

to informal exchange, they must have the opportunity to participate in informal exchange. Countries with economic structures that can easily be overseen by governments tend not to fragment while countries with economies structured so that governments cannot oversee exchange can fragment.

While it seems in order for fragmentation of markets to occur it is necessary for countries to provide the opportunity for individuals to participate in the informal economies. However, it also seems to be true that for informal economies to grow member of a society must have a motivation to leave the formal market. Several other findings support this. First, the findings support de Soto's theory that informality will be higher in countries where legal barriers make formal registration of property and business difficult. Essentially, if the government creates barriers to entry into the formal economy, exchange will not stop. Instead, those who cannot exchange legally will exchange informally. Also supporting the suggestion that access to the formal system lessens the need for informal exchange is the fact that countries with high levels of connectedness to the world economic and social system through the internet have smaller informal economies. Taken together it is clear that the more a country opens its economic system to convenient formal exchange the easier it will be for the country to have an economy firmly under governmental control.

De Soto also suggested that when individuals can exchange formally they will is that countries that have income balanced throughout their class systems have smaller informal economies, where as countries with larger amounts income concentrated among the rich are more likely to have large informal economies. In the latter type of country it

is only the wealthiest who can mobilize resources in order to conduct commerce in a legal manner. Those with less income simply cannot afford to participate in the formal economy.

In order to understand how these finding support the theory that fragmented markets relates to modernity, it is important to understand what type of countries would be the most likely to encourage formality. The countries that provide the greatest access to the national markets and the least opportunity to engage in informal exchange tend to be the most developed countries. Developing countries where the government has never fully established control over the economies within their border feature the most fragmentation. While this may not seem to provide the strongest support for a relationship between fragmentation of markets and modernity, one must remember that this analysis uses the nation-state as the unit of analysis. Not every group within a society has the same access to the formal markets. For instance, no matter the country the poor often have little access to formal markets. In addition, as established in the chapter regarding fragmentation of cities, those how live in neighborhoods isolated from the rest of the urban community do not have access to the benefits of the modern city. Thus, it is reasonable to suggest that within a country groups with less access to the formal economy will the most fragmented from formal markets.

Mingione suggests that one common approach companies use to enhance their profits is the failure to pay taxes. This related to fragmentation of markets in that failure to pay taxes it one of the clearest ways of ignoring government regulation of markets. The only relationships that predicted failure to pay taxes have to do with countries

creating a non-conducive business environment. Essentially, if governments make it hard for businesses to do business, they will ignore government control.

Taken together the findings relating to the general size of the informal economy and one specific way in which businesses resist government control support the theory that lack of access and presence of opportunity are the greatest predictor of the size of informal economies. While highly modernized countries do provide the greatest access to formal economies, other types of fragmentation create social divisions that leave some groups excluded. Thus, they might also create the most pure forms of fragmentation of markets.

Fragmentation of markets has both negative and positive effects for a country. On the negative side, when large amounts of exchange take place in informally, countries cannot collect taxes on the exchange. Essentially, one of the most important reasons for monopolizing national markets, collecting revenue, is undermined. Similarly, countries cannot regulate product safety, working conditions, or pay when they have large formal sectors. However, informality plays an important role in the formal economy in that those who do not have access to the formal economy still have a structure in which that can provide for their survival. In whole though, it seems as if most recognize the benefits of formality. Thus, if countries want to have greater control over their economies and provide greater commercial opportunities for their population, they will try to provide as much access to formal markets as possible.

This research is limited in three ways. First, as with most data from this research, there are gaps in the data. Some of the variables used are used by the World Bank to

assess levels of economic development. Thus, the data is most readily available for developing countries and developed countries at the lower end of upper developmental range. In order, to provide for a stronger analysis data representing as many countries as possible is needed. Otherwise, there is a risk of unreliability within the analysis.

Second, size of an informal sector in a national economy is a somewhat non-specific proxy for participation in the informal economy. A better analysis of informal participation would using several variables to represent different aspect of informality such as exchange of in kind services or informal employment

Finally, like the models in previous chapter, the model for fragmentation of markets does not illustrate causation.

Future research must address all of these limitations, though finding the necessary data would prove to be rather difficult. In addition, future research should determine if patterns exist between fragmentation as it relates to countries and how it relates to groups within countries.

Conclusion

This chapter provides strong support for the argument that fragmentation of markets can be empirically modeled. It suggests that countries that provide access to formal markets will have more control over their national economies. However, by extension it also suggests that groups within countries that cannot mobilize economic and social resources participate in the formal economy will be forced into fragmented markets.

Chapter 8

Fragmentation of the Production Process

Abstract

Fragmentation of the production process refers to the breakdown of production as a continuous process conducted by one country in one location. It is associated with outsourcing and offshoring. It is difficult to determine how much a country is affected by outsourcing, but the amount of offshoring can be assessed by analyzing the relationship between imports, exports, and foreign direct investment (FDI). Literature suggests that these can be predicted by the size of various sectors of a country's economy, ease of doing business within a country, and participation in free trade. Curve analysis suggests that a relationship exists where counties with greater exports tend to have more FDI inflows and countries with greater imports have greater FDI outflows. In all, this analysis provided only limited success in confirming that the most modern economies feature the most fragmented production processes.

*   *   *

A call to Citibank's credit card division at 11:02 PM Saturday February 21, 2009:

Customer Service Representative: Thank you for calling Citicard's customer service. This is Shahid.

Caller: May I ask where you are located?

335

Customer Service Representative: Mumbai, India. But you probably know it as

Bombay.

Citibank does not employ Americans to work customer service at night or on weekends.

Instead they use call centers in countries like India and the Philippines where English is

taught in school, but the labor costs are cheaper.

<p style="text-align:center">*   *   *</p>

An edited press release from the Girl Scouts of America:

Girl Scout Cookies Not Affected by Peanut Butter Warning

FOR IMMEDIATE RELEASE

February 20, 2009

NEW YORK, N.Y. —Neither of the two licensed bakers affiliated with

Girl Scout® Cookies, ABC Interbake or Little Brownie Bakers, source

their peanut butter from the supplier involved in the current peanut butter

warning.

All ingredients used in Girl Scout Cookies are regularly inspected to

ensure they are safe for consumption.

Peanut Butter used by ABC Interbake is supplied by Hampton Farms in

Severn, N.C. Peanut Butter used by Little Brownie Bakers is supplied by

Algood Food Company in Louisville, Ky.

FDA and other regulatory agencies have indicated that Peanut Corporation

of America (PCA) is the focus of their investigation concerning a recent

Salmonella outbreak thought to be caused by tainted peanut butter. PCA
does not supply peanut butter used in any variety of Girl Scout® cookies.
Food safety and quality are of the utmost importance to us. The Girl
Scout® Cookie Program is the nation's premier entrepreneurship and
educational program for girls and we appreciate your support in your local
communities.

For more information on where to get Girl Scout Cookies, go to
www.girlscoutcookies.org.

*   *   *

In the modern capitalist economy it is growing increasingly hard to acquire any
product that has not in one way or another been touched by globalization. Even products
that are assembled in one country often include parts made in various locations by other
companies. Sometimes these other companies are located in very different parts of the
world. In essence, the days of the locally crafted item or the 'Made in America' label are
over.

Fragmentation of the production process is a condition in which few, if any,
goods are produced from start to finish in a single location by a single producer. The
process stands in stark contrast to the premodern artisan who acquired raw materials and
refined them into a finished product or to the vertical monopolies of earlier capitalist eras
where one firm controlled production of a product from start to finish.

This chapter seeks to create an empirical model for fragmentation of the
production process. First, the chapter will describe the difference between unified and

fragmented production processes. A brief discussion of the history of the production process follows, which will illustrate the path of fragmentation of the production process. From these reviews, several indicators will be drawn to create the empirical model.

Unified versus Fragmented Production Processes

A unified production process for a specific product is simply one in which an individual producer controls the production of a good or service from the start of production until distribution. Essentially, there is continuity in production from start to finish. While there have been few examples of a perfectly unified production process, there are examples that have come close. For instance, at the height of its monopoly Standard Oil owned oil wells, railroads, refineries, and distribution networks. However, because examples such as these are rare, unification of a production process must be seen as a matter of degree. If a company buys raw materials, then builds every aspect of the finished product in one location, the process would be considered to be very unified. A company that does control every aspect of production but uses different locations for various aspects of assembly would indicate a production process that was also very unified.

Fragmentation of the production process is in a way the absence of unity. While there are many ways in which the production process can become fragmented, those ways have one factor in common—separability. Sven Arndt and Henryk Kierzokwski (2001) state,

> Needless to say, intra-product specialization can only take place were various phases of a production process are physically separable, that is, where the manufacture of a product is amenable to fragmentation. (2)

Within most industries, there comes a point in which the aspects of the production process do not need to take place in a continuous process. Rather production can be broken down into discreet parts that transcend a single location. Thus, one can speak of two types of fragmentation of production process: fragmentation as it applies to the individual process and fragmentation as it applies to locations.

Fragmentation of the Production Process for Individual Products

Essentially, fragmentation of the production process for individual products is outsourcing, a situation in which different firms produce parts for a finished product while a different firm completes the final manufacturing process. Victoria Cruzon Price (2001) differentiates outsourcing from other forms of inter-firm transactions when she states

> Two important elements make outsourcing different from the traditional arm's-length transactions: the long-term nature of the relationship and the amount of information, in the form of detailed instructions and specifications on the part of the customer, which accompany the outsourcing. (89)

The key to the process is that the business relationships are structured so that a specialist firm relieves the other firm of a certain part of the manufacturing process, allowing the latter to concentrate on the parts where they have a competitive advantage.

An example of this process can be seen in the production of a personal computer. For instance, Hewlett Packard does not produce every part for their computers. A

Pavilion Desktop purchased in November of 2009 included an Intel Pentium Dual-core processor and the Windows Vista operating systems. Thus, HP outsourced the two items that actually make the computer function.

Again, fragmentation of the production process as it relates to an individual product is a matter of degree. A product for which one company manufactures the majority of parts on its own while purchasing a few from specialty firms would not come from a very fragmented production process. On the other hand, a product that was made from mostly subcontracted parts but was assembled by one firm would come from a very fragmented production process.

There are several reasons why the production process may become fragmented in relation to a specific production. However, all reasons can be related back to Marx's theory of the contradiction of capitalism where in order for capitalists to continue to make profits they needed to better exploit markets. In the Manifesto of the communist party Marx and Engels (1967) argue that

> The conditions of bourgeois society are too narrow to comprise the wealth
> created by them. And how does the bourgeoisie get over these crises? On one
> hand by enforced destruction of a mass of productive forces; on the other, by the
> conquest of new markets, and by the more thorough exploitation of the old ones.
> That is to say, by paving the way for more extensive and more destructive crises,
> and by diminishing the means whereby crises are prevented. (86)

In regards to outsourcing, the exploitation of markets does not refer to the sale of products. Rather it involves the better exploitation of markets for the initial components

of a product. In the modern global economy companies can search many markets to find the components that will give them a competitive advantage in producing a finished product at a lower cost.

In regards to how fragmentation of the production process involving individual products relates to countries, it is apparent that countries with fragmented production processes must have a substantial industrial base. While not all industry is manufacturing per se, it is rare that any industrial product has a single stage of production. Therefore, it follows that even countries that produce an initial resource for manufacturing, such as steel, will still be involved in fragmented production processes, just on the front end instead of the last stages of the process.

Unified versus Fragmented Production Processes as Applied to Location

Traditionally, the production of a finished product would take place in a single location. R. J. Johnston (1986) describes the phenomenon by stating,

> All economic activity takes place at a special location and much of it – including the great majority of productive activity – takes place at a fixed location: once invested, fixed capital is immovable… For some activities, location choice is constrained by the availability of, or accessibility to, certain resources. For others, the constraints are much less, and many 'choices' reflect particular local circumstances only. (268)

When most of the production of a given item takes place in one location, it is part of a unified production process as it relates to location.

However, as modern industrial production progressed, firms became less dependent upon any one given location for the production of their finished products. When firms begin to manufacture different parts of a product in multiple locations the one can say that the production process is fragmented by location. While initially this fragmentation took place on a national level, with the advent of offshoring fragmentation by location has become a global phenomenon. Arndt and Kierzkowski (2001) describe this development by stating,

> Thus, while fragmentation has long been a feature of production in many
> industries, it was until recently primarily a domestic phenomenon.
> Subcontracting and outsourcing across borders were limited by [cost and
> availability of service links]. Recent developments in the world trading system,
> together with important technological advances, have created new opportunities
> for extending production fragmentation across national frontiers. As a result, the
> share of components trade in the total trade of nations has risen significantly and
> many final products have become truly global, pulling together parts and
> components from many nations. (4)

Thus, in the search for a way to combat the contradictions of capitalism companies constantly look for less expensive labor markets or areas with few business regulations in order to lower the price of their finished product. As Marx and Engels (1967) state,

> The deed of a constantly expanding market for its products chases the
> bourgeoisie over the whole surface of the globe. It must nestle everywhere, settle
> everywhere, establish connexions [sic] everywhere. (83)

While the process of fragmentation of the production process is usually described for the physical creation of a product, even the servicing of a given product can be fragmented by location. For instance, Rafiq Dossani and Martin Kenney (2007) suggest that

> Many service jobs, which formerly were rooted in close proximity to where they were generated due to the sheer logistics of moving paper documents and formerly high telecommunication costs have now been made mobile. (787)

When referring specifically to the outsourcing of services to India they state,

> The single greatest motivation for considering India for offshoring from a developed country is lower labor costs… In general, though, the wage differences are dramatic… In 2004, the Indian wage rate for entry-level call center employees in metro areas is $2,400 a year. (777)

Essentially, firms relocate their services to distant locations for essentially the same reason they relocate production, to provide the service at a lower cost and to maximize profits.

Fragmentation of the production process as it relates to location is often related to fragmentation of the production process as it relates to a single product. In other words, companies often outsource to areas far distant from their traditional manufacturing bases. Eva Paus (2007) suggests that

> Outsourcing is integral to the division of labor and thus as old as economic development itself. When a production process can be separated into discrete parts and a producer finds that it is more economical for a part to be produced off-site, then the production of that part is out-sourced. Over the last forty or fifty

years this age-old process has taken on a significant added dimension, as

producer have increasingly outsourced to other countries. (4)

Companies engage in this process in order acquire components for finished products at lower costs. Essentially, companies engage in offshore outsourcing in order to increase their profits.

Monopolies and the Unified Production Process

Perhaps the clearest example of a unified production process can be seen in the organization of monopolies. Throughout the history of commerce, there have been two examples of monopolistic practices. First, horizontal monopolies attempt to corner the market on one particular product. Keith Cowling (1982) describes the creation of this type of monopoly as,

… horizontal in character – that is, it involved the joining together of

corporations to form new giants which dominated specific industries or sectors of

the economy. (71)

He continues that horizontal monopolies do not need to produce only one product but can operate in

… fairly closely related markets, e.g., 'traditional' versus 'newer' domestic

appliances; diamond abrasive wheels versus cutting tools; different types of

goods supplied to builders' merchants; and subsector of the ethical

pharmaceutical industry. (73-74)

However, horizontal monopolies do not accurately represent the unification of the production process in that they do not necessarily control the production chain of whatever business in which they engage.

Vertical monopolies are a better representation of unification of the production process. In this context, a company attempts to control as much of the supply chain for producing a finished commodity as is realistically possible. Thomas Karier (1993) suggest companies do this because,

> If the first place a firm looks for potential acquisitions is within its own market, the second place is typical upstream at its suppliers or downstream at its buyers… While there is no direct gain in monopoly power, there may be economies in production and marketing (140)

In fact, many companies have tried to enhance profits by removing as much of the unpredictability in supply chain management as they can. Karier provide the example of the Ford Motor Company, which he describes by saying,

> One of the fist highly integrated firms… was Ford Motor Company. Although Ford relied much less on mergers and acquisitions to get started than most other firms, it did place a strong emphasis on integration. Ford constructed its own steel mills at the Rouge plant in Detroit and bought coal reserves of 600 million tons. It also took great pride in producing most of its own parts as well as such basics as glass, artificial leather, cloth, and lumber. At the giant Rouge plant, raw materials came in one door and automobiles went out the other. (141)

Perhaps, no better example of the vertical monopoly can be offered. Ford, like other companies, attempted to control the entire process of production so that they could increase production if necessary, or decrease it if they needed to do so. In other words, they desired to unify the production process so that they could maximize their profits.

Fragmentation of the Production Process and Flexible Manufacturing

One of the major driving factors in the continued fragmentation of the production process was the advent of flexible manufacturing. The strategy, as described by Clayton Kie (1997), includes using flexible technology which

> entails the use of computer programmable machinery (microprocessing technology) that enables labor saving processes to be introduced without the traditional requirements of product standardization. Rather than producing large quantities of the same product, as has been the prevailing fordist method of reducing production costs, this machinery allows economies of scale to be achieved with differentiated product specifications. (19)

Essentially, this process allows companies to maximize their market exposure by producing different but related products using the same general production process. Often the differences in the products are not only cosmetic. Thus, flexible manufacturing provides customers with the illusion of greater selection in goods.

Flexible manufacturing is associated with the fragmentation of production for several reasons. First, flexible manufacturing often requires companies to use a greater number of suppliers when finishing a product. Second, the process of flexible manufacturing itself implies that companies are not channeling products along the same assembly procedure from start to finish. Instead, products are being diverted at various stages of production in order to be specified for the niche they were intended. In general, it is the nature of the business relationships that relates flexible manufacturing to fragmentation of the production process. When describing these relationships, Kie (1997) suggests that,

> Given the demand environment, the costs of vertically integrating, particularly
>
> via standardization processes, may be too great, and options to subcontract may
>
> be preferable. Small firms may arise independently or as spinoffs of larger firms.
>
> However, the relationships between either a network of small firms, or between
>
> small subcontractors and a few larger producers upon whom the former are
>
> reliant, are closely cooperative. (22)

This description is fully compatible with Price's (2001) description as relationships in the fragmented production process as being close and long-term.

A Brief History of Fragmentation of the Production Process

While there was never perfect unity to the process of production, industrialization and modernization have increased the prevalence of fragmentation of the production process.

The End of the Workshop

Generally, most non-home based pre-industrial production took place in the artisan's workshop. While an artisan did not make every component of a product (e.g., a cooper usually acquired nails from a blacksmith), the vast majority of the production process took place in one location under the direction of one individual. In such a society a worker was fully invested in the entire act of production from the initial assembly to sale of the product.

Even as production moved from the workshop to the factory, fragmentation of the production process did not appear rapidly. During this time, factories tended to be built near the resources which were refined into the finished product (Johnston 2006, 268).

Most of the production process took place at those factories. Often factories would employ not only laborers, but other classes of employees such as machinists who built and repaired the tools of production. Outsourcing as it is understood today was impossible because the standardization of components was not created until the development of interchangeable parts, often attributed to Eli Whitney in 1800's. Thus, products were almost a customized as they were during the pre-industrial era. The main difference between the eras was the number of people involved in the production process.

The Rise of the Monopoly

Even as the production process moved from the workshop to the factory, it remained a more or less unified process, but also remained a comparatively simple process. As technology improved and more steps were needed in the creation of a product, it became necessary for businesses to find ways to control a larger production chain.

In the late 19th and early 20th centuries, some companies attempted to fully take over their industries; in other words, they attempted to form horizontal monopolies. Usually, the founders of these monopolies were attempting to control both the standards and prices of goods. However, Richard McKenzie and Dwight Lee (2008) suggest that monopolization was a more natural process which was driven as much by innovation as any other motive. They suggest that,

> … in a world in which goods are not given—that is, they must be imagined, developed, produced, marketed, and distributed, with a significant probability of failure at each step—monopoly and prospects of it, can be expected in various

ways to actually increase human welfare on both sides of the market over time.

This is the case not *in spite of*, but *because of* a monopoly's ability, for some

period of time, to control market supply and hike prices and economic profits

above the level achievable in a perfectly competitive society. (218)

An example of how their theory might work comes from the example of Standard Oil.

One of the major reasons that John Rockefeller decided to monopolize the petroleum

industry was that he saw large amounts of waste taking place in the oil fields of western

Pennsylvania. Thus, he believed that monopolizing the process would stabilize the

industry.

Horizontal monopolies did not necessarily lead to fragmentation of the production

process. However, the process of vertical monopolization did. As previously stated,

companies attempted to control the production of a commodity from the initial stages of

production through distribution. Mainly, this was done in order to remove uncertainty

from the production process, in that one firm would manage the entire production chain

and not be dependent upon outside forces. Corwin Edwards (1967) alludes to this when

describing the reasons for the vertical integration of production,

Resale price maintenance is a practice by which suppliers of goods they sell shall

be resold by distributors. From the point of view of suppliers, the practice, if

successfully applied, prevents price competition among their distributors that

might result in the loss of some outlets to the market, or in diversion of sales

effort of some of their distributors to goods thought to be more profitable, or in

pressure upon suppliers to maintain distributive margins by reducing their own

selling prices… If different suppliers follow different resale price policies, each

> user of the practice thereby stabilized the vertical and horizontal price relations
>
> for his own product and thus isolates whatever problems he may encounter from
>
> the difference between his policy and the policies of his competitors. (101)

A classic example of such a monopoly was the movie industry of the first half of the 20th century. The business model of the industry is clearly described in the United States Supreme Court case *United States v. Paramount Pictures, Inc*. At that time, the production companies owned their own movie theater chains and kept exclusive contracts with other. Independent theaters could not decide to show a single movie from a production company, but would have to buy a block of them to be able to show a particular movie that they wanted to show. Thus, the production companies controlled distribution of the resources. In addition, the production companies held exclusive contracts with actor, directors, and screenwriters; so they also controlled the resources needed to make the movies. In all, from almost start to finish a company could control how its products were created and distributed.

Competition and the End of Monopolies

As the 20th century progressed, monopolies began to disappear. Government regulators and courts determined that some corporations, like Standard Oil and Alcoa, were illegal monopolies. In addition, companies that produced newer technologies sometimes supplanted older monopolies. Finally, in some countries, privatization brought about the end of government run monopolies allowing competition from the private sector.

For the theory of fragmentation of the production process, it is important to note that in some cases foreign competition destroyed the monopoly that a given company may have had in a country. Karier (1993) suggests that

> In order for trade to be profitable, relative costs must vary among countries. The one with the lowest relative costs for a particular good is said to have a comparative advantage. When each country specializes, production where it has an advantage, the world's potential supply of goods increases and production become more efficient, providing consumers with a wider variety of commodities at lower prices. (152)

This specialization and comparative advantage made production along the entire production chain with the borders of one country impossible for many products. This became one of the last straws in the death of monopolies, especially vertical monopolies. Full vertical integration without specialization was simply no longer profitable.

The end of monopolies, and the vertical integration of many industries, brought about increased fragmentation of the production process. More so than in previous eras, consumers could buy similar goods with different expressions from a variety of manufactures. Eventually, this culminated in flexible manufacturing where, as previously stated, a single firm would use outsourcing and offshoring in order to produce a variety of goods. It should also be noted that companies became less dependent upon a single location for markets. Thus both components and final products could be transported long distances and overseas in order to enhance profits.

The end of vertical monopolies brought about fragmentation in that companies were no longer able to control the production process from start to finish. At some point during the production of a good or service, another party would be involved. An example of this involves the Ford Motor Company, the classic example of a company that attempted full vertical integration of their production process. As more parts of their cars were outsourced, the opportunity for problems with their supply chain increased. This, to some extent, culminated in incidents with their purchase of defective Bridgestone tires for some of their Sports Utility Vehicles. The tires, under certain circumstances were prone to catastrophic failure causing major accidents and deaths (Ackman 2001). Thus, it is evident that Ford was unable to regulate the quality of their products.

The Age of Outsourcing

Paralleling the end of vertical integration was the increasing dependence of industry on outsourcing, the classic expression of fragmentation of the production process. While it is true that few companies have ever produced every tool for production, as the 20th century progressed it became almost impossible for firms to produce most of the components of a finished production on their own. As Victoria Cruzon Price (2001) states,

> As markets grow, so ever-increasing specialization is possible. That
> specialization brings net social gains in the form of lower costs and lower prices
> is one of those facts of life which is encapsulated in Ricardo's theory of
> comparative advantage, but it also contains dynamic elements in the shape of

scale, economies, learning curves, and agglomeration externalities. Firms which

ignore these facts go bankrupt. (99)

Companies that specialized in components of larger productions began to grow. Often

they would sell industry standard products to more than one company. Conversely, often

larger companies would buy industry standard parts from more than one supplier. Thus,

fragmentation of the production process for a single product became the rule.

Another important reason for the further development of outsourcing was the

growing complexity of products. Outsourcing allowed companies to employ unskilled

and semiskilled workers without additional training. Price (2001) describes this by

stating,

Furthermore, there is no reason to believe, a priori, that modern technologies

require ever more skilled and knowledgeable people to operate them. On the

contrary, as Sowell has pointed out, thanks to markets and specialization, modern

people, individually, can afford to know less and less about more and more

because they benefit hugely from the knowledge of others. The cleverness is in

the machine, so to speak, not in the head of the person using it. It follows from

this that the process of fragmentation does not require of the working population

an inhuman level of effort to 'retool' from the modern world. (103-104)

Outsourcing allowed manufacturers of finished products to turn over the highly technical

aspects of the production process to other companies. In addition, suppliers did not

necessarily need to have the knowhow to produce more than one product. This allowed

for both companies to increase their profits. Smaller firms could make greater amounts of

a product and sell to multiple manufacturers. Larger firms could have more control over

labor costs. Thus, the aforementioned close long-term relationships developed that increased the profitability of both firms.

Offshoring: the Logical Extension of Outsourcing

Ricardo's theory of competitive advantage suggests that countries compete in markets were they are best able to compete. As capitalist development progressed one of the greatest advantages some countries possessed was a low-cost labor and production processes. While this would not have been advantageous to companies that would have had to pay tariffs on imported components, the rise of free trade allowed companies to buy overseas parts and only pay transportation costs. Arndt (2001) suggests,

> When the option of component trade is introduced into an [Most Favored Nation] system, components will be obtained from the lowest cost source. The bias inherent in preferential trade arrangements, however, has the effect of diverting component trade to the partner country for the same reason that trade in end-products id diverted. In free trade areas, with their uncoordinated tariff policies, such diversion may be further encouraged by rules of origin. Any tendency for rules of origin to shift sourcing of components from low-cost outsider to higher-cost partners erodes the cost saving inherent in component specialization. (85)

Because of this, many companies found it more profitable to partially or fully assemble products in a country other than their home country.

Often, countries on both sides of the fragmented production process saw these business strategies as a benefit to their economies. Arndt (2001) further suggest,

> Under condition of free trade, extension of the international division of labor to the level of parts and component activities is welfare-creating. If component

> production is subject to variation in factor intensities, it will affect comparative
>
> advantage across countries. (85-86)

However, there are negative aspects of fragmentation of the production process by

offshoring. On the macro level, as firms produce a greater number of components in

different countries, it becomes harder for any one country to control the production

process through regulation. While they can control the wage and safety of workers within

their borders, they have little ability to control the process in countries with lower labor

costs. Often developing countries cannot control the production process within their

countries either, as they are dependent upon transnational corporation for jobs and tax

revenue. If they regulate businesses too much, the transnationals will simply find new

production locations.

In essence, the more fragmented production processes become throughout the

world, the less control both companies and countries have on the process. In essence, the

production process itself determines the production process changes. Examples of this

loss of control are numerous. In the past couple of years, several major product recalls

occurred in the United States. First, in 2009 the Peanut Corporation of America's

Blakely, Georgia, processing plant became infected with salmonella bacteria. The

company continued to sell their products to other manufacturers despite the dangers. As a

result people died and sales of peanut products plummeted, as people were unsure what

consumer end products involved products from the peanut corporation of America

(Martin 2009). A transnational example, in 2007 many children's toys produced in the

People's Republic of China were found to contain dangerous levels of lead. American

corporations that had offshored to the companies had little control over how the products were developed (Economist 2007a). The incident became a major source of embarrassment to both the firms and the government of the PRC (Economist 2007b). Ironically, USA Today (2007) reported that before their Fisher-Price unit was affected by the recall "Fisher-Price and parent company Mattel had never before recalled toys because of lead."

Indicators of Fragmentation of the Production

Determining whether a country features a fragmented production process is not straightforward. Because this type of fragmentation usually refers to an individual product or to a company, speaking about a country in such terms is difficult. However, because today fragmentation of the production process does cross national boundaries due to globalization, one can attempt to determine what countries might be involved in international outsourcing. Again though, there are methodological concerns about any model. For instance, which country is more involved in the fragmented production process, a country that receives a large amount of foreign investments in absolute terms or one that has a larger portion of its Gross Domestic Product (GDP) accounted for by foreign direct investment? Thus, it can be said that there are no perfect models. Despite these challenges, a theoretically justifiable model can be created from the recent history of fragmentation of markets.

Size of Production Sectors of the Economy: While agriculture and similar segments of the economy inherently cannot be fragmented, other sectors do more easily lead to fragmentation of the production process. Specifically, history demonstrates that

both the manufacturing process and the provision of services lend easily to fragmentation. The latter very easily lends to offshoring. These indicators will be measured using two variables "Manufacturing, value added (% of GDP)" and "Services, etc., value added (% of GDP)", where value added refers to the net output of a sector after combining all outputs and subtracting intermediate inputs. Both were calculated by the World Bank using six year averages calculated from 2002 to 2007 in order to maximize the number of countries measured by minimizing missing data. The appropriateness of these variables is straightforward in that they provide a measure of how much of a country's economy is accounted for by each easily fragmentable sector. In theory, countries with larger manufacturing and services sectors will be more apt to have fragmented production processes.

Trade: In the globalized world, fragmentation of the production process necessarily involves foreign trade. Countries with high levels of fragmentation of production processes will, in theory, feature more importing and exporting. These indicators will be measured using four variables, "Computer, communications and other services (% of commercial service exports)", "Computer, communications and other services (% of commercial service imports)", "Manufactures exports (% of merchandise exports)", and "Manufactures exports (% of merchandise imports)". All were calculated by the World Bank using six-year averages ranging from 2002 to 2007 in order to maximize the number of countries measured by minimizing missing data. These variables are appropriate in that they represent the exports and imports of their sectors, specifically referring to the portions of those sectors related to fragmentation. Exporting merchandise

that has not been manufactured in a country (i.e., exported in transit) is not part of the

production process. Commercial imports and exports are not part of the production

process if they deal with an aspect of the commercial economy that cannot be considered

part of the production process (e.g., financial services). The variables are limited in that

they do not measure the actual portion of production that has to do with fragmentation of

the production process. However, they are the best process readily available.

Business Environment: Countries that have unfavorable business environments

will be less involved in fragmented production processes because they will not be places

in which multinational corporations will want to operate. This variable is measured using

the variable "Ease of doing business index" calculated by the World Bank using six-year

averages ranging from 2002 to 2007 in order to maximize the number of countries

measured by minimizing missing data. The index rates countries combining measures of:

ease of starting a business, ease of dealing with licenses, ease of hiring and firing

workers, ease of registering property, ease of getting credit, ease of protecting investors,

ease of paying taxes, ease of trading across borders, ease of enforcing contracts, ease of

closing a business. The scores range from 1 to 176 with lower scores being more business

friends. This is an appropriate measure, because it is a commonly accepted way of

describing what countries are more favorable to Western businesses practices.

Free Trade: Arndt (2001) makes the reasonable supposition that counties with

free trade policies are going to have more fragmented production processes. This variable

is measured using World Trade Organization (WTO) membership. The data were drawn

from the WTO's webpage. While members and non-members were straightforward to

code, observer members were not quite so clear, as all but the Holy See are in WTO

accession talks, and thus are already following some of the WTO's free trade policies.

However, they were coded as non-members because there would be no clear and

consistent cutoff point for when a country has 'free enough' trade. While the WTO does

not support free trade fully (there are still many controversies over agricultural policies) it

does operate in a way that facilitates fragmentation of production processes. Thus, it is a

necessary measure.

Foreign Investment: Countries with fragmented production processes have

multinational companies investing in their countries or are home to multinationals that

invest in other countries. Thus, Foreign Direct Investment (FDI) can be used to

approximate how much multinational capital is coming into or leaving a country. These

indicators are calculated using six-year World Bank averages for the variables "Foreign

direct investment, net inflows (% of GDP)" and "Foreign direct investment, net outflows

(% of GDP)". The use of averages maximizes the number of countries measured by

minimizing missing data. Foreign direct investment is the best measure to this indicator

even though it does not necessarily capture indirect investments into local economies.

There are other indicators that may be better measures of fragmentation of the

production process. For instance, the World Trade Organization collects data on trade

flows of a large number of goods and services. However, the categories are very specific

to the point where a very large number would have to be used, as foreign trade related to

fragmentation of the production process would involve different production in different

countries. The same data is also too general in that it combines finished product and their

components into a single category (e.g., tractors and parts for tractors). This data would be too unwieldy and arbitrary to be useful. The indicators selected are far from perfect in the sense that they can only approximate fragmentation of the production process. In the future better data should be collected on this topic if an interested funding organization can be found.

Hypotheses and Analysis

As this dissertation is a preliminary study of social fragmentation, it is most appropriate to describe the relationships between the various indicators of fragmentation of the production process. The first step is to create a model including the hypothesized relationships between the predictor variables. The second step will use curve estimation to determine if the hypothesized relationships can best be described as linear or curvilinear relationships. Finally, structural equations models will be calculated taking into account the type of relationship between the variables described in column two.

Model Specification

Figure 8.1 demonstrates the model as specified in the initial relationships. The model includes six indicators of fragmentation of the production process found in ten variables. There are four first order independent variables. Two, manufacturing as percent of GDP and services as percent of GDP, represent the portion of each country's economy is made up of the sectors that are most likely to be fragmented. Ease of doing business and WTO membership represent concepts that in theory make fragmentation of production processes more likely. Four second order variables represent how much

manufacturing and fragmentable services contribute to a country's GDP. Finally, two third order variables represent the amount of direct investment in a country.

Several hypotheses can be drawn from this data. First, higher levels of manufacturing as a portion of a country's GDP will predict both higher levels of manufacturing exports and higher levels of manufacturing imports. This is because the process of fragmentation involves trade moving in multiple directions with no one country as an absolute supplier and none as an absolute consumer. A similar relationship is expected for services as a portion of a country's GDP with both service exports and service imports.

Next, countries with higher levels of manufacturing exports will most likely receive higher levels of FDI, as these will be countries where multinational corporations engage in the initial stages of production. Similarly, countries with higher levels of manufacturing imports will be the more developed countries where goods are finished. As they are the home of the multinationals, it is likely that they will have higher levels of FDI outflows. Similar trends will be found for service imports and exports.

FDI will also have predictive power in this model. Specifically, higher FDI inflows will predict higher levels of manufacturing exports and higher levels of service exports. Countries with higher levels of FDI outflows will predict higher levels of manufacturing and service imports.

Ease of doing business will make it easier for countries to engage in foreign trade in general. Thus, countries with lower ease of doing business scores will have greater amounts of manufacturing and service imports and exports. Similarly, lower scores in

ease of doing business will most likely involve higher scores on FDI outflows as more

established economies will both have the money to invest in other countries and have

better business environments in general. In addition, lower scores in ease of doing

business may also predict higher foreign direct investment inflows as less developed

countries which have more advantageous business environments are probably the chosen

destinations of FDI inflows.

Finally, WTO membership will predict higher manufacturing and service imports

and exports along with higher levels of FDI inflows and outflows. This is because these

countries are more likely to be involved in free trade arrangements.

Curve Estimation: Results

The curve estimations provide several illuminating findings for fragmentation of

the production as viewed using countries as the unit of analysis. Most importantly, the

lack of relationships between some of the first order variables and the variables related to

imports and exports suggest counterintuitive interpretations of the data.

The relationships are organized by the independent variable.

Manufacturing % of GDP to Manufacturing Exports: (n =150) All of the models

were significant (p < .001 for all). The linear model (R^2 = .226) accounted for a

moderately large amount of the variation, and was not improved upon by the quadratic

model (R^2 = .229). Thus, the former was selected for further analysis. The data indicate

that as the portion of a country's GDP accounted for by value added manufacturing

increases, the amount of manufacturing exports as a portion of merchandise exports

increases sharply. For countries with almost no value added manufacturing

approximately 15% of their exports are made up of manufacturing exports, while countries with approximately 30% of the economy accounted for by value added manufacturing have almost 90% of their merchandise exports accounted for by manufacturing exports. Essentially, as countries have a greater amount of manufacturing in their economy, the amount of manufacturing exports increase as compared to other merchandise exports (e.g., unrefined resources). This finding supports the theory of fragmentation of the production process in that countries with more manufacturing will be more likely to export manufactured goods.

Manufacturing % of GDP to Manufacturing Imports: (n = 150) All of the models were significant (linear and quadratic: $p = .003$; cubic: $p = .009$). The quadratic model ($R^2 = .075$) accounts for a small amount of the variation, and improves upon the linear model ($R^2 = .058$), but is not improved upon by the cubic model ($R^2 = .076$). Thus, the quadratic model was selected for further analysis. The data indicate that countries with almost none of their GDP accounted for by manufacturing have about 60% of their total merchandise imports accounted for by manufactured imports. The amount of manufacturing imports increases until value added manufacturing accounts for about 15% of a country's GDP at which point the proportion of merchandise imports accounted for by manufactured imports remains steady at approximately 70%. This supports fragmentation of the production process theories because countries with little value added manufacturing import relatively fewer manufactured goods while countries with more established manufacturing sectors import a comparatively larger amount of manufactured

goods. This can be interpreted as importing manufactured goods to add even more value to them by completing the manufacturing process.

Services % of GDP to Service Exports: (n =152) None of the models were significant. The cubic model (R^2 = .036) predicted a very small amount of the variability, and improves upon the quadratic model (R^2 = .021), which in turn improves upon the linear model (R^2 = .014). Thus, the cubic model was selected for further analysis. However, it does not appear as if the proportion of a country's GDP accounted for by value added services affects the proportion exports of all commercial service exports accounted for by of easily fragmentable services (i.e., computer, communication, etc.).

Services % of GDP to Service Imports: (n = 152) None of the models were significant. The quadratic model (R^2 = .021) accounts for a small amount of the variation, and improves upon the linear model (R^2 = .001), but is not improved upon by the cubic model (R^2 = .030). Thus, the quadratic model was selected for further analysis. However, it does not appear as if the proportion of a country's GDP accounted for by value added services affects the proportion imports of all commercial service exports accounted for by of easily fragmentable services.

Manufacturing Exports to FDI Inflows: (n = 155) None of the models were significant. The linear model (R^2 = .015) accounted for a very small amount of the variation, and was not improved upon by the quadratic model (R^2 = .022). Thus, the former was selected for further analysis. However, it does not appear as if the proportion of all merchandise exports accounted for by manufacturing exports affects FDI inflows.

Service Exports to FDI Inflows: (n = 155) Only the linear model was significant (p = .065). The linear model (R^2 = .022) accounted for a small amount of the variation, and was not improved upon by the quadratic model (R^2 = .022). Thus, the former was selected for further analysis. The data indicate that countries with almost no easily fragmentable service exports (approximately 6%) have a slightly higher portion of their GDP accounted for the FDI inflows than countries with almost 80% of their service exports accounted for by that those types of services (approximately 3%). This relationship, though significant, does not really suggest a relationship between fragmentable service exports and FDI inflows.

Manufacturing Imports to FDI Outflows: (n = 140) All of the models were significant (p < .001 for all). The cubic model (R^2 = .181) predicted a moderate amount of the variability, and improves upon the quadratic model (R^2 = .158), which in turn improves upon the linear model (R^2 = .092). Thus, the cubic model was selected for further analysis. The data indicate that for most of the range of the data (i.e., countries with between 40% and 70% of their merchandise exports accounted for by manufacturing exports) FDI outflows are relatively low. However, after manufacturing exports account for 70% of all merchandise exports, FDI outflows increase sharply. This is consistent with the hypothesis that countries with more manufacturing in their economies are more likely to have established multinational corporations that are able to invest abroad in order to save on labor costs.

Manufacturing Imports to FDI Outflows: (n = 147) All of the models were significant (linear: p = .011; quadratic: p = .041; cubic: p = .093). The linear model (R^2 =

.043) accounted for a very small amount of the variation, and was not improved upon by the quadratic model (R^2 = .043). Thus, the former was selected for further analysis. The data indicate that when countries have almost none of their commercial service imports accounted for by easily fragmentable service exports they provide almost no FDI outflow. However, as the amount of commercial services imports accounted for by easily fragmentable service exports, FDI outflows increase to the point where when the easily fragmentable service exports account for 70% of all commercial service exports, countries send FDI outflows accounting for almost 3% of their GDPs. This finding is somewhat ambiguous towards the original hypothesis.

FDI Inflows to Manufacturing Outflows: (n =151) None of the models were significant. The linear model (R^2 = .015) accounted for a very small amount of the variation, and was not improved upon by the quadratic model (R^2 = .016). Thus, the former was selected for further analysis. However, it does not appear as if FDI inflows have any effect upon what portion of merchandise exports are made up of manufactured exports.

FDI Inflows to Manufacturing Outflows: (n = 155) The linear model (p = .065) and the cubic model (p = .068) were significant. The quadratic model (R^2 = .023) did not improve upon the linear model (R^2 = .022). However, the cubic model (R^2 = .046) doubled the predictive power of the quadratic model, predicting a small amount of the variation. Due to this large increase, an exception was made to the selection rule, and the cubic model was selected for further analysis. The data indicate that for countries with no FDI inflows, almost 40% of their commercial service exports are made up of the easily

fragmented services. This proportion declines until about 5% of a country's GDP is accounted for by FDI inflows, when about 21% of a country's commercial service exports are of the easily fragmented types. The proportion of service exports then rises again until FDI inflows account for about 17% of GDP, when about 30% of all commercial service exports are made up of the highly fragmentable services. While somewhat convoluted, this finding is consistent with fragmentation of production processes in that countries receiving the smallest FDI inflows seem to export a good deal of highly fragmentable services. However, countries that receive a large amount of FDI inflows also tend to have a higher proportion of such service. Thus, it may be possible that these countries are receiving FDI inflows so that they can develop services such as call centers.

FDI Outflows to Manufacturing Imports: (n = 140) All of the models were significant (p < .001 for all). The quadratic model (R^2 = .116) accounts for a moderate amount of the variation, and improves upon the linear model (R^2 = .092), but is not improved upon by the cubic model (R^2 = .125). Thus, the quadratic model was selected for further analysis. The data indicate that in countries with essentially no FDI outflows, manufacturing imports made up approximately 65% of all merchandise imports. As the amount of FDI outflows increased, the proportion of manufactured imports increased to a point where when outflows equaled approximately 8% of GDP and the manufacturing import ratio was approximately 80%, the increase became more gradual. This supports the theory of fragmentation of production processes in that countries sending out a large

amount of FDI already have established manufacturing bases. Thus, they seek new markets to decrease the cost of production.

FDI Outflows to Service Imports: (n = 147) All of the models were significant (linear: p = .011; quadratic and cubic: p < .001). The quadratic model (R^2 = .121) accounts for a moderate amount of the variation, and improves upon the linear model (R^2 = .043), but is not improved upon by the cubic model (R^2 = .125). Thus, the quadratic model was selected for further analysis. The data indicate that in countries with essentially no FDI outflows, highly fragmentable service imports made up approximately 25% of all service imports. As the amount of FDI outflows increased, the proportion of highly fragmentable service imports increased to a point where when outflows equaled approximately 7% of GDP, the ratio of highly fragmentable services becomes steady at about 45%. This lends some support to fragmentation of production processes theory in that the countries with the greatest portion of FDI outflows are receiving the greatest amount of highly fragmentable service imports.

Ease Doing Business to Manufacturing Exports: (n = 150) All of the models were significant (p < .001 for all). The linear model (R^2 = .193) accounted for a moderate amount of the variation, and was not improved upon by the quadratic model (R^2 = .193). Thus, the former was selected for further analysis. The data indicate that countries with scores on the scale approaching zero, where it is easier to conduct business, have approximately 70% of their merchandise exports accounted for by manufactured exports, while countries that score much higher have much lower proportions of manufacturing exports (e.g., approximately 30% when the index equals 150). This is supportive of the

initial hypothesis in that exporting manufactured materials is most likely harder than exporting unrefined merchandise in that an intermediate process of manufacturing the product is involved. Manufacturing is easier in countries where it is easier to do business. Therefore, more manufactured goods will be exported from countries where it is easier to conduct business.

Ease Doing Business to Manufacturing Imports: (n = 150) All of the models were significant (p < .001 for all). The linear model (R^2 = .210) accounted for a moderate amount of the variation, and was not improved upon by the quadratic model (R^2 = .211). Thus, the former was selected for further analysis. The data indicate that countries with scores on the scale approaching zero, where it is easier to conduct business, have approximately 75% of their merchandise imports accounted for by manufactured exports, while countries with scores much higher have lower proportions of manufacturing exports (e.g., approximately 60% when the index equals 150). This supports fragmentation of production processes theories because the back and forth flow of manufactured goods is necessary for the process. Countries where it is easier to do business seem to have a greater portion of manufactured imports, implying that these countries could become more fragmented.

Ease Doing Business to Service Exports: (n = 150) The quadratic model (p = .018) and the cubic model (p = .014) where significant. The cubic model (R^2 = .069) predicted a small amount of the variability, and improves upon the quadratic model (R^2 = .053), which in turn improves upon the linear model (R^2 = .010). Thus, the cubic model was selected for further analysis. The data indicate that in countries with scores on the

ease of doing business scale approaching zero, about 45% of all commercial service exports are accounted for by the highly fragmentable services. As the scale increases, the proportion falls sharply until it is approximately 25% when the index score is about 70. At that point, the proportion increases slightly until it is about 30% when the index score is 150. Essentially, this supports the hypothesis that countries where it is easier to do business will be more likely to feature the type of service trade that is apt for fragmentation of the production process.

Ease Doing Business to Service Imports: (n = 152) All of the models were significant (linear: p = .001; quadratic: p = .005; cubic: p = .009). The linear model (R^2 = .070) accounted for a small amount of the variation, and was not improved upon by the quadratic model (R^2 = .070). Thus, the former was selected for further analysis. The data indicate that countries with ease of business scores approaching zero have approximately 35% of their service imports accounted for by highly fragmentable service exports, while countries with much higher scores have lower proportions of highly fragmentable service exports (e.g., approximately 20% when the index equals 150). This supports the hypothesis that countries with better business practices are more likely to be involved in the trade of services apt for fragmentation.

Ease Doing Business to FDI Inflows: (n = 162) None of the models were significant. The linear model (R^2 = .001) accounted for almost none the variation, and was not improved upon by the quadratic model (R^2 = .006). Thus, the former was selected for further analysis, although it does not seem as if ease of doing business affects the flow of FDI into a country.

Ease Doing Business to FDI Outflows: (n = 141) All of the models were significant (p < .001 for all). The cubic model (R^2 = .297) predicted a large amount of the variability, and improves upon the quadratic model (R^2 = .263), which in turn improves upon the linear model (R^2 = .155). Thus, the cubic model was selected for further analysis. The data indicate that countries where it was easiest to do business had FDI outflows equivalent to about 8% of their GDP. As the scale increased, FDI outflows decreased until the index scores equaled 50 where FDI outflows reached approximately zero when FDI outflows were between 0% and 1% of a country's GDP. This is consistent with countries where it is easier to do business being home to multinational corporations that make the FDIs.

WTO Membership to Manufacturing Exports: (n = 161) The linear model was significant (p = .017), and predicted a small amount of the variability (R^2 = .035). The data indicate that on average manufactured exports comprise approximately 50% of merchandise exports in countries that are members of the WTO, while the proportion is only 30% in non-members. Apparently, WTO membership helps a country export manufactured goods. This suggests that countries that are WTO members may have an easier time participating in industries with fragmented production processes.

WTO Membership to Manufacturing Imports: (n = 162) The linear model was not significant (p = .105), and predicted only a very small amount of the variability (R^2 = .016). The data indicate that WTO membership does not affect the ease of importing manufactured goods into a country.

WTO Membership to Service Exports: (n = 162) The linear model was significant (p = .011), and predicted a small amount of the variability (R^2 = .040). The data indicate that on average highly fragmentable service exports comprise approximately 35% of all service exports in countries that are members of the WTO, while the proportion is 25% in non-members. Apparently, WTO membership helps a country export services such as computer and communication service. This suggests that countries that are WTO members may have an easier time participating in services that lend to high levels of fragmentation.

WTO Membership to Service Imports: (n = 162) The linear model was not significant (p = .540), and predicted a almost none of the variability (R^2 = .002). The data indicate that WTO membership does not affect the ease of importing highly fragmentable service goods into a country.

WTO Membership to FDI Inflows: (n = 170) The linear model was not significant (p = .160), and predicted a very small amount of the variability (R^2 = .012). The data indicate that WTO membership does not affect FDI inflows for a country.

WTO Membership to FDI Outflows: (n = 148) The linear model was not significant (p = .625), and predicted a very small amount of the variability (R^2 = .002). The data indicate that WTO membership does not affect FDI outflows for a country.

Curve Estimation: Discussion

The curve estimations provide useful information regarding the relationships between the various indicators of fragmentation of the production process. First, it is reasonable that when manufacturing is a larger portion of the economy, a country will

have more manufacturing as a portion of merchandise exports. Essentially, as countries manufacture the more manufactured goods they will be able to exports. This is opposed to countries with smaller manufacturing sectors that still might export merchandise, though it will be in the form of raw commodities. Similarly, countries with larger manufacturing sectors will also need to import a greater amount of manufactured goods as a portion of all merchandise imports. In part, this is explained by level of development in general. However, these countries are not importing only raw materials, so they are obviously not importing merchandise in order to refine them. In addition, countries that have larger manufacturing sectors and also have larger markets may not have substantially greater amounts of manufactured imports as it would be possible for them to simply provide for their own home market. The key to understanding this relationship is that the measure included measures value added manufacturing as a portion of GDP. Countries with greater amounts of valued added manufacturing up to a certain level import greater amounts of manufactured goods. Because the countries are adding value to what they manufacture it is probably that they are importing goods, like components, that are being used to make finished products. Both of these relationships are examples of fragmentation of the production process in that they suggest that countries more involved in the manufacturing process are more likely to be involved in manufacturing that builds upon what has already been manufactured. This implies offshoring.

A surprising finding is that there was no relationship between value added services as a portion of GDP versus computer and telecommunication service exports as a portion of all service exports. This might be partially explained in that countries with

relatively low levels of development may be able to provide these kinds of services without having large segments of the population involved in services in general. For example, many call banks are located in India and the Philippines and are staffed by a relatively small portion of the population that has been educated in English. Many other parts of those countries are undeveloped and have desperate poverty. On the other hand the lack of a relationship between value added services as a portion of GDP versus computer and telecommunication service imports as a portion of all service imports. This implies that countries with large service sectors may need to import many different types of services, not just the high end highly fragmentable types.

The lack of a relationship between foreign direct investment (FDI) inflows and the portion of the merchandise exports accounted for by manufactured exports actually supports the theory of fragmentation of the production process in that multinational corporations, the main source of FDI, invest in other countries in order to gather a variety of resources and components. In essence, countries can invest abroad in both resource gathering and the early stages of the production process. Both are examples of offshoring.

There is barely a relationship between the proportion all service exports accounted for by computer and telecommunication service predicting foreign direct investment inflows (FDI). In addition, the reciprocal relationship is weak. This implies those multinational corporations are investing in services in many parts of foreign country's service economies, but not only in the highest end services. In addition, corporation that specialize in providing these services can form in a country sometimes

with little effort and capital. Thus, the industries will not be dependent upon FDI. Other findings, which will be subsequently reported, will further support this hypothesis.

There are relationships between both manufactured imports as a portion of merchandise imports and computer predicting FDI outflows and communication services imports as a portion of all service imports predicting FDI outflows. This suggests that the more a country imports these goods and services that can be part of the fragmented production process the more FDI multinationals from those countries send to other countries. This implies that companies are not able to produce all of the goods and services needed in the consumer countries. Most likely the FDI is going to be used in production of components used in further manufacturing and services that are can be procured from a lower cost work force. Essentially, more developed countries are turning to less developed countries in order to acquire goods and services at a lower cost.

The lack of a relationship between FDI inflows and manufactured imports as a portion of merchandise imports is somewhat surprising. One would suppose that countries that receive more FDI would have larger manufacturing sectors. That seems not to be the case. Perhaps, the lack of a relationship is due to the fact that countries need a manufacturing sector to have some level of development before they will receive FDI. The lack of a relationship might also indicate that FDI inflows might go towards non-manufacturing production, specifically the gathering of unfinished resources. There are only weak relationships with FDI inflows predicting communication services imports as a portion of all service imports, but they still suggest fragmentation of the production

process in that countries receiving FDI may use these to develop service sectors upon which more developed countries will depend.

There are relationships between both FDI outflows predicting manufactured imports as a portion of merchandise imports and FDI outflows predicting computer and communication services imports as a portion of all service imports provide strong support for fragmentation of production processes. The relationships suggest that countries that send out more FDI are going to import more goods and services from highly fragmentable sectors. In other words, these are the countries that are most likely to be engaged in offshoring. This makes perfect sense in that the purpose of offshoring is to manufacture or produce services in a country where costs are lower than they are in the home country.

There is a strong relationship when the ease of doing business in a country predicts manufactured exports as a portion of merchandise exports. In addition, there is a significant relationship with ease of doing business in a country predicting communication services exports as a portion of all service exports. Essentially, countries where it is easier to do business have larger fragmentable export sectors. These relationships provide some support for fragmentation of production processes. While it is true that the most developed countries are the ones most to both have business friendly environments and have large manufacturing sectors that produce finished products, it is also true that countries with business conducive environments are more likely to be able to develop manufacturing of components simply because it will be possible start the

business that participates in these processes. Both explanations are consistent with fragmentation of production processes.

The significant relationships where ease of doing business in a country predicts manufactured imports as a portion of merchandise imports, and ease of doing business in a country predicts communication services imports as a portion of all service imports lends support for fragmentation of production processes in that countries with the most business friendly environments will be the countries most likely to have developed economies that lend to fragmentation of production processes. The countries in which it is easier to do business are also going to be the countries with the more developed workforces that can be the end point of finished products. The relationship where ease of doing business in a country predicts FDI outflows is also consistent with the former interpretation.

It is somewhat surprising that there is no relationship between ease of doing business in a country and FDI inflows. This suggests that multinational corporations are likely to pursue lower cost production in countries no matter how hard it might be to do business in those countries.

World Trade Organization (WTO) membership predicts both manufactured imports as a portion of merchandise imports and communication services imports as a portion of all service imports. Though these relationships are not particularly strong, they do support an interpretation where countries with free trade are more likely to be able to participate in trade involving highly fragmentable sectors of the economy. In other words, free trade allows for countries to participate in earlier stages of the manufacturing process

then send components to countries where the product is finished. In addition, countries involved in free trade are more likely to be able to create service sectors made up of high end service.

It is somewhat surprising that WTO members are no more likely to receive FDI than non-members. Theory suggests that countries engaging in free trade are more likely to be included in the full range of the production process. This finding does not support the theory of fragmentation of the production process.

The lack of relationships between WTO membership predicting manufactured imports as a portion of merchandise imports or communication services imports as a portion of all service imports or FDI outflows is surprising. One would figure that countries engaged in free trade would be more likely to import highly fragmentable goods and services, and to invest more in foreign countries. Thus, none of these relationships support fragmentation of production processes as being related to free trade.

For the sake of parsimony, the models should be reduced as much as possible before building structural equation models. However, the only component of the initial model that had not predictive ability whatsoever was the percent of the GDP accounted by production of value added service. This component is theoretically important and thus will not be excluded at this point, though structural equation analysis may remove that variable from the final model.

General Discussion

Fragmentation of production processes theory posits that as economies modernize companies in those countries will begin to outsource parts of their production process

ending production as a process continuous in one location within one company. Later

companies will begin to outsource to other countries, in search of less expensive

components. This offshoring is the classic example of globalization. Due to data

considerations, this analysis involves only offshore outsourcing as a measure of

fragmentation of production processes.

This research provides limited support for the relationship between development

of national economies and fragmentation of production processes as defined by

offshoring. However, it does illustrate the relationship between how developed a

country's economy is and how much they invest in other companies. This suggests that

such countries are on the receiving end of the fragmented production process.

A notable initial finding is that a larger manufacturing sector predicts a larger

proportion of manufactured exports as compared to all merchandise exports. In other

words, more manufacturing leads to a great amount of exports that can be part of a

fragmented production. However, a larger service sector does not predict a great amount

of service exports that could be part of a fragmented production process. This finding

suggests that having a strong manufacturing base will allow countries to better participate

in fragmented production processes, they need not have a well-developed service

economy to participate in offshoring of high end services such as telecommunications

and computer services. Essentially, if a country can create a labor market of professionals

who can do such jobs, it can enter a fragmented service production process without mass

economic development projects.

The relationships between imports and FDI outflows are noteworthy. Countries that import large amounts of manufactured goods or highly fragmentable service jobs tend to send out large amounts of FDI, while the reverse is also true. This suggests that richer countries whose companies can make large amounts of FDI are also the ones importing the most manufactured components. This is perfectly in support of the theory of fragmentation of the production process where countries with established manufacturing bases that use the most offshoring.

On the other hand the theory of fragmentation of the production process is somewhat undermined by the fact that there is no relationship between exports and FDI inflows. In theory, countries that exported a large amount of manufactured goods or highly fragmentable services should have received a larger amount of FDI. A possible explanation of this is that rich countries that are net givers of FDI might also export many of these goods and services among themselves. While further research might illuminate this relationship, as the model stands the overall theory is not supported.

It is also noteworthy that free trade, as measured by WTO membership, predicted very little. Contrary to established theory, which suggests that free trade enhances fragmentation of the production process, only manufacturing imports and exports seemed to be related to free trade. While this does to give support to the fact that free trade does make the transpiration of goods across borders simpler, that in and of itself does not imply fragmentation of production processes. Without any relationships between WTO membership and FDI inflows or outflows, it is equally likely that countries are exporting

or importing finished products that may not necessarily have been involved in fragmented production.

The analysis suggests that the single biggest predictor of participation in fragmented production processes is whether a country has a business friendly environment. Business friendly countries are more likely to be involved in fragmented production processes. While it is not surprising, it is an important statement about the necessary condition for a country to engage in fragmented production – opportunity. In countries where business transactions are fairly simple and free of government control, firms have the opportunity to buy components or services from whatever sources they like. When they need to, it is relatively simple to use offshore production in order to reduce their production costs, enhancing profits. Countries that make business more difficult do not allow their firms the leeway to engage in fragmented production.

Fragmented production processes are both beneficial and detrimental to a country's economy. Fragmentation allows firms within a country near the end of the production chain to provide goods and services at lower costs. In countries near start of the production chain receive jobs that otherwise would not be necessary because they often do not have large enough home markets to sell a large amount of finished goods. From this perspective, fragmentation of production processes can be of net benefit to countries at both ends of the process. However, fragmented production processes do not allow for countries at either end of the process to control the production process. Even firms involved in production cannot do this. Thus, fragmented production processes can be corrupted at any point.

The major limitation of this research is that it only accounts for one aspect of fragmentation of production processes, offshoring. Theory suggests that this is actually one of the late stages of this type of fragmentation. Data regarding intranational fragmented production processes is simply not available. Even if such data could be found it would most likely be unreliable in that outsourcing can be hard to define. For instance, would a company that builds components in Georgia that are then assembled in California be engaging in fragmented production? The company is making the components and assembling. However, it is doing this in more than one location. In a way, everybody knows what outsourcing is, but few agree on how to define it.

Two other limitations of this work are similar to that of that other models created. First, because the data were collected by different organization for different reasons, missing data could easily have an effect upon the results of the analysis. Second, the models do not show causation; and thus, can only describe individual parts of the model, but not show how the model itself works.

Future research should address all of these concerns. Two directions could be considered most important. First, future analysis must take into account the specific types of goods and services that are being traded. The variables used as proxies in this chapter were the best representation of trade involving easily fragmentable manufactured products and services. However, research that could identify the exact commodity being exchanged would provide a much more specific measure of this type of fragmentation. Second, future research must somehow take into account the fragmented production process within countries. Large countries with large economies, like the United States,

might proved to have even more fragmented production processes if what happens within their border is taken into account.

Conclusion

This chapter provides limited support for the argument that fragmentation of production processes can be empirically modeled. It suggests that countries with business climates that are amenable to this type of fragmentation will have fragmented production processes. Future research is needed to better establish this relationship though because the current research only addresses one aspect of this type of fragmentation.

Chapter 9

Fragmentation: the Future of Society?

This research argues that fragmentation is a process inherent to modernity. Data analysis involving six types of fragmentation from two axes of fragmentation do seem to show that countries with more traits of modernity are indeed is more fragmented. This concluding section will show the parallels between the analyses from the previous chapters and discuss fragmentation in a general context of the future of society.

Comparing the Analyses of the Types of Fragmentation

Several of the analyses are very clear regarding how modernity is related to fragmentation. For instance, fragmentation of the family as defined by divorce to marriage ratios is found in countries with a large number of women in the workforce and high levels of immigration. Fragmentation of normative systems is found in countries with modern class systems, high levels of education, and connection to the modern world system. Fragmentation of morality is found most in countries where knowledge is easily distributed through mass education and access to transnational communication systems. Fragmentation of production processes involving offshoring seems to be most common in countries that receive large amounts of imports and countries that have business-friendly environments. All of these predictors are associated with the more modern society.

The relationship between fragmentation of cities and modernity is not quite so clear. The analyses conducted tend to show that more modern countries have fewer people in slums and better access to the resources of modern urban life. However, this analysis demonstrates the importance of curve estimation in understanding the

relationship between modernity and fragmentation. What the analysis shows is that countries with smaller urban populations are less developed. Therefore, as countries modernize the percent of their population living in cities also increases. As a country develops, the proportion of urban dwellers living slums, the classic fragmented neighborhoods, decreases. Thus, people in less modern countries who live in modern urban conditions are more likely to live in fragmented areas. When analyzing access to services, a similar pattern is seen where countries that are less developed have more fragmented modern cities. However, the relationship is most clear in the analysis between the percent of urban population and internet access, which is the most modern urban amenity. Countries with small urban populations have greater access to internet in their cities than countries with a somewhat higher percent of their population that is urbanized. When these results are combined with the established literature regarding fragmentation of cities, a pattern is clear. As countries begin to form modern cities, access to physical resources in cities decreases to a certain point; however, at some point government action increases access to these services in general. However, the non-physical access does not necessarily improve, as areas may have access to physical resources but not access to political and social resources. This can be most easily seen in Stanback's (1991) determination of how suburbanites become dependent fully upon their suburban town, which features commercial, political, and social interaction independent of the city and of other suburban areas. Clearly, some forms of fragmentation of cities can be mitigated by increased modernization, but others are probably increased.

Fragmentation of markets is also deceptive in its support for the theory that fragmentation in general is a function of modernity. The analysis would suggest that more modern countries, which give individuals better access to regulated national markets, demonstrate less fragmentation. However, this finding needs to be understood in the context of the market itself as a modern social structure. The market as it is understood today is simply a forum for exchange dominated by one central authority. Therefore, any country that has sought to dominate trade within its borders has modern markets. That being said, countries that try to make their formal markets accessible and attractive have less fragmentation. However, when the modern economy is not made accessible to all members of a society, they will choose to participate in exchange in a forum to which they have access, the informal market. Context modernization can be seen as a necessary, but not sufficient, condition of the formation of fragmented markets.

As a whole, the analyses suggest that modernity through the existence of modern social structures does influence fragmentation. However, the question remains as to whether the social structures themselves or an underlying assumption of the modern worldview bring about the dis-integration of other modern social structures.

The Choice to Fragment

Besides modernity in general there is an underlying trait of modernity – freedom of individual choice. Theory suggests that families fragment when the unit is not of benefit to the individuals involved; analysis demonstrates that when countries allow the means for families to fragment, families are more likely to do so. Theory suggests that cities fragment because people choose to live in areas where they feel that they will have

the greatest advantage; analysis suggests that states can alleviate the negative factors associated with fragmented cities, but it does not suggest that governments can alleviate fragmentation on other levels. Theory suggests that normative systems fragment when individuals find ways of defining 'the good life' in terms of values not different from those found in their social system; analysis suggests that when individuals are given greater access to knowledge about how people in different areas define 'the good life' those countries will have more fragmentation of normative systems. Similarly, theory suggests that individuals who have greater knowledge of different ways of determining what is right and wrong will create moral systems that help them pursue happiness in ways that are most useful to them; analysis suggests that greater access to knowledge and better connection to the modern world social system influences whether moral fragmentation will be present in a country. Theory suggests that individuals participate in informal markets by choice when the formal markets do not serve their needs; analysis suggests that the more barriers there are to entry into the formal economy, the more people will choose to participate in informal exchange, resulting in increasing fragmentation of markets. Finally, theory suggests that firms choose to engage in fragmented production processes to increase their profits; analysis suggests that when countries give opportunities to firms to engage in fragmented production, a greater amount of their economy will involve fragmented production processes. In all of these circumstances, it seems that opportunity to engage in fragmentation leads to fragmentation.

Individualism and individual choice are cornerstones of modernity. Enlightenment though was in large part a reaction to the perceived oppression of humanity brought on by the *ancien régime*. The goals of the social revolutions of the early modern era were, therefore, a way of making the individual's enrichment, both economic and social, the focus of society. Therefore, any society that chooses to maintain the modern definition of freedoms must regulate choice as little as possible.

However, the drawback of this if individual choice produces the opportunity for fragmentation, a paradox develops. How can a government limit choice as little as possible without increasing the chance of social isolation caused by fragmentation within that country? There may not be a good answer to this question.

In *The Great Transformation* Karl Polanyi (2001) argued that unregulated economic markets led to the rise of fascism. Essentially, so many people became fragmented from the economic and social systems that they were willing to turn to a governing ideology that promised stability and inclusion. For instance, Mussolini claimed that he would restore the glory of Ancient Rome to Italy. Hitler spoke of a Germany where every true Arian would be included. These are not hypothetical or debatable oppressive forms of government. If those in the modern world are good consumers of history, they will recognize this. However, Polanyi's theory begs the question, "Can mass exclusion from social systems and political systems through fragmentation have the same detrimental social effects?"

It is conceivable that mass exclusion from the social system in general could lead to considerable social disruption. Durkheim (1984 argued that the greater the sense of

being adrift in the world, the great the anomie, the more likely people would be to self-select out of isolation of modern society by killing themselves. However, if individuals who feel cut off from the structures of modern society form social groups which do support their physical and social needs, then fragmentation could put these groups in conflict with other social groups. It is these conflicts that could cause class conflict as described by Marx or a culture war as described by Hunter (1991). Neither of these conflicts is beneficial to society.

Fragmentation: Good or Bad?

The previous section should not be read as a condemnation of fragmentation. Instead, it should be viewed as one possible extreme effect of the social isolation that fragmentation might cause. This research has shown that fragmentation can be seen as having both positive and negative benefits.

As previously described, social fragmentation can lead to social isolation and social conflict. A highly fragmented society, therefore, may have a sufficient amount of social conflict to make social mobilization difficult at best. Some groups within society may see any change in the social order as a threat to the stasis that they enjoy in society. Other groups may be unable to mobilize allies to bring about social change if they feel their rights are being violated. Thus, it could be the case that highly fragmented societies will not be able to bring about social change that is seen as beneficial by most members of a society.

However, from another perspective, fragmented societies could be seen as the most inclusive societies that exist in that they allow dissent from the mainstream social

system without persecution. During the height of the anti-Iraq War movement, a common slogan was "dissent is patriotic". If taken to heart, this is the key benefit of fragmentation to society. Individuals can choose to opt out of the mainstream social system, in whole or in part, and create associations with like minded people. Individuals can form groups with non-standard normative or moral systems. They can choose to live in areas with people among whom they feel that they can relate. They can choose to buy products that are less expensive due to fragmented production processes. They can engage in commerce that is outside the government's control if it helps them to survive. They can opt out of a family when it is no longer of benefit to their aspirations. In sum, fragmentation allows for those who do not want to live within their present social order to join a new social order.

So, as a whole, is fragmentation good or bad? In reality, it is neither. Fragmentation is a process, nothing more. As a process, it is neither good nor bad. Instead, it creates conditions for the direction of a society. From the modern perspective, it is that society's choice of how it should organize itself, to determine if it is more preferable to have greater amounts of fragmentation or more social control. Thus, there is the question of whether it is possible to regulate fragmentation. The easy answer to this question is yes. Fragmentation in general can be controlled by controlling the underlying factors that contribute to it. For instance, reinstating the economic necessity of marriage, not just an economic incentive, would probably lessen fragmentation of families due to divorce. Establishment of and enforcement of a common moral code would lessen fragmentation of morality within a country. Regulation on

outsourcing and offshoring would reduce fragmentation of the production process. There are countries that attempt to do this through trade protectionism and morality police. However, one must ask if this would be preferable to a fragmented system. If a goal of modernity is individuality and individual choice, then taking such steps to limit fragmentation is antithetical to the social philosophies that underlie Western society. In essence, to strictly limit fragmentation is to fundamentally alter Western society, and to create something else.

The End of Society?

The title of this research posits the question as to whether fragmentation will bring about the end of society. In the simplest sense, it will not. Even the anarchy of the Weimar Republic led to the establishment of a stronger society – perhaps the most oppressive ever, but one stronger then Weimar none the less. The true question is to what type of society fragmentation will lead. If true anarchy is not a possibility – even Somalia has groups trying to build stronger societies (e.g., the unrecognized country of Somaliland) – then there are two possibilities of societies that social fragmentation might create.

First, there is the possibility that society could remain somewhat unchanged with legislatures and courts trying to increase the opportunity for choice as much as possible without creating newly excluded groups and greater social isolation. This would be a society of dynamic regulation that would attempt to adjust to changing social circumstances. It might succeed or it might fail.

Second, a highly regulated society could develop. One in which social choice is severely limited, but social unity is enforced. If it is true that radical Islam and fascism are both reactions to modernity, then some societies are already choosing or have chosen this path. These societies would produce less social exclusion for those who chose to live according to the precepts upon which the society was based. However, it would produce severe consequences for those who did not want to live by the established social system. In the future, the weak bonds created by social fragmentation will necessitate changes in society. What those changes entail and what the new society will look like will depend upon social negotiation and eventually political action.

Future Research

This research is not meant to be the definitive work on social fragmentation. Instead, it provides a starting point for a discussion of the direction in which society will progress from a different theoretical perspective. Future research should consist of four parts.

First, as has been mentioned in every section, future research will require better data. Hopefully, at some point data could be collected that would specifically represent the various indicators of the types of fragmentation, reducing the necessity of proxy variables. The benefit of this research would be that it would make the analysis more reliable.

Second, future research should attempt to create causal models for the various types of fragmentation. This would show how the established relationships work together to influence the various types of fragmentation.

Third, composite indicators of how fragmented a society is on each type of fragmentation should be created in order to understand how the types of fragmentation are related. This would allow researchers to determine how the types of fragmentation interact, allowing them to facilitate social negotiation when fragmentation becomes a problem. It would help to determine what unintended consequences would be the result of such social interventions.

Finally, research must be conducted on the sub-national level to determine exactly how fragmentation affects individuals in their day-to-day lives. This would establish empirically when individuals feel isolated from the mainstream society. It would identify when fragmentation becomes a problem.

Future research directed in these ways would help to establish fragmentation theory as a practical way of understanding new forms of social exclusion found in modern society.

Tables

Table 3.1
Curve Estimations for Fragmentation of the Family

Hypothesis	N	Curve	F (sig)	R^2
MLFP to FLFP		**Linear**	**10.663 (.001)***	**.058**
	181	Quadratic	6.092 (.003)**	.066
		Cubic	6.126 (.003)**	.066
MLFP to Elementary Enrollment		Linear	15.942 (.000)***	.097
	150	**Quadratic**	**13.348 (.000)***	**.154**
		Cubic	13.686 (.000)***	.157
FLFP to Elementary Enrollment		Linear	2.139 (.146)	.014
	150	**Quadratic**	**2.796 (.064)†**	**.037**
		Cubic	2.177 (.093)†	.043
MLFP to Migrants		Linear	.000 (.995)	.000
	173	Quadratic	.009 (.991)	.000
		Cubic	.023(.978)	.000
MLFP to Remittances		**Linear**	**.151 (.698)**	**.001**
	172	Quadratic	.234 (.791)	.003
		Cubic	.235 (.790)	.003
Migrants to Remittances		Linear	2.587 (.109)	.014
	179	**Quadratic**	**4.956 (.008)****	**.053**
		Cubic	3.579 (.015)*	.058
Migrants to Divorce		Linear	2.869 (.094)†	.032
	90	Quadratic	3.454 (.036)*	.074
		Cubic	**2.806 (.044)***	**.089**
Remittances to Divorce		Linear	17.344 (.000)***	.166
	89	**Quadratic**	**12.141 (.000)***	**.220**
		Cubic	8.094 (.000)***	.222
FLFP to Divorce		Linear	9.662 (.003)**	.107
	73	Quadratic	4.995 (.009)**	.111
		Cubic	**5.250 (.002)****	**.166**

Bold = best relationship
† $F < .10$
* $F < .05$
** $F < .01$
*** $F < .001$

Table 4.1
Curve Estimations for Fragmentation of the Cities

Hypothesis	N	Curve	F	R^2	R^2 Change
Urban Population to Urban Growth	195	Linear	49.632 (.000)***	.205	
		Quadratic	**28.385 (.000)***	**.228**	**.023**
		Cubic	18.926 (.000)***	.230	.002
Urban Population to % in Slums	102	**Linear**	**23.903 (.000)***	**.193**	
		Quadratic	11.832 (.000)***	.193	.000
		Cubic	8.115 (.000)***	.199	.006
Urban Population to Passengers Carried Rail	96	**Linear**	**.890 (.348)**	**.010**	
		Quadratic	.450 (.639)	.010	.000
		Cubic	.390 (.761)	.014	.004
Urban Population to Passengers Carried Road	48	Linear	1.708 (.198)	.036	
		Quadratic	.940 (.398)	.040	.004
		Cubic	**.778 (.513)**	**.050**	**.010**
Urban Population to Access to Improved Water	178	**Linear**	**35.764 (.000)***	**.169**	
		Quadratic	17.967 (.000)***	.170	.001
		Cubic	13.840 (.000)***	.193	.013
Urban Population to Access to Improved Sanitation	164	**Linear**	**71.348 (.000)***	**.306**	
		Quadratic	35.531 (.000)***	.306	.000
		Cubic	23.845 (.000)***	.309	.003
Urban Population to Access to Internet	197	Linear	102.664 (.000)***	.345	
		Quadratic	**57.457 (.000)***	**.372**	**.027**
		Cubic	38.614 (.000)***	.375	.003
Urban Growth to % in Slums	100	Linear	71.650 (.000)***	.422	
		Quadratic	38.669 (.000)***	.444	.022
		Cubic	**29.319 (.000)***	**.478**	**.034**
Urban Growth to Passengers Carried Rail	88	**Linear**	**.007 (.933)**	**.000**	
		Quadratic	.356 (.701)	.008	.008
		Cubic	.015 (.735)	.015	.007
Urban Growth Passengers Carried Road	48	Linear	.626 (.433)	.013	
		Quadratic	**.659 (.522)**	**.028**	**.015**
		Cubic	.546 (.654)	.036	.008
Service/Industrial Emp to % in Slums	37	Linear	.150 (.700)	.003	
		Quadratic	.430 (.653)	.019	.016
		Cubic	**.469 (.705)**	**.032**	**.013**
Service/Industrial Emp to Passengers Carried Rail	67	Linear	3.967 (.051)*	.058	
		Quadratic	5.164 (.008)**	.139	.081
		Cubic	**9.371 (.000)***	**.309**	**.170**
Service/Industrial Emp to Passengers Carried Road	44	Linear	2.103 (.154)	.048	
		Quadratic	1.339 (.273)	.061	.013
		Cubic	**1.186 (.327)**	**.082**	**.021**

Hypothesis	N	Curve	F	R^2	R^2 Change
Service/Industrial Emp to Access to Improved Water	100	Linear	.032 (.859)	.000	
		Quadratic	1.62 (.288)	.025	.025
		Cubic	**1.330 (.269)**	**.040**	**.015**
Service/Industrial Emp to Access to Improved Sanitation	88	Linear	.102 (.751)	.001	
		Quadratic	**1.599 (.208)**	**.036**	**.035**
		Cubic	1.058 (.371)	.036	.000
Service/Industrial Emp to Access to Internet	107	**Linear**	**3.588 (.061)†**	**.033**	
		Quadratic	2.028 (.137)	.038	.005
		Cubic	1.728 (.166)	.048	.010
Income Top Fifth to % in Slums	64	**Linear**	**3.559 (.064)†**	**.054**	
		Quadratic	1.752 (.182)	.054	.000
		Cubic	1.752 (.182)	.054	.000
Income Top Fifth to Passengers Carried Rail	70	**Linear**	**1.618 (.208)**	**.023**	
		Quadratic	.879 (.420)	.026	.003
		Cubic	.903 (.410)	.026	.000
Income Top Fifth to Passengers Carried Road	40	Linear	.372 (.545)	.010	
		Quadratic	**1.034 (.366)**	**.053**	**.043**
		Cubic	1.060 (.355)	.054	.001
Income Top Fifth to Access to Improved Water	104	Linear	5.459 (.021)*	.051	
		Quadratic	**4.836 (.010)****	**.087**	**.036**
		Cubic	4.836 (.010)**	.087	.036
Income Top Fifth to Access to Improved Sanitation	96	Linear	9.227 (.003)**	.089	
		Quadratic	**8.844 (.000)*****	**.160**	**.071**
		Cubic	8.844 (.000)***	.160	.000
Income Top Fifth to Access to Internet	109	Linear	26.287 (.000)***	.197	
		Quadratic	**23.380 (.000)*****	**.306**	**.109**
		Cubic	23.380 (.000)***	.306	.000
Income 2nd Fifth to % in Slums	64	Linear	**4.754 (.033)***	**.071**	
		Quadratic	2.403 (.099) †	.073	.002
		Cubic	.2418 (.098) †	.073	.000
Income 2nd Fifth to Passengers Carried Rail	70	**Linear**	**1.844 (.179)**	**.026**	
		Quadratic	.950 (.396)	.028	.002
		Cubic	.969 (.385)	.028	.000
Income 2nd Fifth to Passengers Carried Road	40	Linear	.536 (.468)	.014	
		Quadratic	**.926 (.405)**	**.048**	**.034**
		Cubic	.848 (.436)	.044	-.004
Income 2nd Fifth to Access to Improved Water	104	Linear	4.346 (.040)*	.041	
		Quadratic	**5.140 (.007)****	**.092**	**.051**
		Cubic	5.179 (.007)**	.093	.001

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Hypothesis	N	Curve	F	R^2	R^2 Change
Income 2nd Fifth to Access to Improved Sanitation	96	Linear	.014 (.906)	.000	
		Quadratic	**1.239 (.294)**	**.026**	**.026**
		Cubic	.821 (.485)	.026	.000
Income 2nd Fifth to Access to Internet	109	Linear	25.483 (.000)***	.192	
		Quadratic	23.330 (.000)***	.306	.114
		Cubic	**24.871 (.000)***	**.319**	**.013**
Income 3rd Fifth to % in Slums	64	**Linear**	**2.636 (.110)**	**.041**	
		Quadratic	1.324 (.274)	.042	.001
		Cubic	1.329 (.272)	.042	.001
Income 3rd Fifth to Passengers Carried Rail	70	**Linear**	**1.538 (.219)**	**.022**	
		Quadratic	.987 (.378)	.029	.007
		Cubic	.950 (.392)	.028	-.001
Income 3rd Fifth to Passengers Carried Road	40	Linear	.110 (.742)	.003	
		Quadratic	**.745 (.482)**	**.039**	**.036**
		Cubic	.738 (.485)	.038	-.001
Income 3rd Fifth to Access to Improved Water	104	Linear	6.512 (.012)*	.060	
		Quadratic	**5.643 (.005)**	**.101**	**.041**
		Cubic	5.753 (.004)**	.102	.004
Income 3rd Fifth to Access to Improved Sanitation	96	Linear	12.288 (.001)***	.161	
		Quadratic	**10.640 (.000)***	**.186**	**.015**
		Cubic	10.831 (.000)***	.189	.003
Income 3rd Fifth to Access to Internet	109	Linear	31.851 (.000)***	.229	
		Quadratic	**28.544 (.000)***	**.350**	**.128**
		Cubic	29.458 (.000)***	.357	.007
Income 4th Fifth to % in Slums	64	**Linear**	**.005 (.944)**	**.000**	
		Quadratic	.046 (.955)	.002	.002
		Cubic	.400 (.754)	.020	.018
Income 4th Fifth to Passengers Carried Rail	70	Linear	.826 (.366)	.012	
		Quadratic	**.809 (.450)**	**.024**	**.012**
		Cubic	.797 (.455)	.023	-.001
Income 4th Fifth to Passengers Carried Road	40	**Linear**	**.156 (.695)**	**.004**	
		Quadratic	.125 (.883)	.007	.003
		Cubic	.029 (.879)	.007	.000
Income 4th Fifth to Access to Improved Water	104	**Linear**	**8.708 (.004)**	**.079**	
		Quadratic	4.429 (.014)*	.081	.002
		Cubic	4.456 (.014)*	.081	.000
Income 4th Fifth to Access to Improved Sanitation	96	Linear	15.697 (.000)***	.143	
		Quadratic	**8.638 (.000)***	**.157**	**.013**
		Cubic	8.677 (.000)***	.157	.013

Hypothesis	N	Curve	F	R^2	R^2 Change
Income 4th Fifth to Access to Internet	109	Linear	30.949 (.000)***	.224	
		Quadratic	**23.874 (.000)*****	**.311**	**.087**
		Cubic	23.994 (.000)***	.312	.001
Income Bottom Fifth to % in Slums	64	**Linear**	**.005 (.944)**	**.000**	
		Quadratic	.046 (.955)	.002	.002
		Cubic	.400 (.754)	.020	.018
Income Bottom Fifth to Passengers Carried Rail	70	Linear	1.037 (.312)	.015	
		Quadratic	1.831 (.168)	.052	.037
		Cubic	**1.547 (.211)**	**.066**	**.014**
Income Bottom Fifth to Passengers Carried Road	40	Linear	1.650 (.207)	.042	
		Quadratic	1.152 (.327)	.059	.013
		Cubic	**1.869 (.152)**	**.135**	**.075**
Income Bottom Fifth to Access to Improved Water	104	Linear	2.331 (.130)	.022	
		Quadratic	**2.366 (.099)†**	**.045**	**.023**
		Cubic	.1633 (.187)	.047	.002
Income Bottom Fifth to Access to Improved Sanitation	96	Linear	3.146 (.079)†	.032	
		Quadratic	**3.314 (.041)***	**.067**	**.035**
		Cubic	2.302 (.082)†	.070	.003
Income Bottom Fifth to Access to Internet	109	Linear	11.343 (.001)***	.096	
		Quadratic	**7.029 (.001)*****	**.117**	**.021**
		Cubic	5.068 (.003)**	.126	.009
% in Slums to Access to Improved Water	98	Linear	46.738 (.000)***	.327	
		Quadratic	**28.040 (.000)*****	**.371**	**.044**
		Cubic	18.513 (.000)***	.371	.000
% in Slums to Access to Improved Sanitation	95	Linear	119.706 (.000)***	.563	
		Quadratic	**62.131 (.000)*****	**.575**	**.012**
		Cubic	42.604 (.000)***	.584	.009
% in Slums to Access to Internet	102	**Linear**	**39.640 (.000)*****	**.284**	
		Quadratic	19.625 (.000)***	.284	.000
		Cubic	13.539 (.000)***	.293	.009
Passengers Carried Rail to Improved Water	86	Linear	.772 (.382)	.009	
		Quadratic	1.946 (.149)	.045	.036
		Cubic	**1.992 (.122)**	**.068**	**.023**
Passengers Carried Rail to Improved Sanitation	77	Linear	.168 (.683)	.002	
		Quadratic	2.390 (.099)†	.061	.059
		Cubic	**2.451 (.070)†**	**.091**	**.030**
Passengers Carried Rail to Access to Internet	89	Linear	.030 (.862)	.000	
		Quadratic	5.117 (.008)**	.106	.106
		Cubic	**4.190 (.008)****	**.129**	**.023**

Hypothesis	N	Curve	F	R^2	R^2 Change
Passengers Carried Road to Improved Water	46	Linear	.628 (.432)	.014	
		Quadratic	**.874 (.424)**	**.039**	**.025**
		Cubic	.874 (.424)	.039	.000
Passengers Carried Road to Improved Sanitation	39	Linear	.684 (.413)	.018	
		Quadratic	**.557 (.578)**	**.030**	**.012**
		Cubic	.557 (.578)	.030	.000
Passengers Carried Road to Access to Internet	48	Linear	4.227 (.045)*	.084	
		Quadratic	3.454 (.040)*	.133	.049
		Cubic	3.454 (.040)*	.133	.000

Bold = best relationship
†   F < .10
*   F < .05
** F < .01
*** F < .001

Table 5.1
Curve Estimations for Fragmentation of Normative Systems

Hypothesis	N	Curve	F (sig)	R^2	R^2 Change
Majority Ethnicity to Fragmentation in Importance of Religion	79	**Linear**	**8.561 (.005)****	**.100**	
		Quadratic	N/A	N/A	N/A
		Cubic	N/A	N/A	N/A
Majority Ethnicity to Fragmentation in Marriage Out-Dated	77	**Linear**	**.544 (.463)**	**.007**	
		Quadratic	N/A	N/A	N/A
		Cubic	N/A	N/A	N/A
Majority Ethnicity to Fragmentation in Always Love Parents	65	**Linear**	**6.290 (.015)***	**.091**	
		Quadratic	N/A	N/A	N/A
		Cubic	N/A	N/A	N/A
Majority Ethnicity to Fragmentation in Work as Duty to Society	74	**Linear**	**2.348 (.138)**	**.030**	
		Quadratic	N/A	N/A	N/A
		Cubic	N/A	N/A	N/A
Number of Ethnic Groups to Fragmentation in Importance of Religion	77	**Linear**	**6.338 (.014)***	**.078**	
		Quadratic	3.516 (.035)*	.087	.009
		Cubic	2.515 (.065)†	.094	.007
Number of Ethnic Groups to Fragmentation in Marriage Out-Dated	75	Linear	.243 (.624)	.003	
		Quadratic	**2.426 (.096)†**	**.065**	**.062**
		Cubic	1.950 (.130)	.078	.013
Number of Ethnic Groups to Fragmentation in Always Love Parents	65	Linear	1.235 (.270)	.017	
		Quadratic	**1.796 (.173)**	**.048**	**.031**
		Cubic	1.203 (.315)	.048	.000
Number of Ethnic Groups to Fragmentation in Work as Duty to Society	73	**Linear**	**2.257 (.138)**	**.036**	
		Quadratic	1.128 (.331)	.036	.000
		Cubic	1.417 (.247)	.067	.031
Majority Religion to Fragmentation in Importance of Religion	81	**Linear**	**1.075 (.303)**	**.013**	
		Quadratic	N/A	N/A	N/A
		Cubic	N/A	N/A	N/A
Majority Religion to Fragmentation in Marriage Out-Dated	79	**Linear**	**.005 (.944)**	**.000**	
		Quadratic	N/A	N/A	N/A
		Cubic	N/A	N/A	N/A
Majority Religion to Fragmentation in Always Love Parents	66	**Linear**	**.122 (.728)**	**.002**	
		Quadratic	N/A	N/A	N/A
		Cubic	N/A	N/A	N/A
Majority Religion to Fragmentation in Work as Duty to Society	76	**Linear**	**1.357 (.248)**	**.018**	
		Quadratic	N/A	N/A	N/A
		Cubic	N/A	N/A	N/A
Number of Religions to Fragmentation in Importance of Religion	81	Linear	.524 (.471)	.007	
		Quadratic	1.079 (.345)	.027	.020
		Cubic	**1.760 (.162)**	**.064**	**.037**

Hypothesis	N	Curve	F (sig)	R^2	R^2 Change
Number of Religions to Fragmentation in Marriage Out-Dated	79	**Linear**	**.003 (.958)**	**.000**	
		Quadratic	.323 (.725)	.008	.008
		Cubic	.229 (.876)	.009	.001
Number of Religions to Fragmentation in Always Love Parents	66	Linear	.655 (.421)	.010	
		Quadratic	**1.199 (.308)**	**.037**	**.027**
		Cubic	.798 (.500)	.037	.000
Number of Religions to Fragmentation in Work as Duty to Society	76	Linear	**1.897 (.173)**	**.025**	
		Quadratic	1.134 (.327)	.030	.005
		Cubic	1.121 (.347)	.045	.015
Common Language to Fragmentation in Importance of Religion	81	**Linear**	**9.349 (.030)****	**.106**	
		Quadratic	N/A	N/A	N/A
		Cubic	N/A	N/A	N/A
Common Language to Fragmentation in Marriage Out-Dated	79	**Linear**	**.131 (.719)**	**.002**	
		Quadratic	N/A	N/A	N/A
		Cubic	N/A	N/A	N/A
Common Language to Fragmentation in Always Love Parents	66	Linear	**8.101 (.006)****	**.112**	
		Quadratic	N/A	N/A	N/A
		Cubic	N/A	N/A	N/A
Common Language to Fragmentation in Work as Duty to Society	76	**Linear**	**4.895 (.030)***	**.062**	
		Quadratic	N/A	N/A	N/A
		Cubic	N/A	N/A	N/A
Top 20% Income to Fragmentation in Importance of Religion	61	Linear	23.292 (.000)***	.283	
		Quadratic	**16.911 (.000)*****	**.368**	**.085**
		Cubic	16.911 (.000)***	.368	.000
Top 20% Income to Fragmentation in Marriage Out-Dated	60	Linear	.800 (.375)	.014	
		Quadratic	**1.499 (.232)**	**.050**	**.036**
		Cubic	1.495 (.233)	.050	.000
Top 20% Income to Fragmentation in Always Love Parents	54	Linear	12.995 (.001)***	.200	
		Quadratic	**8.262 (.001)*****	**.245**	**.045**
		Cubic	8.262 (.001)***	.245	.000
Top 20% Income to Fragmentation in Work as Duty to Society	60	Linear	12.023 (.001)***	.176	
		Quadratic	**8.875 (.000)*****	**.237**	**.061**
		Cubic	9.023 (.000)***	.240	.003
2nd 20% Income to Fragmentation in Importance of Religion	61	**Linear**	20.789 (.000)***	.261	
		Quadratic	**14.049 (.000)*****	**.326**	**.065**
		Cubic	14.113 (.000)***	.327	.001
2nd 20% Income to Fragmentation in Marriage Out-Dated	54	Linear	.768 (.384)	.013	
		Quadratic	**1.729 (.187)**	**.057**	**.044**
		Cubic	1.729 (.187)	.057	.044

Hypothesis	N	Curve	F (sig)	R^2	R^2 Change
2nd 20% Income to Fragmentation in Always Love Parents	60	Linear	13.839 (.000)***	.210	
		Quadratic	**8.527 (.001)***	**.251**	**.041**
		Cubic	8.831 (.001)***	.257	.006
2nd 20% Income to Fragmentation in Work as Duty to Society	61	Linear	10.564 (.002)**	.154	
		Quadratic	**6.662 (.003)**	**.189**	**.035**
		Cubic	6.484 (.003)**	.185	-.004
3rd 20% Income to Fragmentation in Importance of Religion	61	Linear	28.897 (.000)***	.329	
		Quadratic	**21.120 (.000)***	**.421**	**.092**
		Cubic	21.120 (.000)***	.427	.006
3rd 20% Income to Fragmentation in Marriage Out-Dated	54	Linear	.524 (.472)	.009	
		Quadratic	**1.554 (.220)**	**.052**	**.043**
		Cubic	1.563 (.218)	.052	.000
3rd 20% Income to Fragmentation in Always Love Parents	60	Linear	12.947 (.001)***	.199	
		Quadratic	**7.956 (.001)***	**.238**	**.039**
		Cubic	7.976 (.001)***	.238	.000
3rd 20% Income to Fragmentation in Work as Duty to Society	61	Linear	16.789 (.000)***	.224	
		Quadratic	**13.404 (.000)***	**.320**	**.096**
		Cubic	13.177 (.000)***	.316	-.004
4th 20% Income to Fragmentation in Importance of Religion	61	Linear	27.662 (.000)***	.319	
		Quadratic	**18.448 (.000)***	**.389**	**.070**
		Cubic	18.434 (.000)***	.389	.000
4th 20% Income to Fragmentation in Marriage Out-Dated	54	Linear	.003 (.960)	.000	
		Quadratic	**1.997 (.145)**	**.065**	**.065**
		Cubic	1.985 (.147)	.065	.000
4th 20% Income to Fragmentation in Always Love Parents	60	Linear	8.454 (.005)**	.140	
		Quadratic	**6.160 (.004)**	**.195**	**.055**
		Cubic	6.237 (.004)**	.197	.002
4th 20% Income to Fragmentation in Work as Duty to Society	61	Linear	19.733 (.000)***	.254	
		Quadratic	**14.864 (.000)***	**.343**	**.089**
		Cubic	14.774 (.000)***	.341	-.002
Bottom 20% Income to Fragmentation in Importance of Religion	61	**Linear**	**9.734 (.003)**	**.142**	
		Quadratic	5.061 (.009)**	.149	.007
		Cubic	3.997 (.012)*	.174	.025
Bottom 20% Income to Fragmentation in Marriage Out-Dated	60	**Linear**	**2.145 (.148)**	**.036**	
		Quadratic	1.105 (.338)	.037	.001
		Cubic	1.139 (.341)	.057	.020
Bottom 20% Income to Fragmentation in Always Love Parents	54	**Linear**	**3.709 (.059)†**	**.060**	
		Quadratic	1.829 (.170)	.060	.000
		Cubic	1.654 (.187)	.081	.021

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Hypothesis	N	Curve	F (sig)	R^2	R^2 Change
Bottom 20% Income to Fragmentation in Work as Duty to Society	60	**Linear** Quadratic Cubic	**8.445 (.005)**** 4.227 (.020)* 3.204 (.031)*	**.140** .142 .161	.002 .019
Primary Enrollment To Secondary Enrollment	140	Linear **Quadratic** Cubic	152.240 (.000)*** **81.002 (.000)***** 55.281 (.000)***	.525 **.542** .549	**.017** .007
Primary Enrollment to Fragmentation in Importance of Religion	71	**Linear** Quadratic Cubic	**16.351 (.000)***** 9.643(.000)*** 9.647(.000)***	**.192** .221 .221	.029 .000
Primary Enrollment to Fragmentation in Marriage Out-Dated	69	**Linear** Quadratic Cubic	**.775 (.382)** .521 (.596) .535 (.588)	**.011** .016 .016	.005 .000
Primary Enrollment to Fragmentation in Always Love Parents	56	Linear **Quadratic** Cubic	4.870 (.032)* **9.166 (.000)***** 9.142 (.000)***	.083 **.257** .256	**.174** -.001
Primary Enrollment to Fragmentation in Work as Duty to Society	67	**Linear** Quadratic Cubic	**21.511 (.000)***** 10.983 (.000)*** 10.983 (.000)***	**.249** .256 .256	.007 .000
Secondary Enrollment to Fragmentation in Importance of Religion	63	Linear **Quadratic** Cubic	46.408 (.000)*** **28.809 (.000)***** 19.166 (.000)***	.432 **.490** .494	**.058** .004
Secondary Enrollment to Fragmentation in Marriage Out-Dated	60	**Linear** Quadratic Cubic	**3.784 (.057)†** 2.007 (.144) 1.482 (.229)	**.061** .066 .074	.005 .008
Secondary Enrollment to Fragmentation in Always Love Parents	48	Linear Quadratic **Cubic**	10.991 (.002)** 12.638 (.000)*** **9.084 (.000)*****	.193 .360 **.382**	.169 **.012**
Secondary Enrollment to Fragmentation in Work as Duty to Society	58	Linear **Quadratic** Cubic	35.341 (.000)*** **19.670 (.000)***** 12.876 (.000)***	.387 **.417** .417	**.030** .000
Internet Access to Fragmentation in Importance of Religion	76	Linear **Quadratic** Cubic	36.322 (.000)*** **24.050 (.000)***** 16.124 (.000)***	.315 **.381** .386	**.066** .005
Internet Access to Fragmentation in Marriage Out-Dated	81	Linear **Quadratic** **Cubic**	3.605 (.061)† **2.982 (.057) †** 2.133 (.103)	.045 **.073** .079	**.028** .006

Hypothesis	N	Curve	F (sig)	R^2	R^2 Change
Internet Access to Fragmentation in Always Love Parents	79	Linear	29.923 (.000)***	.288	
		Quadratic	19.340 (.000)***	.346	.058
		Cubic	**14.616 (.000)***	**.378**	**.032**
Internet Access to Fragmentation in Work as Duty to Society	66	**Linear**	**44.791 (.000)***	**.412**	
		Quadratic	22.721 (.000)***	.419	.007
		Cubic	17.126 (.000)***	453	.034

Bold = best relationship
†　F < .10
*　F < .05
**　F < .01
*** F < .001

Table 6.1
Curve Estimations for Fragmentation of Morality

Hypothesis	N	Curve	F (sig)	R^2	R^2 Change
Majority Ethnicity to Fragmentation in Cheat on Taxes	81	**Linear**	**.010 (.992)**	**.000**	
		Quadratic	N/A	N/A	N/A
		Cubic	N/A	N/A	N/A
Majority Ethnicity to Fragmentation in Homosexuality Justifiable	82	**Linear**	**.511 (.477)**	**.008**	
		Quadratic	N/A	N/A	N/A
		Cubic	N/A	N/A	N/A
Majority Ethnicity to Fragmentation in Prostitution Justifiable	74	**Linear**	**.128 (.722)**	**.002**	
		Quadratic	N/A	N/A	N/A
		Cubic	N/A	N/A	N/A
Number of Ethnic Groups to Fragmentation in Cheat on Taxes	79	Linear	12.884 (.001)***	.170	
		Quadratic	6.405 (.006)**	.171	.001
		Cubic	**5.827 (.001)***	**.223**	**.052**
Number of Ethnic Groups to Fragmentation in Homosexuality Justifiable	80	**Linear**	**.149 (.701)**	**.002**	
		Quadratic	.207 (.813)	.007	.005
		Cubic	.467 (.706)	.022	.015
Number of Ethnic Groups to Fragmentation in Prostitution Justifiable	72	**Linear**	**.156 (.694)**	**.003**	
		Quadratic	.200 (.820)	.007	.004
		Cubic	.564 (.641)	.031	.024
Majority Religion to Fragmentation in Cheat on Taxes	83	**Linear**	**.454 (.503)**	**.007**	
		Quadratic	N/A	N/A	N/A
		Cubic	N/A	N/A	N/A
Majority Religion to Fragmentation in Homosexuality Justifiable	84	**Linear**	**.129 (.720)**	**.002**	
		Quadratic	N/A	N/A	N/A
		Cubic	N/A	N/A	N/A
Majority Religion to Fragmentation in Prostitution Justifiable	76	**Linear**	**.582 (.449)**	**.010**	
		Quadratic	N/A	N/A	N/A
		Cubic	N/A	N/A	N/A
Number of Religions to Fragmentation in Cheat on Taxes	83	**Linear**	**.960 (.331)**	**.014**	
		Quadratic	.474 (.625)	.014	.000
		Cubic	.363 (.780)	.016	.002
Number of Religions to Fragmentation in Homosexuality Justifiable	84	**Linear**	**3.171 (.079)†**	**.045**	
		Quadratic	1.656 (.199)	.048	.003
		Cubic	1.638 (.189)	.070	.022
Number of Religions to Fragmentation in Prostitution Justifiable	76	**Linear**	**.428 (.516)**	**.007**	
		Quadratic	.347 (.708)	.012	.005
		Cubic	.256 (.857)	.014	.002

Hypothesis	N	Curve	F (sig)	R^2	R^2 Change
Common Language to Fragmentation in Cheat on Taxes	83	**Linear**	**2.402 (.126)**	**.035**	
		Quadratic	N/A	N/A	N/A
		Cubic	N/A	N/A	N/A
Common Language to Fragmentation in Homosexuality Justifiable	84	**Linear**	**11.362 (.001)*****	**.145**	
		Quadratic	N/A	N/A	N/A
		Cubic	N/A	N/A	N/A
Common Language to Fragmentation in Prostitution Justifiable	76	**Linear**	**2.131 (.150)**	**.036**	
		Quadratic	N/A	N/A	N/A
		Cubic	N/A	N/A	N/A
Top 20% Income to Fragmentation in Cheat on Taxes	65	**Linear**	**.582 (.449)**	**.011**	
		Quadratic	.357 (.702)	.013	.002
		Cubic	.357 (.702)	.013	.000
Top 20% Income to Fragmentation in Homosexuality Justifiable	65	Linear	.032 (.859)	.001	
		Quadratic	**2.798 (.071)†**	**.101**	**.100**
		Cubic	2.823 (.069)†	.101	.000
Top 20% Income to Fragmentation in Prostitution Justifiable	60	Linear	.012 (.913)	.000	
		Quadratic	**.927 (.403)**	**.040**	**.004**
		Cubic	.903 (.413)	.039	.035
2nd 20% Income to Fragmentation in Cheat on Taxes	65	**Linear**	**.491 (.486)**	**.009**	
		Quadratic	.355 (.703)	.013	.004
		Cubic	.452 (.639)	.017	.004
2nd 20% Income to Fragmentation in Homosexuality Justifiable	65	Linear	.064 (.801)	.001	
		Quadratic	**2.932 (.063)†**	**.105**	**.104**
		Cubic	2.798 (.071)†	.101	-.004
2nd 20% Income to Fragmentation in Prostitution Justifiable	60	Linear	.023 (.000)	.000	
		Quadratic	**.642 (.028)**	**.028**	**.028**
		Cubic	.642 (.028)	.028	.000
3rd 20% Income to Fragmentation in Cheat on Taxes	65	**Linear**	**.802 (.375)**	**.015**	
		Quadratic	.429 (.653)	.016	.001
		Cubic	.456 (.637)	.017	.001
3rd 20% Income to Fragmentation in Homosexuality Justifiable	65	Linear	.153 (.697)	.003	
		Quadratic	**3.402 (.041)***	**.120**	**.117**
		Cubic	3.574 (.035)*	.125	.005
3rd 20% Income to Fragmentation in Prostitution Justifiable	60	Linear	.000 (.986)	.000	
		Quadratic	**1.394 (.258)**	**.058**	**.058**
		Cubic	1.423 (.252)	.059	.001

Hypothesis	N	Curve	F (sig)	R^2	R^2 Change
4th 20% Income to Fragmentation in Cheat on Taxes	65	**Linear**	**1.681 (.200)**	**.030**	
		Quadratic	.838 (.438)	.031	.001
		Cubic	.835 (.439)	.031	.000
4th 20% Income to Fragmentation in Homosexuality Justifiable	65	Linear	.181 (.672)	.004	
		Quadratic	**3.073 (.055)†**	**.109**	**.105**
		Cubic	3.163 (.051)†	.112	.003
4th 20% Income to Fragmentation in Prostitution Justifiable	60	Linear	.227 (.636)	.005	
		Quadratic	**3.407 (.042)***	**.132**	**.127**
		Cubic	3.606 (.035)*	.138	.006
Bottom 20% Income to Fragmentation in Cheat on Taxes	65	**Linear**	**.037 (.849)**	**.001**	
		Quadratic	.154 (.858)	.006	.005
		Cubic	.514 (.675)	.029	.023
Bottom 20% Income to Fragmentation in Homosexuality Justifiable	65	Linear	.104 (.748)	.002	
		Quadratic	.393 (.677)	.015	.013
		Cubic	**.594 (.622)**	**.035**	**.020**
Bottom 20% Income to Fragmentation in Prostitution Justifiable	60	**Linear**	**.318 (.575)**	**.007**	
		Quadratic	.167 (.846)	.007	.000
		Cubic	.141 (.935)	.009	.002
Primary Enrollment To Secondary Enrollment	140	Linear	152.240 (.000)***	.525	
		Quadratic	**81.002 (.000)***	**.542**	**.017**
		Cubic	55.281 (.000)***	.549	.007
Primary Enrollment to Fragmentation in Cheat on Taxes	74	**Linear**	**.518 (.474)**	**.009**	
		Quadratic	.475 (.624)	.016	.007
		Cubic	.546 (.582)	.018	.002
Primary Enrollment to Fragmentation in Homosexuality Justifiable	74	Linear	8.997 (.004)**	.136	
		Quadratic	7.547 (.001)***	.212	.076
		Cubic	**8.431 (.001)***	**.231**	**.019**
Primary Enrollment to Fragmentation in Prostitution Justifiable	66	Linear	.623 (.434)	.013	
		Quadratic	**.827 (.444)**	**.035**	**.022**
		Cubic	.855 (.432)	.036	.001
Secondary Enrollment to Fragmentation in Cheat on Taxes	74	Linear	.036 (.851)	.001	
		Quadratic	.070 (.933)	.003	.002
		Cubic	**1.345 (.271)**	**.076**	**.073**
Secondary Enrollment to Fragmentation in Homosexuality Justifiable	74	Linear	12.299 (.001)***	.197	
		Quadratic	**7.317 (.002)**	**.230**	**.033**
		Cubic	4.945(.005)**	.236	.006
Secondary Enrollment to Fragmentation in Prostitution Justifiable	66	**Linear**	**1.271 (.266)**	**.030**	
		Quadratic	.660 (.522)	.032	.002
		Cubic	.478 (.699)	.035	.003

Hypothesis	N	Curve	F (sig)	R^2	R^2 Change
Internet Access to Fragmentation in Cheat on Taxes	83	**Linear** Quadratic Cubic	**2.070 (.155)** 1.022 (.366) .671 (.573)	**.030** .030 .030	.000 .000
Internet Access to Fragmentation in Homosexuality Justifiable	84	Linear **Quadratic** Cubic	29.842 (.000)*** **15.541 (.000)*** 10.619 (.000)***	.308 **.320** .329	**.012** .009
Internet Access to Fragmentation in Prostitution Justifiable	76	**Linear** Quadratic Cubic	**7.138 (.010)** * 3.705 (.031)* 2.648 (.058)†	**.111** .117 .126	.006 .009
Incomes Equalized to Fragmentation in Cheat on Taxes	63	**Linear** Quadratic Cubic	**.169 (.683)** .094 (.910) .116 (.890)	**.003** .003 .004	.000 .001
Incomes Equalized to Fragmentation in Homosexuality Justifiable	62	Linear **Quadratic** Cubic	9.151 (.004)** **8.054 (.001)*** 7.733 (.001)***	.132 **.214** .208	**.082** -.006
Incomes Equalized to Fragmentation in Prostitution Justifiable	55	**Linear** Quadratic Cubic	**3.128 (.083)†** 1.683 (.196) 1.667 (.199)	**.056** .061 .060	.005 -.001
Ideology Scale to Fragmentation in Cheat on Taxes	67	**Linear** Quadratic Cubic	**.294 (.590)** .295 (.746) .220 (.882)	**.005** .009 .010	.004 .001
Ideology Scale to Fragmentation in Homosexuality Justifiable	64	Linear Quadratic **Cubic**	3.634 (.061)† 2.349 (.104)† **2.985 (.038)***	.055 .072 **.130**	.017 **.058**
Ideology Scale to Fragmentation in Prostitution Justifiable	56	**Linear** Quadratic Cubic	**2.044 (.159)** 1.048 (.358) .965 (.417)	**.036** .038 .053	.002 .015

Bold = best relationship
†   F < .10
*   F < .05
**   F < .01
*** F < .001

Table 7.1
Curve Estimations for Fragmentation of Markets

Hypothesis	N	Curve	F (sig)	R^2	R^2 Change
Procedures Registering Property to Time Registering Property	171	Linear	3.164 (.077)†	.018	
		Quadratic	2.920 (.057) †	.034	.016
		Cubic	**2.859 (.039)***	**.049**	**.015**
Procedures Registering Business to Time Registering Business	171	**Linear**	**32.639 (.000)*****	**.158**	
		Quadratic	16.307 (.000)***	.159	.001
		Cubic	10.935 (.000)***	.160	.001
Percent Agriculture to Informal Economy	85	Linear	26.409 (.000)***	.241	
		Quadratic	19.010 (.000)***	.317	.076
		Cubic	**13.185 (.000)*****	**.328**	**.011**
Percent Industry to Informal Economy	85	Linear	15.076 (.000)***	.154	
		Quadratic	**8.662 (.000)*****	**.174**	**.020**
		Cubic	5.708 (.001)***	.175	.001
Percent Service to Informal Economy	85	Linear	16.537 (.000)***	.166	
		Quadratic	12.866 (.000)***	.239	.073
		Cubic	**9.626 (.000)*****	**.263**	**.024**
Majority Ethnic Group to Informal Economy	103	**Linear**	**3.377 (.069) †**	**.032**	
		Quadratic	N/A	N/A	N/A
		Cubic	N/A	N/A	N/A
Number of Ethnic Groups to Informal Economy	101	**Linear**	**6.981 (.010)****	**.066**	
		Quadratic	3.525 (.033)*	.067	.001
		Cubic	2.398 (.073) †	.069	.002
Migrants per 1000 to Informal Economy	108	Linear	17.706 (.000)***	.143	
		Quadratic	10.466 (.000)***	.166	.025
		Cubic	**9.334 (.000)*****	**.212**	**.046**
Income Share Top 20% to Informal Economy	89	**Linear**	**12.082 (.001)*****	**.122**	
		Quadratic	6.225 (.003)**	.126	.004
		Cubic	6.225 (.003)**	.126	.000
Income Share 2nd 20% to Informal Economy	89	**Linear**	**12.527 (.001)*****	**.126**	
		Quadratic	6.259 (.003)**	.127	.001
		Cubic	6.308 (.003)**	.128	.001
Income Share 3rd 20% to Informal Economy	89	Linear	12.180 (.001)***	.123	
		Quadratic	**6.715 (.002)****	**.135**	**.012**
		Cubic	6.715 (.002)**	.134	-.001
Income Share 4th 20% to Informal Economy	89	Linear	8.151 (.005)**	.086	
		Quadratic	**6.835 (.002)****	**.137**	**.051**
		Cubic	6.779 (.002)**	.136	-.001

Hypothesis	N	Curve	F (sig)	R^2	R^2 Change
Income Share Bottom 20% to Informal Economy	89	Linear	9.142 (.003)**	.095	
		Quadratic	4.866 (.010)**	.102	.007
		Cubic	**4.483 (.006)****	**.137**	**.035**
Internet Usage to Informal Economy	108	**Linear**	**69.936 (.000)*****	**.398**	
		Quadratic	35.081 (.000)***	.401	.003
		Cubic	23.580 (.000)***	.405	.004
Procedures Registering Property to Informal Economy	108	Linear	17.665 (.000)***	.143	
		Quadratic	9.858 (.000)***	.158	.013
		Cubic	**6.993 (.000)*****	**.168**	**.010**
Time Registering Property to Informal Economy	108	Linear	2.615 (.109)	.024	
		Quadratic	3.897 (.023)*	.069	.045
		Cubic	**3.975 (.010)****	**.103**	**.034**
Procedures Registering Business to Informal Economy	108	Linear	16.497 (.000)***	.134	
		Quadratic	8.918 (.000)***	.145	.011
		Cubic	**6.565 (.000)*****	**.159**	**.014**
Time Registering Business to Informal Economy	108	Linear	6.527 (.012)*	.058	
		Quadratic	6.784 (.002)**	.114	.056
		Cubic	**4.899 (.003)****	**.124**	**.010**
Percent Agriculture to Firms Avoiding Taxes	60	Linear	2.520 (.118)	.042	
		Quadratic	**2.080 (.134)**	**.068**	**.026**
		Cubic	1.404 (.251)	.070	.002
Percent Industry to Firms Avoiding Taxes	60	**Linear**	**2.315 (.134)**	**.038**	
		Quadratic	1.338 (.271)	.045	.007
		Cubic	1.035 (.384)	.053	.008
Percent Service to Firms Avoiding Taxes	60	**Linear**	**1.781 (.187)**	**.030**	
		Quadratic	1.126 (.332)	.038	.008
		Cubic	.740 (.533)	.038	.000
Majority Ethnic Group to Firms Avoiding Taxes	89	**Linear**	**9.843 (.002)****	**.102**	
		Quadratic	N/A	N/A	N/A
		Cubic	N/A	N/A	N/A
Number of Ethnic Groups to Firms Avoiding Taxes	89	**Linear**	**3.179 (.078)†**	**.035**	
		Quadratic	1.571 (.214)	.035	.000
		Cubic	1.244 (.299)	.042	.007
Migrants per 1000 to Firms Avoiding Taxes	94	**Linear**	**.218 (.642)**	**.002**	
		Quadratic	.108 (.898)	.002	.000
		Cubic	.071 (.975)	.002	.000

Hypothesis	N	Curve	F (sig)	R^2	R^2 Change
Income Share Top 20% to Firms Avoiding Taxes	76	Linear **Quadratic** Cubic	1.868 (.176) **2.095 (.130)** 2.149 (.124)	.025 **.054** .056	**.029** .002
Income Share 2nd 20% to Firms Avoiding Taxes	76	Linear **Quadratic** Cubic	2.087 (.153) **1.983 (.145)** 1.950 (.150)	.027 **.052** .051	**.025** -.001
Income Share 3rd 20% to Firms Avoiding Taxes	76	Linear **Quadratic** Cubic	1.965 (.165) **2.245 (.113)** 2.134 (.126)	.026 **.058** .055	**.028** -.003
Income Share 4th 20% to Firms Avoiding Taxes	76	**Linear** Quadratic Cubic	**.641 (.426)** .594 (.555) .565 (.565)	**.009** .016 .015	.007 -.001
Income Share Bottom 20% to Firms Avoiding Taxes	76	Linear **Quadratic** Cubic	1.893 (.173) **1.404 (.252)** .936 (.428)	.025 **.037** .038	**.012** .001
Internet Usage to Firms Avoiding Taxes	94	Linear **Quadratic** Cubic	4.145 (.045)* **2.924 (.059)†** 1.939 (.129)	.043 **.060** .061	**.017** .001
Procedures Registering Property to Firms Avoiding Taxes	94	Linear Quadratic **Cubic**	2.138 (.147) 1.779 (.175) **1.627 (.189)**	.023 .038 **.051**	.015 **.013**
Time Registering Property to Firms Avoiding Taxes	94	**Linear** Quadratic Cubic	**.075 (.785)** .231 (.794) .153 (.928)	**.001** .005 .005	.004 .000
Procedures Registering Business to Firms Avoiding Taxes	94	**Linear** Quadratic Cubic	**8.741 (.004)**** 4.445 (.014)* 3.333 (.023)*	**.087** .089 .100	.002 .013
Time Registering Business to Firms Avoiding Taxes	94	**Linear** Quadratic Cubic	**4.300 (.041)*** 2.579 (.081)† 1.974 (.123)	**.045** .054 .062	.009 .008

Bold = best relationship
†   F < .10
*   F < .05
** F < .01
*** F < .001

Table 8.1

Curve Estimations for Fragmentation of the Production Process

Hypothesis	N	Curve	F (sig)	R^2	R^2 Change
Manufacturing % of GDP		**Linear**	**53.762 (.000)*****	**.226**	
To	150	Quadratic	27.030 (.000)***	.229	.003
Manufacturing Exports		Cubic	20.309 (.000)***	.294	.065
Manufacturing % of GDP		Linear	9.170 (.003)**	.058	
To	150	**Quadratic**	**5.992 (.003)****	**.075**	**.017**
Manufacturing Imports		Cubic	4.025 (.009)**	.076	.001
Services % of GDP		Linear	2.069 (.152)	.014	
To	152	Quadratic	1.829 (.164)	.024	.010
Service Exports		**Cubic**	**1.822 (.146)**	**.036**	**.012**
Services % of GDP		Linear	.129 (.720)	.001	
To	152	**Quadratic**	**1.626 (.200)**	**.021**	**.020**
Service Imports		Cubic	1.526 (.210)	.030	.009
Manufacturing Exports		**Linear**	**2.223 (.138)**	**.015**	
To	151	Quadratic	1.658 (.194)	.022	.007
FDI Inflows		Cubic	1.206 (.310)	.024	.002
Service Exports		**Linear**	**3.453 (.065)†**	**.022**	
To	155	Quadratic	1.717 (.183)	.022	.000
FDI Inflows		Cubic	1.716 (.166)	.033	.011
Manufacturing Imports		Linear	14.025 (.000)***	.092	
To	140	Quadratic	12.823 (.000)***	.158	.066
FDI Outflows		**Cubic**	**10.035 (.000)*****	**.181**	**.023**
Service Imports		**Linear**	**6.567 (.011)***	**.043**	
To	147	Quadratic	3.265 (.041)*	.043	.000
FDI Outflows		Cubic	2.183 (.093)†	.044	.001
FDI Inflows		**Linear**	**2.223 (.138)**	**.015**	
To	151	Quadratic	1.188 (.308)	.016	.001
Manufacturing Exports		Cubic	.928 (.429)	.019	.003
FDI Inflows		Linear	3.453 (.065)†	.022	
To	155	Quadratic	1.819 (.161)	.023	.001
Service Exports		**Cubic**	**2.424 (.068)†**	**.046**	**.032**
FDI Outflows		Linear	14.025 (.000)***	.092	
To	140	**Quadratic**	**8.973 (.000)*****	**.116**	**.024**
Manufacturing Imports		Cubic	6.247 (.001)***	.121	.005
FDI Outflows		Linear	6.567 (.011)*	.043	
To	147	**Quadratic**	**9.946 (.000)*****	**.121**	**.078**
Service Imports		Cubic	6.833 (.000)***	.125	.004

Hypothesis	N	Curve	F (sig)	R^2	R^2 Change
Ease of Doing Business To Manufacturing Exports	150	Linear	35.323 (.000)***	.193	
		Quadratic	17.554 (.000)***	.193	.000
		Cubic	11.900 (.000)***	.196	.003
Ease of Doing Business To Manufacturing Imports	150	**Linear**	**39.460 (.000)***	**.210**	
		Quadratic	19.636 (.000)***	.211	.001
		Cubic	15.765 (.000)***	.245	.044
Ease of Doing Business To Service Exports	152	Linear	1.510 (.221)	.010	
		Quadratic	4.151 (.018)*	.053	.043
		Cubic	**3.634 (.014)***	**.069**	**.016**
Ease of Doing Business To Service Imports	152	**Linear**	**11.204 (.001)***	**.070**	
		Quadratic	5.578 (.005)**	.070	.000
		Cubic	4.005 (.009)**	.075	.005
Ease of Doing Business To FDI Inflows	162	**Linear**	**.187 (.666)**	**.001**	
		Quadratic	.478 (.621)	.006	.005
		Cubic	1.552 (.203)	.029	.023
Ease of Doing Business To FDI Outflows	141	Linear	25.471 (.000)***	.155	
		Quadratic	24.684 (.000)***	.263	.108
		Cubic	**19.325 (.000)***	**.297**	**.034**
WTO Membership To Manufacturing Exports	161	Linear	**5.841 (.017)***	**.035**	
		Quadratic	N/A	N/A	N/A
		Cubic	N/A	N/A	N/A
WTO Membership To Manufacturing Imports	162	**Linear**	**2.663 (.105)**	**.016**	
		Quadratic	N/A	N/A	N/A
		Cubic	N/A	N/A	N/A
WTO Membership To Service Exports	162	**Linear**	**6.636 (.011)***	**.040**	
		Quadratic	N/A	N/A	N/A
		Cubic	N/A	N/A	N/A
WTO Membership To Service Imports	162	**Linear**	**.377 (.540)**	**.002**	
		Quadratic	N/A	N/A	N/A
		Cubic	N/A	N/A	N/A
WTO Membership To FDI Inflows	170	Linear	1.996 (.160)	.012	
		Quadratic	N/A	N/A	N/A
		Cubic	N/A	N/A	N/A
WTO Membership To FDI Outflows	148	Linear	.240 (.625)	.002	
		Quadratic	N/A	N/A	N/A
		Cubic	N/A	N/A	N/A

Bold = best relationship

†   F < .10

*   F < .05

** F < .01

*** F < .001

Figures.

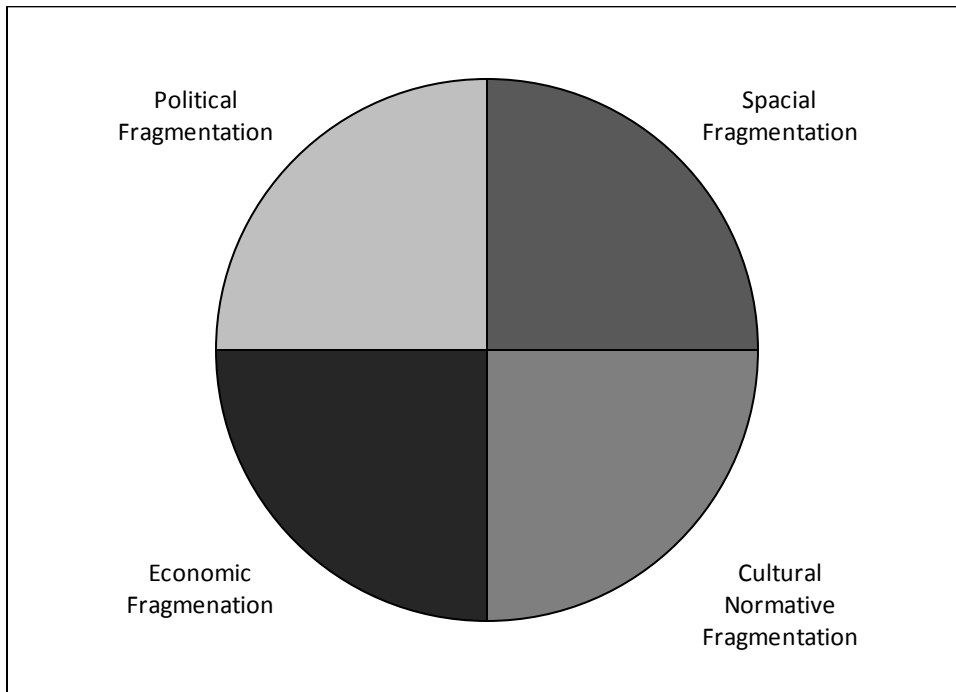Firgure 1.a.
Graphical Representation of the Axes of Fragmentation

Figure 1.b.
Types of Data Associated with the axes of fragmentation (see figure 1.a.)

Political Structure and Behavior

Physical Structure of Social Structure
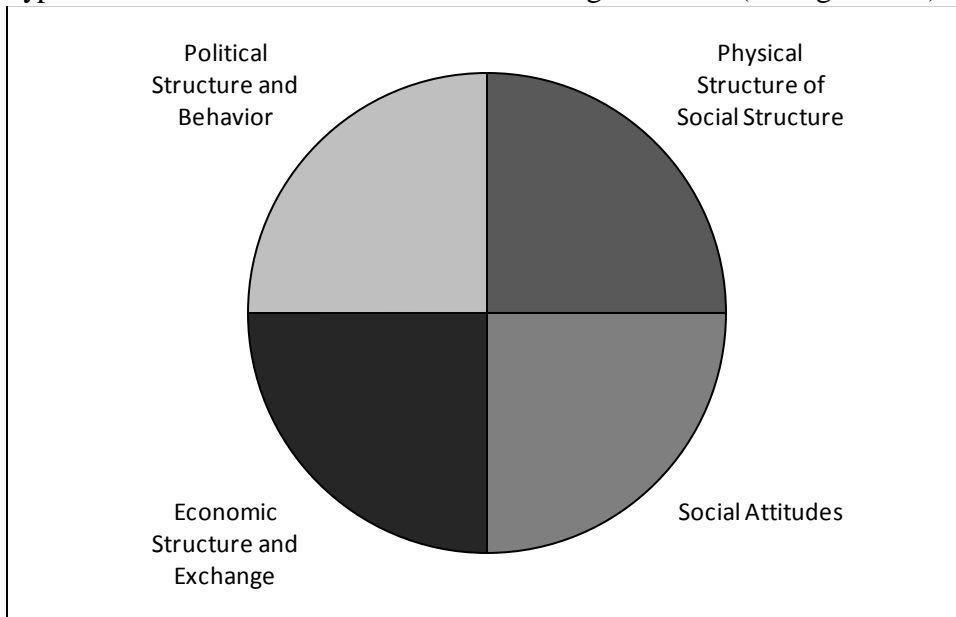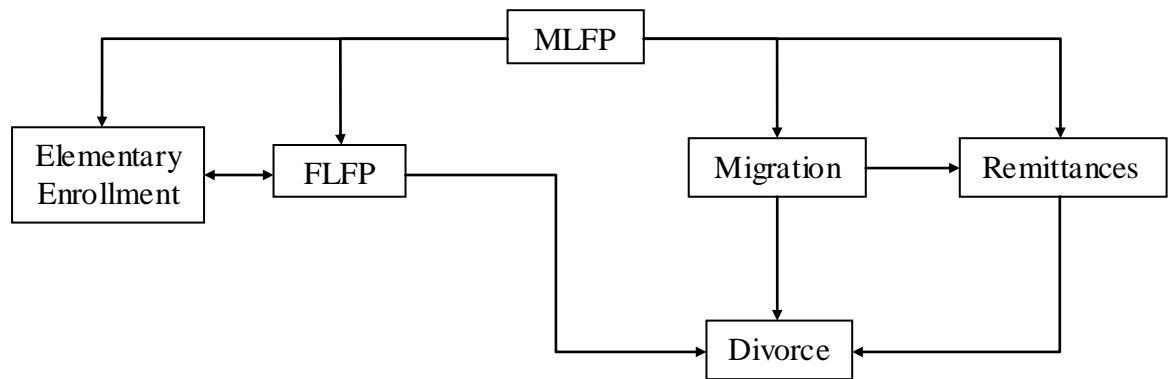
Economic Structure and Exchange

Social Attitudes

Figure 3.1

Initial Hypothetical Model for Fragmentation of the Family

Figure 4.1
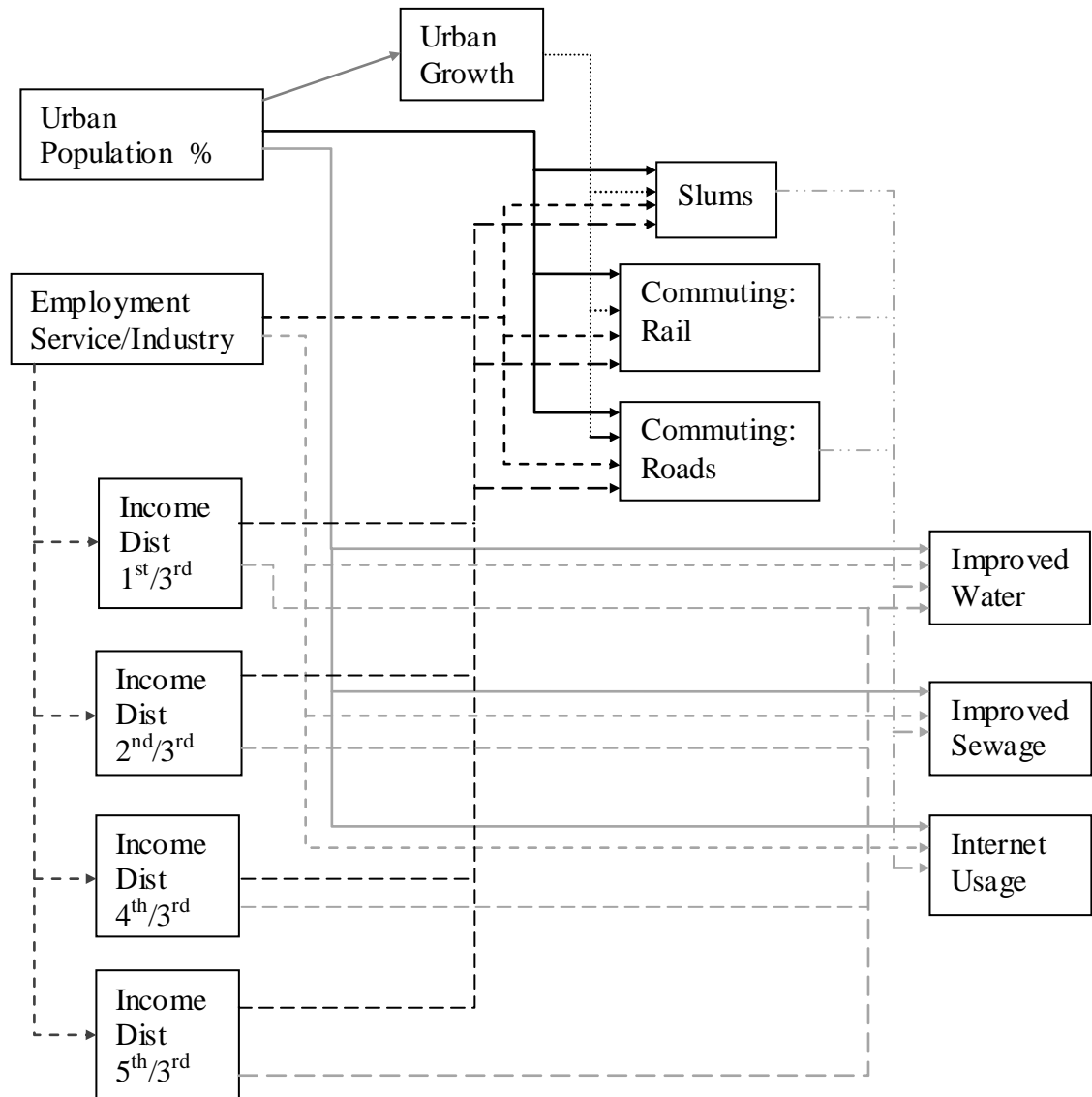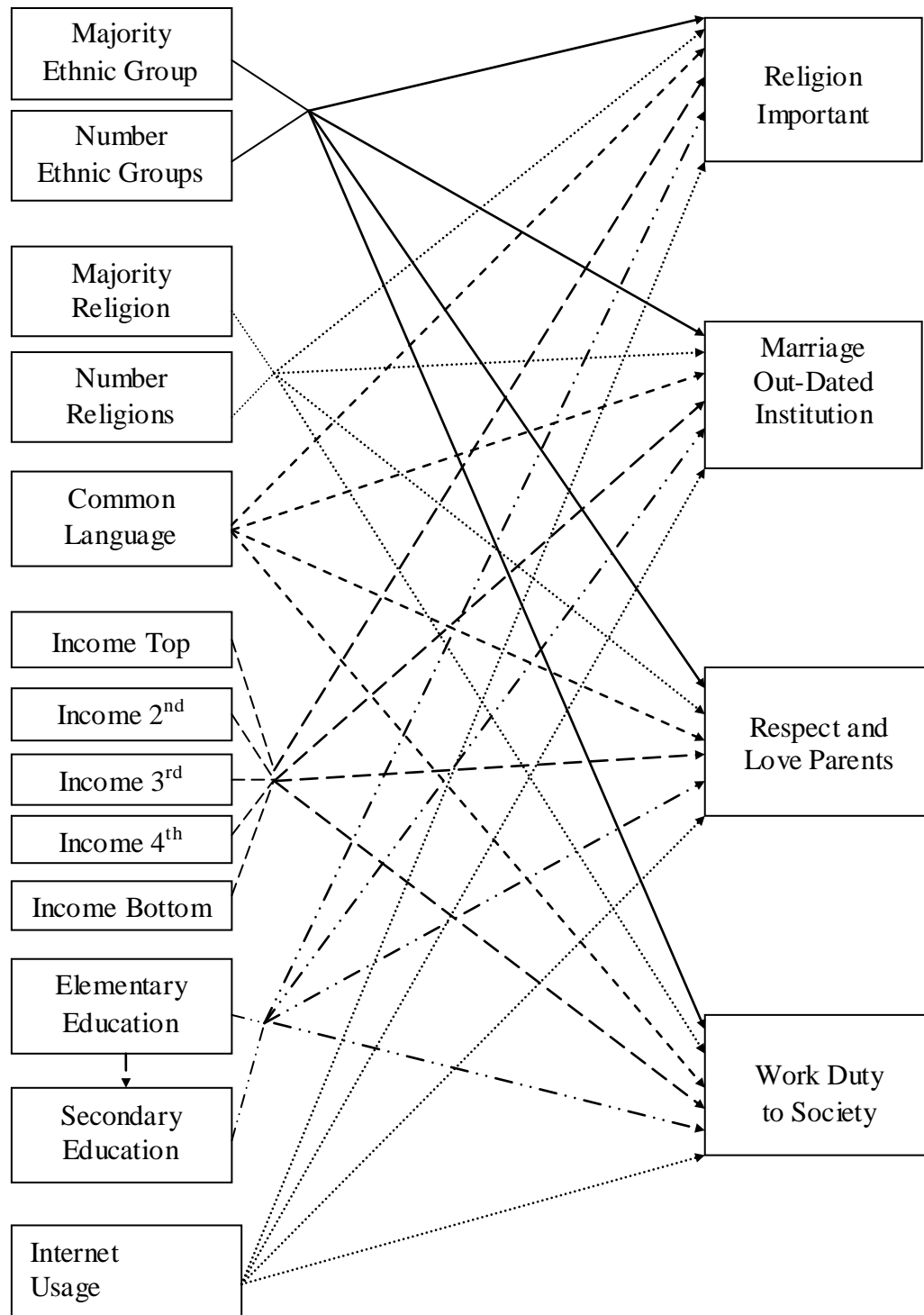
Initial Hypothetical Model for Fragmentation of the Cities

Figure 5.1
Initial Hypothetical Model for Fragmentation of Normative Systems

Figure 6.1
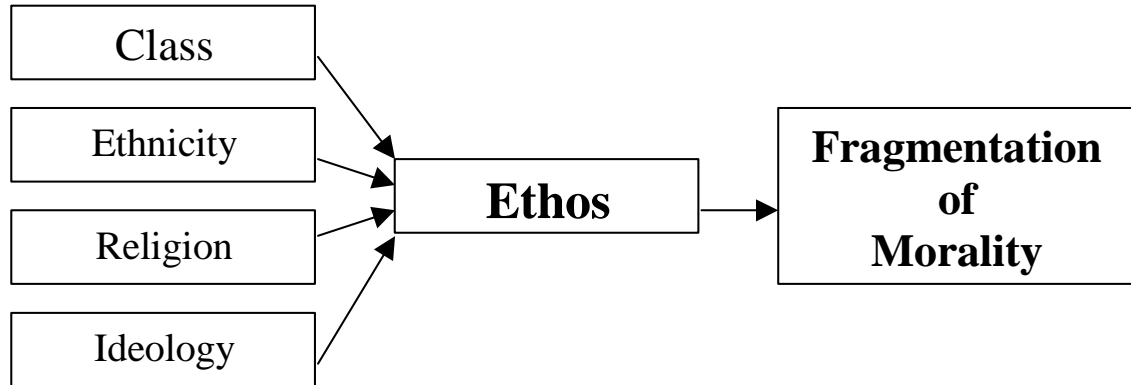Relationship of Selected Social Groupings to Ethos to Fragmentation of Morality.

| Class |
| Ethnicity |
| Religion |
| Ideology |

→ **Ethos** → **Fragmentation of Morality**

Figure 6.2
Initial Hypothetical Model for Fragmentation of Morality
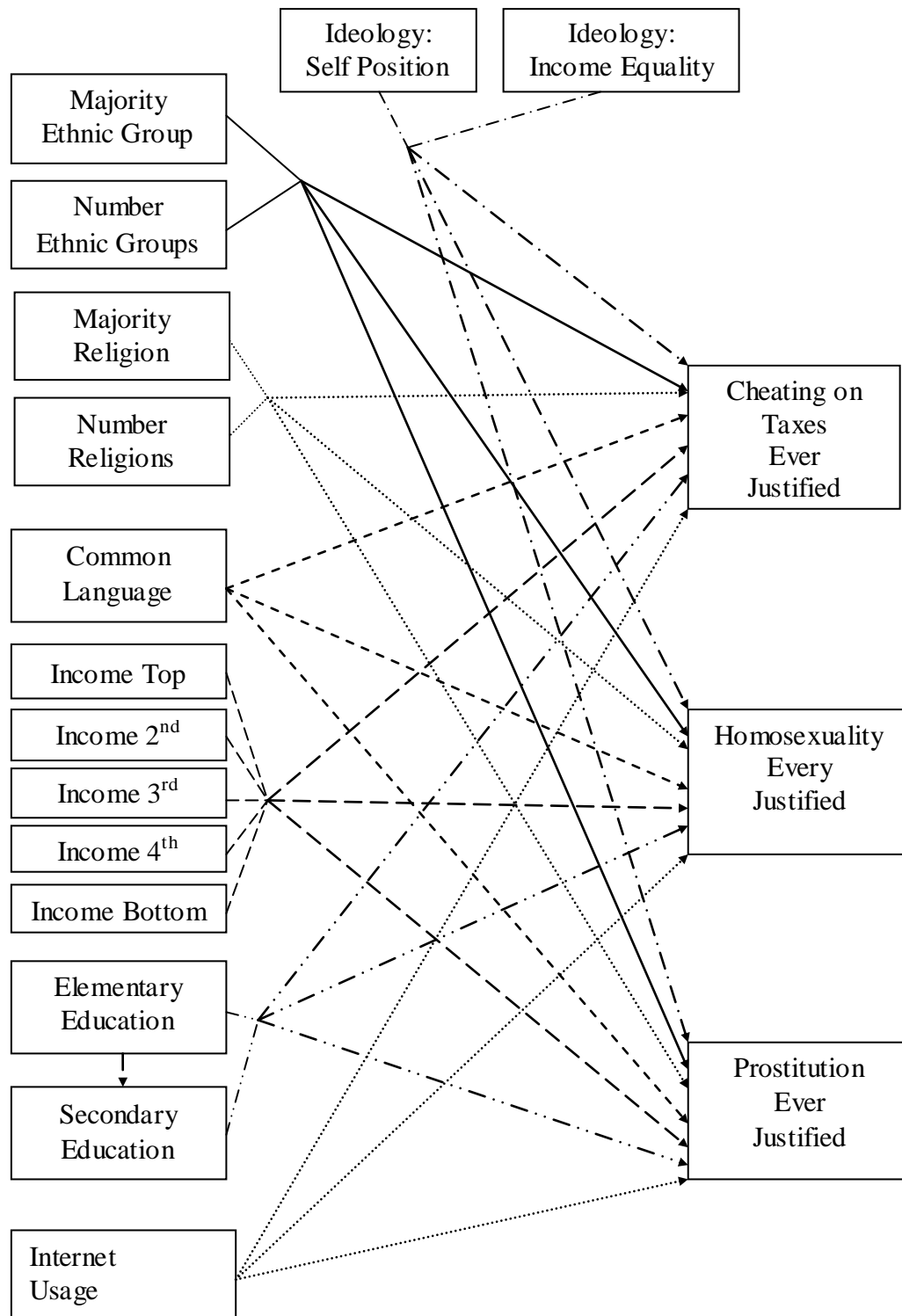
Figure 7.1
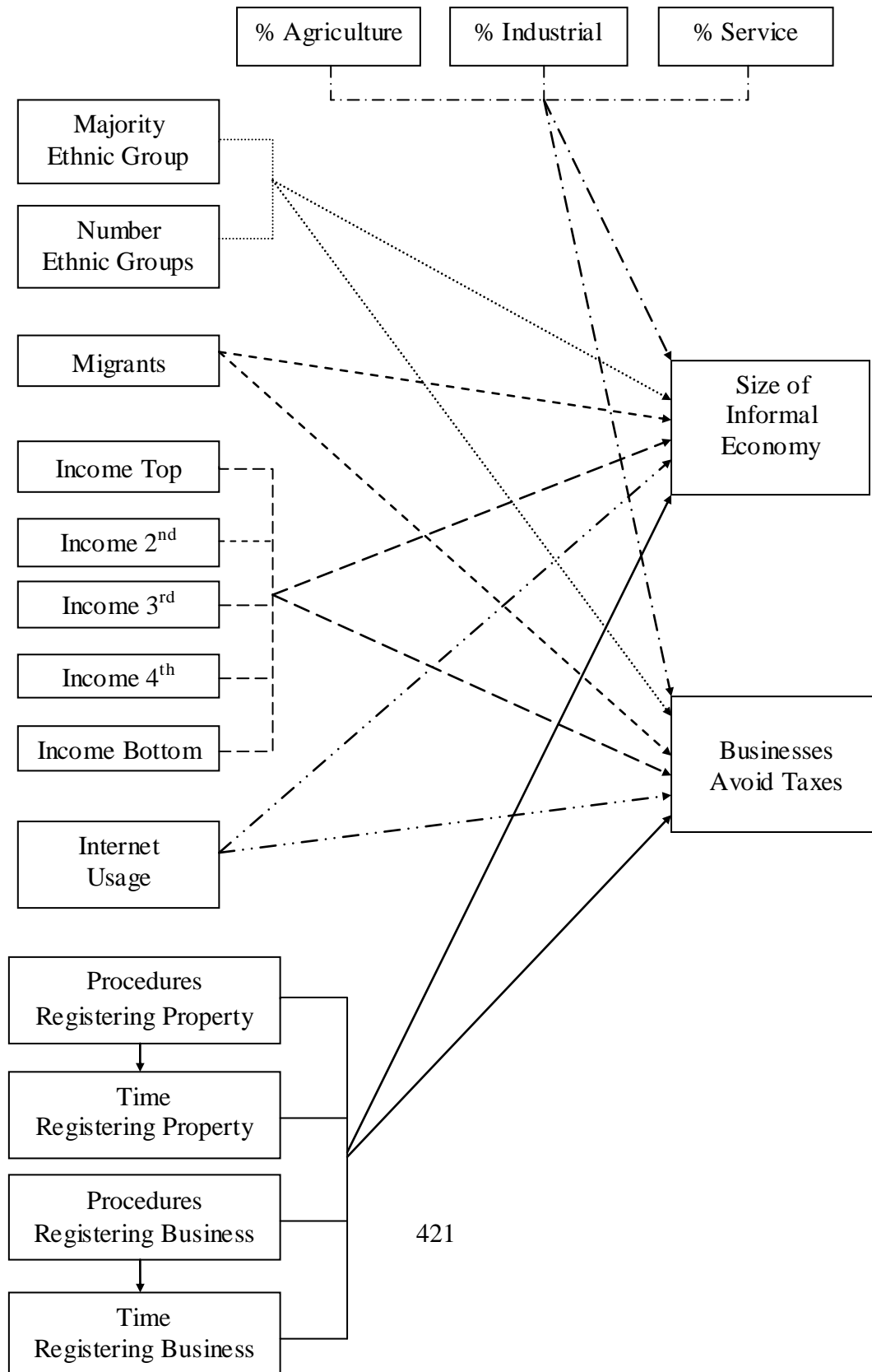Initial Hypothetical Model for Fragmentation of Markets

| % Agriculture | % Industrial | % Service |

Majority
Ethnic Group

Number
Ethnic Groups

Migrants

Income Top

Income 2nd

Income 3rd

Income 4th

Income Bottom

Internet
Usage

Size of
Informal
Economy

Businesses
Avoid Taxes

Procedures
Registering Property

Time
Registering Property

Procedures
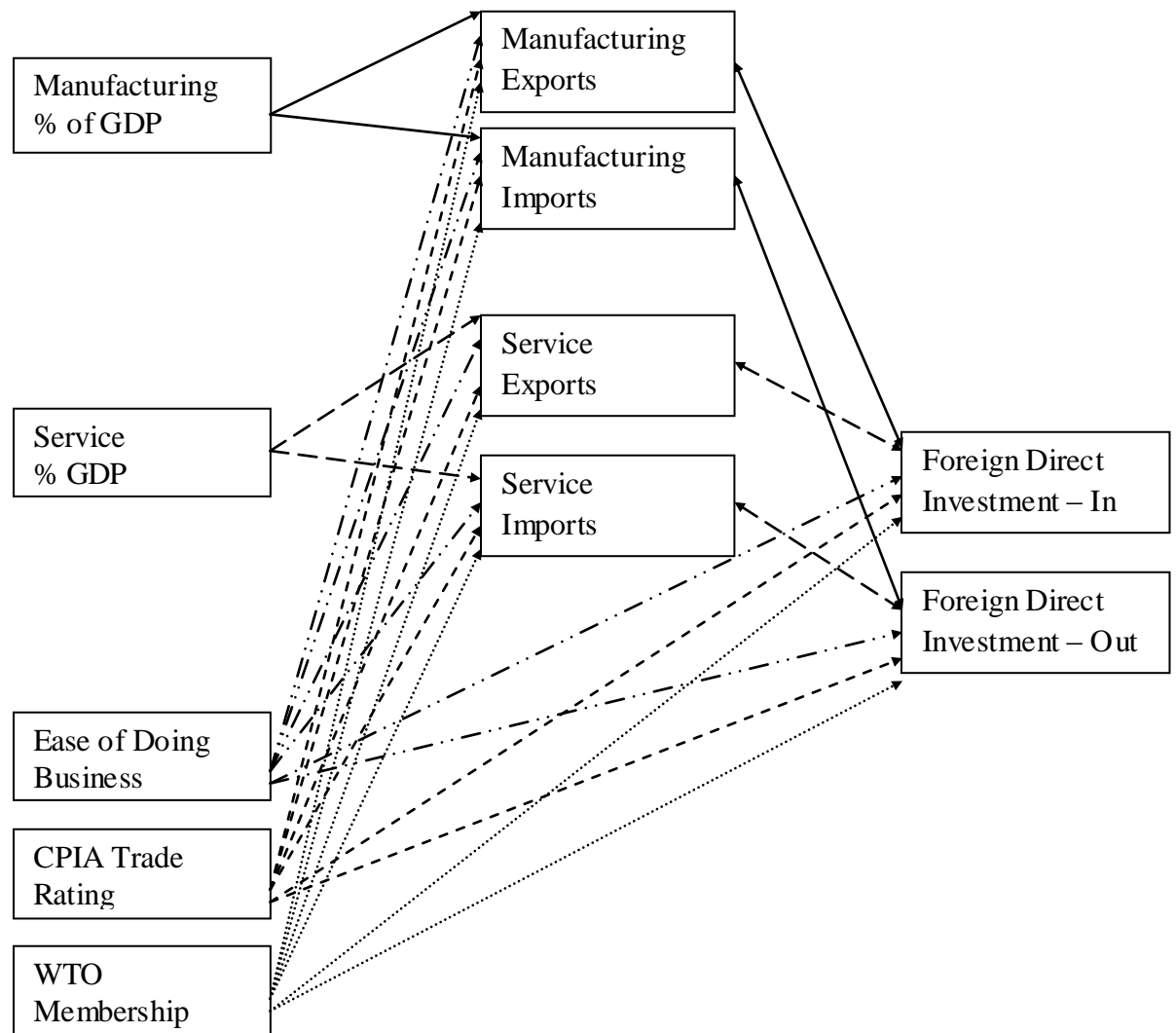Registering Business

Time
Registering Business

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Figure 8.1
Initial Theoretical Model for Fragmentation of the Production Process

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