

## **PROSPECTS AND LIMITATIONS OF WORLD SYSTEM THEORY FOR MEDIA ANALYSIS**

The Case of the Middle East and North Africa

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**Abstract** / This article points out the potential of applying the world system theory to global communication- and media analysis as a 'humanocentric' enterprise covering both the present and the past. It attempts to identify the world's core countries using a weighted index of a country's size of the economy (GNP) and of its exports. It applies the index to rank order the countries in the Middle East and North Africa region to ascertain the likelihood of a core-periphery structure within the region itself and to test whether media freedom and media penetration follow the pattern of that structure. It concludes that such symmetry is unlikely to exist in a regional core-periphery configuration where the scores separating the countries are relatively negligible. It also suggests that under informational capitalism, economic power blocs should replace individual countries as the unit of analysis for configuring the global core-periphery structure.

**Keywords** / core-periphery / Human Development Index / human rights / media freedom and penetration / Middle East and North Africa / new media / world system theory

### **Introduction**

This article asks whether the world system theory can serve as a framework for conducting communication research at the global or regional level and, if so, what criteria are pertinent to classify the world into the center-periphery structure that the theory presumes to exist. Can a classification of countries (or economic blocs) based on competitive capital accumulation, as presumed in the world system theory, serve as a predictor of old-media and new-media penetration, media freedom and commitment to human rights?

Historian William McNeill has argued that if the notion of a world system were tied more explicitly to a communication network and if more attention were paid to changes in that network, then the notion of a 'world system' would gain greater clarity and power (Frank and Gills, 1993: xiii). Whether the theory is sound historically has been debated over more than a quarter century resulting in subsequent refinements; yet little attention has been paid to the dynamics of communication networks in relation to the world core-periphery structure. However, on a related plane, Cioffi-Revilla et al. (1987), assisted by other collaborating political scientists, have experimented with mathematical

and quantitative approaches to lay the groundwork for the 'systematic analysis of communication and interaction [to] help us understand the complexities of global politics' (Cioffi-Revilla et al., 1987: 9).

To answer the questions in the introductory paragraph: first, this study explores the potential of applying macro theory, particularly Frank and Gills's (1993) interpretation of the world system theory, to investigate global communication phenomena. It attempts to devise a method for placing countries or economic blocs along the core-periphery continuum – an area that has received little attention. The 'Core' countries are the economic powerhouses of the world. The dominant paradigm associates a high level of mass media penetration and freedom, as well as political participation, with those countries. If the world's 'Periphery' also had a core-periphery structure, then the 'small c' core countries should also be ahead of other countries in that structure on the identical variables.

Second, this study uses secondary data to explore the possibilities of classifying the world into the center-periphery structure and to test the hypotheses that media penetration, media freedom and commitment to human rights follow a symmetrical pattern within the core-periphery continuum. These hypotheses are consistent with the presumptions of the Eurocentric dominant paradigm, which identified mass media as the 'great multiplier' associated with economic development (or capital accumulation) and political participation, a liberal interpretation of which should include concerns with civil and political rights.

The study used the following operational definitions of the variables associated with the hypotheses:

- *World core-periphery continuum*: the rank order of countries based on a weighted score of a country's gross national product (GNP) and share of exports as explained in note 7.
- *Old-media penetration*: the daily newspaper circulation and the number of radio and television receivers per 100 inhabitants.
- *New-media penetration*: the number of telephones and personal computers per 100 inhabitants and the number of Internet hosts per 1000 inhabitants.
- *Media freedom*: the scale of freedom available to print and broadcast media based on laws and regulations, political pressures and controls, economic influences and repressive actions that affect media content (see Table 5 for detailed breakdowns). The indicator used was the composite score, 0 through 100, assigned to each country by Freedom House in its 2000 press freedom report<sup>1</sup> (Sussman, 2000).
- *Human rights commitment*: the scale of commitment as reflected by the number of human rights instruments ratified by a country. The United Nations Development Program (UNDP, 1999, 2000) has highlighted eight selected instruments (see Table 6). The indicator used was the percentage of the instruments ratified by each country.

Third, the study applies the aforesaid method to configure a core-periphery structure in a peripheral region – the Middle East and North Africa – that once contained world centers before the emergence of European domination, and it tests the research hypotheses within the regional core-periphery structure.

Finally, it discusses the problems and prospects of applying the world system theory to analyze communication phenomena.

## Need for Macro Theory

Frank and Gills (1993) have argued the case for applying the world system theory across disciplines because it provides a humanocentric alternative to the systematic distortions of Eurocentrism. It could help us see 'a common river and unity of history in a single world system [that is] multicultural in origin and expression' (Frank and Gills, 1993: 17). They have shown the applicability of this approach to the study of political geography, development studies, gender, ethnic and race relations, international relations and international political economy.

Although micro-level and mid-range theories have their uses, a clear need exists to use and refine macro-level theories in the age of globalization. Thus international communication research fits into the Frank-Gills approach because it enables scholars to dissect the reality of the world as an interconnected unit. Galtung (1993) lamented:

*Surprisingly little is known about the world, geo, gaia, as one economic system. Liberal economics is the economics of countries (national economics, Volkswirtschaftslehre in German - VWL) or the economics of enterprises (business administration; Betriebswirtschaftslehre in German - BWL); and their relations. Marxist-Leninist economics is the economics of class relations, within and among societies, and is more global. Liberal economics focuses on growth, Marxist economics on distribution. Both are necessary, neither of them sufficient to answer the key question: how is the world doing, seen as one country, one enterprise, one class? (Galtung, 1993: 33-4)*

Frederick (1993) classified macro-level theories into four types: (1) political economy, (2) systems, (3) geopolitical and environmental and (4) power and international communication. Within the political economy framework, scholars have used three approaches: structuralism and dependency; Marxist; and liberal-economic and modernization. Systems theories, which owe much to cybernetics, the systematic study of communication and control in organizations, are exemplified in approaches such as integration theory, which examines the volume of interaction between and among political entities, and regime theory, which examines how regimes such as the WTO and IMF operate. Geopolitical theory looks at the political consequences of geographical variables, such as population, communication and information; and environment theory is explicated in approaches such as memetics, that applies biological models to the evolution, spread and persistence of ideas, within, between and among cultures. Theories of power and international communication include the realist approach, which studies power in international relations, and the idealist or normative approach.

Baran and Davis (1995) classified the macro-level political economy approach – the Marxist and, presumably, the structuralism and dependency approaches – under the rubric of critical cultural studies, and placed McLuhan's (1964) vision of the global village also under the same rubric. They refer to the

systems theories of communication processes as limited-effect paradigms that fall into Lazarsfeld's administrative research category (Lazarsfeld et al., 1944) because 'they are best at explaining and controlling the status quo, not in discovering methods for transforming it' (Baran and Davis, 1995: 271). They identify critical cultural studies as 'heuristic', but they recognize that this approach provides 'a useful challenge to mainstream media theory' (Baran and Davis, 1995: 339).

Wallerstein (1974: 347) conceptualized a world system as a social system that has 'boundaries, structures, member groups, rules of legitimation, and coherence'. He said that conflicting forces held it together by tension, and tore it apart as each group sought eternally to remold it to its advantage. It had the characteristics of an organism. Core states and peripheral areas constituted a world economy. Semi-peripheral areas, a necessary structural element in a world economy, existed 'between the core and the periphery on a series of dimensions, such as the complexity of economic activities, strength of the state machinery, cultural integrity, etc.' (Wallerstein, 1974: 349). A hierarchy of occupational tasks characterized a world economy, where 'tasks requiring higher levels of skill and greater capitalization' were reserved for higher-ranking areas (Wallerstein, 1974: 350). Wallerstein insisted that the modern world economy was, and only could be, a capitalist world economy, where the bourgeoisie claimed to be the universal class and sought to organize political life to pursue its objectives. Within a world economy, state structures were relatively strong in the core areas and relatively weak in the periphery.

Wallerstein (1974) applied the term 'world economy' to describe the widespread economic links that European colonialism had fostered in the late 15th- and early 16th-century.<sup>2</sup> Frank and Gills (1993) have attempted to document the thesis that the contemporary world system, the motor force of which is the process of capital accumulation, has a long history. Their 'humanocentric thesis' challenges Eurocentrism: specifically, their thesis asserts that 'the contemporary world system has a history of at least 5,000 years'; and 'the rise to dominance of Europe and the West in this world system is only a recent – and perhaps a passing – event' (Frank and Gills, 1993: 3). The thesis is based on five observable components of the world system: the world system itself, capital accumulation as its motor force, its core-periphery structure, the hegemony-rivalry alternation within it and the phenomenon of economic cycles within it (see Figure 1).

Thus a world economy, i.e. an economy in which capital accumulation proceeds throughout the world, prevailed long before the advent of the current Third Communication Revolution.<sup>3</sup> Castells (1996), however, makes a distinction between the pre-Information Age world economy and the contemporary global economy. He says, 'A global economy is something different [from a world economy]: it is an economy with the capacity to work as a unit in real time on a planetary scale' (Castells, 1996: 92). Castells argues that the global economy emerged as a result of the 'new infrastructure provided by new information and communication technologies' (Castells, 1996: 93). The global information infrastructure (GII) has replaced national borders with 'cyberspace' and enhanced the power of transnational capital over nation-states to conduct global business at a velocity hardly imaginable before.

**FIGURE 1**

Components of the World System and their Relevance to International Communication Research

Components	Explanation	Applicability to International Communication
1. World system itself	Principal features of the world political-economic system, identified below, stretch back to several thousand years. It long predated the rise of 'capitalism' in Europe and Europe's hegemony in the world. The feudalism–capitalism–socialism transition process is inconsistent with world system theory.	<ul style="list-style-type: none"> <li>• Enables taking the world system as a whole as the unit of analysis – to go beyond country- or region-centered studies</li> <li>• Encourages humanocentric study of communication</li> </ul>
2. Process of capital accumulation as the motor force of (world system) history	Capital accumulation – the imperative of ceaseless accumulation – has played a central role in the world system for several millennia. Capital = surplus transfer through infrastructural <i>investment</i> in agriculture and livestock; industry and new technology; transport; commerce; military; legitimacy; education and training of 'human capital'.	<ul style="list-style-type: none"> <li>• Establishes economic power as the antecedent to international communication power</li> </ul>
3. Core–periphery structure in and of the world (system)	Core–periphery structure of world system is applicable to pre-modern and ancient history as well as prehistory.	<ul style="list-style-type: none"> <li>• Establishes core–periphery framework for study of international communication</li> </ul>
4. Alternation between hegemony and rivalry	Hegemony–rivalry = political-economic predominance by a center of accumulation, which alternates with periods of rivalry among several such centers of accumulation. Shifting systems of economic, political and military alliances create, maintain and dismantle hegemonic imperial power.	<ul style="list-style-type: none"> <li>• Enables historical study of international communication over time to document changes in communication power</li> </ul>
5. Long (and short) economic cycles of alternating ascending (A) phases and descending (B) phases.	Process of capital accumulation, changes in core–periphery position within world system, as well as hegemony and rivalry within it, are all cyclical and occur in tandem with each other.	<ul style="list-style-type: none"> <li>• Enables tracing communication power shifts on the basis of cyclical shifts in the preceding trinity</li> </ul>

Source: Adapted from Frank and Gills (1993).

Both Wallerstein (1974) and Frank (1993) agree on the 'capitalist' characteristic of the world material economy. Both used structural theories to explain how the world works. Galtung and Vincent (1992: 13) applied structuralism to explain the phenomenon of world communication heavily colored by 'occidental cosmology'. Moreover, structuralism was the framework that dependency theorists used to analyze the core–periphery phenomenon (Gunaratne and Conteh, 1988). Because economic power, enhanced by new technology, reflects the ability of states to compete in the world material economy, a structural

division of the world based on economic criteria, such as the share of world exports, appears to be quite pertinent for analyzing how the world works.

Galtung (1980), who published his structural theory of imperialism in 1971, however, theorized the existence of five types of imperialism (or dominance) in the core–periphery relationships: economic, political, military, communication and cultural. He said he had ‘no theory that one is more basic than the others, or precedes the others’ (Galtung, 1980: 274). On the other hand, it is viable to argue on the basis of the Frank–Gills thesis that the global influence of the USA – the core of the Center countries – in the political, military, communication and cultural spheres would not have been possible had it not first established its economic dominance, which is thus more basic than the others. The demise of the Soviet Union has belied Galtung’s contention that no one of the five types of imperialism was more basic than the other. With its loss of economic clout, Russia, the backbone of the former Soviet Union, has lost its hegemony in the four other areas as well. Economic success enabled the Four Dragons, also called ‘the China Circle’ (Castells, 1996: 109), to reach the level of Asia’s semi-periphery,<sup>4</sup> even though, as anti-Communist bastions, they had the political and military backing of the USA to achieve such economic success.

Galtung (1980) explained his structural theory thus:

*The world consists of Center and Periphery nations; and each nation, in turn, has its centers and periphery. Hence our concern is with the mechanism underlying this discrepancy, particularly between the center in the Center, and the periphery in the Periphery. (Galtung, 1980: 261)*

He described the phenomenon of the Core–Periphery inequality as a major form of structural violence. Disharmony of interest existed between the periphery in the Periphery and the periphery in the Center while harmony of interest prevailed between the bridgeheads at the center in the Periphery and the center in the Center. Galtung asserted: ‘But the basic idea, absolutely fundamental for the whole theory . . . is that there is more disharmony in the Periphery nation than in the Center nation’ (Galtung, 1980: 265). Galtung’s structural formulation placed within the Frank–Gills thesis provides a plausible construct upon which to build a global theory sans the bias of what Frank (1993) calls ideal-‘isms’ of the right or the left.

The basic premise of dependency/world system theory has been the focus of the work of Barnett et al. (1996), who examined the global telecommunication network structure and the structure of physical communication – trade volume, mail, etc. Their examination of telecommunication indicators such as system density, connectedness, centrality and integrativeness revealed a similar structure for the network at three points in time. The results supported the basic premise of the dependency/world system theory ‘that position in the world communication system affected a country’s economic and social development’ (Barnett et al., 1996: 40). A group of western industrialized countries were at the core; and most developing countries and the former Soviet Union were at the periphery. Barnett et al. found a similar structure in the international transportation network. Their extended research examines international computer networks as well (Barnett, 1998). Various other researchers (e.g. Bollen, 1983;

Brams, 1966; Breiger, 1982; Chase-Dunn, 1975; Smith and Nemeth, 1988; Snyder and Kick, 1979) have also analyzed aggregated cross-national data to test the dependency/world system theory. Chang (1998) used the world system perspective to identify the possible determinants that might affect the structure and process of the international news flow and coverage. A major problem for researchers using this theoretical perspective is the difficulty of gathering global data showing dependency.

The application of the world system theory for international communication analysis requires the identification of the core-periphery structure of the world at any historical juncture on the basis of competitive capital accumulation.<sup>5</sup> The obvious criteria relevant to measuring the economic power of countries in the contemporary world are the GNP (expressed in US dollars using the Atlas method or in international dollars using the purchasing power parity [PPP] method), the GNP per capita (Atlas), the GNP per capita (PPP) and the share of world exports in merchandise and services. The Atlas conversion factor for any year is the average of a country's exchange rate (or alternative conversion factor) for that year and its exchange rates for the two preceding years, adjusted for the difference between the rate of inflation in the country and that in the G-5 countries (France, Germany, Japan, the UK and the USA). A country's inflation rate is measured by the change in its GNP deflator.<sup>6</sup> The PPP method uses factors based on the International Conversion Program's most recent round of price surveys in 118 countries, as well as statistical models to account for those not in the survey, to derive a standard measure of real price levels across countries. An international dollar in the PPP method has the same purchasing power over GNP as a US dollar in the USA. The top 10 countries under each of these criteria appear in the rank order shown in Table 1.

The 10 countries with the highest GNP (far-left column) accounted for 72 percent of the world economy in 1998. The 10 countries with the highest share of exports of goods and services (far-right column) accounted for almost 59 percent of the world exports in 1998. (The top countries ranked on the basis of *per capita* GNP include a number of smaller economies, which cannot qualify as core countries despite their economic strength.) A reality check shows that the core countries are those that occupy top ranks on both the left-hand column (GNP or size of the economy) and the right-hand column (exports). Although the capital accumulated through world trade (i.e. exports minus imports) is a constituent element of a country's GNP, the size of exports clearly represents a country's ability to expand into the global economy on a competitive basis. Therefore, it seems reasonable to allocate proportional weights of 55:45 to these two indicators (reflecting the performance of the top 10 countries) to generate an index that roughly reflects a country's capital-accumulation capacity in the global material economy.<sup>7</sup>

The data provide a clear idea of the world's super-center – the USA (see note 7). With a score of 100 assigned to the USA, the next economic powerhouse is Japan, which gets a score of 72. Germany comes next with a score of 54. The sequence of the other economies in the top 10 in GNP and exports appears as follows: France (36), the UK (31), Italy (28), China (20), Canada (18), the Netherlands (16), Spain (14), Belgium-Luxembourg (13) and Brazil

**TABLE 1****World Rank of Top 10 Countries on Four Economic Indicators**

Rank on Size of the Economy (GNP, Atlas Method) 1998	Rank on GNP per Capita (Atlas) 1998	Rank on GNP per Capita (PPP) 1998	Rank on Share of Exports of Merchandise and Services 1998
USA (US\$7.9 trillion) 27.4%	Luxembourg (US\$43,570)	Luxembourg (US\$37,420)	USA (US\$922.5 billion) 13.7%
Japan (US\$4.1 trillion) 14.2%	Liechtenstein (n.a.)	Liechtenstein (n.a.)	Germany (US\$618.6 billion) 9.2%
Germany (US\$2.1 trillion) 7.3%	Switzerland (US\$40,080)	USA (US\$29,340)	Japan (US\$449.7 billion) 6.7%
France (US\$1.5 trillion) 5.1%	Norway (US\$34,330)	Bermuda (n.a.)	France (US\$389.4 billion) 5.8%
UK (US\$1.3 trillion) 4.5%	Bermuda (n.a.)	Singapore (US\$28,620)	UK (US\$328.4 billion) 4.9%
Italy (US\$1.2 trillion) 4.0%	Denmark (US\$33,260)	Cayman Islands (n.a.)	Italy (US\$308.9 billion) 4.6%
China (US\$928.9 billion) 3.2%	Japan (US\$32,380)	Switzerland (US\$26,620)	Netherlands (US\$250.3 billion) 3.7%
Brazil (US\$758 billion) 2.6%	Cayman Islands (n.a.)	Norway (US\$24,290)	Canada (US\$244.6 billion) 3.6%
Canada (US\$612.2 billion) 2.1%	Singapore (US\$30,060)	Canada (US\$20,020)	Belgium-Luxembourg (US\$213.9 billion) 3.2%
Spain (US\$553.7 billion) 1.9%	USA (US\$29,340)	Monaco (n.a.)	China (US\$207.8 billion) 3.1%
72% of gross world product			59% of world exports

n.a. = not available.

Sources: World Bank Database; WTO (1999).

(12). The difficulty is in determining the cutting point of the Semi-periphery. Perhaps more scholarly discussion is necessary in this regard.

A majority of the countries are in the Periphery because a few players have won the game of capital accumulation in the world material economy, as reflected in their huge slice of the world GNP and exports. Most of the former Soviet Union has disintegrated into the world's Periphery as another phenomenon of the world-historical process accommodated in the alternating-economic-cycles aspect of the world system theory. Using our formula, Russia gets a score of 8 compared to Switzerland's 9 and Sweden's 7. Asia's Four Tigers are in the same league or better: South Korea (11), Hong Kong (11), Taiwan (9) and Singapore (7).

Galtung's (1971) structural theory states that the core-periphery structure prevails within each periphery country as well. Anderson (1984), who applied



Galtung's structural theory to examine the advertising power relationships within and between Asian nations and the Center countries, found considerable support for the hypotheses derived from it. Other researchers have gone beyond Galtung's theory to test the possible existence of a core-periphery structure within peripheral regions as well. For instance, Gunaratne (1999, 2000) attempted to identify the core-periphery structure in Asia proper and its sub-regions – the East, the Southeast and the South. Using export data as a measure of competitive capital accumulation, he found Japan to be the core country in Asia with China and the Four Dragons ('the China Circle') constituting the first-tier semi-periphery.

The purpose of this study was to further ascertain the divisibility of the world system into regional core-periphery components. This study hypothesized the existence of a core-periphery structure within the Middle East and North Africa region and tested whether the communication and media phenomena in that region followed the pattern of the hypothesized structure.

## **Defining the Region**

The Islamic heartland encompassing the Middle East (West Asia) and North Africa has more than 437 million or 7.3 percent of the world's 1999 estimated population of 6 billion. It covers 23 economies ranging in population size from Bahrain's 0.6 million people to Egypt's 67.3 million. Cyprus and Qatar, each with fewer than 0.7 million people, are only slightly larger than Bahrain in population. The two other population giants are Turkey (65.6 million) and Iran (65.2 million). Although since 1996 Turkey has had a customs union arrangement with the European Union, geographically it is part of West Asia except for the small northwest section surrounding Istanbul that juts into Europe.

The World Bank (1999) has placed five economies in the region in the high-income category – Cyprus, Israel, Kuwait, Qatar and United Arab Emirates (UAE); six in the upper-middle-income category – Bahrain, Lebanon, Libya, Oman, Saudi Arabia and Turkey; nine in the lower-middle-income category – Algeria, Egypt, Iran, Iraq, Jordan, Morocco, Syria, Tunisia and Palestine (West Bank and Gaza); and three in the low-income category – Afghanistan, Sudan and Yemen.

Although we have called the region the Islamic heartland, it is also home to large Jewish and Christian populations. The Middle East, an early 20th-century term that replaced the older term 'Near East', was the birthplace of Judaism, the mother religion of both Christianity and Islam, as well as of Zoroastrianism, the religion of the Parsees of India and the Gabars of Iran. In addition to Arabs, the region has Persians, Turks, Kurds, Berbers and others who each use their own languages. Kamalipour and Mowlana (1994: xvi) point out that the Middle East is a diverse region that 'frequently defies generalization'. Sreberny-Mohammadi (1998: 180) agrees that 'the region reveals remarkable differentiation along almost any indicator one cares to choose'.

Before the 15th- and 16th-century rise of the world system centered in the West, the Middle East played a central role in the world system centered in the East. Frank and Gills (1993) point out that the trinity of core-periphery,

hegemony–rivalry and alternating phases of economic cycles were recurring structures and processes of the world system for some 5000 years. More than 3000 years before Christ, the Sumerians in southern Mesopotamia (Iraq) founded the region's first civilization and devised the cuneiform system of writing, while the Egyptians also built a civilization and the hieroglyphics system of writing almost as early.

The Middle East was a world Center during the periods of the Hittite empire based in Anatolia (Turkey) and Mesopotamia in the late 17th century BC and the empire of New Kingdom Egypt (1430–1200 BC); the Assyrian empire in northern Mesopotamia in the early 9th century BC to the end of the 7th; the Achaemenid Persian empire (612–333 BC) that preceded Alexander the Great's conquest of West Asia; the Parthian empire stretching from the Euphrates to Bactria, north of Afghanistan (129 BC to AD 226); the Persian Sassanid empire (AD 226– 630) and the Abbassid caliphate (AD 750–1258); and the Ottoman empire (founded in the 14th century), which exerted profound influence over European and Middle Eastern affairs for some 500 years.

### **Core–Periphery Structure**

If one were to judge global competitiveness on the basis of the share of the world exports in merchandise and services (Gunaratne, 1999, 2000), the Middle East and North Africa score very poorly. The contribution of the region to world exports in 1998 was about US\$259 billion – 3.8 percent of the world total<sup>8</sup> (WTO, 1999) – or only slightly more than the exports of the Netherlands. In 1990, the region's share was 5 percent. That share reached a low of 4 percent in 1995, rose to 4.3 percent in 1997 and dipped to the decade's lowest in 1998 because of a severe decline in oil prices. Clearly, despite its oil wealth, the region – which had been a world Center over several cycles from the Bronze Age through the Iron Age axial and classical periods to the medieval period – has fallen into the Periphery of the contemporary world system.

In terms of real gross domestic product (GDP) per capita, six smaller economies occupy the top rankings in the region – Kuwait, Qatar, UAE, Israel, Bahrain and Cyprus (Table 2). In terms of the Human Development Index (HDI), the same six countries top the region with Cyprus in the lead, followed by Israel, Kuwait, Bahrain, Qatar and UAE (Table 2). But *neither* of these two indices is sufficient to demarcate them as the core of the region because they, as relatively small economic units, do not reflect the hegemony–rivalry dimension of the world system.<sup>9</sup>

The World Economic Forum (WEF, 1997, 1998, 1999), however, ranked Israel, Jordan, Egypt and Turkey as the most competitive economies of the region based on eight factors: openness, government, finance, technology, infrastructure, management, labor and institutions. Israel topped the region's list in recent years with the other three showing wider fluctuations (Table 3). In 1998, Israel ranked 28th of the 59 economies the forum analyzed. Jordan ranked 40th, Turkey 44th and Egypt 49th among the same 59 economies.

The WEF promotes the importance of microeconomic conditions for economic development in the belief that macroeconomic policies are necessary but

TABLE 2

**Middle East and North Africa Human Development Index 1998**

Country	Life Expectancy at Birth (Years)	Adult Literacy Rate (%)	Combined 1st-, 2nd- and 3rd-Level Gross Enrolment Ratio (%)	Real GDP per Capita (PPP US\$)	HDI Value	HDI Rank
	1998	1998	1998	1998	1998	1998
High Human Development						
Cyprus	77.9	96.6	81	17,482	0.886	22
Israel	77.9	95.7	81	17,301	0.883	23
Kuwait	76.1	80.9	58	25,314	0.836	36
Bahrain	73.1	86.5	81	13,111	0.820	41
Qatar	71.9	80.4	74	20,987	0.819	42
UAE	75.0	74.6	70	17,719	0.810	45
Medium Human Development						
Libya	70.2	78.1	92	6697	0.760	72
Saudi Arabia	71.7	75.2	57	10,158	0.747	75
Lebanon	70.1	85.1	77	4326	0.735	82
Turkey	69.3	84.0	61	6422	0.732	85
Oman	71.1	68.8	58	9960	0.730	86
Jordan	70.4	88.6	69	3347	0.721	92
Iran	69.5	74.6	69	5121	0.709	97
Tunisia	69.8	68.7	72	5404	0.703	101
Algeria	69.2	65.5	69	4792	0.683	107
Syria	69.2	72.7	59	2892	0.660	111
Egypt	66.7	53.7	74	3041	0.623	119
Morocco	67.0	47.1	50	3305	0.589	124
Iraq	63.8	53.7	50	3197	0.583	126
Low Human Development						
Sudan	55.4	55.7	34	1394	0.477	143
Yemen	58.5	44.1	49	719	0.448	148
Afghanistan	45.5	35.0	n.a.	n.a.	n.a.	n.a.

n.a. = not available

Source: UNDP (2000).

not sufficient to ensure a prosperous economy. Its eight criteria for judging competitiveness, as well as its selection of countries for annual analysis, reflect this economic philosophy. The inclusion of Egypt and Jordan, which have not been major players in world trade competitiveness, despite the more solid economic strength of Iran and the UAE, shows a philosophical partiality. In the 1990s, Egypt's exports of merchandise and services failed to exceed US\$13 billion for

TABLE 3

**WEF's Global Competitiveness Rankings of Economies in the Middle East and North Africa**

Economy	Rank 1996	Rank 1997	Rank 1998	Rank 1999
Israel	24	24	29	28
Jordan	28	43	34	40
Egypt	29	28	38	49
Turkey	42	36	40	44
	N = 53	N = 53	N = 53	N = 59

Source: WEF (1999).

any year while Jordan's failed to exceed US\$3.6 billion for any year. At the end of the 1990s, the reality was that four economies – Turkey, Saudi Arabia, Israel and UAE – accounted for almost 60 percent of the region's exports. The next four contributors – Iran, Egypt, Algeria and Kuwait – added only 18 percent to that total. Moreover, the value of Egypt's annual imports has been double that of its exports. Israel and Egypt share about 40 percent of the annual foreign-aid allocation of the USA.<sup>10</sup> The competitive economies in the region profiled by the WEF are strongly tied to the USA.

In the Middle East and North Africa, the exports are predominantly agricultural and mining products, rather than industrial and information products. For instance, petroleum constitutes about 90 percent of Saudi Arabia's merchandise exports and commercial services make up less than 10 percent of its total exports. Egypt exports more commercial services than merchandise at a heavily lopsided ratio approximating 70:30. Petroleum products make up more than a third of its merchandise exports. However, Turkey, Saudi Arabia's nearest trade rival, has a different exports makeup: slightly less than one-half of its export earnings come from commercial services while some 40 percent of its merchandise exports constitute clothing and textiles. Israel, which earns more than a quarter of its export income from commercial services, is the major high-tech merchandise exporter of the region.

The world system theory makes no distinction in the nature of products and services that leads to capital accumulation. Frank and Gills (1993) have described the process of capital accumulation as the motor force of (world system) history. Success in capital accumulation through infrastructural *investment* in agriculture and livestock, industry and new technology, etc., determined the core-periphery and the hegemony-rivalry structure of the world system at any given time. They further argued that the process of capital accumulation, changes in core-periphery position within the world system, as well as hegemony and rivalry within it, were all cyclical and occurred in tandem with each other.

Table 4 shows the 1998 share of exports of the countries in the region. The shifting export shares in the region show the volatility of economies dependent on mining products such as oil and gas. Oil constitutes the predominant export of Saudi Arabia, UAE, Kuwait, Qatar, Bahrain, Oman, Iran, Libya and Iraq.

TABLE 4

**Middle East and North Africa: Hypothetical Core-Periphery Structure Based on 1998 GNP and Share of Exports**

Score on Index (US = 100)	Country	Merchandise US\$ Billions	Services US\$ Billions	Total US\$ Billions	Share of Regional Exports (%)
Dual Center					
4.7	Turkey	25.9	23.1	49.0	18.9
3.9	Saudi Arabia	42.3	4.4	46.7	18.0
Semi-Periphery 1					
2.6	Israel	23.3	9.0	32.3	12.5
2.1	Iran	12.6	3.2 <sup>a</sup>	15.8	6.1
Semi-Periphery 2					
1.6	UAE	22.5	n.a.	22.5	8.7
1.5	Egypt	3.1	7.8	10.9	4.2
1.0	Algeria	10.3	n.a.	10.3	4.0
Periphery					
0.9	Morocco	7.2	2.5	9.7	3.7
0.8	Kuwait	8.5	1.5	10.0	3.9
0.8	Libya	7.1	n.a.	7.1	2.7
0.6	Tunisia	5.7	2.7	8.4	3.2
0.5	Oman	5.5	1.2 <sup>a</sup>	6.7	2.6
0.4	Syria	2.8	1.5	4.3	1.7
0.4	Qatar	5.4	0.8 <sup>a</sup>	6.2	2.4
	Iraq	5.0	n.a.	5.0	1.9
0.3	Jordan	1.8	1.8	3.6	1.4
0.2	Bahrain	3.3	0.8	4.1	1.6
0.2	Lebanon	0.7	n.a.	0.7	0.3
0.2	Cyprus	1.1	1.1 <sup>b</sup>	2.2	0.8
0.2	Yemen	2.5 <sup>a</sup>	0.2	2.7	1.0
0.1	Sudan	0.6	0.0	0.6	0.2
0.0	Afghanistan	0.1 <sup>a</sup>	n.a.	0.1	0.0
	Total	197.3	61.6	258.9	100.0

n.a. = not available.

<sup>a</sup>1997 data.

<sup>b</sup>1995 date.

See note 7 for formula used to derive index score for ranking.

Sources: WTO (1999); World Bank Database.

Applying the formula described in note 7, thereby allocating weights in the proportion of 55:45 to share of the economy and share of the exports, we constructed a score for each country that had both sets of data. We estimated the size of the economy using past World Bank data for countries with missing GNP data for 1998 except for Afghanistan and Iraq. The constructed scores (left-hand column, Table 4) produced the region's probable core-periphery structure, though the cutting points we used may be open to dispute.

- Turkey (with a score of 4.7) has slightly surpassed Saudi Arabia (with a score of 3.9) as the largest exporter, thereby creating a dual *center* in the Islamic heartland. (Note that these two countries respectively occupy the 10th and seventh ranks in the region in terms of the real GDP per capita but the first and second ranks in GNP – or size of the economy.)
- Israel (2.6) leads the *first-tier semi-periphery* followed by Iran (2.1). (Note that these two countries respectively occupy the fourth and 12th ranks in the region in terms of the real GDP per capita. Iran and Israel have the third and fourth largest GNP in the region.)
- The UAE (1.6), Egypt (1.5) and Algeria (1.0) form the *second-tier semi-periphery*. (Note that these three countries respectively have the fourth, fifth and sixth largest GNP in the region, but the real GDP per capita of the last two countries is relatively low: US\$3050 and US\$4460 respectively.)
- All other countries are in the *periphery* with scores of less than 1.0. (Note that in terms of the real GDP per capita Kuwait, Qatar, Bahrain, Cyprus and Oman respectively occupy the first, second, third, fourth and eighth rank.)

Turkey, which had a GNP of US\$200.5 billion in 1998, is the economic leader of the region. Saudi Arabia, with an estimated GNP of US\$146.8 billion, is next in rank followed by Iran (US\$109.6 billion), Israel (US\$95.2 billion) and Egypt (US\$79.2 billion). When coupled with their share of world exports, Turkey and Saudi Arabia emerge as the dual center of the region. Israel is a significant player in the first-tier semi-periphery. Iran and Egypt are also in the semi-periphery while Jordan, with a GNP of US\$6.9 billion and a score of 0.3, is behind seven other countries.

## Press Freedom and Human Rights

Elaborating on the annual Freedom House ratings on political rights and civil liberties, Karatnycky (2000) asserted that the roots of democracy and freedom were weakest in the Middle East (excluding North Africa). Cyprus and Israel were the only 'free' countries; Jordan, Kuwait and Turkey were the only 'partly free' countries; and the rest were 'not free'. Cyprus, Israel and Turkey were the Middle East's only electoral democracies. In the Arab world, Karatnycky observed, Morocco was the only other 'partly free' state apart from Jordan and Kuwait. None of the 16 other Arab states was 'free'. Sreberny-Mohammadi (1998: 186) says: 'Democratization takes a crab-like configuration in the region, with some steps forward and many steps of set-back'.

The annual Freedom House ratings on press freedom – measured by four criteria founded on the Universal Declaration of Human Rights (UDHR) – showed that Cyprus and Israel were the region's only countries with a 'free' press. Kuwait, Morocco, Jordan and Turkey had a 'partly free' press. In the other countries in the region, the press was 'not free' (Sussman, 2000). Press freedom and rankings on civil and political rights usually go together, as shown on the last two columns of Table 5. Column 7 gives the combined freedom score for print and broadcasting with a score of 0–30 indicating 'free', 31–60 indicating 'partly free' and 61–100 indicating 'not free'. Column 8 covers the wider spectrum of civil and political rights on a scale of 0 through 7 with the lower scores indicating greater freedom.

Six countries in the region – Bahrain, Oman, Qatar, Saudi Arabia, Turkey and UAE – have so far not ratified either of the 1996 international human rights covenants: the one on civil and political rights, and the other on economic, social and cultural rights. The same countries (except Turkey) plus Iran, Sudan and Syria have not ratified the 1979 convention on discrimination against women. Seven countries – Iran, Iraq, Lebanon, Oman, Qatar, Syria and UAE – have not ratified the 1984 convention against torture and inhuman or degrading treatment. Contrary to the hypothesis in this study, the data (see Table 6) showed no statistically significant correlation between the core–periphery index score and the score on commitment to human rights instruments.

UNDP (2000) asserts that four defining features of a democracy are based on human rights: holding free and fair elections, which contributes to fulfillment of the right to political participation; allowing free and independent media, which contributes to fulfillment of the right to freedom of expression, thought and conscience; separating powers among branches of government, which helps protect citizens from abuses of their civil and political rights; and encouraging an open civil society, which contributes to fulfillment of the right to peaceful assembly and association. It adds, 'An open civil society adds an important participatory dimension, along with the separation of powers, for the promotion of rights' (UNDP, 2000: 56). That the dual center of the region has ignored the two fundamental covenants relating to the UDHR is an indication of the dual center's tenuous links to democratic principles. The examples of South Korea, Taiwan and Singapore show that countries may achieve economic progress despite human right restrictions up to a point when freedom and economic progress must merge.

UNDP (2000: 69), however, points out: 'The process of economic policy-making for human development should honor the rights of participation and freedom of expression.'

The Middle East and North Africa region provides no evidence that media freedom and core–periphery status (as measured by the GNP and the share of world exports) follow a symmetrical pattern as hypothesized in this study. As Table 8 shows, the correlation between media freedom and per capita GNP was also not statistically significant ( $p = .08$ ). Saudi Arabia, one of the two centers in the region, has no 'press freedom', just as in the case of Singapore, the center in Southeast Asia. Turkey is only 'partly free' and Saudi Arabia 'not free' in political rights and civil liberties. In the semi-periphery, Israel stands out as the

TABLE 5

**Press Freedom in the Middle East and North Africa, 2000**

Country	Media Type	Laws and Regulations that Influence Media Content (Scale: 0-15)	Political Pressures and Controls on Media Content (Scale: 0-15)	Economic Influences over Media Content (Scale: 0-15)	Repressive Actions: Killings, Violence, Censorship, Arrests, etc. (Scale: 0-5)	Total Media Restriction Score	Rating on Political Rights and Civil Liberties (Scale: 0-7)
Cyprus	Broadcast	2	5	2	0	16	1
	Print	2	2	3	0	F	F
Israel	Broadcast	3	2	2	2	30	2
	Print	8	6	2	5	F	F
Kuwait	Broadcast	9	11	0	1	48	5
	Print	9	11	4	3	PF	PF
Morocco	Broadcast	11	6	0	0	49	4.5
	Print	11	10	10	1	PF	PF
Jordan	Broadcast	12	10	6	0	57	4.5
	Print	12	9	4	4	PF	PF
Turkey	Broadcast	11	11	3	0	58	4.5
	Print	11	9	8	5	PF	PF
Lebanon	Broadcast	12	12	7	1	61	5.5
	Print	9	10	9	1	NF	NF
Qatar	Broadcast	7	13	10	0	62	6.5
	Print	8	14	10	0	NF	NF
Yemen	Broadcast	14	14	0	1	68	5.5
	Print	13	13	9	4	NF	NF
Iran	Broadcast	10	15	8	0	68	6
	Print	12	10	8	5	NF	NF
Egypt	Broadcast	8	14	9	0	69	6
	Print	11	12	10	5	NF	NF
Oman	Broadcast	15	13	0	0	71	6
	Print	15	13	15	0	NF	NF
Syria	Broadcast	15	15	7	0	73	7
	Print	15	13	7	1	NF	NF
Tunisia	Broadcast	15	15	0	0	74	5.5
	Print	15	15	9	5	NF	NF
Bahrain	Broadcast	15	15	7	0	75	6.5
	Print	13	14	10	1	NF	NF
UAE	Broadcast	15	15	6	0	76	5.5
	Print	15	15	10	0	NF	NF
Algeria	Broadcast	15	15	10	2	83	5.5
	Print	13	10	15	3	NF	NF

*Continued*



**TABLE 5***Continued*

Country	Media Type	Laws and Regulations that Influence Media Content (Scale: 0-15)	Political Pressures and Controls on Media Content (Scale: 0-15)	Economic Influences over Media Content (Scale: 0-15)	Repressive Actions: Killings, Violence, Censorship, Arrests, etc. (Scale: 0-5)	Total Media Restriction Score	Rating on Political Rights and Civil Liberties (Scale: 0-7)
Sudan	Broadcast	15	15	7	0	85	7
	Print	15	15	13	5	NF	NF
Saudi Arabia	Broadcast	15	15	15	0	90	7
	Print	15	15	15	0	NF	NF
Libya	Broadcast	15	15	15	0	90	7
	Print	15	15	15	0	NF	NF
Afghanistan	Broadcast	15	15	15	0	90	7
	Print	15	15	15	0	NF	NF
Iraq	Broadcast	15	14	15	5	98	7
	Print	15	14	15	5	NF	NF

F = Free; PF = Partly Free; NF = Not Free.

*Source:* Sussman (2000); Karatnycky (2000).

second 'freest' in the region while Egypt, the UAE and Iran are 'not free'. Cyprus, the 'freest' country, is in the hypothesized periphery.

## Old and New Media

The core-periphery structure based on share of exports and overall GNP does not parallel the penetration of the old or the new media in the Middle East and North Africa. Even though the hypotheses related to the two types of media indicators failed, the correlation between per capita GNP and all the media indicators was statistically significant at either the .01 level (for newspaper, telephone and personal computer penetration) or the .05 level (for radio, television and Internet host penetration). Table 7 shows the penetration of traditional media, telephones, computers and the Internet in the countries classified into four income categories based on per capita GNP.

An analysis of the seven media penetration indicators shows wide variations across the hypothesized core-periphery structure. A comparison of the core and the semi-periphery countries on the seven selected media indicators with all other countries in the region leads to the deduction that several periphery countries rank higher than the selected center and semi-periphery countries in the penetration of daily newspapers, radio, television and telephones. Israel tops the other five countries in all the media indicators except in television

TABLE 6

## Middle East and North Africa: Commitment of Countries to Selected Human Rights Instruments

	International Covenant on Economic, Social and Cultural Rights  1966	International Covenant on Civil and Political Rights  1966	International Convention on the Elimination of All Forms of Racial Discrimination  1966	Convention on the Prevention and Punishment of the Crime of Genocide  1948	Convention on the Rights of the Child  1989	Convention on the Elimination of All Forms of Discrimination Against Women  1979	Convention Against Torture and Other Cruel, Inhuman or Degrading Treatment or Punishment  1984	Convention Relating to the Status of Refugees  1951
				Dual Center				
Turkey			○	●	●	●	●	●
Saudi Arabia			●	●	●		●	
				Semi-Periphery 1				
Israel	●	●	●	●	●	●	●	●
Iran	●	●	●	●	●			●
				Semi-Periphery 2				
UAE			●		●			
Egypt	●	●	●	●	●	●	●	●
Algeria	●	●	●	●	●	●	●	●
				Periphery				
Morocco	●	●	●	●	●	●	●	●
Kuwait	●	●	●	●	●	●	●	

*continued*

**TABLE 6***Continued*

	International Covenant on Economic, Social and Cultural Rights	International Covenant on Civil and Political Rights	International Convention on the Elimination of All Forms of Racial Discrimination	Convention on the Prevention and Punishment of the Crime of Genocide	Convention on the Rights of the Child	Convention on the Elimination of All Forms of Discrimination Against Women	Convention Against Torture and Other Cruel, Inhuman or Degrading Treatment or Punishment	Convention Relating to the Status of Refugees
	1966	1966	1966	1948	1989	1979	1984	1951
Libya	●	●	●	●	●	●	●	
Tunisia	●	●	●	●	●	●	●	●
Oman					●			
Syria	●	●	●	●	●			
Qatar			●		●		●	
Iraq	●	●	●	●	●	●		
Jordan	●	●	●	●	●	●	●	
Bahrain			●	●	●		●	
Lebanon	●	●	●	●	●	●		
Cyprus	●	●	●	●	●	●	●	●
Yemen	●	●	●	●	●	●	●	●
Sudan	●	●	●		●		○	●
Afghanistan	●	●	●	●	●	○	●	

● Ratification as of 16 February 2000.

○ Signature not followed by ratification.

TABLE 7

## Demographic and Media Penetration Indicators in the Middle East and North Africa

	GNP per Capita (World Bank Estimate) 1998	Population (US Census Bureau Estimate in Millions) mid-1999	Newspaper Circulation per 100 People (UNESCO Estimate) 1996	Radio Receivers per 100 People (UNESCO Estimate) 1997	TV Receivers per 100 People (UNESCO Estimate) 1997	TV Receivers per 100 People (ITU Estimate) 1998	Main Telephone Lines per 100 People (ITU Estimate) 1998	Cellular Mobile Subscribers per 100 People (ITU Estimate) 1998	Internet Hosts per 1000 People (Derived from Network Wizards July Survey) 1999	Personal Computers per 100 People (ITU Estimate) 1998
High-Income										
Qatar	20,179	0.7	16.1	45.0	40.4	80.8	25.99	11.36	0.04	12.09
UAE	18,220	2.3	17.0	35.5	13.4	29.4	38.90	20.96	4.74	10.62
Kuwait	17,056	2.0	37.7	67.8	50.5	49.1	23.59	13.80	2.30	10.49
Israel	15,940	5.8	28.8	52.4	28.8	31.8	53.95	35.88	25.43	21.72
Cyprus	12,481	0.7	11.1	40.6	32.5	16.7	58.51	16.83	6.25	n.a.
Upper-Middle-Income										
Bahrain	7660	0.6	11.7	58.0	47.2	41.9	24.57	14.34	1.76	9.34
Saudi Arabia	7150	21.5	5.9	32.1	26.2	26.0	14.26	3.11	0.86	4.96
Oman	6897	2.4	2.8	60.7	69.4	59.5	9.23	4.33	0.27	2.10
Libya	6660	5.0	1.4	25.6	14.0	14.3	8.36	0.33	0.00	n.a.
Lebanon	3560	3.6	14.1	90.7	37.5	35.2	19.43	15.67	1.74	3.92
Turkey	3160	65.6	11.0	17.8	33.0	28.6	25.41	5.25	1.98	2.32

Continued

TABLE 7

*continued*

	GNP per Capita (World Bank Estimate) 1998	Population (US Census Bureau Estimate in Millions) mid-1999	Newspaper Circulation per 100 People (UNESCO Estimate) 1996	Radio Receivers per 100 People (UNESCO Estimate) 1997	TV Receivers per 100 People (UNESCO Estimate) 1997	TV Receivers per 100 People (ITU Estimate) 1998	TV Receivers Main Telephone Lines per 100 People (ITU Estimate) 1998	Cellular Mobile Subscribers per 100 People (ITU Estimate) 1998	Internet Hosts per 1000 People (Derived from Network Wizards July Survey) 1999	Personal Computers per 100 People (ITU Estimate) 1998
Lower-Middle-Income										
Iraq	2400	22.4	2.0	22.9	8.3	8.2	3.10	n.a.	0.00	n.a.
Tunisia	2050	9.5	3.1	22.4	10.0	19.8	8.06	0.42	0.01	1.47
Iran	1770	65.2	2.6	26.3	7.1	15.7	11.18	0.59	0.01	3.19
West Bank and Gaza	1560	2.7	n.a.	n.a.	n.a.	n.a.	5.78	1.45	0.00	n.a.
Algeria	1550	31.1	3.8	24.2	10.5	6.8	5.32	0.06	0.00	0.42
Jordan	1520	4.6	4.2	27.1	8.2	5.2	8.55	1.18	1.53	0.87
Egypt	1290	67.3	3.8	31.7	11.9	12.7	6.02	0.14	0.07	0.91
Morocco	1250	29.7	2.7	24.7	11.5	16.0	5.44	0.42	0.03	0.25
Syria	1020	17.2	2.0	27.8	7.0	6.8	9.54	n.a.	0.00	0.17
Low-Income										
Yemen	300	16.9	1.5	6.4	2.9	27.3	1.34	0.11	0.00	0.12
Sudan	290	34.5	2.7	27.2	8.6	14.1	0.57	0.03	0.00	0.19
Afghanistan	n.a.	25.8	0.6	13.2	1.3	1.2	0.14	n.a.	0.00	n.a.

Notes: GNP per capita figures for Afghanistan, Cyprus, Iraq, Kuwait, Oman, Palestine (West Bank and Gaza) and Qatar are not in the World Bank database.

GDP per capita from ITU (1999) were substituted where available; n.a. = not available.

Source: UNESCO (1999).

**TABLE 8****Data for the Middle East and North Africa: Pearson Correlations for Variables Related to Hypotheses**

Indicator	Correlation with Core-Periphery Index Score	Correlation with GNP per Capita
Newspaper penetration	.182 ( $p = .429$ )	.784 ( $p = .000$ )
Radio penetration	-.151 ( $p = .514$ )	.465 ( $p = .033$ )
Television penetration	.064 ( $p = .784$ )	.528 ( $p = .014$ )
Telephone density	.064 ( $p = .784$ )	.757 ( $p = .000$ )
Cellular density	.101 ( $p = .680$ )	.756 ( $p = .000$ )
Personal computer penetration	.206 ( $p = .412$ )	.865 ( $p = .000$ )
Internet host density	.284 ( $p = .212$ )	.487 ( $p = .022$ )
Human rights score	-.098 ( $p = .673$ )	-.338 ( $p = .134$ )
Media freedom score	-.030 ( $p = .897$ )	-.382 ( $p = .080$ )

penetration, on which it ties with Turkey. Israel and UAE are ahead of the other four in all indicators except television penetration. Israel leads the region in the new media signified by personal computers, the Internet and cellular mobile subscribers. Cyprus ranks first in mainline telephone density, Kuwait in newspaper penetration, Lebanon in radio penetration and Oman in television penetration.

## Discussion and Conclusions

Our theoretical core-periphery structure of the Middle East and North Africa is not a good predictor of the media penetration pattern of the region. The scores separating the hypothetical core (3.9-4.7) from the semi-periphery (1.0-2.6) and those separating the periphery (0.01 to 0.9) from the semi-periphery in this region are so low (in relation to the USA = 100 as the maximum) that researchers should be cautious about applying the core-periphery distinction to Periphery regions where countries cluster around low scores.

The per capita income index is generally a better, though not a sophisticated, predictor of media penetration in a region with several high-income small economies. This is the case with the Middle East. Table 8 shows that each of the media indicators has a statistically significant correlation with per capita GNP (at  $p$  values  $\leq .03$ ), but none with the core-periphery index configured for

the region. Daily newspaper penetration is highest in Kuwait (38 copies per 100 people), Israel (29), UAE (17) and Qatar (16) – all in the high-income category. (The USA has a newspaper penetration of only 21 copies per 100 people. This indicator may no longer reflect the world system structure because of the declining newspaper circulation in core countries.)

Radio penetration cuts across the first three income levels with Lebanon (91 per 100 people) in the second tier, beating Kuwait (68) in the first tier. Oman (61) and Bahrain (58) in the second tier have better penetration than the other first-tier countries. Even Sudan (27), in the low-income category, competes well with the lower-middle-income countries, as well as Turkey and Libya in the upper-income level, on this indicator. Television penetration generally conforms to the structure of the first two income tiers with Oman, Qatar, Kuwait and Bahrain heading the list.

The telecommunication and Internet and computer indicators clearly follow the pattern of the four income tiers. In telephone density, Cyprus (58 per 100 people) is at the top followed by Israel (54) and UAE (39). Turkey and Bahrain (25 each) in the second tier are on par with Kuwait and Qatar in the first tier. Cellular-mobile-subscriber penetration is highest in Israel (36 per 100 people), while Lebanon (16) and Bahrain (15) in the second tier have a density matching that of Cyprus, Kuwait and Qatar in the first tier. In Internet penetration and personal computer penetration, Israel is the region's leader by a long way.

Massey and Levy (1999: 534) have suggested that 'a global competitiveness indicator based on the percentage share of regional goods and services may not precisely approximate a country's position in the world capitalist system'. They concluded that the core-periphery classifications cut from global competitiveness indicators offered little help in explaining variations in the interactivity of English-language Web newspapers between and within subregions of Asia. The hypothesized core-periphery structure for subregions in Asia also suffers from the same low-score syndrome along the structural continuum. Applying the formula in note 7 to Southeast Asia, Singapore (= 6.7) emerges as the core; Malaysia, Thailand, Indonesia and Philippines as the semi-periphery (= 2.6–4.6); and the other Association for Southeast Asian Nations (ASEAN) countries as the periphery (<1.0). In South Asia, India emerges as the core (= 7.1), Pakistan as the semi-periphery (= 1.2) and the other South Asian Association for Regional Cooperation (SAARC) countries as the periphery (<1.0). The three tiers of the structure carved out of tight scores at the very low end may not produce results in the expected direction. Thus the application of the world system theory for international communication research certainly needs greater sophistication.

Galtung (1971) introduced the concept of 'bridgeheads' to identify the elite that constitutes the center in a Periphery country. He theorized that these bridgeheads had more in common with the center in the Center countries than with the periphery in the Periphery countries. Massey and Levy's (1999) study of interactivity related to Asia's English-language dailies on the Web. In short, they did not take into account that Web access to the English-language press was the privilege of the bridgeheads – the center – in the Periphery countries. This could be another explanation why their null hypotheses prevailed.

Any type of core-periphery classification will suffer from some degree of arbitrariness because no one can precisely determine the cutting points that shift some economies from one category to the next. Moreover, the indicators we chose to construct the capital accumulation index – the overall GNP and the share of exports – tend to place richer small economies, such as Bahrain, Cyprus, Qatar, Oman or Brunei Darussalam, in the periphery. The exceptions are entrepot economies like Hong Kong and Singapore, which the WEF continues to place at the top of world competitiveness. A solution may be to analyze the richer smaller economies outside the core-periphery configuration. The WEF's (1999) competitiveness rankings, which place USA second, Japan 14th and Germany 25th, are not suitable for configuring the world's core-periphery structure. UNDP's Human Development Index ranks the USA third, Japan fourth and Germany 14th (after the UK, 10th, and France, 11th). The tripartite division of the HDI – 46 countries in the high HD category, 93 in the medium HD category and 35 in the low HD category – does not appear to parallel the tripartite division of the world system theory. It is more likely that the Core and the Semi-periphery are both in the high HD category.<sup>11</sup>

An essential component of the world system theory is the hegemony-rivalry phenomenon. This is particularly relevant to the analysis of the global communication flow. The interests of the core countries in selected Periphery countries can distort the expected pattern of information flow to and from a regional core-periphery cluster. For instance, the intense commitment the USA and other core countries in the West have in the preservation of Israel makes Israel and its Islamic rivals more newsworthy than their economic power in the world system warrants. This distortion occurs, however, because of the overall economic power of the Center. As Castells (1996: 146) puts it, the Middle East is 'highly dependent on the avatars of the world's geopolitics'. In an attempt to account for such distortion, Hafez (2000) has developed a macro-level political communication framework for analyzing international news coverage.

Hugill (1999) and Fortner (1993) are among those who have examined world communication phenomena within the framework of world system theory. These two authors used Innis's (1950) empire and communications model, which distinguished between Type 1 durable (or heavy) communication media, that allowed cultures to control time, and Type 2 ephemeral (or portable) communication systems, that allowed cultures to control space. Whereas Frank and Gills (1993) saw the possibilities of the world system theory to move away from the Eurocentric mode to a humanocentric mode, Hugill (1999: 16) confined the theory to the 'capitalist world-system only as it has developed over the past 150 years'. He looked at the geopolitics and technologies of the respective communication systems of Britain, imperial Germany and the USA as they struggled for hegemony. Eurocentrism, as well as his implication of capitalism as the superior 'ism', differentiates Hugill from Frank and Gills, who use capitalism in a neutral sense – as the motor force of capital accumulation affecting the world as a single unit. Despite his bias, Hugill (1999: 18) makes a useful assertion: that 'in the period of multipolarity we are now entering', the chosen communication strategy of regional power groupings – e.g. North American Free Trade Association (NAFTA), the EU and Japan-led Asia



– will determine their ability to achieve hegemony. Perhaps we should move away from the country-specific approach to configure the world's core-periphery structure in reference to these economic power blocs.

Castells (1996: 145) describes the 'architecture and geometry of the informational/global economy' as an asymmetrically interdependent phenomenon organized around three major regions – Europe (EU and the European economies affiliated with the Organization for Economic Cooperation and Development), North America (or NAFTA) and the Asian Pacific (Japan and the 'China Circle'). He identifies the G-7 countries as 'the core of the system' because they accounted for 90.5 percent of high-technology manufacturing in the world (in 1990), and also held 80.4 percent of global computing power. Furthermore, he says that an economic hinterland has sprung up around each of the three major regions, with Africa becoming increasingly marginalized in the global economy. Combining these observations of Castells and Hugill, communication scholars can test a global system theory to research the information flow among and within the three regional centers and their respective economic hinterlands. High-technology manufacturing and computing power may serve as the criteria for measuring competitive capital accumulation under informational capitalism, the nerve center of which is the 'global financial networks, and their networks of management', which constitute 'the actual collective capitalist' (Castells, 1998: 363). Informational capitalism is what Tehranian (1999) calls 'informatic imperialism', which, in his view, is bifurcating the globe into the 'high-tech and high-growth centers' and the 'disintegrating peripheries' (Tehranian, 1999: 26).

Servaes (1999) has argued the case for a 'multiplicity paradigm' to explain development in the context of global interdependence of nations within the core-periphery continuum. This approach presumes that no universal model is applicable to explain development, which involves structural changes at multiple levels in the global system. Although Servaes's (1999: 271) contention that 'each society must develop its own development strategy' has great appeal, the interaction of variables associated with the dominant paradigm – urbanization (a process that countries can now skip through teleconnectivity), literacy and education (particularly tertiary education), media participation (now possible at the global level) and political participation – constitutes the foundation of economic development, which ultimately determines a country's position in the world core-periphery continuum. Political, cultural and communication factors are primarily internal determinants of a country's or an economic bloc's capacity to compete in the world material economy – now identified as the global informational economy – through capital accumulation. A development strategy based on factors that clash with the process of capital accumulation inherent in the world/global economy is unlikely to succeed.

Where high-technology production and computing power are likely to determine competitive capital accumulation, as well as the concomitant phenomena of hegemony-rivalry and alternating economic cycles, a development approach must recognize the realities of the world/global system. International communication researchers should address this issue to help policy-makers to stall the proliferation of 'disintegrating peripheries'.

## Notes

This article was originally presented to the International Communication Division of the Association for Education in Journalism and Mass Communication at its annual convention in Phoenix, Arizona, 12 August 2000. The author is grateful to Professor Kurt Kent, University of Florida, and to the anonymous reviewers for suggestions to improve this article.

1. A reviewer of this article questioned the validity of the Freedom House data thus: 'The organization has a long and sordid historical connection with the U.S. press lobby in whose interest it is to constantly find the U.S. press as the "free-est" in the world. Freedom House almost single handedly led the charge in the '70s and '80s against a call from developing countries for a more equitable global distribution of communication resources. Freedom House is a political organization, not an independent evaluator of "press freedom".' In the 2000 survey, Freedom House ranked 14 countries ahead of the USA. The reviewer's reference may be to the World Press Freedom Committee. The author has not found an alternative set of press freedom data considered less controversial.
2. Chitty (2000: 14) has criticized the Wallerstein model because it emphasizes 'the role of economics in world structuration and social change at the expense of culture' and because 'it is not a model that is consistent with postmodern conditions'. Chitty has proposed what he calls a 'matrix model' – a political economy/cultural framework.
3. Stevenson (1994: 317) refers to 'the development of printed language' and 'the development of printing with moveable type' as the first and second communication revolutions. The first revolution 'ended the power monopoly of the elders who preserved and passed on the oral sagas and poems that contained the accumulated knowledge of preliterate tribes', while the second revolution 'challenged the authority of church and crown and allowed the flowering of vernacular languages and, eventually, democracy' (Stevenson, 1994: 262).
4. WTO (1999) reported that in 1998, Hong Kong, South Korea, Singapore and Taiwan were respectively the 11th, 12th, 14th and 15th largest exporters in the world merchandise trade. In world trade in commercial services, Hong Kong ranked 10th; South Korea, 15th; Singapore, 17th; and Taiwan, 19th.
5. Some researchers have taken the view that the classification of countries as core, semi-peripheral or peripheral in the world system depended 'on the flows involved' based on 'a priori substantive criteria' (Chang, 1998: 539).
6. See World Bank (2000: 362) for more details.
7. Such an index may give the top score of 100 to the USA and proportionately allocate scores for the other countries. I tried the formula  $\{[(\%GNP \times 55\%) + (\%Exports \times 45\%)] \times 10\}$ , which gave the USA a score of 151. Making 151 equivalent to 100, the scores of other countries were multiplied by 0.66 (= 100/151).
8. In comparison, the 15-member European Union, which has a population of 375 million, exported merchandise and commercial services valued at US\$2.7 trillion – or 41.6 percent of the world total – in 1998.
9. The 1998 GNP for Cyprus, Kuwait, Qatar and four other economies – Afghanistan, Iraq, Oman and Palestine – were not available in the World Bank database.
10. In 1997, the US Congress approved US\$13 billion in foreign aid, out of which US\$3 billion went to Israel and US\$2.1 billion to Egypt. In 1999, Congress approved US\$15.3 billion in foreign aid, but US\$1.8 billion of that increase was earmarked for the Middle East peace process.
11. Castells (1996: 108) makes the point that although the global economy is deeply asymmetric, attempts to compartmentalize it into a center, semi-periphery and a periphery are 'simplistic' because 'there are several 'centers' and several 'peripheries' and because both North and South are so internally diversified as to make little analytical sense of using these categories'. However, Chang (1998) identified core countries as the USA, EU (as a single unit), UK, Germany, France, Japan and Canada. His semi-peripheral countries comprised the other Western European countries, Russia, China and 'relatively advanced economies' such as South Korea, Singapore, Malaysia, Argentina, Mexico and Egypt. These, he claimed, were 'consistent with common classifications' (Chang, 1998: 539).

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