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Three Logics of "Major Power Rivalry" in the World System
- A Footnote to a Pentagon study

Tieting Su
Department of Sociology
McGill University
855 Sherbrooke West
Montreal, Canada, H3A 2T7
Fax: (514) 398-7476
e-mail: intt@musicb.mcgill.ca
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Abstract

A vast body of social science literature on long waves and major power wars has greatly enriched our knowledge about the rhythms and violent transitions of the modern world-system. The correlation between long waves and major power clashes in the past has been established. What are the structural causal mechanisms between these two historical and cyclical movements? Using trade network patterns as an indicator of a deep structure, this article summarizes a longitudinal study attempting to construct one of the missing links between the two historical cycles. Based on a structural analysis of world trade networks in 1938, 1960, and 1990, and a quantitative study of the U.S.-Japanese commercial rivalry in the Asia-Pacific region, this study considers three logics of "major power rivalry" in the past and its implication for the future: (1) the logic of rivalry over "life spaces"; (2) the logic of rivalry for global domination; and

(3) the logic of imperial intervention. I contend that these three logics are related, and that changes in one logic result in changes in others.

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I. Introduction

During the North Korean nuclear crisis in the summer of 1994, former U.S. government officials, advisers and business analysts expressed concern that this could trigger a Japanese nuclear armament.[2] Why should Japanese nuclear armament concern the U.S.? This concern is not too difficult to understand, in light of the Pentagon's Defense Planning Guidance (DPG) for Fiscal Years 1994-1999 and its studies which consider Japan and Germany as potential rivals in the post cold war era (Chase-Dunn and Podobnik 1994; Dupuy 1994; Hadar 1994; Layne 1993; Layne and Schwartz 1993).

The initial draft of the Defense Planning Guidance, which was first leaked to the media in March, 1992, stated: "We must account sufficiently for the interests of the large industrial nations to discourage them from challenging our leadership or seeking to overturn the established political or economic order," and "we must maintain the mechanisms for deterring potential competitors from even aspiring to a larger regional or global role." [3] Although in a later draft such statements about U.S. global dominance were deleted, other evidence, according to Layne, suggests that the initial draft of DPG correctly reflects

official views of the New World Order. Before the initial draft of the DPG was published, a 1991 Pentagon Summer Study expressed serious concerns that the main risk to American security is that

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of "Germany and/or Japan disconnecting from multilateral security and economic arrangements and pursuing an independent course" (Layne 1993:6). Another Pentagon document which was intended to establish a framework for the American post-Cold War grand strategy, and which was published after the DPG, argues that "a multipolar world is...dangerously unstable" (Layne 1993:6).

What are some factors that may potentially contribute to possible clashes between "major powers" in the future? Why this "grave" concern about Japan and Germany in Pentagon studies? What structural factors may explain this concern? All these questions have to be addressed in a large framework and from a historical perspective.

Since the collapse of the Soviet Union and the end of the Cold War, analysts from various perspectives have embarked on a new enterprise of inquiry into possible future global power struggles and clashes.

Huntington speculates that future clashes will be between "civilizations." This interpretation is based on a belief that racial and cultural differences are permanent forces for conflict and clashes of the past, the present, and the future. Furthermore, he calls on the West to foster a "unity within its own civilization," to "maintain military superiority in East and

Southwest Asia," and to "exploit differences and conflicts among"

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other civilizations so that their "expansion" can be limited (Huntington 1993:49). However, Huntington is not the first to call for a racial and "cultural" unity within "the Western Civilization," and a war between "civilizations" and "cultures". This historical echo can be traced back to the periods before both the World War I and II.

For example, before the World War I, in a speech given at Leicester in 1899, Joseph Chamberlain appealed to Germany and called for "a new Triple Alliance between the Teutonic race and the two great branches of the Anglo-Saxon race" (Remak 1967:33). Active measures were adopted to promote this "unity" and peace between the "races" within the same civilization. For example, when Rhodes scholarships were initially established they were granted exclusively to citizens of Great Britain, the United States, and Germany.[4] Despite all those efforts, the First World War broke out with Great Britain fighting on one side and Germany the other.

In 1928, Lieutenant Colonel Ishiwara Kanji, one of the designers of the blueprint for a "Great East Asia Co-prosperity Sphere," predicted a final war in human history between "the Eastern Civilization" led by Japan and "the Western Civilization" led by the U.S. (Modern History Research Institute 1992:307). And yet Japanese imperial troops encountered fierce resistance in China and other East Asian countries in "the

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Eastern Civilization" during the Second World War.

If such social darwinist, racial ideologies, which were much more influential during the periods of both world wars than at the present, did not lead to those wars, it is doubtful that they can become fundamental causes for future clashes although they could become propaganda tools to rally popular support.

Although, as the mass media reflects, there are localized ethnic conflicts in various parts of the world, it is doubtful that the parties involved in these conflicts have the material means to bring the whole world into conflict. Furthermore, systematic empirical studies suggest that there has been no dramatic increase in ethnic conflict in recent years (Gurr 1994). At present, only the rival powers within the core of the world system have the material means to bring the whole world into clashes and catastrophe.

What about "geopolitical and national security concerns?"
Can these factors lead to clashes?

According to Friedman and Lebard (1992), the cause for the clash between the U.S. and Japan in the past was and in the future will be Japan's "economic necessity" and U.S. "geopolitical necessity".

"Japan's search for autarky, for complete economic self-sufficiency, was understood by America to be a geopolitical

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challenge. This collision course, first undertaken in the 1920s, is one of the permanent and unavoidable forces driving U.S. Japanese relations" (Friedman and Lebard 1992:59).

"Thus, the U.S., out of geopolitical necessity, had to destroy Japan's empire, created out of economic necessity." (Friedman and Lebard 1992:85)

The puzzle about this perspective that emphasizes the "U.S. geopolitical necessity" is: Why does the U.S. have to extend its forces thousands and thousands of miles away from its border to guard its "security"? This would only make sense if it was an empire. But it is not, in the strict definition of the term. During a speech at McGill University in Montreal, Canada, a political scientist, who also gives primacy to geopolitics, named border disputes as one of the most important reasons that gave rise to major wars (world wars).

What was the border dispute that gave rise to the Pacific War between the U.S. and Japan? The answer: the Philippines. According to General MacArthur, the Philippines were important because the islands, "together with Singapore, form a barricade protecting the oil, rubber, quinine, teak, and tin in the Dutch East Indies to the south" (quoted in Manchester 1978:186).

Let us follow the "MacArtherian logic" further, and examine what role economic factors played in the past and may play in possible future clashes.

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II. Long Economic Waves and Major Wars

The role of economic factors in major power clashes, since the dawn of modern capitalism and up through the twentieth century, features prominently in the Hobson-Lenin thesis on imperialism (Hobson 1902/1965; Lenin 1933), in lateral pressure theory (Choucri and North 1975; North and Lagerstrom 1971), in world-systems research on the connections between long economic waves and major core wars, and in other non-theoretical works on the topic (see for example, Friedman and Lebard 1992; Kennedy 1987).

World-system and "leadership cycle" theorists have carried out a great deal of research in this area (Bergesen 1983 and 1985; Bosquet 1980; Boswell 1994; Boswell and Sweat 1991; Chase-Dunn 1989; Chase-Dunn and Podobnik 1994; Goldstein 1985; Goldfrank 1987; Modelski 1994 and 1987; Thompson and Zuk 1982; Hopkins and Wallerstein 1979; Wallerstein 1984). These theorists distinguish two types of long waves: the 40-60 year Kondratieff economic cycle (K-wave), and the 100 year hegemonic wave or sequence.

In a comprehensive empirical study of the relationship between K-waves and wars, Goldstein (1985) indicates that major power wars synchronize with the 50 year K-wave cycles, measured by price movements. While relying on a high correlation between these two sets of cyclical movements, he attempts to construct a

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reciprocal relationship between economic processes and major power wars. Other empirical analyses confirm this correlation between

major power wars and the K-wave cycle (Thompson and Zuk 1982; Boswell and Sweat 1991), although the causal direction in the Thompson and Zuk study moves from war to price levels.

A hegemonic wave or sequence is a longer process than the K-wave. While most world-system and other analysts regard this process as a sequence (see for example, Chase-Dunn and Podobnik 1994; Kennedy 1987), Modelski portrays this process as one with a 100 year cycle (Modelski 1994). Although Goldstein's research failed to find a synchronization between this long cycle and the K-wave, Modelski's "leadership cycle" is linked to pairs of K-waves (Modelski 1981). In Modelski's paradigm, every long cycle of hegemonic contention as ended with a major war between leading powers. In Modelski's evolutionary model, this phase is called the period of "execution" (1994). While most world-system theorists regard this process as a political-economic process, (see for example, Bosquet 1980; Wallerstein 1984) early "leadership cycle" works tend to emphasize political aspects of the process, which also include economic factors (Modelski and Thompson 1988:3).

Although these studies have greatly enriched our knowledge about the historical rhythms of the modern capitalist economic and interstate system, the causal relation between economic cycles

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and major power wars remains unclear and speculative, as pointed out by Chase-Dunn (1989:133), Gilpin (1987:101), and Schaeffer (1989:3-4). They seem to suggest that there are missing links between the two historical processes, which call for more

elaborate and systematic analyses of the causal mechanisms in between.

III. Recent Research on Missing Links

Some recent analyses of long waves tend to decipher the 500 - year long waves in time and disaggregate components. For example, a recent empirical study by Thompson attempts to focus on the growth of innovation and leading economic sectors in different segments of the long waves (1992). This study identifies thirteen leading economic sectors from the 1500's to the 1790's. Warfare is one of the processes that is associated with the boom and bust of these leading sectors. Innovations lead to ascendance of the new hegemonic power. As innovation matures and diffuses to economic competitors, rivalries become intensified. This analysis suggests a structural pattern of transition from unipolarity to multipolarity of the core of the world-system, as old innovations become diffused and new innovations emerge.

Recent world-system and other analysts indicate that the

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world capitalist system is moving from a hegemonic to a multipolar core (Bergesen 1992; Bergner 1992; Chase -Dunn and O'Reilly 1989; Smith and White 1992; Wallerstein 1991 and 1993). What is the structure of this multipolar core? How similar is this structure to past structures? What is the empirical basis of this structure?

Detailed and systematic analyses of the multipolar structure characteristic of the contemporary period can provide the explanation of missing links between long economic waves and major power wars. Network analysis proves to be a useful tool in exploring this structure.

Recent empirical network analyses of the structure of the multipolar core have been conducted at two levels: 1) at the level of corporations (Bergesen and Fernandez 1994), and 2) at the country level (Su and Clawson 1994; Su 1994; Su forthcoming). In this section of my paper, I will concentrate on my own empirical analyses at the country level.

Following the example of earlier research carried out by economists and economic historians on the link between trade blocs and major clashes in the past (Arndt 1944/1972; Condliffe 1950; Hirschman 1969; Kindleberger 1973), the project I have undertaken examines patterns of trade flows in the world at three points in time: 1938, 1960, and 1990. For this particular paper, my focus will be on trade patterns in the 1990s and their

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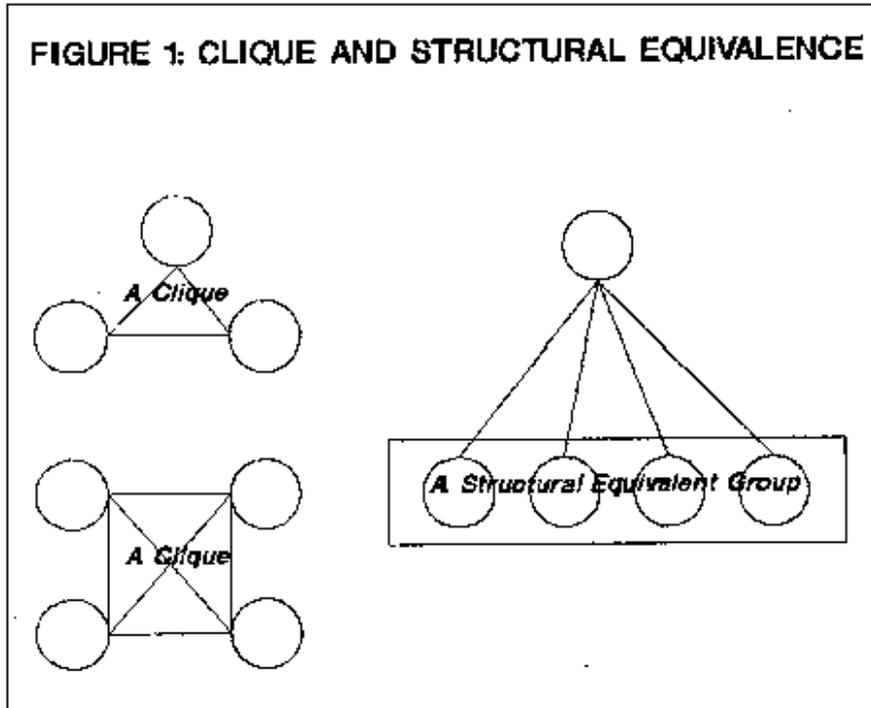
implications for future relations between major powers. I have presented different aspects of my preliminary findings in several social science journals (Su and Clawson 1994; Su 1994; Su forthcoming), which I intend to highlight in the following pages.

Before discussing these findings, though, I should point out that I do not claim changes in trade structure are the only structural dynamics that may constitute the missing links between the long K-waves and major power wars. I consider trade to be

only one important indicator of a deep structure which may constitute missing links in the long cycle paradigm. Unlike some analysts, however, I do not regard trade as a singular process; I instead argue that it is related to other economic, political and military processes. For example, previous studies have recorded the importance of naval power in the hegemonic sequence, and its additional link with the overseas trading capabilities of hegemonic powers (see for example Modelski and Thompson 1988; Hirschman 1969).

As the primary focus of this project is to reveal the contemporary world trade structure, and analyze its change over time, I mainly rely on two research techniques: clique and structural equivalence, as shown in Figure 1. A clique is defined as group in which every member is tied to every other member of the group by whatever criterion is selected [5]. More technically, a clique is a maximal complete sub-graph (Alba 1973). The trade flows among the U.K., South Africa and Egypt in 1938

FIGURE 1: CLIQUE AND STRUCTURAL EQUIVALENCE



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constitute such a clique. However, such groupings may neglect "bilateral" trade relations such as the trade between France and its colonies in North Africa and Southeast Asia. Such a pattern is best represented by a structural equivalent pattern (Burt 1991).

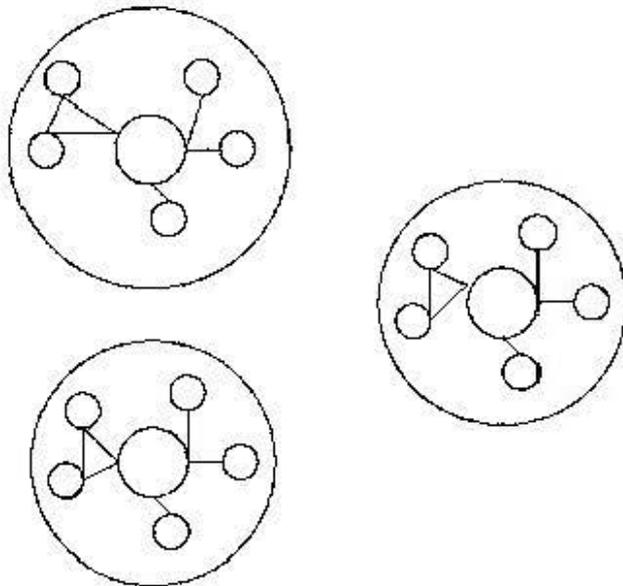
In the strict definition of structural equivalence, two actors, A and B, are structurally equivalent if they each have relations with exactly the same set of other actors.

A trade bloc can be modelled as a combination of cliques and structural equivalent groups. What potential trade blocs are suggested by analyses of recent policy blocs such as NAFTA, EC, APEC, ASEAN, South Common Market, Caribbean Basin Initiative, Eurasian Union, etc.? Their projections can be summarized by the following configurations:

(1) Exclusive hegemonic blocs

As shown in Figure 2, these blocs include small-sized cliques and structural equivalent groups revolving around major powers. These blocs do not overlap with one another.

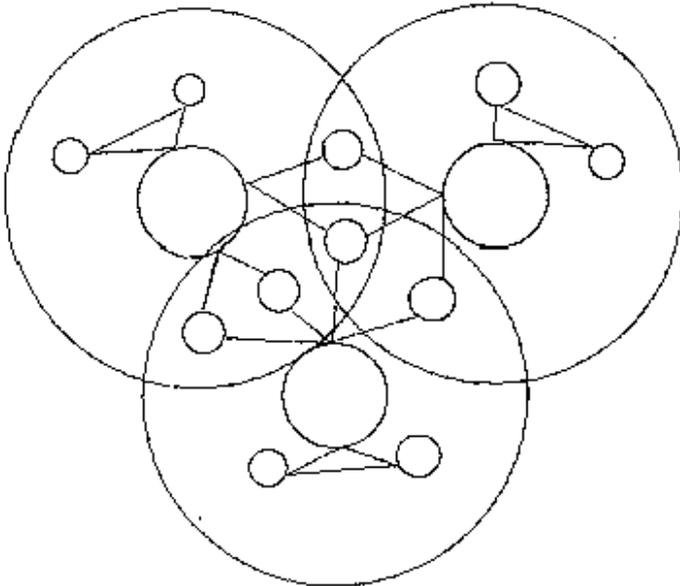
FIGURE 2: EXCLUSIVE HEGEMONIC BLOCS



(2) Overlapping hegemonic blocs

These major core power blocs overlap with one another, as indicated in Figure 3. Limited overlapping areas may suggest intensified competition and conflict for markets and resources. Large overlapping areas, however, suggest a fairly open economy for major core powers.

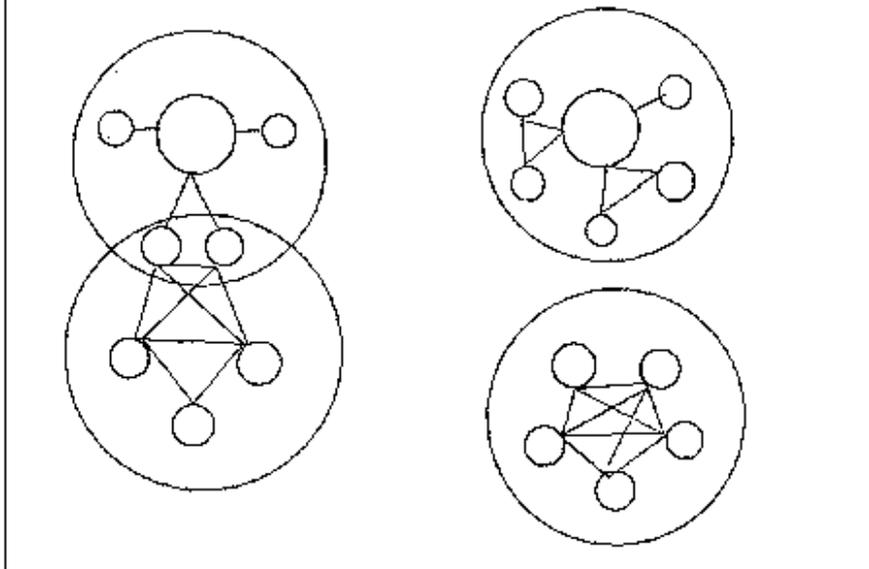
FIGURE 3: OVERLAPPING HEGEMONIC BLOCS



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(3) Coexistence of hegemonic and regional blocs

As shown in Figure 4, regional blocs may emerge if trade cliques only consist of non-major-power countries, or if these cliques are sufficiently large so that the major power influence is eroded even though the cliques may overlap with a major power bloc.

FIGURE 4: COEXISTENCE OF HEGEMONIC AND REGIONAL BLOCS

What did the world structure of real trade flows look like in 1990? What earlier historical structure did it resemble?

For 1990 I found three major power trade blocs: the German, the U.S. and the Japanese blocs, with the U.S. and Japan blocs largely overlapping in the Asia-Pacific region (Su and Clawson 1994; and Su forthcoming). What historical period does this contemporary structure of world trade resemble?

First, it resembles to a remarkable degree "the Grand Area" designed by the U.S. policy advisers and makers in the early 1940's, as discussed in a remarkable study by Shoup and Minter based on a very detailed analysis of historical archives (1977).

According to Shoup and Minter, after World War II broke out in Europe the Council on Foreign Relations (CFR), the leading

U.S. business group concerned with foreign policy, working in conjunction with the U.S. State Department, began planning a U.S. "life space" or bloc. It had become obvious to U.S. policy makers that a "German Bloc" was emerging, and as a result these advisers decided that the resources under the control of the U.S. in the Western Hemisphere were insufficient to counter this German Bloc. In order to match the German Bloc, therefore, U.S. policy makers decided that the U.S. should extend its control into the Asia-Pacific region. This "life space", also named "the Grand Area," initially included the Western Hemisphere and the Asia-Pacific area, but later came to incorporate the United Kingdom as well.

U.S. interests in the Asia-Pacific region inevitably clashed with the "life space" of the emerging Japanese imperial power. The Japanese-designed "Greater East Asia Co-prosperity Sphere" overlapped with that of the U.S.-led "Grand Area," and their interests inevitably clashed. The conflict eventually escalated into a full-scale Pacific War, after the U.S. imposed an economic blockade to check Japanese expansion in the region.

While the 1990 trade network does not resemble the "open" trade structure characteristic of the 1960s, it does resemble that of 1938 in the sense that major power blocs overlap in geographically-concentrated areas (See forthcoming). In 1938,

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the overlapping areas between major power blocs were the U.K. and Germany in Europe and Africa, the U.S. and Japan in Asia, and the U.S. and the U.K. in the Western Hemisphere. War broke out in

three out of four of these overlapping areas, with the only exception being that of the overlap between the U.S. and the U.K. (Su 1994).

If one is insistent on applying the Hobson/Lenin thesis and lateral pressure theory here, this case seems to be a puzzle. While the Hobson/Lenin thesis argues that competition between major imperial powers for markets, resources and investments leads to conflict and clashes, lateral pressure theory contends instead that clashes are generated by expansion dynamics of nations whose interests may eventually collide (Choucri and North 1975; North and Lagerstrom 1971). These theories will be discussed in greater detail in section V.

Why did an open clash between the U.S. and the U.K. not occur? An examination of past hegemonic transitions suggest that it is often the case that "a rising challenger state (A)" (e.g. Germany) initiates "war against the declining hegemon (B) (e.g. the U.K.). B makes an alliance with another rising state (C) (e.g. the U.S.) to combat the military challenge by A. B and C win the war and C emerges as the new hegemon." (Chase-Dunn and O'Reilly 1989:51)

Relations between the U.S. and the U.K. during World War II

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are particularly complicated. While most analyses of these relations emphasize their cooperative nature, efforts undertaken by the U.S. (the rising hegemonic power) to erode the power base of a U.K. in decline are often neglected. Some of these efforts

were political-military, while others were political-economic. An example in which the U.S. undermined British political - military power can be found in the U.S. -engineered swap of fifty old U.S. destroyers, left over from World War I, for all British naval bases in the Western hemisphere, an exchange which outraged the British parliament (Nicholas 1975). Meanwhile, efforts by the U.S. State Department to dismantle the Sterling Bloc, the economic basis of the British colonial empire, provide an example of political-economic attempts by the U.S. to undermine British hegemony. The U.S. made repeated demands to the British to end its "discrimination" against American interests in the Sterling area as a condition for Lend-Lease Aid during the War. In the early 1940's the U.K did not yield to such demands. After 1944, however, given that U.K. power had been greatly eroded as a result of its military struggle against Germany, Britain was not powerful enough to resist American demands (Block 1977; Woods 1990).

These economic structures, as indicated by trade patterns, imply some interesting logics of "major power rivalry". But before I discuss these implied logics, I have one more important

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problem to solve, which I will discuss in the next section.

IV. Does the U.S. Compete with Japan in the Asia-Pacific Region?

One crucial question, in examining the structure in 1990, is whether the U.S. and Japan compete or cooperate in the

overlapping area of the trade network.

The overlap between the U.S. and Japan blocs in the Asia-Pacific area in 1990 suggests competition between these two core powers. This is buttressed by some analysts (see for example, Baldwin et al. 1988). Others (see for example, Gordon 1990), however, have challenged this claim. They argue that the U.S. - Japanese economic relations are largely complementary in the Asia-Pacific region.

The issue has to be examined systematically at the industry level. To comprehensively and systematically study competition in the area at the industry level, three dimensions of competition have to be considered: 1) structural rivalry, 2) intensity of rivalry, and 3) consistency of rivalry. Technically, these three factors can be measured by the three components imbedded in the Euclidean Distance measure: similarity, distance, and variability (Cronbach and Glester 1953; Lorr 1983; Penrose 1952).

Empirically, structural rivalry is measured as correlation

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between the U.S. and Japan in different industries. A high positive correlation suggests a competitive structure, whereas a high negative correlation implies a complementary structure. For example, a high positive correlation occurs when the U.S. share in different industries changes in the same direction as the Japanese share.

The correlation measure, however, may neglect the fact that two powers can show a structural similarity, even though they

might not engage in intense competition. In such cases, the competition is only "potential" as the presence of the powers is found in all industries but the volume is far apart. If the powers are not only found in different industries, but their shares are also similar, a head-to-head rivalry can be seen to emerge. This intensity of competition can be measured by the second component in the Euclidean Distance: distance measure.

The third dimension, consistency of competition, measures the extent to which competition fluctuates wildly from one industry to another. This measure may be used to detect the extent to which competition is concentrated in only a few industries, or spreads across many industries. Careful measures on these three dimensions can enable us to pin down the real nature of rivalry.

Systematic data was collected from the OECD Foreign Trade by Commodities (1992) in order to carry out such measurements. The

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respective U.S., Japanese and German commodity trade in thirty-six industries in the Far East (as defined by OECD) in 1992 was analyzed on the three dimensions described above. Germany was selected as a reference, because it consistently ranks as one of the top five participants in Far Eastern trade.

Specifically, the analysis is performed on U.S., Japanese and German imports from the Far East of crude materials, mineral fuels, and resource-based manufactured goods (Ricardian goods), as listed in the following 2-digit SITC (Standard International Trade Classification) categories: 21, 22, 23, 24, 25, 26, 27, 28, 32, 33, 34, 61, 62, 63, 64, 65, 66, 67, 68. The analysis also

analyzes their exports to the Far East in capital intensive industries such as chemicals and related products, machinery and transport equipment, professional, scientific, and controlling instruments and apparatus as found in the following 2-digit SITC categories: 51, 52, 53, 54, 55, 56, 57, 58, 71, 72, 73, 74, 75, 76, 77, 78, and 87.

Some exceptional cases are not included in this analysis. These include: agribusiness (roughly 00 to 09 categories in SITC), beverages and tobacco (categories 11 and 12) and aircraft (largely in the category 79). In all these industries the U.S. maintains a dominant position.

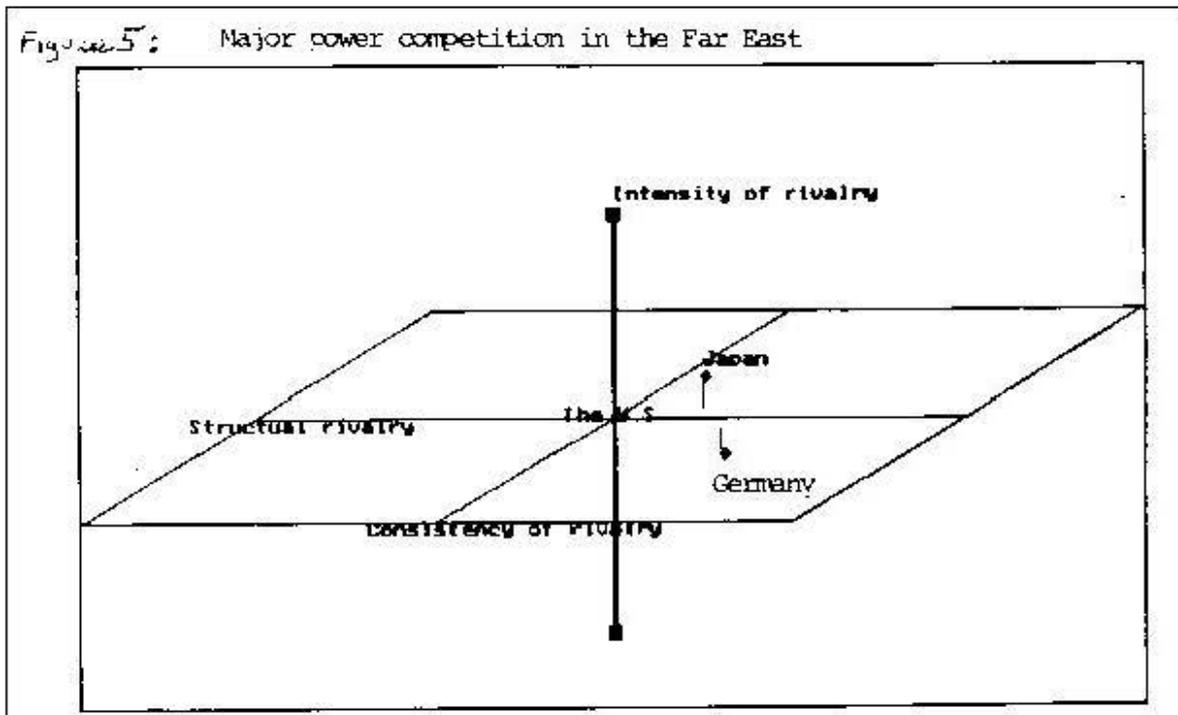
The last category in each section, such as 29, 59, and 69,

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are not included in the study, as they lump together miscellaneous goods not classified in other categories. Sections 8 (miscellaneous manufactured articles) and 9 (commodities and transactions not classified elsewhere in SITC) are also not included. Section 8 is not included, except for category 87, because this section largely contains labor-intensive goods largely manufactured in non-core countries. Section 9 is not included because again it lumps together very different industries in the same category.

As shown in Figure 5 and Table B1 (in Appendix B of this document), the preliminary results from the analysis of the U.S.-Japanese rivalry in thirty-six industries in the Far East in 1992 tend to confirm that the U.S. and Japan do compete in this

region in these key industries. [6]



In the three-dimensional rival space, Japan is closer to the U.S. than Germany. This is particularly true with the first dimension of rivalry. The correlation between the U.S. and Japan across the thirty-six industries is over .8, whereas that between the U.S. and Germany is .67. This indicates that the U.S. and Japan are more likely to export similar products to and import similar materials from the Asia-Pacific region than the U.S. and Germany. [7]

In terms of the second dimension, intensity of competition, Japan is found in the positive direction and Germany the negative. This means that, on average, Japan has surpassed the

U.S. in market share in different industries whereas Germany is only a potential competitor. This also partially explains why U.S. strategists and business analysts fear that the U.S. is "losing the battle" to Japan. A quick glance at some of the titles in the "competitiveness" literature will reveal this deep fear: How We Allowed Japan to Take the Lead; In the Shadow of the Rising Sun: The Political Roots of American Economic Decline; Silent War: Inside the Global Business Battles Shaping America's Future; ...How to win the Geo-economic Struggle for Industrial Supremacy; The Highest Stakes: The Economic Foundations of the Next Security System; (Krugeman 1994). It is this obsession with "competitiveness" and growth that has prompted U.S. policy makers to stress the importance of the Asia-Pacific region, and to keep a watchful eye on its major rivals.

70% of the growth in the U.S. economy occurs in the export sector. Since the Asia-Pacific area has the most rapid growth in production by U.S. multinationals, and since it is also one of the major areas absorbing U.S. exports, the U.S. is not likely to give up this area to Japan. At the APEC summit meetings in Seattle in 1993, as on many other occasions, U.S. Secretary of State Warren Christopher emphasized that there is no area of the world that is more important to the U.S. than the Asian-Pacific region.

It is this deep fear of "losing the geo-economic battle to

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competitors" that prompted draft of the Pentagon's 1994-1999

Defence Guidance, which was mainly designed to aim at Japan and Germany (Layne and Schwarz 1993).

V. Three Logics of "Hegemonic Rivalry"

The research as summarized in this article relies on trade flows as an indicator of a deep structure. However, this paper is not designed to address a simple but, to me, fallacious dichotomy: Does trade lead to conflict or does it prevent war? The logic suggested in my empirical study of trade structure are more complicated than this simple dichotomy. But even for those who believe trade decreases the chance of war, and thus advocate trade interdependence and cooperation (see for example, Rosecrance 1986), the reality of today, as compared with the past, is not encouraging.

I would also like to point out that the peaceful and cooperative intentions of some policy makers are not sufficient, in and of themselves, to prevent future clashes between major powers. It is imperative that a better understanding of the powerful political and economic forces of the world-system, which may lead to future conflicts, be reached.

For instance, with the historical experience of World War

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II behind us, we should be wise enough to recognize that the "Greater East Asia Co-prosperity Sphere" is synonymous with a violent Japanese empire. When it was first conceived in the

1910's by Japanese business elites and colonial officials stationed in Korea, it was merely intended to be a peaceful economic and currency zone. In fact, the originators of the blueprint emphasized again and again the need to utilize peaceful means in achieving the goals of the "Sphere." As the rivalry between Japan and other core powers intensified, however, and as resistance from peripheral countries increased, it evolved into a violent empire.

Theoretically, the analysis presented in this paper implies three possible logics for "hegemonic" rivalry. They are:

- a. Clash of "life spaces"
- b. Rivalry for global domination
- c. Imperial intervention (disguised as major power rivalry)

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- a. Clash of "life spaces"

This specifically refers to a number of political and economic processes, such as the direct economic competition for markets and resources, rivalry for control of colonies, and rivalry in influencing or subordinating peripheral polities by major core powers.

Empirical research, such as that presented in this paper, reveals the extent of contemporary economic rivalry between the U.S. and Japan in the Asia-Pacific region. Other research, especially that carried out by Shoup and Minter (1977) and by Hirschman (1969), indicates that before World War II there were trade rivalries between the U.K. and Germany in Europe and

Africa, and between the U.S. and Japan in Asia.

The possibility that the intensification of competition between major powers for markets, resources, and investment opportunities in overlapping geographical areas may lead to military clashes, was suggested by the Hobson-Lenin Thesis on Imperialism (Hobson 1902/1965; Lenin 1933). While Hobson was primarily concerned with the Boer War and colonial expansion in Africa and Asia, Lenin extended his thesis to the analysis of the World War I. However, a more comprehensive analysis of World War I, following a similar argument as that of the Hobson-Lenin

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thesis, has been carried out by contemporary lateral pressure theorists (Choucri and North 1975; North and Lagerstrom 1971). Although economic competition is seen to be important in the lateral pressure thesis, and Choucri and North recognize its intellectual root in the Hobson-Lenin thesis, they argue that their theory has moved beyond the Hobson-Lenin thesis by including pre-capitalist and socialist states, and by including non-economic factors for lateral pressure.

However, it is hard to extrapolate this thesis to the pre-world-system period, and beyond the world-system to existing state socialist and former socialist states. Lateral pressure, according to Choucri and North, is generated by the expansion dynamics of nations, whose interests may eventually collide. In pre-capitalist societies, however, the evidence for this theory

is at best mixed. While the Khans expanded their empires all over the Eurasian landmass, there were Asian empires based on self-sufficient economies which simply did not expand and no lateral pressure was felt. Even in the case of the expanding Khan empires, usually taken as an example of the extension of nomadic tribes, the role of Semu (Muslim and European) merchant army is largely ignored.

Turning to a more contemporary experience, although nuclear deterrence and the anti-war movement were thought to be largely

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responsible for preventing a potentially disastrous clash between the Soviet Union and the U.S., an important factor for lateral pressure was absent. That is, there was no indication of strong pressure and dynamics or external economic expansion on the part of the Soviet Union as shown in our trade network analysis (Su 1994; Su and Clawson 1994), although this does not mean that there were no other dynamics for its expansion for influence.

While I am open to the applicability of lateral pressure theory to the pre-world-system period, and to former and actually-existing state socialist societies, the systematic evidence presented in the Choucri and North study on World War I, and in my study on World War II, lend strong support to the applicability of lateral pressure theory to the current world-system.

Intensification of competition, and perception of the challenge from "competitors" in many industries in rival core states, may prompt state policy makers and business elites to

take action. As far as the U.S. is concerned, business elites may play pivotal roles in this process, as predicted by power structure theory.

According to power structure theory, business elites usually act at "critical moments" (Burnham 1970; Clawson, Neustadt, and Scott 1992). For example, in the battle for the renewal of Most Favored Nation (MFN) status for China in 1994, 800 major U.S.

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corporations formed a powerful bloc and their victory was total [8]. However, the opening of the vast market of China is one part of a U.S. strategy favored by the business elite. A double-edged U.S. strategy to open the Chinese market (in order to more effectively compete against other capitalist powers, particularly Japan), and to support Taiwan at the same time (either to prevent the emergence of a "Greater China" life space, or to prevent the emergence of a powerful "socialist market economy"), is clearly elucidated by the editor of Forbes magazine [9] and is reflected in the U.S.-China policies of both the Bush and Clinton administrations.

Of course, in order for business to take drastic actions the moment has to be "crucial," and competition and rivalry has to be intense.

b. Rivalry for Global Hegemony

Empirical network research, as summarized in this paper,

combined with previous research (Hirschman 1969; Kindleberger 1973; Shoup and Minter 1977), also points to another logic that may lead to a future hegemonic clash: major core powers contending for hegemony in arenas that are not merely economic. Specifically, let me refer to the U.S. -German rivalry in the 1930's and also in the 1990's.

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One of the major "competitors" cited in the 1994 -1999 U.S. Defence Guidance document is Germany, which again, according to my network analysis, is in the process of forming its own "life space" or bloc [10]. This German bloc does not overlap with those of the U.S. or Japan. Its competition with the other two major powers is only potential.

Even if there is little direct economic competition, however, a definition of rivalry which goes beyond mere economic competition allows us to see that "geopolitical" struggles over which major power will be the next hegemon to rearrange the world economic and political order within the world-system are nevertheless taking place. But often geopolitics is such a generic term that such diverse concepts as rivalry for hegemony, "national security", "territoriality", etc. are all swept under the same carpet.

According to Gilpin (1981), rivalry for domination and the result of such rivalry will fundamentally affect the economic, social and ideological structures of different societies, and the new international system itself. While at certain points in history hegemonic challengers have attempted to construct

empires, interstate system has tended to prevail as capitalism tends to thrive within the context of such a system (Chase -Dunn 1989). In Modelski's view, the "natural" selection of a hegemon usually reflects an evolutionary process, or phases of a

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"learning mode." In this model, the transition from rivalry to final hegemony has always been violent (Modelski 1994).

This discussion of rivalry for hegemony is not intended to suggest that rival powers competing in overlapping areas of their "life spaces" are not in contention for hegemony. However, they are guided by different logics with different degrees of intensity.

c. Imperial Intervention (Disguised as major Power Rivalry)

A third logic is implicit in the empirical findings presented in this paper. While the focus of the analysis has been on major core power rivalry, it can not neglect the fact that less powerful countries located within the "life spaces" of these powers are subjected to the rules of the system as well. Because these countries are integrated into the world -system, their fate and "domestic" affairs necessarily concern major powers which have their vital interests at stake. Changes that may harm major power interests do not go unnoticed. Such changes change may come from different sources: domestic instability, rise of dictators that may harm major power interests, development of

democracy that may harm their interests, resistance of those countries to world-system rules, resistance of groups of people in those countries to the world-system rules, etc. For example,

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businesses from core countries have tried to turn Russia into a resource base and a site to dump toxic waste (Germany accounts for 80% of that waste) [11]. Likewise, commodity chains initiated from core countries have been trying to transform the labor-intensive export sectors of China into a giant "sweat shop" for the world. These developments are not accepted without resistance. In fact, the response is quite strong. For example, the Russian government recently adopted measures to stop the smuggling of vital resources out of the country [12]. Meanwhile, workers (and a large proportion of them are women) in various part of China have resorted to different protest tactics against low wages, mistreatment, corporal punishment, unsafe working conditions, etc. [13].

All these events may cause grave concerns for the major powers. If developments within a small country do succeed in threatening a core powers' interests, and it intervenes, this is not likely to be understood as a "rivalry." However, if changes in a large country (such as Russia and China, each of which has a large military) take such turns that core powers decide to intervene, and clashes occur between these countries and core powers, this could be propagated as a "major power rivalry" or as a battle against "dictators" [14]. Is imperial intervention possible?

Viewed in terms of very long periods of human history,

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McNeil tends to think that the current interstate system is an exception and the resurgence of multi-ethnic empires is a possibility. He especially considers the U.S. to be a potential candidate for such an empire (1994:129). McNeil doubts that the forces that repeatedly restored past multi-ethnic empires have completely died. For example, he argues that some new center of military power could use this power to subordinate other polities. Modern communication and transportation make such a process of empire-building more feasible.

This argument is more intriguing if it is considered alongside Boswell's application of transaction cost theory to the analysis of the oscillation of the world system between free-market and colonial empires (Boswell 1989). If cost and profit are the ultimate goals of the system, then it is only logical that hierarchy (empires) and free markets (a liberal global trading system) could be both employed (depending on "transaction cost") to accommodate the goals. If such mechanisms have worked well for firms, why can't they work for the world system as well?

In fact, in studying colonial empires, Bergesen and Shoenberg (1980) found two waves of boom and bust of colonial empires. Although the cycle of the second wave is shorter than the first, the tendency to impose tighter political control over areas and countries in which core powers have vital interests in times

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of economic contraction is a consistent historical trend. Other studies confirm systemic waves of colonization and its negative relation with a unipolar world system (Boswell 1989; Strang 1991).

In conclusion, it is important to distinguish between two types of "rivalries:" true rivalries, and imperial intervention disguised as "major power rivalry." Dupuy (1994) succinctly points out that Huntington confuses these two types of clashes: the clash between imperial powers and that involving colonial conquest. For Huntington, colonial conquest is simply a clash of "cultural values".

d. The Interplay of these Three Logics

These three logics are not mutually exclusive, and they are related such that changes in one logic may lead to changes in the others. For example, the imperial intervention logic may prompt countries which would otherwise be rivals to form coalitions. The intensification of the rivalry for global domination (without direct and intense economic competition) may also intensify the economic competition for "life spaces." Thus, during World War II the potential U.S.-German rivalry prompted the U.S. to design a "Grand Area" which "encroached" upon the "life space" carved out by the Japanese empire. This "life space" was vital for the

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Japan to sustain its "industrialization," and was indispensable for the U.S. to match Germany in a final contention for world domination. During the period of World War II, therefore, wars in different areas were fought following different logics, but they were intimately related. Recent social science analyses, of which my project is a part, tend to indicate that these three logics are re-emerging and may have profound implications for the future.

VI. Conclusion

This article summarizes my recent research on trade networks in 1938, 1960 and 1990, which indicates that there are important similarities between the nature of trade networks today (in 1990) and those that existed in 1938, just before World War II. My research also shows that these networks are significantly different from those that existed in 1960, a period of stable hegemonic rule by the U.S. The overlap of the U.S. and Japanese blocs in the Asia-Pacific region is found to be an area of intensive economic competition instead of cooperation, which gives rise to an increasing literature of "geo-economic" struggle.

The analysis presented in this paper also suggests three major logics of "major power rivalry", which need to be further explored. These three logics are intimately related. I contend that

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changes in one logic lead to changes in others. While the changing structure of the world system is not determined by any single

logic, its transition can be very violent (Chase -Dunn and Podobnik 1994). If these are the major logics governing the current world-system, indicators of each of the logics should be closely monitored so that attempts at social intervention, based upon sound social science research, can be launched to decrease the probability of another global-scale catastrophe.

Notes

[1] Note [1] contains instructions for gopher users; it is not applicable to the html version.

[2] Lawrence Eagleberger, the former Under Secretary of State under the Bush administration made such a remark in the McNeil/Lehrer News Hour on June 7, 1994, and Robert Gates, the former CIA director, expressed the same concern in a article in New Perspectives which appeared in Montreal Gazette, June 18, 1994.

[3] New York Times March 8, 1992, A14, cited in Layne (1993:6).

[4] Rhodes Scholarship was established in 1903 to "secure the peace of the world". (Groliez Academic Encyclopedia 1983; Groliez International, p. 202)

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[5] For a detailed discussion of data sources, data used, criteria in establishing trade connections, network methods and network patterns, please see Appendix A, Su and Clawson (1994), Su (1994) and Su (forthcoming).

[6] I should point out that the findings are only preliminary. More time periods, more refined commodities classifications, and more detailed analysis on a country by country basis should be employed to consolidate the preliminary findings.

[7] If the obvious exceptional cases are included in this analysis, the correlation coefficient between the U.S. and Japan is .61 and that between the U.S. and Germany is .53. These industries include: agribusiness (roughly 00 to 09 categories in SITC), beverages and tobacco (categories 11 and 12) and aircraft (largely in the category 79). In all these industries the U.S. maintains a dominant position. However the total number of these additional industries is twelve whereas the original sample, which yields a high correlation (.81) between the U.S. and Japan includes thirty-five industries. Intensive competition in these key industries will not escape the eyes of state policy advisers and makers and can contribute to formation of formidable business blocs along national lines facilitated by national industrial associations and umbrella business organizations such as the American Chamber of Commerce.

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[8] Washington Post, May 6, 1994.

[9] Malcolm S. Forbes Jr., Editor-in-Chief, "How to Treat China" Forbes, April 11, 1994.

[10] Although economically Germany is, as shown in our study, leading the bloc, politically an European bloc is emerging according to recent studies (see for example, Bornschier 1994).

[11] IPS, May 25, 1994.

[12] IPS, May 31, 1994.

[13] CND, June 18, 23, 1994.

[14] This is not to argue that countries such as China may not engage in a true hegemonic rivalry as it becomes "developed" and become more economically and socially stratified. But for the moment as far as its financial ability to manage economic affairs is concerned, its central government is among the weakest in the world (Wang and Hu 1994) and regional "fiefdoms" have been emerging in late 1980's and early 1990's (Shen and Dai 1990; Su 1992) and if the current trend continues it is not too far-fetched

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to project that it would split up into either several nation-states like the former Soviet Union or into a de facto state of powerful "fiefdoms" like in the early Republican period. I see the latter scenario as a distinct possibility if the current trend continues.

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APPENDICES

Appendix A

Data and Methods for trade network analysis

1. Data

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For each of the three years -- 1938, 1960, and 1990 -- I analyze trade networks for about 100 countries. I analyze trade flows among 100 countries and regions in 1938 which had such information, 98 countries in 1960 and 102 countries in 1990. The data for 1938 is derived from the League of Nations' Network of World Trade (1942). One hundred countries and regions are included in the 1938 network. For 1960, again I analyze trade flows for all the countries and regions which had information on trade. This data comes from a computer tape provided by the IMF. There are 98 countries in the 1960 network. For 1990 I analyzed trade for all countries which had a total trade volume of 2 billion U.S. dollars in 1990. As a result, 102 countries met the criterion and were included in the sample. Information on trade was based on the IMF Direction of Trade data and the trade analyzed in this project accounts for over 95% of the total world trade.

A focus on country by country trade flows produces three symmetric matrices (a 100 by 100 matrix in 1938, a 98 by 98 matrix in 1960, and a 102 by 102 matrix in 1990) with each cell containing the dollar volume of the trade between two countries.

The next step was to percentage these matrices, creating new matrices. These new matrices are asymmetric because for each trade relationship between two countries there are two ratios. For example, the trade in 1990 between the United States and Thailand

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accounts for 20% of Thailand's foreign trade while it only accounts for 1.5% of the U.S. foreign trade. A high percentage on either side may suggest an important relationship. Although the trade between Thailand and the U.S. only accounts for a relatively small share of America's foreign trade, the high percentages on the part of Thailand not only suggest Thailand's dependency on the trade but also indicate American market share and the extent of its political-economic leverage.

The next step was to construct a matrix of significant trade relations (or adjacency matrix) for network analyses. What is a significant trade relation? In order to consistently carry out network analyses, it is necessary to establish a cutting point. Since there are 102 countries in 1990, 100 in 1938, 98 in 1960, the random trade level would be around 1%. The analysis is performed at the 10% level, indicating a high trade engagement or a significant trade relation. Thus any percentage equal to or above 10% is recoded as "1" and that below 10% as "0". This new adjacency matrix of "1"s and "0"s is the input for network analyses.

2. Methods

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a. Clique and structural equivalent groups

As the primary focus of this project is to find world trade

structure and its change over time, I mainly rely on two structural finding techniques: clique and structural equivalence. As shown in Figure 1, a clique is a group where every member of the group is tied to every other member of the group by whatever criterion is selected. More technically, a clique is a maximal complete sub-graph (Alba 1973). The trade flows among the UK, South Africa and Egypt in 1938 constitute such a clique. However, such groupings may neglect "bilateral" trade relations such as the trade between France and it's colonies in North Africa and Southeast Asia. Such a pattern is best represented by a structural equivalent pattern, as shown in Figure 1. In the strict definition of structural equivalence, two actors A and B are structurally equivalent if they each have relations with exactly the same set of other actors. Thus, even if A and B do not have relations with each other, they are structurally equivalent if they each have relations with X, Y, and Z regardless of the relations among X, Y and Z themselves. I used UCINET IV (Borgatti, Everett and Freeman 1992) for clique analysis and STRUCTURE (Burt 1991) for structural equivalent analysis.

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b. Trade Blocs

A trade bloc is defined as a large trade group which combines cliques and structurally equivalent groups.

Table B1

U.S. Competition with Japan and Germany in the Far East

U.S.

	Correlation	Distance	Variability
Japan	.81	+1808850.4	+2527049.0
Germany	.67	- 798111.4	-916445.3
