

Mapping world cultures: Cluster formation, sources and implications

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Abstract

This paper extends and builds on Ronen and Shenkar's synthesized cultural clustering of countries based on similarity and dissimilarity in work-related attitudes. The new map uses an updated dataset, and expands coverage to world areas that were non-accessible at the time. Cluster boundaries are drawn empirically rather than intuitively, and the plot obtained is triple nested, indicating three levels of similarity across given country pairs. Also delineated are cluster adjacency and cluster cohesiveness, which vary from the highly cohesive Arab and Anglo clusters to the least cohesive Confucian and Far Eastern clusters. Exploring predictors of cluster formation, we draw on the ecocultural perspective and other inputs, and examine the combined role of language, religion, and geography in generating cluster formation. We find that these forces play a prominent yet complex role: for instance, the religion and language brought by the Spanish fail to create a singular, cohesive Latin American cluster akin to the Anglo cluster. The role of economic variables is similarly considered. Finally, comparing the current map with that of 1985, we find strong support for the divergence (vs convergence) argument. Implications for international business are delineated.

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INTRODUCTION

Manifestations of a "flat world" notwithstanding, the planet remains divided by various fault lines, not the least of which is culture. Huntington (1993: 413; 1997) claimed that differences among cultures, or civilizations, are, and will likely remain, the most powerful force dividing the human race. In international business, national culture is a significant determinant of the global environment in which multinational enterprises (MNEs) operate, driving strategic and operational decisions on globalization vs localization (Bartlett & Ghoshal, 2003), and is key to the convergence vs divergence debate (Webber, 1969). Since this dichotomy represents ideal types unlikely to exist in the real world (Weber, 1947), midpoints straddling the two poles are called for. While terms such as "semiglobalization" (Ghemawat, 2003) or "regional MNEs" (Rugman, 2005) are conceptually helpful, they do not draw empirical boundaries, a vital step in seeking the elusive "intermediate degree of globalization" (Asmussen, 2009). That endeavor requires combining "an openness to and awareness of diversity across

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cultures and markets with propensity and ability to synthesize across" (Evans, Pucik, & Barsoux, 2002; Gupta & Govindarajan, 2002: 117).

Meaningful regional groupings have been derived from the study of nations based on relative similarity in history and religion (Huntington, 1993, 1997); in business, commonality was defined in terms of work-related values, beliefs, and attitudes associated with national culture (Gupta, Hanges, & Dorfman, 2002; Peterson & Smith, 2008). Culture and cultural differences have been found to correlate with the antecedents, processes, and outcomes of macro issues (e.g., cross-border alliances and mergers/acquisitions) and micro issues (e.g., negotiations, leadership, and motivation), such as the relation between job satisfaction and performance (Chakrabarti, Gupta-Mukherjee, & Jayaraman, 2009; Gomez-Mejia & Palich, 1997; Gould & Grein, 2009; Javidan & House, 2001; Ng, Sorensen, & Yim, 2009; Oddou, Osland, & Blakeney, 2009). Cultural differences have also been found to correlate with capital structure, finance, and investment flow (Chui, Lloyd, & Kwok, 2002; Li, Qiu, & Wan., 2011; Siegel, Licht, & Schwartz, 2011).

The present paper reports the results of a synthesis of major culture clustering studies published since the Ronen and Shenkar (1985) article. The study is aimed at rigorously deriving a single, synthesized cluster map broad in scope and rich in information, displaying an innovative, three-layered, nested plot with empirical rather than intuitively drawn boundaries, and empirical measures of intra-cluster cohesiveness and inter-cluster relative adjacency. A second purpose is to shed light on context variables that underlie cluster formation, as guided by the ecocultural perspective (e.g., Berry, 1976, 2001; Georgas, Van de Vijver, & Berry, 2004) and other inputs. A third aim is to leverage the two data points to investigate cluster membership longitudinally, contributing to the convergence vs divergence debate. A final purpose is to embed cultural clustering in extant theoretical frameworks, leading to theory development.

CULTURE AND NATIONAL IDENTITY

Culture is a shared way of life of a group of socially interacting people, transmitted from one generation to the next via acculturation and socialization processes that distinguish one group's members from others (Berry & Pootinga, 2006; Hofstede & Bond, 1988). In management, culture has been defined in terms of values, beliefs, norms, attitudes, and behavior propensities that are used to develop

cultural taxonomies (Javidan, House, Dorfman, Hanges, & de Luque, 2006; Ronen & Shenkar, 1985). Recognized as a crucial organizational variable (Cavusgil, Kiyak, & Yenyurt, 2004; Gould & Grein, 2009; Leung, Bhagat, Buchan, Erez, & Gibson, 2005), culture remains an elusive construct, the complex, evolved product of multiple and diverse elements, such as geographic, historical, religious, economic (Peterson & Smith, 2008), and ideological (Ralston, Holt, Terpstra, & Kai-Cheng, 1997).

Country clustering can be traced to the concept of "families of nations" rooted in political science, sociology, and law (Castles & Flood, 1991; Glendon, 1987). In management, country clustering emerged with the seminal work of Haire, Ghiselli, and Porter (1966), followed by Sirota and Greenwood (1971), Ronen and Kraut (1977), Hofstede (1980, 1991), Schwartz (1999), Smith et al. (2002), and GLOBE (House, Hanges, Javidan, Dorfman, & Gupta, 2004), who grouped countries based on the relative similarity of employee attitudes and behavior. Clustering solutions based on work-related values appear in the synthesis of Ronen and Shenkar (1985), but that map is now dated and missing key regions, for example China, that could not be accessed at the time. Also, statistical techniques available at the time did not permit rigorous investigation of topics of theoretical and practical significance, such as nested cluster formation, cohesiveness, and adjacency - leaving them open to intuitive if not speculative or tautological interpretation. Given that "understanding and coordinating the different cultural values would be a more beneficial strategy than trying to force-fit them into a single corporate culture" (Ralston et al., 1997: 202), it is vital to take stock of cultural variations as well as dwell on their underlying sources and repercussions.

Empirical evidence shows variation in cultural values to be both systematic (Hangs & Dickson, 2006; House et al., 2004; Inglehart & Baker, 2000; Smith, Peterson, & Thomas, 2008) and tied to workplace behaviors, attitudes, and outcomes (e.g., Kirkman, Lowe, & Gibson, 2006; Schwartz, 1992, 1994; Trompenaars, 1994) such as organizational climate (e.g., Schneider, 1990; van de Vliert, 2008), directing vs coaching preference (e.g., Brodbeck et al., 2000; Zander, 2005), and participation (e.g., Smith, 1997). Variations have been shown across regions and hemispheres: for example, Zander (2005) found that southern Europeans prefer directing while northern Europeans prefer coaching; Smith (1997) found that southern Europeans endorse participation and equality, whereas their

northern European brethren prefer hierarchy and loyal involvement; and Brodbeck et al. (2000) found a gradient scale of interpersonal directness from southern to northern European countries. However, to progress beyond the dichotomy of cultural universalism or a "flat world" (Friedman, 2005), and the cultural variation embedded in the "clash of civilizations" view (Huntington, 1993, 1997), it is vital to search for middle ground - that is, examine how countries group together based on their relative similarity (Gupta et al., 2002; Peterson & Smith, 2008).

In a world where borders define countries, the impact of national culture is highly pertinent to the understanding of organization behavior (Leung et al., 2005; Ronen, 1986). The very existence of the state encourages homogenization of cultural elements (Cavusgil et al., 2004; Gould & Grein, 2009; Hofstede, 1980, 2001; House et al., 2004; Javidan et al., 2006; Ronen & Shenkar, 1985; Smith et al., 2008; Tang & Koveos, 2008; Tweed, Conway, & Ryder, 1999). Political, economic, social, and regulative institutions define the power of the nation-state as a cultural delimiter, as confirmed by neo-institutional and functional theories (Peterson & Smith, 2008). These institutions, which include socializing agents such as schools, interact with the cultural milieu to form unique value systems that distinguish between countries (Conway, Ryder, Tweed, & Sokol, 2001; Gelfand, Erez, & Aycan, 2007). National governments enact workplace laws and provide the base for MNE operation at home and abroad, inclusive of cultural content (Shenkar, Luo, & Yeheskel, 2008).

Corporate culture can soften and attenuate, but not eliminate, the overarching impact of national culture (Adler, 1997; Newman & Nollen, 1996; Pearce & Osmond, 1999): Kraut and Ronen (1975: 676) found that "country is a relatively powerful predictor of performance ratings, suggesting cross-national differences in management style"; IBM, known for a strong corporate culture, revealed major cultural differences across national subsidiaries (Hofstede, 1980); and corporate cultural differences were shown to be anchored in national culture in cross-border mergers (Weber, Shenkar, & Raveh, 1996). Others found corporate practices incongruent with national culture less likely to yield high performance (Denison & Mishra, 1995; Erez & Earley, 1993; Leung et al., 2005; Newman & Nollen, 1996). Where some researchers distinguish individual self-perception from cultural characteristics (Kolstad & Yorpestad, 2009), we view individual psychological

characteristics adaptive to their cultural context, and assume that individual preferences are generalizable to broader membership (Javidan et al., 2006; Leung et al., 2005).

CLUSTERING AND THEORY DEVELOPMENT

Identifying reliable dimensions of cultural variation helps researchers select cultural groups for study on an *a priori* basis, according to their positioning on relevant dimensions (Bond, 1988; Leung, Bond, Carment, Krishnan, & Liebrand, 1990). Clusters can guide cross-cultural sampling, since "judicious sampling within and across societal clusters can test potential boundary conditions for management theories and interventions" (Gupta et al., 2002: 11). Comparing two (Fischer & Smith, 2004; Wade-Benzoni, Brett, Tenbrunsel, Okumura, Moore, & Bazerman, 2002), three (Roe, Zinovieva, Dienes, & Ten Horn, 2000; Tinsley, 1998), four (Glazer & Beehr, 2005; Price, Hall, van den Bos, Hunton, Lovett, & Tippett, 2001), or more countries, studies show that cluster affiliation enables prediction, such as of member attitudes. Clustering can avoid biases in measuring cultural differences such as those endemic to the "cultural distance" construct - the erroneous additive assumption, for example (Shenkar, 2001).

Clustering is, however, more than a methodological device; it is a vital tool for theory development (Dorfman, Howell, Hibino, Lee, Tate, & Bautista, 1997; Ronen & Shenkar, 1985). At its core, clustering performs an ordering of entities into groups or classes, assumed to be relatively homogeneous, yielding a classification that constitutes a complex theoretical statement, and setting a foundation for sense-making, reasoning, and conceptualization. Clustering therefore requires definition, delineation, and testing of construct boundaries, transforming the clustering process and outcome into a theory-building tool (Bailey, 1994; Doty & Glick, 1994).

In this paper, we engage in what Rich (1992: 768) calls "evolutionary theorizing" - that is, "a procedure that works backward from the taxonomy; researchers look into the past for explanations of the present reality" - in order to develop "a classification scheme that is used not only to store and order complex data but also to build upon a meaningful theory that attempts to produce answers to questions of diversity and homogeneity". Taking a phyletic approach, we produce a classification that is genotype-based - that is, provides "both natural groupings and an explanation of such groupings" (Rich, 1992: 762). This we do by cross-referencing context variables from the ecocultural framework,

which are examined for their ability to predict cluster formation. Consistent with the evolutionary approach is the nesting procedure; it too is not merely a methodological device but a way to theorize regarding organizational types that builds on the biological concept of species groupings (Rich, 1992; Sneath & Sokal, 1973; Warriner, 1984). Georgas and Berry (1995) concluded that cluster analysis is the best method to investigate concepts such as dimensions of nations, which are so complex and undifferentiated, and composed of so many inter-related variables, that a clear factor solution is virtually impossible.

The Functions of Clustering

Properly construed, the functions of clustering - to name, display, summarize, predict, and require explanation (Hartigan, 1975) - are theory enabled. When a label denotes a characteristic we assume to have produced commonality across countries, as in the Confucian cluster, naming becomes a theoretical statement. This is amplified when context variables are used to predict and interpret commonalities. The display function makes visible the overall variation pattern, augmented here by cluster adjacency data. The summary function achieves scientific parsimony, and enables a synthesis across a diverse set of dimensions; here, this is supplemented by the calculation of three cluster levels, with nested parsimony degrees. The predictive function (Glazer & Beehr, 2005) enables cluster placement of countries not yet studied, based on co-variation in context variables; in our study, this is supported by the large number of sampled countries, the enhanced reliability from replicate pairings, and the inclusion of multiple, theory-driven predictors. Finally, to require explanation is among the most theoretically significant clustering functions, for example implying a need to interpret order relations among entities (Ronen, Kraut, Lingo, & Aranya, 1979). It is hence vital that group boundaries be arrived at rigorously rather than intuitively.

Clustering and Theorizing

Though seldom leveraged as such, cultural clustering has the potential to make a substantial contribution to current management theories. Take a stalwart of foreign direct investment (FDI), transaction cost economics (Williamson, 1975, 1985). Country clusters can be seen to provide a midway post between the contract enforcement available at the country level and the "anarchy" by which political scientists denote the absence of regulative enforcement in the

international environment. While clusters do not represent political and institutional entities *per se*, the commonalities they embed contain key elements facilitating in-cluster transactions, namely the three institutional pillars (Scott, 2001): regulative (e.g., La Porta, Lopez-de-Silanes, Shleifer, & Vishny, 1998), normative (e.g., Whitley, 1992), and cognitive (e.g., Xu & Shenkar, 2001). These commonalities lower intra-cluster transaction cost, while inter-cluster transaction barriers are captured by cluster adjacencies aided by context variables, such as language-rooted coding and decoding barriers (Gong, Shenkar, Luo, & Nyaw, 2001; Ronen, 1986). Clusters can hence be seen as networks that mitigate uncertainty and opportunism, impacting on entry mode and contracting forms.

Rugman (2005) argues that the vast majority of MNEs are regional: that is, most of their revenues come from their region of origin; a few are bi-regional, and still fewer are truly global. This is because MNEs' capabilities are both firm- and country-specific, providing advantages that are valid within but not outside a triad region where intraregional trade and investment face lower barriers thanks to treaty provisions. Rugman's (2001) designation of regions is based on Ohmae's (1985) "triads": North America, the European Union (EU), and Asia. He discounts intraregional barriers, including culture, proposing that "cultural and political differences among members of a single triad may remain, but these will mostly be less significant than across triad regions" (Rugman, 2005: 63). Rugman contends that firm-specific advantages can be deployed in a triad region, especially "if the countries involved are subject to a low cultural, administrative, geographic and economic distance among themselves" (2005: 230).

This study extends Rugman's framework. First, our clustering covers areas beyond traditional triad territory, such as the Middle East and Africa, thus broadening the scope of regional theories. Second, it provides an alternative regional division based on empirically drawn boundaries, driven only partially by triad-like geography. Third, consistent with Rugman's implicitly nested view, it provides a map that allows for the finer discrimination in the applicability of firm- and country-specific advantage. Clustering captures the challenges involved in reaching across a region better than traditional distance measures do (Ghemawat, 2001, 2003), and, by providing a measure of inter-cluster differences, we permit a better estimate of the difficulties involved in shifting from a regional to a bi-regional

and eventually a global MNE. Finally, clustering may partially answer the fundamental question posed by Osegowitsch and Sammartino (2007: 46), namely "why, in an age of purported globalization, many of the world's largest firms appear to have barely ventured beyond the confines of their home region", and, in so doing, contribute to the still lacking systematic theory explaining regionalization (Banalieva & Dhanaraj, 2013).

Given measures of nesting and cohesiveness, clustering can be used to better test the internationalization thesis (Johanson & Vahlne, 1977), while longitudinal cluster data can test possible change in its applicability (Johanson & Vahlne, 2009), especially given shifts in FDI patterns (Dau, 2013). And, consistent with Zeng, Shenkar, Lee, and Song (2013), who have found that MNEs are more likely to engage in erroneous learning when new to a cluster, the novel, nested clustering can indicate the precise level at which effective learning dissipates, contributing to knowledge-based theories. Clustering can also inform cultural interaction and its emanating friction, a substitute for outmoded ideas of cultural distance (Shenkar, 2001; Shenkar et al., 2008): for instance, stereotypes rooted in national social categorization that impact on perceptions of trust (Ertug, Cuyper, Noorderhaven, & Bensaou, 2013) are likely to correlate with cluster affiliation. Micro-theory development can also be informed: for example, in contingency leadership theory (Fiedler, 1967), operation across clusters can be taken to constitute an ill-structured task, impacting on the requisite leadership profile. Clustering can similarly inform motivational (Erez & Earley, 1993; Ronen, 2001) and perception theories (e.g., Festinger, Schacter, & Back, 1950).

PREDICTING CLUSTER FORMATION: THE ECOCULTURAL FRAMEWORK

Culture-clustering studies have noted potential antecedents such as language, religion, history, and institutions (Brodbeck et al., 2000; Cavusgil et al., 2004; Gupta et al., 2002; Hofstede, 2001; House et al., 2004; Huntington, 1993; Peterson & Smith, 2008; Tang & Koveos, 2008), but this was rarely done systematically. To do that, we follow Berry (Berry, 1976; Berry, Poortinga, Segall, & Dasen, 2002; Georgas et al., 2004), whose ecocultural perspective sees culture as an evolving adaptation to ecological and sociopolitical influences, and individual psychological characteristics in a given population as adaptive to their cultural context,

as well as to broader ecological and sociopolitical influence (Leung et al., 2005: 362). Given the impracticality of measuring all ecocultural variables for each member of our clusters, we focus on three, namely religion, language, and geography. First, these variables represent the ecological (geography) and the sociopolitical (religion and language) aspects of the framework, which Georgas and Berry (1995) see as contextual as opposed to process-related and outcome (biological and cultural adaptation/transmission to members) variables. Second, the three can be considered "core variables", since they are correlated with a variety of other context variables: for example, geography correlates with climate and population density. Third, taken together, the three form a diffusion model: impacted by ecology, cultures spread geographically, for example via population flows (Huntington, 1993; Inglehart & Baker, 2000), linguistically, and via religion, such as the spread of Islam to South Asia. Fourth, language and religion are often taken to reflect national context. For example, Georgas et al. (2004: 91) see religion as "a critical dimension in the sociocultural framework", and report that "religions were found to be differentially related to psychological variables". Finally, language and religion are more than culture correlates. Jain (1996) offers religion as a surrogate for culture, and Simon (1996) makes a similar assertion *vis-a-vis* language. While we view culture as a distinct construct, we agree with the role of these two variables in cultural formation, which we discuss further below.

Religion

Religion is defined as "service and worship of God or the supernatural" (Merriam-Webster).¹ It refers to all kinds of behaviors by people in reference to what they think is a transcendent reality (Saroglou & Cohen, 2011). Religion is a form of culture, as it accounts for much variation in transmitted norms, values, beliefs, and behaviors (Cohen, 2009). Following Saroglou and Cohen (2011), religion may be part of culture, constitute culture, include and transcend culture, be influenced by culture, shape culture, or interact with culture in influencing cognitions and emotions; however, religion does not equal culture, and culture does not necessarily include religion. Religion and culture are distinct, but include partially overlapping aspects of human cognition, emotion, norms, and social behavior (Saroglou & Cohen, 2011). Cultures also differ in what it means to be religious (McDaniel & Burnett, 1990). In this paper, we examine religion as an input and predictor of

cultural clustering, measured in terms of the proportional number of adherents, fully recognizing that this does not capture the complexity and varying interpretations of religion or religiosity.

Language

Language is often used as an indicator for cultural affiliation. Linguistic studies highlight not only differences in pronunciation, vocabulary, or grammar, but also "cultures of speaking": cultural power distance, for instance, may be reflected in whether a person is addressed by a first name, surname, or title. Language is related to an array of cultural values and artifacts. The linguistic relativity principle, by which language affects how members of a culture conceptualize the world and impacts on cognitive and behavioral features, dominated linguistic discourse until it was discredited in 1969 (Berlin & Kay, 1969); yet the effects of differences in linguistic categorization on cognition were empirically supported later on (e.g., Lakoff, 1987; Lucy, 1997).

Linguistic relativity effects can be found in spatial cognition, in color perception, and in the social use of language (Koerner, 2000). Linguistic metaphors are indicative of the way speakers think, and while some may be common to most languages, as they are based on general human experience, other metaphors are culture-specific, reflecting the mental categories of that culture (Lakoff, 1987). Today, most linguists espouse linguistic relativity, holding that language influences, rather than determines, certain cognitive processes, and explore the ways in which and extent to which language impacts on thought (Koerner, 2000). Current studies of linguistic relativity examine the interface between thought, language and culture, and the degree and kind of interrelatedness or influence. Diamond (2005) notes that while China had a single writing system from the dawn of literacy, Europe boasts 45 languages. This is aligned with a cultural difference: China had overall cultural unity for 2000 years, whereas Europe is splintered into multiple cultural entities. A key input to culture (Fishman, 1982), language is examined as a predictor of cultural clustering.

Geography

Culture represents shared values held by groups of people living in certain locations, also culturally affected by spatial variations in resources availability (Shelley & Carke, 1994), and by other factors such as population density. This is consistent with cultural geography, a subset of human geography that

studies the geography of culture (Smith & Norwine, 2009). Dau (2013) argues that research linking the strategy and composition of MNEs to their position in geographic space has been limited, although attempts at connecting the two are evident (e.g., Ghemawat, 2001, 2003). Cultural clusters can play a role in forming the link, as they can be predicted from three geographic perspectives:

- (1) geographic continua (conesponds to continents);
- (2) geographic span; and
- (3) average distance from the equator (e.g., investigation by Kwon and Shan (2012) of work values in cold and warm regions).

Yet, while geography intuitively seems a potent predictor of clusters, the relation between the two is not as simple as it may look at first sight.

CONVERGENCE VS DIVERGENCE

Convergence vs divergence (Webber, 1969) remains a key debate in international business and the social sciences (Guillen, 2001). Convergence pressures are associated with globalization, as goods, services, capital, know-how, and people move across borders (Govindarajan & Gupta, 2001), facilitated by political and economic integration, trade and FDI, and international organizations. Advances in communication and transportation homogenize consumption patterns. Education and training are transformed by talent migration and idea dissemination. Convergence proponents claim that these trends erode cultural diversity (Leung et al., 2005), obscure local identities, and increase multiculturalism (Gelfand et al., 2007). As managers are exposed to similar influences, from attending an MBA program to serving in the same MNE, they presumably embrace values common to Western capitalism (Ralston et al., 1997), such as individualism, and concern for individual rights (Peterson & Smith, 2008).

Divergence proponents counter that not even a tenth of the world's population are truly "globalized" (Leung et al., 2005). Huntington (1993, 1997), who hypothesizes that culture will remain the main fault line dividing humankind, talks sarcastically about a "Davos culture", after the Swiss gathering of world luminaries that is anything but representative of the world at large. The vast majority of MNEs remain regional (Rugman, 2005), confirming that national diversity endures. An era of unprecedented globalization saw the disintegration of multicultural entities (the Soviet Union, Yugoslavia) and the

founding of new countries (e.g., Kosovo) along cultural or ethnic lines. Europe, parsed into 25 countries up to the 1980s, now comprises some 40 countries with 45 official languages (Brodbeck et al., 2000; Diamond, 2005). Conflicts in Spain and Turkey show the aspiration of ethnic groups to maintain their uniqueness. Immigration proceeds, but research shows that at least the first generation remains culturally separate in the new country. Technology, too, has the power not only to converge, but also to sustain cultural divergence (Hofstede, 2001; Leung et al., 2005). Hence convergence is improbable or, at the very least, will take generations to set in (Leung et al., 2005; Peterson & Smith, 2008; Ralston et al., 1997). Enhanced cultural interaction may intensify cultural consciousness and surface animosities (Greider, 1997). It is hence possible that divergence will *increase* over time as cultural groups react to perceived infringement, and ethnic groups gain political expression. Or, if both convergence and divergence occur, "crossvergence", a meeting of the two that drives unique value systems as well as commonalities (Ralston, Gustafson, Cheung, & Terpstra, 1993; Ralston et al., 1997) may result.

While we do not seek to resolve the convergence vs divergence debate, we hope to contribute to a discussion that has been phrased so far in absolutist, almost ideological terms. This paper tests a key aspect of cultural commonality - that is, the positioning of countries in relation to each other's culture. Whether this positioning has changed, or not, in 30 years of globalization should provide valuable insights as to whether we should look forward to a future of a flat or a jagged planet.

METHOD

Sample and Data

To be included in our analysis, studies had to:

- (1) utilize work-related values/attitudes, on the basis of which they had to
- (2) empirically yield a clustering solution derived from
- (3) analyzed raw data;
- (4) survey practicing or potential employees (not students);²
- (5) include multiple regions and over 15 countries,
- (6) be published or updated between 1985 and 2005, and appear in scholarly outlets.

Ten studies met the selection criteria:³ Brodbeck et al. (2000), Foley (1992), GLOBE (House et al.,

2004), Hofstede (2001), Inglehart and Baker (2000),⁴ Merritt (2000), Schwartz (1999),⁴ Smith et al. (2002),⁴ Trompenaars (1994)⁵ as reanalyzed by Smith et al. (Smith, Trompenaars, & Dugan, 1995, and Smith, Dugan, & Trompenaars, 1996; henceforth "Trompenaars' database"), and Zander (2005). Ronen and Shenkar (1985) was not based on original raw data, and was used to represent all pre-1985 studies.

All dimensions are rooted in the field of organization behavior, and are assumed to hail from the same "world of content" (Guttman, 1968). They also partially overlap: for example, the extent to which unequal power is legitimized is manifested in dimensions such as *Power distance* (GLOBE, Hofstede, Merritt), *Hierarchy-egalitarianism* (Schwartz), and *Universalism-particularism* (Trompenaars). Risk tendency is seen in dimensions such as *Uncertainty avoidance* (GLOBE, Hofstede, Merritt). The focus on individual or group is reflected in dimensions such as *Autonomy* (Brodbeck et al.), *Societal institutional collectivism* (GLOBE), Group cohesiveness, identification with managers or with workgroup (Foley), *Individualism-collectivism* (Hofstede, Merritt, Trompenaars), Traditional/Secular-rational values (Inglehart & Baker), *Conservatism-autonomy* (Schwartz), and *Individual-Social* (Trompenaars). Gender role is in dimensions such as *Humane orientation* (GLOBE, Brodbeck et al.), *Gender egalitarianism* (GLOBE), *Assertiveness* (GLOBE), and *Masculinity-femininity* (Hofstede, Merritt). Mastering natural resources is seen in dimensions such as *Harmony-mastery* (Schwartz) and *Personal-political* (Trompenaars). Leadership is in Management leadership (Foley), *Positive proud-making feedback*, *Achievement reviewing* (Zander), and *Charismatic/Value-based, Participative* (Brodbeck et al.). Decision-making is in *Reliance on Vertical Sources for Guidance* (Smith et al.), *Achievement-ascription* (Trompenaars), *General communication*, *Personal communication* (Zander) and *Survival/Self-expression* values (Inglehart & Baker).

Table 1 summarizes the data published between 1992 and 2005 by the input studies (114 countries) as well as the data subset analyzed in this paper (70 countries - see below): sample characteristics (sample size per country, industry, respondent level/function/demographics) and input cluster statistics (average/minimum/median/maximum size). Samples vary in size from 6000+ to 91,000+, ranging per country from 27 to 11,834 individuals. With two exceptions, sampled industries are diverse. Respondents include both managerial and non-managerial professionals, as well as managers in

Table 1 Characteristics of the samples appearing in each of the input studies

Study	Year data were collected	Sample size	Numbers of countries and clusters ^a				Sample size per country	Industries represented
			114 countries		70 countries			
			Countries	Clusters	Countries	Clusters		
Brodbeck et al. (2000) Foley (1992)	1995–1997 Not reported	6052 14,752	22 23	10 11	21 23	10 11	53–895 62–6500	Food, finance, and telecommunication industries Two large multinational organizations; varied products
GLOBE (2004) Hofstede (2001)	1995–1997 1967–1969, 1971–1973, 1973–1979	17,370 72,215	61 53	10 12	52 48	10 12	27–1790 58–11,384	Food, finance, and telecommunication industries High-tech, manufacturing, marketing, and services
Inglehart & Baker (2000)	1990–1991, 1995–1998	~91,000	65	11	50	11	Average = 1400	Not specified
Merritt (2000)	1993–1997	9417	19	7	19	7	39–5139	Commercial aviation
Schwartz (1999)	1988–1993	9220	44	7	40	7	89–604	Urban school teachers
Smith et al. (2002)	Not reported	7091	53	14	48	12	38–342	Varied industries; both private and public sectors
Trompenaars' database (Smith et al., 1995, 1996)	1983–1993	Over 9000	43	18	37	15	29–1292	Not specified
Zander (2005)	1992–1993	13,799	16	6	16	6	48–7903	24 companies in different industries owned by one Swedish multinational conglomerate
Ronen & Shenkar (1985) ^b	N/A	N/A	46	12	41	12	N/A	Varied
Study	Organizational level/function	Background info given on participants	Questionnaire translation	Mean size	Median size	Min. Size	Max. Size	Characteristics of analyzed clusters
Brodbeck et al. (2000)	Middle managers	Full-time national employees	Translation and back-translation by country co-investigator or by professional translator	2.1	2	1	4	
Foley (1992)	Non-managerial positions in homogeneous local cultural groups	Only country natives included	Translation and back-translation	2.1	2	1	4	
GLOBE (2004)	Middle managers	75% males, full-time national employees	Translated by country co-investigator or by professional translator	5.2	6	2	10	
Hofstede (2001)	Managers, sales representatives, engineers, technicians, administrators	Age and gender controlled, but not reported; employees are exclusively nationals	Translated by professional; back-translation used only exceptionally	4.0	4.5	1	6	
Inglehart & Baker (2000)	Not specified	Not specified	Not specified	5.6	6	2	10	

Merritt (2000)	Pilots ranked: captain, first officer, second officer	All males; cultural and national affiliation of respondents controlled	In six countries (30%) translation and back-translation	2.7	3	1	5
Schwartz (1999)	School teachers	From dominant cultural group of each nation; samples matched on critical characteristics	Translated by competent bilinguals	5.7	5	1	11
Smith et al. (2002)	Middle managers, most in training programs	Not reported	Translated by competent bilinguals who were either affiliates or supervised by them	4.0	3.5	1	7
Trompenaars' database (Smith et al., 1995, 1996)	Mostly managerial or professional status; all participants in training courses	Employees of various managerial or professional positions; gender percentage reported	Mostly used translation and back-translation; alternatively, translated by competent bilinguals	4.2	2	1	11
Zander (2005)	National managers and professional employees	Diverse work positions, ages, and genders	Translation by authorized persons and back-translation	2.7	2	1	5
Ronen & Shenkar (1985) ^b	Varied	N/A	N/A	3.4	3	1	7

^aFor an explanation of the 114 and 70 countries see the "Analysis" section.

^bAlthough this study is not a primary field study as all other input studies are, we add relevant obtainable data of this study to the table for the sake of convenience.

training programs. Age, gender, and nationality were controlled in some instances. Translation of questionnaires was done by bilingual professionals or those local to the host country. Back-translation was reported by six studies.

Respondents were surveyed in 114 countries, ranging from 16 to 65 countries per study, yielding a range of 6-18 clusters.⁶ These clusters were the input of our analysis. While countries in the input studies were clustered based on average country ratings on the dimensions employed in each, there was no need to use the scores directly, since the contribution was reflected in the clustering solution. We included only countries still in existence that appeared in at least two input studies, since no consensus can be inferred from single occurrences; 44 countries were omitted, leaving a total of 70, somewhat affecting the number of resultant clusters of each input study. Input studies' clusters are detailed in Table 2.

Procedure and Analysis

The 70 countries analyzed were clustered hierarchically, permitting evaluation of clustering techniques and reproducibility of the resultant clusters (Fowlkes & Mallows, 1983; McShane, Radmacher, Freidlin, Yu, Li, & Simon, 2002; Rand, 1971), and enabling comparison of dual clustering of the same data. Similarity of countries in the cluster analysis is denned using a distance metric as follows. When a single pair of countries is considered, p is the proportion of studies in which the two countries occur in different clusters in relation to the number of all studies that considered that pair. Calculating the dissimilarity measure between larger groups (i.e., composed of more than one country), p is a weighted average of pairwise proportions: every pairing of one country from group C_1 and one from group C_2 is considered, and the pairwise proportions are weighted by the number of studies that considered both members of the pair. Given two groups of countries C_1 and C_2 of size n_1 and n_2 , respectively, p is then represented by the following formula:

$$p = \frac{\sum_{i=1}^{n_1} \sum_{j=1}^{n_2} a_{ij}}{\sum_{i=1}^{n_1} \sum_{j=1}^{n_2} m_{ij}} \quad (1)$$

where a_{ij} is the number of studies in which the i th country from C_1 and j th country from C_2 appear in different clusters, and m_{ij} is the number of studies that consider both the i th country from C_1 and the j th country from C_2 . The bottom of the dendrogram represents the analysis' starting point, with each

Stability analysis: Jack-knifing

We used jack-knifing as another control measure to determine the results' sensitivity to any input study, and assess the stability of our clustering solution. We removed one study at a time and repeated the process of forming clusters on the remaining ten studies, resulting in 11 leave-one-out (aka jack-knifing) dendrograms. We cut each of these dendrograms twice: once at a height that would produce the same number of Consensus clusters as per the full analysis of 11 studies, and once at a height that would produce an equal number of Global clusters as in the full analysis of 11 studies. We then compare each leave-one-out clustering solution with the full clustering solution to test stability.

Sensitivity analysis: Assessing potential bias

One new cluster set was studied more closely, because of potential bias: while we use Hofstede (2001) in the current analysis, Hofstede (1980) was used by Ronen and Shenkar (1985), our representative of all pre-1985 studies. Hofstede's 2001 work offered data from ten new countries and three new regions. To eliminate potential bias, we conducted another analysis, removing both Hofstede and Ronen and Shenkar, and repeated the analysis, aiming to compare it with the resulting clustering of the full analysis. Rand (1971) proposed the r-index as a measure of similarity for two clustering solutions of the same data, indicating the proportion of pairs with the same relation in the two solutions. Here, the r-index is the proportion of country pairs in a specific Consensus or Global cluster that cluster together in each leave-one-out study. In effect, it measures the extent of similarity at the level of individual clusters (McShane et al., 2002). Values for the r-index close to 1 indicate strong similarity, and values close to 0 indicate a lack of similarity. For a singleton (a cluster containing only one country), the r-index is set to 1 if the country remains a singleton in the consensus clustering, and 0 otherwise.

Establishing adjacency: Multidimensional scaling of clusters

To determine cluster adjacency via MDS, we applied the "cmdscale" function in the R statistical package, and confirmed that distances could be measured between each pair. A scree plot determines the number of dimensions included in the MDS analysis. MDS-based adjacency is then used to produce a cultural map in the form of a pie, where each slice represents a cluster, similar to the pie of Ronen and Shenkar (1985).

Cluster cohesiveness

Cluster cohesiveness (p_c) was calculated as the average weighted proportion apart for countries within a given cluster, gauging the extent of member dissimilarity within a cluster.⁷ Similarity between group members breeds cohesiveness, which in turn is assumed to lead to homogeneity in attitudes and behaviors (e.g., Festinger et al., 1950).

Testing convergence vs divergence (cluster membership)

To figure fluctuations in work values and their impact on (dis)similarities of cultural groupings since 1985, we reanalyzed and re-clustered the dataset of nine studies *without* Ronen and Shenkar (1985) and Hofstede (2001), after which we compared the reduced set with 1985 cluster membership. We chose Ronen and Shenkar (1985) as a reference point since it represents all major work-related culture studies published up to that time, is widely used, and is closest in nature to the present "clustering of clustering".

Limitations

Cluster analysis has received a fair share of criticism over the years, with some (e.g., Ketchen & Shook, 1996) arguing that the technique has passed its peak, although this was not apparent in our review. The first criticism is loss of data and richness, as in-group diversity is overlooked; however, although complexity is reduced, data manageability is enhanced (Bailey, 1994; Ball & Hall, 1967; Bijnen, 1973). We contend that insights gained from a parsimonious outlook justify the clustering prism; all science entails parsimony, and as long as it is achieved in an organic and/or theoretically meaningful fashion, it augments understanding of constituent components by showing their commonalities as well as distinctiveness. Further, under our nested clustering, information loss is minimal, and complexity is not sacrificed.

A second criticism is the random selection of dimensions lacking a theoretical foundation; generating clusters where no meaningful groups exist, results may range from inaccurate to misleading (Ketchen & Shook, 1996). However:

- (1) all our variables come from a single, well-defined domain or "world of content" (Guttman, 1968), and hence cannot be said to be random or unrelated;
- (2) we synthesize results of published studies that formed meaningful work-related clusters; and

- (3) we employ two complementing techniques (triangulation), adding reliability to the clustering solution.

Our limitation would rather be that, in choosing studies on the basis of scale and geographic spread, we did not have the luxury of screening them based on adequate dimensional representation, so some dimensions may be overrepresented. Further, we enhance robustness by increasing the number of dimensions "to maximize the likelihood of discovering meaningful differences" (Ketchen & Shook, 1996: 443). "From this perspective, the methodological weaknesses inherent in each particular study are a source of collective strength: dimensions that emerge consistently despite such variations are plainly robust" (Smith et al., 1996: 259).

A third criticism of cluster analysis is that the techniques employed to determine clusters involve visually inspecting a dendrogram, change in agglomeration coefficient, and cubic clustering criterion (a measure of within-cluster homogeneity relative to between-cluster heterogeneity). Cluster analysis provides no statistical test by which results can be objectively evaluated, leaving researchers to apply subjective judgment; in other words, *a priori* theory serves as a non-statistical interpretation tool (Ketchen & Shook, 1996). The GLOBE team, for example, acknowledged some subjective judgment in the first step of the GLOBE clustering (Gupta et al., 2002). Here, however, we use advanced statistical techniques that provide objectivity in key measures such as cluster cohesiveness and adjacency, information that in the past has been unavailable or intuitively driven.

A fourth criticism of clustering is that the "guidance offered by methodological texts is often unclear or even contradictory", and that even where it is clear (such as in relation to the selection of clustering algorithm), research fails to follow it (Ketchen & Shook, 1996). Our research, however, relies on rigorous measures imported from the exact sciences that provide specific guidance, and is consistent with established humanities/social sciences in subjects such as "families of nations", which enhances guidance.

A number of potential limitations are specific to our study. First is the use of different sets of dimensions in the input studies; however, as also argued elsewhere, the dimensions partially overlap, and all come from the same world of content. We see this diversity as *adding* to rigor, especially with the "leave one out" methodology employed below. A second

limitation is that input studies have based their clustering solutions on observed country scores; potential methodological artifacts in observed means may result from non-identical response style, unequal score distribution, and sample (inequivalence (Aycan et al., 2000; van de Vijver & Leung, 1997). Differences in sampling techniques, which may affect results, are at times difficult to interpret and compare. For example, in some cultures, responses tend to be biased in a socially desirable way (Aycan et al., 2000: 205). The values, beliefs, and attitudes in input studies are assumed to be contextually based, and when psychological measures are literally translated, results may be difficult to compare (Schmitt et al., 2007). Still, this is common in cross-cultural research. The same is true for the unequal number of countries in each study, an input that governed the clustering process and its ability to group relevant countries, especially given the use of *relative dissimilarity*. The variance in number of countries among studies created two anomalies. First, the frequency of countries varied; and second, while all continents were represented, some (e.g., Africa) were under-sampled while others were overrepresented. Our 70 countries constitute less than half of the world's countries (the 114 are just above half), and cannot be seen to represent the entire world. They nevertheless represent much of the world economy, and a variety of continents, languages, and religions. In the case of overrepresentation, for example in Europe, the limitation bears a silver lining in that it enabled a finer division of countries within continuous geographic locales (e.g., Brodbeck et al., 2000; Zander, 2005).

RESULTS

Hierarchical Cluster Analysis

Nested view of clusters

The 70 countries in the input dataset were clustered hierarchically, resulting in a tree-like dendrogram showing hierarchical relations among all countries. As earlier explained, and as shown in Figure 1, the dendrogram tree was cut at three heights. First, we cut the tree at the point representing clusters of countries that, on average, appeared together in a single cluster in the input studies at least half the time. We thus cut the tree first at $p=0.5$, producing what we call *Consensus clusters*. Considering all clusters and singletons formed at this point, there is a total of 15 Consensus clusters and six singletons (Nigeria and South Africa, despite falling exactly

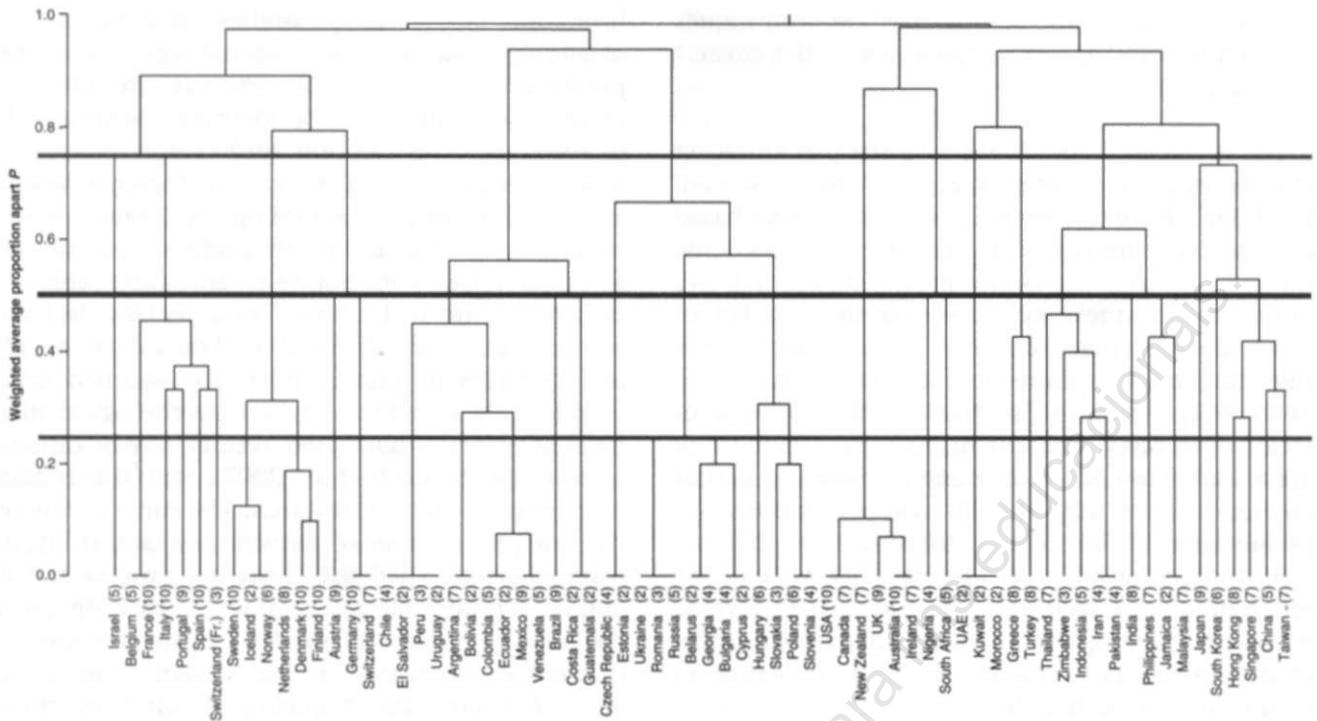


Figure 1 Dendrogram cut at three different points: $p=0.75$, $p=0.5$, and $p=0.25$. Numbers appearing in parentheses represent the number of times each country appeared within the input studies. No country appeared in all 11 input studies.

on $p=0.5$, were considered together as the African cluster, which would otherwise have been devoid of members). Each of the 15 non-singleton clusters is assumed to show a cohesive level of work-related attitudes and behaviors differing from other clusters. Similarly, attitudes and behaviors manifested in singleton countries differ from those exhibited in other Consensus clusters.

To portray three clustering levels, we chose two additional cutting points. At the lower end of the dendrogram, where country congruence is higher, we cut the tree at $p=0.25$. This resulted in 38 clusters that we name *Local*, many of which consist of a single country. While this high number of clusters seems to render the information less practical, 43 of the 70 countries cluster with at least one other country at this high congruency level, and eight of these clusters have three or more (up to seven) members each, some of which are quite significant. At the higher end, we cut the dendrogram at $p=0.75$, obtaining 11 clusters we name *Global*. Pursuing triangulation, these clusters were also reproduced via MDS of countries, available upon request. The level of Global clusters is further highlighted through the stability of Consensus clusters. Excluding singletons, seven clusters collapse into three, and *eight clusters remain unchanged*. The two

Latin American Consensus clusters collapse into a single Global cluster, the two Far Eastern Consensus clusters collapse into one Global cluster, and the three Eastern European Consensus clusters also collapse into one Global cluster. Clear meta-groups are evident in the dendrogram comprising {Far Eastern, Confucian}, {African, Anglo}, {Germanic, Nordic, Latin Europe}, {East Europe}, {Latin America}, {Near East, Arab}, where the {Far Eastern, Confucian} group is tightly related to the {Near East, Arab} group.

Cluster analysis results are often displayed in a form that makes it impossible to infer whether any cluster is more congruent or stable than others. This is vital, as Global clusters forming lower than $p=0.25$ can be deemed highly congruent, stable, and distinct from other clusters at all levels. Had we looked only at Global clusters, it would have been impossible to observe this difference between clusters. Similarly, any country retaining its singleton status all the way to this level must be unique. In our analysis, no country maintained its independent status among the Global clusters, although Israel and Japan come close ($p=0.75$ and $p=0.73$, respectively), reflecting high distinctiveness compared with other singletons and their respective Consensus clusters. Finally, studying three nested levels highlights cluster interrelationships. For example,

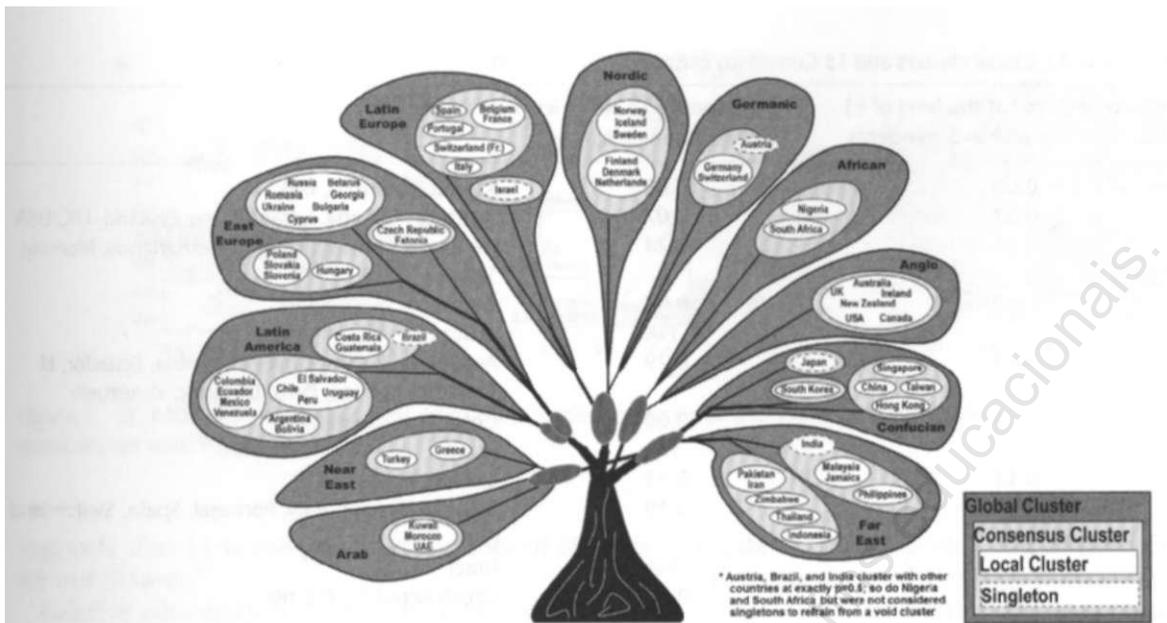


Figure 2 The new world map represented in a tree-like form. (Colored figure available in the HTML version of this article on the *JBS* website.)

the Arab and Anglo clusters form at such high congruency (low p) that each appears a single, unchanged cluster at all levels. Representing the upturned dendrogram in a tree-like form for visual accessibility, Figure 2 clearly shows the three nested clustering levels in relation to and within each other.

Eleven Global clusters emerge from our full data: 15 *Consensus clusters* comprising two countries or more, and *six singletons* (Austria, Brazil, India, Israel, Japan, South Korea). Recall that country similarity was measured based on relative dissimilarity, so countries dissimilar to all others may be "pushed" to the cluster from which they are least dissimilar, potentially creating "strange bedfellows" (e.g., Cyprus, Jamaica) or singletons. For instance, China and Taiwan merge at a height of 0.00 (100% congruence, i.e., appearing in the same cluster in all input studies in which both countries appeared as clustered by the input study), but the two do not merge with Hong Kong and Singapore until higher up the tree, indicating that as a group the four are not as congruent ($p=0.42$, $p_w=0.38$), although all belong in a single Consensus cluster.

Intra-cluster cohesiveness

The height at which a cluster forms implies a cohesiveness level. While p , the height at which a cluster eventually forms, is set by the extent of dissimilarity of the last two clusters (or single country) that merge to form the cluster, cohesiveness is set by the *average* relations of all cluster members. Cohesiveness or intra-cluster dissimilarity measures of 15 Consensus

and 11 Global clusters are shown in descending order in Table 3. The Arab (three members, $p=0.00$, $p_w=0.00$) and Anglo clusters (six members, $p=0.10$, $p_w=0.07$) exhibit such cohesiveness (p_w) that they are stable through three cutting points, identical as Local/Consensus/Global clusters. The East Europe Global cluster (13 members, $p=0.68$, $p_w=0.48$) is not highly cohesive, but has three highly cohesive, geographically adjacent Consensus clusters.

Stability and Sensitivity Analyses

Stability analysis: jack-knifing

As a control measure, we tested how sensitive our results are to a given input study by assessing the stability of each Global and Consensus cluster through 11 repetitions of the analysis, removing one input study at a time and reproducing the dendrogram of each leave-one-out analysis. It is possible to test the influence of a single study on the overall consensus by comparing the full dataset's clusters with each of the 11 leave-one-out analyses.⁸ For example, most clusters, both Global and Consensus, have a cohesive nucleus supported by all leave-one-out analyses; the Anglo cluster remains intact in all 11 leave-one-out analyses (as both Global and Consensus cluster), while the Nordic remains intact in ten of 11 leave-one-out analyses; Israel and Japan each appear as a singleton cluster in ten of 11 leave-one-out analyses; the Far Eastern and Confucian clusters are closely affiliated as Global clusters, as are the Near Eastern and the Arab Global

Table 3 Cohesiveness of 11 Global clusters and 15 Consensus clusters^a

Cluster	Cohesiveness (p_w) at the level of 11 Global clusters with independents	Cohesiveness (p_w) at the level of 15 Consensus clusters	Members
Arabic	0.00	0.00	Kuwait, Morocco, UAE
Anglo	0.07	0.07	Australia, Canada, Ireland, New Zealand, UK, USA
Nordic	0.24	0.24	Denmark, Finland, Iceland, Netherlands, Norway, Sweden
Germanic	0.50	0.00	Germany, Switzerland
Latin America	0.40	NA	Austria
		0.29	Argentina, Bolivia, Chile, Colombia, Ecuador, El Salvador, Mexico, Peru, Uruguay, Venezuela
		0.00	Costa Rica, Guatemala
		NA	Brazil
Near East	0.43	0.43	Greece, Turkey
Latin Europe	0.47	0.39	Belgium, France, Italy, Portugal, Spain, Switzerland (Fr.)
		NA	Israel
East Europe	0.48	0.00	Czech Republic, Estonia
		0.19	Belarus, Bulgaria, Cyprus, Georgia, Romania, Russia, Ukraine
		0.22	Hungary, Poland, Slovakia, Slovenia
African	0.50	0.50 ^b	Nigeria, South Africa
Far East	0.53	0.38	Indonesia, Iran, Pakistan, Thailand, Zimbabwe
		0.33	Jamaica, Malaysia, Philippines
		NA	India
Confucian	0.55	0.38	China, Hong Kong, Singapore, Taiwan,
		NA	South Korea
		NA	Japan

^aIn effect, measures of cohesiveness are measures of dissimilarity: thus the lower p_w , the higher the cohesiveness among cluster members.

^bCountries cluster at $p=0.50$, and if considered, singletons would have no cohesiveness at the level of Consensus clusters.

clusters. Using the r-index measure, Consensus clusters show a weighted average of 85% stability, while Global clusters show a weighted average of 91%.

Sensitivity analysis: Assessing bias

Removing Hofstede in the stability analysis results in an r-index value of 0.99 for the 11 Global clusters (the two clustering solutions are identical except for one country), and of 0.91 for the 18 Consensus clusters (another difference is how Far East and Confucian Global clusters break down to Consensus clusters), proving that Hofstede's did not significantly impact outcomes. To further eliminate potential bias, we compare Global and Consensus clusters with the clustering produced after removing *both* Hofstede (2001) and Ronen and Shenkar (1985). While this yields fewer clusters at all levels, results are similar.^{*} At our Consensus and Global levels ($p=0.5$ and $p=0.75$), while few divergences emerge, the underlying structure is unchanged. At the Global level, there are ten clusters instead of

11, while at the Consensus level there are 18 clusters, ten of which change in composition very slightly.

Establishing Adjacency: Multidimensional Scaling (MDS)

MDS of global clusters

While Consensus clusters may be most significant statistically, at a cultural level Global clusters seem to be more representative. First, the average number of clusters in our input studies is 9.63 (considering the 70 input countries) or 9.9 (considering 114 countries), indicating that a number of clusters closer to 11 (as opposed to the more numerous clusters in lower levels) is perhaps more representative of the input clusters. Second, the higher Global level seems equivalent to the 1985 map, which, excluding independent countries, comprised eight clusters. Third, another analysis using the multi-algorithm voting method (Bittman & Gelbard, 2007, 2008) further

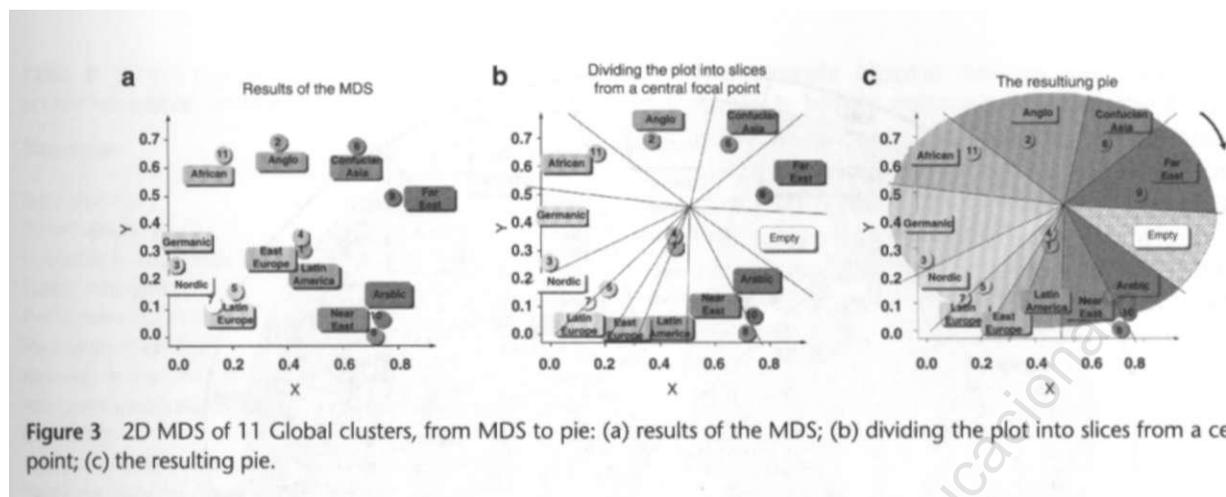


Figure 3 2D MDS of 11 Global clusters, from MDS to pie: (a) results of the MDS; (b) dividing the plot into slices from a central focal point; (c) the resulting pie.

supports that 11 is the preferred number of clusters for our dataset.⁹

Relative adjacency is inferred by inter-cluster congruency level: for example, the Confucian and Far Eastern Global clusters merge at a height of 0.79 in the dendrogram, indicating that they are closer to each other than to any other Global cluster. Still, adjacency between some Global clusters, such as the Latin European and Nordic, can be decided only via the MDS incorporated in the tree display. We create a 3D MDS of the 11 Global clusters, each represented by a point in space reflecting its distance from all other clusters (Figure 3). Total variance explained by the first three dimensions amounts to 42.7%. Having measured dissimilarity, clusters situated toward the center seem closer to all other encircling clusters, but in fact are least similar - that is most distinct - from all other clusters, and set almost equally apart. In other words, clusters have been pushed by their interrelationship to MDS locations that reflect the essence of the relations among them. This makes sense when the plot is seen as a globe where left and right sides wrap around to form a circle.

From MDS to pie

Ronen and Shenkar's (1985) data were presented in a pie-like figure in which cluster adjacency was drawn observationally, based on results and reasoning, but with no statistical backing. In the present study, having imposed a grid over the MDS of Global clusters, we construed a pie in which slice order is empirically based. First, we searched for a focal center point, from which to slice the MDS. That our center point is in a relatively central MDS location enhances the meaning of our pie, as most clusters are similarly far away from it, rendering them neither more alike nor more unlike others. Two

clusters, Latin America and Eastern Europe, emerge closer to the pie's center, indicating that they are most distinct in relation to other clusters. As the 2D MDS plot reflects only the xy dimension, we drew on the z -axis to establish their relative dissimilarity, and found that the two clusters are clearly distanced from other clusters. The resulting MDS slices are of different sizes. Drawing on topological psychology (Lewin, 1936), which emphasizes borders rather than distances, we treated all slices as equal, visually representing them as such in our final pie. Finally, drawing segment lines from the center point outward, an empty segment emerged, permitting future clusters to form as more countries are added. We thus equalized slices regardless of the number of countries in each or distance between clusters and, for convenience, rounded the pie. We turned the pie so that the empty space became the "stem" of the pie-like tree, a rotation made for presentation only, and bearing no other significance; the sole meaningful aspect in the plot is the location of clusters in relation to each other, rather than their absolute location. The key feature is the universal view of Global clusters in which the empirical order of slices is meaningful.

Enhancing the pie

To enhance utilization, we reassign the removed countries to our Global clusters, with the exception of eight nations that no longer exist and seven that could not be decisively clustered. Each of the additional 26 countries was reassigned to Global clusters based on the single study in which it appeared, so that the final pie (Figure 4) shows 96 countries. Independents were moved to an appended zone outside each cluster, but positioned in relation to their originating Global cluster. The enhanced Arab cluster comprises eight countries, and the East

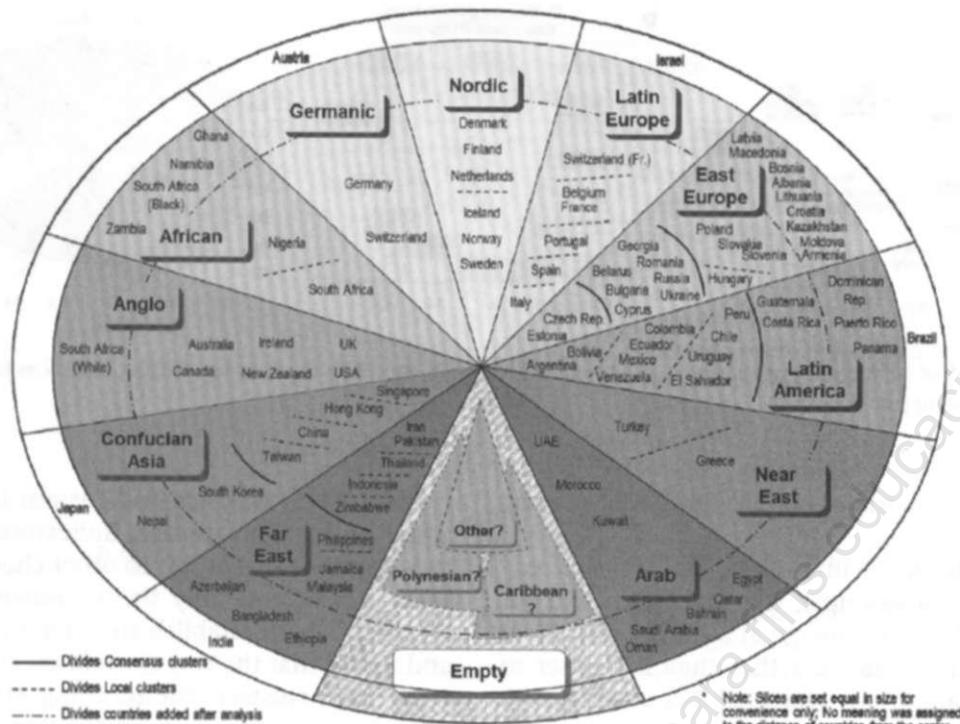


Figure 4 Final pie of clusters (96 countries) at three levels. (Colored figure available in the HTML version of this article on the *JIBS* website.)

European cluster 22. Three countries were added to the Latin American Global cluster, White South Africa was added to the Anglo Global cluster, three countries were added to the Far East Global cluster, and one to the Confucian. The Germanic and Nordic clusters are unchanged, since all members have been studied repeatedly (six of eight nations are in eight to ten of the input studies).

The empty cluster generated by the MDS is situated between the Far Eastern and Arab clusters, and we expect that, given more countries, unrepresented cultural force(s) will emerge here. Nevertheless, it appears that Islam is bringing together three clusters surrounding this vacant space: Far Eastern, Arab, and Near Eastern. Eight of nine Islamic nations appear in these three clusters (Muslim percentage in parenthesis): Turkey (100%), Morocco (99%), Kuwait (85%), UAE (96%), Malaysia (40%), Iran (98%), Pakistan (97%), and Indonesia (88%). The ninth (part) Islamic country, Nigeria (50%), is in the African Global cluster. When more Islamic countries are added in the future, they might converge into a single cluster.

A Sample Comparison of Two Clusters

Space constraints compel us to illustrate the content of our clustering via two sample clusters, the Anglo

and the Confucian. We choose the Anglo cluster because it is where the majority of management and organization behavior theory originates, it is the dominant comparison anchor for international business research (Thomas, Shenkar, & Clarke, 1994), and it has the largest stock of inward and outward FDI. Additionally, the Anglo cluster represents a highly cohesive cluster. We select the Confucian cluster because it has been posed as the sharpest contrast to prevailing models and assumptions in our literature (e.g., Shenkar & Von Glinow, 1994), is a leading FDI target, and has a rapidly increasing outward FDI. It also represents a cluster with relatively low cohesiveness.

Table 4 summarizes similarities and differences between the two clusters. While both are high on future orientation and performance orientation, they are almost diametrically opposed on other dimensions. The Anglo cluster is high on individualism, participative leadership, coaching, general communication, and reliance on specialists, and low on power distance, uncertainty avoidance, autonomous leadership, self-protective leadership, and reliance on unwritten rules. In contrast, the Confucian cluster is high on power distance, uncertainty avoidance, autonomous leadership, self-protective leadership, reliance on vertical sources, unwritten

Table 4 Sample comparison of Anglo and Confucian clusters across work-related dimensions

Dimension	Anglo	Confucian
Individualism	High	Low
Power distance	Low	High
Uncertainty avoidance	Low	High
Future orientation	High	High
Performance orientation	High	High
Participative leadership	High	Low
Autonomous leadership	Low	High
Self-protective leadership	Low	High
Coaching	High	Japan only
General communication	High	Japan only
Vertical source for guidance	Low	High
Unwritten rules	Low	High
Specialists	High	Low
Co-workers	Medium-high	Low
Widespread beliefs	Medium-high	High

guidance rules, and widespread beliefs, and low on individualism, participative leadership, and reliance on specialists and co-workers.

A number of implications can be drawn from this comparison. For instance, the Anglo cluster is characterized by a high degree of participative leadership and a low power distance; combined, this translates into a high level of involving others in making and implementing decisions. In contrast, the Confucian cluster shows a low degree of participative leadership and high power distance, suggesting a low level of involving others in making and implementing decisions. Using another example, since the Anglo cluster combines high individualism with low uncertainty avoidance, an effective reward system would integrate intrinsic and extrinsic incentives, and set rewards and promotions on the basis of merit, performance, and contribution to the success. In contrast, in the high collectivism, high uncertainty avoidance Confucian cluster, an effective reward system would need to consider factors such as seniority, tenure, age, and personal relations. As a macro example, Anglo firms tend to be risk takers and early movers, while Confucian members, as a whole, tend to be more cautious, late market entrants.

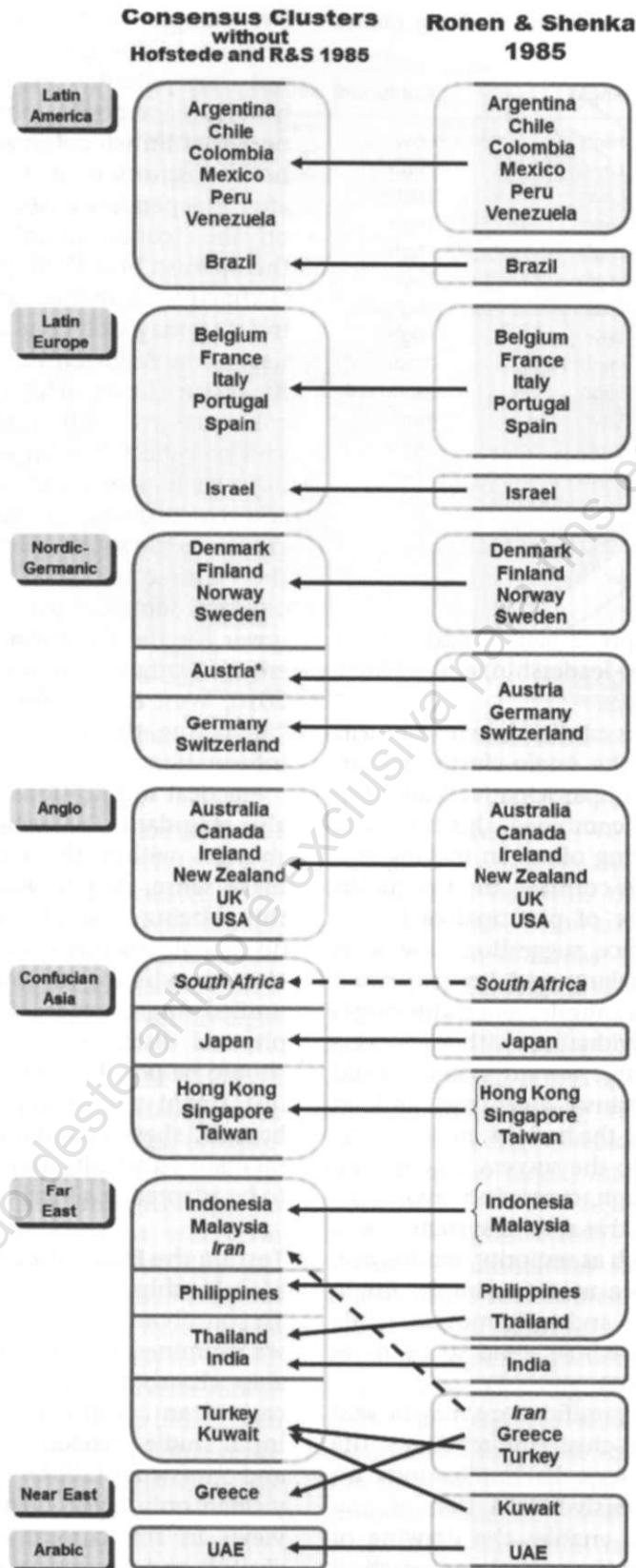
While somewhat similar ramifications may be said to emanate from the input-clustering solutions, the present study not only bases its implications on a dataset more comprehensive than that of any individual study, but also enables the drawing of additional repercussions of theoretical and practical significance. Recall, for example, that our solution provides cluster cohesiveness measures, where our

two sample clusters are on opposing poles: the Anglo is highly cohesive whereas the Confucian is not. The potential reasons can be instructive. For instance, Acemoglu, Johnson, and Robinson (2001) note that British colonizers sought to replicate their home institutions in the colonies, which survived after independence (see also Lundan & Jones, 2001, on the "commonwealth effect"), in contrast to the Spanish and Portuguese, who were engaged in "extractive" activities rather than institution building; this may well be reflected in the high cohesiveness of the Anglo cluster as compared with the Latin American cluster, which does not even include the colonizers as members. The Confucian cluster can be said to reflect the impact of Chinese institutions diffused to Japan and Korea, as well as Singapore and Hong Kong, however, note that the latter, despite being former British colonies, remain within the Chinese fold. The contrasting cohesiveness of our two sample clusters (high for the Anglo and lower for the Confucian) may also involve differences in language uniformity (see Luring & Selmer, 2010; West & Graham, 2004). Refer to the section "Predicting the clusters" for additional pertinent information.

Practical implications of cluster cohesiveness are also abundant. For instance, given the lower cohesiveness within the Confucian cluster, it would make sense, despite geographical proximity (other things being equal), for MNEs to establish a regional divisional structure divided into Consensus or Local clusters, whereas it would be viable to consider a unified Anglo region, at least for functions where physical distance is less of an issue. Similarly, it should be possible to use a unified human resource instrument within the Anglo region (where members also share a common language), whereas instruments used within the Confucian region may have to be adapted at a local cluster level.

Testing the Element of Time: Stability in Cluster Membership

To contribute to the convergence-divergence debate, we examined the extent to which cluster membership changed since 1985. To do that, we have created an additional dendrogram with only nine input studies, excluding Ronen and Shenkar (1985) and Hofstede (2001). Since the 1985 clustering yielded only eight clusters, we applied two nested views in the current clustering solution: Global clusters and Consensus clusters. Only the 41 countries appearing in both datasets were considered in the comparison in Figure 5, as opposed to 46



* Countries clustering at $p=0.5$

Figure 5 Present nested clusterings compared with the 1985 clusters.

countries in the 1985 study and 70 countries in the current study.

In terms of group membership, it is striking how little has changed in two decades, supporting the notion that cultural changes are stable or slow to emerge. This, however, does not exclude the possibility of whole clusters changing as a single unit, for example as suggested by Inglehart and Baker (2000). The few changes apparent since the 1985 clustering (e.g., break-off of the Confucian and the Far East clusters, migration of Iran from Near East to Far East) can be explained in two ways: (1) that some cultural change has transpired over this period, possibly a result of political change; and (2) that having more countries in the analysis results in a more accurate map.

Predicting the Clusters

One of our objectives was to gauge the impact of context variables, drawn from the ecocultural framework, on cluster formation. Let us start with geography, which is often taken to be a commonsensical substitute for cultural clustering. Our findings (see Table 4) reveal a more complex impact pattern, however. True, geography appears to play an important role in cluster positioning. Overall, six clusters - Near East, Latin America, East Europe, Nordic, African, and Far East - can be inferred from geographic proximity. Continental association is also relevant, with seven clusters found in unbroken continua, four of which are on a single continent. The four European clusters also correlate with geography: the Latin Europe in Western Europe, the Nordic in the north, the East European in the east, and the Germanic cluster in Central Europe. Yet continental affiliation goes only so far. Three quarters of Arab cluster members are in the Persian Gulf, while one quarter is in Africa. The Near Eastern cluster also spreads across two continents, but forms a geographic continuum across the Bosphorus. The Anglo cluster is spread across almost all continents, although it too follows an undisturbed geographic axis.

Overall, it is clear that, in and of itself, geography is not a sufficient predictor; only one of the four clusters that are not 100% geography-determined are explained by geography to a high extent (Far East 75% Southwest Asia), and the Arab cluster is explained only moderately by geography (67%). African cluster members are not geographically adjacent. Most telling is that the Arab and Anglo clusters, the most cohesive, are geographically dispersed, a product of colonization and immigration. As Anglo

culture emerged in what is now the UK and Ireland, ecological variables such as climate are features of these countries of origin rather than of the later-formed USA, Canada, Australia, and New Zealand. Surely, the diffusion of settlers and institutions, with their religious and linguistic affiliations, has brought Anglo countries together, in the same way that it appears to have drawn Singapore into a Confucian orbit populated by countries situated in the Eastern side of Asia. Note, however, that this did not happen in Hong Kong or India, possibly because expatriates remained a small portion of that populace.

As noted, the fact that Hong Kong is a member of the Confucian and not the Anglo cluster is especially interesting. First, Hong Kong was a British colony for a century and a half and until 1997, and many of its original institutions, such as the judiciary, are preserved under the handover agreement between China and the UK. Second, although geographically adjacent to mainland China, Hong Kong is inhabited mostly by descendants of risk-taking Chinese immigrants, a group that could be expected to show Anglo-style risk-taking attitudes, owing to self-selection. The independent position of Japan in a Confucian cluster is consistent with an island nation isolated from the outside world for centuries, and never colonized (with the exception of a brief US occupation after the Second World War), yet impacted by its neighbors, China and Korea. History may also be reflected in the position of the Germanic cluster between the African and the Nordic, which may reflect German influence in East Africa in the 19th century, as well as proximity to Nordic countries.

Religion is shared in many clusters, and so appears to be an important context variable. While it does not explain cluster cohesiveness, it explains adjacency for both Christianity and Islam. It is noteworthy that Asian Islamic nations such as Indonesia and Malaysia retain their membership in the Far Eastern geographic cluster rather than join other Moslem nations, such as Morocco, Kuwait, UAE, Egypt, Oman, Qatar, Saudi Arabia, and Bahrain, although large immigrant populations, mostly Chinese, may be a partial explanation. Especially challenging to the role of religion is that Christian Greece and predominantly Moslem Turkey are joined together in the Global Near Eastern cluster. Geographical proximity is a possible factor, as are centuries of Ottoman rule of Greece. Looking at Christian creeds, three clusters are clearly explained by religious affiliation (Latin America

100% Catholic, Latin Europe 83% Catholic, Nordic 83% Protestant), and three additional clusters are generally Christian but lack a dominant creed (East Europe 93%, Germanic 100%, Anglo 100%). The only other predominant religion is Islam, explaining two of our clusters to different degrees (Arab 100% Moslem, Far East 50% Moslem).

Language, as is visible in Table 5, explains eight of 11 Global clusters from 60% to 100%. Language is shared to a 100% degree in each of the clusters with the highest cohesiveness, namely the Arab and the Anglo. Fully cohesive in terms of prevalent language are also the Germanic and Latin American clusters. The remaining clusters are only moderately explained by language (East Europe 59% Slavic languages, Latin European 60% non-Spanish Latin Nordic 67% Nordic languages, Confucian 60% Sino Tibetan). Our clusters are mostly characterized by a unique language majority. We may thus say that the ecocultural perspective is generally consistent with our clustering solution and the resultant cultural map.

Assessing Economic Correlates

While not part of the ecocultural framework, economic variables are potentially important to cultural variation. Under a convergence hypothesis in particular, they can be viewed as context variables: for instance, economic advance can be seen to drive the emergence of universal, Western-leaning values. However, economic variables can also be considered outcomes; for instance, Hofstede and Bond (1988) found a correlation between Confucian Dynamism and economic growth. To add an economic perspective to our analysis, we downloaded GDP data adjusted for Purchasing Power Parity (PPP) from the World Bank,¹⁰ supplemented from the CIA Fact Book.¹¹

Generally speaking, our clusters may be divided into three groups: clusters with high GDP-PPP are Latin Europe, Nordic, Germanic, and the Anglo; clusters with low GDP-PPP are Near East, Latin America, Africa, and the Far East. The third group has a relatively wide spread range among members, with a medium to low average: Arab, East Europe, and the Confucian. Cohesiveness is not a predictor of GDP-PPP count, as the highly cohesive Arab cluster shows a range almost as wide as the low-cohesiveness Confucian cluster; however, adjacency seems to play a role, with the upper part of our pie (excluding the African cluster) scoring high on this index and the lower part scoring lower.

An additional set of economic variables, with political and social overtones, comes from the Heritage Foundation.¹² It includes three indices. First, the index of *Business Freedom* is a quantitative measure of the ability to start, operate, and close a business that represents the overall burden of regulation, as well as the efficiency of government in the regulatory process. Second, the *Investment Freedom* index evaluates a variety of restrictions typically imposed on investment. The highest score on the latter index represents a fully free economy, whereas lower scores represent restrictions such as national treatment of foreign investment, foreign investment code, restrictions on land ownership, sectorial investment restrictions, expropriation of investments without fair compensation, foreign exchange controls, capital controls, security problems, a lack of basic investment infrastructure, or other government policies that indirectly burden the investment process and limit investment freedom. Finally, the *Financial Freedom* index is a measure of banking efficiency, and of independence from government control and interference in the financial sector. It includes the extent of government regulation of financial services, the degree of state intervention in banks and other financial firms through direct and indirect ownership, the extent of financial and capital market development, government influence on the allocation of credit, and openness to foreign competition.

Here, too, our clusters may be roughly divided into three groups: clusters clearly high in their rate of economic freedom, including the Latin European, Nordic, Germanic, and Anglo; a group scoring in the middle range - Arab, Near Eastern, and African; and others, showing a broader range of scores - Latin American, East European, Confucian, and Far East. It is not surprising to see most developed countries in the first group; whether such development is correlated with culture is a different question.

DISCUSSION

This paper describes a synthesis of clustering studies on work-related cultural differences. Like any clustering, ours is utilitarian, designed to reduce complexity and aid data manageability (Ball & Hall, 1967; Bijnen, 1973). The minimization of within-group variance and maximization of between-group variance (Bailey, 1994; Estes, 1994) is appropriate, given that cross-national variance in individual values is greater than within-nation variance (Hanges & Dickson, 2006). Cluster labels render the members of each cluster discernible, understood, and

Table 5 The extent to which ecocultural antecedents and economic corollaries explain our clusters

Cluster	Arab	Near East	Latin America	East Europe	Latin Europe	Nordic	Germanic	African	Anglo	Confucian	Far East
Number of countries ^a	3/8	2/2	12/15 ^c	13/22	6/7	6/6	2/3	2/5 ^c	6/6 ^c	4/7	8/12
<i>Ecocultural antecedents</i>											
Religion											
Main marker	Muslim	No majority	Christian: Catholic	Overall Christian ^b	Christian: Catholic	Christian: Protestant	Christian: Mixture	No majority	Overall Christian ^b	Buddhist	Muslim
% in cluster	100%	—	100%	93%	100%	83%	100%	—	100%	50%	50%
Singleton(s)	—	—	Same	—	Different	—	Different Christian	—	—	Japan, same; S. Korea, different	Different
Language											
Main marker	Semitic	No majority	Latin, Spanish	Slavic	Latin, non-Spanish	Germanic, Nordic	Germanic, German	No majority	Germanic, English	Sino Tibetan	No majority
% in cluster	100%	—	100%	62%	60%***	67%	100%	—	100%	75%	—
Singleton(s)	—	—	Different	—	Different	—	Same	—	—	Different	N/A
Geographic continuum	Persian gulf	Bosphorus	America, Latin	Europe, East	Europe, West	Europe, North	Europe, Central	Africa, mainland	No majority	Asia, East	Asia, Southwest
% in cluster	67%	100%	100%	100%	100%	100%	100%	100%	—	100%	75%
Singleton(s)	—	—	Same	—	Different	—	Same	—	—	Same	Same
<i>Economic corollaries</i>											
GDP-PPP											
Min.	4712 ^d	15.321	4785	3110	25.610	34.895	37.260	1562	29.531	1199	500
Max.	48.900 ^d	27.805	16.300	31.092	37.600	56.692	46.581	10.570	47.199	57.936	14.731
Average	27.946 ^d	21.563	11.134	15.583	32.131	41.502	41.921	4535	38.968	29.787	5971
Economic freedom											
Min.	4712	15.321	4785	3110	25.610 ^c	34.895	37.260	1562	29.531	1199	500
Max.	48.900	27.805	16.300	31.092	37.600 ^c	56.692	46.581	10.570	47.199	57.936	14.731
Average	27.946	21.563	11.134	15.583	32.131 ^c	41.502	41.921	4535	38.968	29.787	5971

^aEcocultural antecedents based on 70 analyzed countries excluding singletons (first *n*); economic corollaries based on 96 countries including appended countries and singletons (second *n*).

^bOverall Christian when no single Christian denomination establishes a majority, but the different Christian denominations in the cluster combine to over 50%.

^cExcluding cultures with no data.

^dExcluding the outlier Qatar, with which the Arab average was misrepresented.

differentiated, and also stand for behavioral and attitudinal corollaries that transcend corporate and individual variations, and whose congruence carries performance ramifications (Newman & Nollen, 1996; Pearce & Osmond, 1999). At a broader level, clustering is aimed at anchoring the "think globally and act locally" balance in empirical reality, specifying its form, range, and boundaries; it is investigated as "an intermediate degree of globalization" (Asmussen, 2009).

Results of the current study show that the 70 analyzed countries divide into 11 Global clusters comprising 15 Consensus clusters and six singletons, which together break down into 38 Local clusters. While this high number of clusters seems to render the information less practical, 43 of the 70 countries cluster with at least one other country at this high congruency level, and eight of the clusters have three or more members each. The different levels of clusters and the singletons are easy to discern in the tree; each level depicts a different level of similarity, inferred from the frequency of countries adjoined in the same cluster in the input studies. Members of Global clusters, the main branches, appear together in the input studies at least 25% of the time vs 50% in the Consensus clusters and at least 75% in the Local clusters. These frequencies represent three cutting points on the dendrogram, but most clusters form at considerably lower levels. The merging point of a cluster (p), determined by the last country to join, insinuates the level of cohesiveness displayed by the cluster. Cluster's cohesiveness, however, reflects the average extent of similarity among all members of the clusters: hence two clusters merging at the same height (p) may have different cohesiveness levels (p). Taken together, the two measures show the significance of each cluster by implying the extent of similarity in shared values (score range) between members of each cluster.

To gauge convergence or divergence, we tested cluster membership, juxtaposing two time points a quarter of a century apart, and found great stability. While we assume that culture is slow to evolve (e.g., Ralston et al., 1997), it may be that values, beliefs, and attitudes have shifted since the 1980s. Such a shift would not have necessarily resulted in different cluster formation, as members may have moved simultaneously in a similar direction (Inglehart & Baker, 2000). Still, in and of itself, this stability finding is valuable, in that it contributes empirically to the convergence vs divergence debate that has so far been staged on conceptual and anecdotal

grounds. Given the stability shown in cluster formation, we suggest that work-related national culture is slow to transform, lending credibility to the divergence school. While some research shows variance in country scores over time (e.g., Inglehart & Baker, 2000), and while there is evidence that economic development and urbanization impact on world views (Welzel & Inglehart, 2010), these points by themselves do not reflect a fundamental change in country grouping, which is to us the relevant test. It is possible, as Ralston et al. (1997) offer, that the impact of current changes such as in economic ideology will be felt only in the future. The role of the ecocultural variables is supportive of the stability/slow change thesis, since religion, and in particular language, are unlikely to change in the near term. Still, it is possible, for instance, that the rise in Islamic population in Europe will produce changes in national cultures, or the emergence of stronger subcultures.

At the same time, our study does not address the possibility that convergence and divergence measures vary depending on the issue at hand, as demonstrated, for instance, by the findings on leadership styles and preferences (e.g., Brodbeck et al., 2000; Den Hartog, House, Hanges, & Ruiz-Quintanilla, 1999; Dorfman et al., 1997; House et al., 2004), or observations concerning ethical behavior (Ralston et al., 2009). Finally, duration-derived cluster cohesiveness strengthens inter-cluster divergence concurrently with intra-cluster convergence. Cohesiveness is the result of membership continuity, and social-psychological definitions of social cohesion have emphasized the long duration of a person's membership of group norms (e.g., Festinger et al., 1950) such as national culture. The longer countries are in the same cluster, the more cohesive the cluster; indicating that countries within the cluster are "converged" together but "diverged" (separated) from the other clusters. Cohesiveness supports identity and strengthens norms and values, which in turn contributes to clusters' divergence.

Theoretical Implications

If a typology is a complex theoretical statement (Doty & Glick, 1994), an empirically derived clustering of countries on the basis of work-related attitudes, values, and beliefs can be considered a classificatory landscape upon which theoretical frameworks are overlaid. In the same way that a typology is more than a filing system, breaking the organizational world into "discrete and collective categories" (Rich, 1992: 758), the clustering of cultures can be viewed

as the parsing and ordering of the culturally meaningful environments in which organizations are embedded, a process we call "cultural mapping". This mapping provides an "empirical classification" (Doty & Glick, 1994) of cultural types that goes beyond tentative classifications such as the "triads" (Americas/Asia/Europe/rest of world), as well as existing clustering sets that were limited in scope, depth, and key information (e.g., similarity level, cohesiveness). While elements of our clustering, such as geographic adjacency, seem intuitive, a closer look reveals various predictors at play in a complex fashion, activating the all-important theoretical function of clustering as "seeking explanation" (Hartigan, 1975), a key element of context revelation.

Cultural mapping creates a substitute for the controversial construct of cultural distance, a proxy for cultural differences that fails to capture the complexity of inter-cultural interaction (Shenkar, 2001; Shenkar et al., 2008). A rigorous cultural clustering not only holds the promise of providing more accurate and valid measures of the differences between cultural environments, but can also provide the base on which a friction lens (Shenkar et al., 2008) can be developed. Such an effort will also necessitate a shift away from extant theoretical proxies for cultural differences, such as uncertainty, which stands for those differences in transaction cost economics, towards a more robust theoretical positioning that takes into account cultural variability in the cognitive aspects of decision-makers, such as goal setting (e.g., Erez & Earley, 1987). Cultural mapping provides the patterns of variation underlying such advances.

Clustering is also relevant to broader questions regarding the cultural relativity of organizational theories (e.g., Hofstede, 2001). Such questions cannot be adequately addressed unless the world is ordered into meaningful parts, a possibility made available by cultural clustering. Theories such as transaction cost economics contain culturally variable assumptions, and there is some evidence that they may hold better in certain environments; however, clusters enable systematic treatment of such variations. Overlaying theory-relevant assumptions (e.g., opportunism) on a cultural map will enable systematic examination of possible biases in organizational theories, facilitating the development of "regional theories" (Rugman, 2001), a variant of mid-range theories. For instance, cultural mapping may pinpoint regions within which business transactions are likely to encounter specific "liabilities of

foreignness". By linking those macro phenomena with the aforementioned organization behavior variables, the clustering of cultures may also contribute to one of the more elusive goals in management research - that is, the development of mezzo theories linking micro and macro phenomena.

Cultural clustering has the potential to make a substantial contribution to macro managerial theories. Take, for example, one of the main theories used to explain FDI - transaction cost economics (Williamson, 1975, 1985). Broadly speaking, country clusters can be seen to provide a mitigating stand between the contract enforcement available at the country level and the "anarchy" by which political scientists denote the absence of regulative enforcement in the international environment. While clusters do not reflect political and institutional entities *per se*, the commonalities they embed contain important informal elements facilitating within-cluster transactions, as we have discussed earlier. Also, cluster formations can tell us about the power of institutional diffusion: compare, for example, the existence of a cohesive Anglo region with its absence in the case of Latin America. Thus cultural clustering can help determine what makes up the institutional environment (Brouthers, 2013). Those commonalities, which include similarity in the three institutional pillars (Scott, 2001) - the legal (e.g., La Porta et al., 1998), normative (e.g., Whitley, 1992), and cognitive (e.g., Xu & Shenkar, 2001) - lower the cost of transactions within clusters, while transaction barriers across clusters are captured by inter-cluster adjacencies aided by context variables, such as language-rooted coding and decoding barriers (Gong et al., 2001; Ronen, 1986). Clusters can hence be seen as networks that mitigate uncertainty and opportunism, impacting on entry mode and contracting forms.

A broader contribution of the present cultural clustering concerns the organization/environment interface, a junction of crucial significance in organizational theories. Berry, Guillen, and Zhou (2010) grouped institutional theorizing in international business into three groups, based on key variations in:

- (1) national business systems (e.g., Whitley, 1992);
- (2) governance (e.g., La Porta et al., 1998); and
- (3) national innovation systems (e.g., Furman et al., 2002).

As the foundation on which institutions rest (Weber, 1947), culture, in conjunction with other variables, produces variations in national business systems, inclusive of governance, innovation, and

more. Cultural clustering can help us progress beyond acknowledging the cultural relativity of theories to the development of context-specific theories, an elusive task, yet one where international business can drive, rather than merely apply, management theory.

Finally, the impact of culture on organization behavior has been repeatedly demonstrated for training (Schneider & Demeyer, 1991), goal-setting strategies (Erez & Earley, 1987), trust (Doney, Cannon, & Mullen, 1998; Earley, 1997), and job satisfaction (Huang & Van de Vliert, 2004), among other constructs. Clusters offer specific guidance that is of significant value in an increasingly culturally diverse workforce (House et al., 2004) - for example, where to apply 360 degree feedback (Shipper, Hoffman, & Rotondo, 2007). The stability identified here indicates the substantial value of cultural learning: for example, it suggests that it may be worthwhile to have expatriates themselves immerse in cultural knowledge, so that their posting "is not simply another assignment in a progression of positions or jobs, but an opportunity to acquire, create, and transfer valuable knowledge, both upon expatriation and repatriation" (Oddou et al., 2009: 182). The cluster map can show where practices affirmed in one country can be diffused and at what confidence level, a vital challenge for MNEs.

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NOTES

¹ www.merriam-webster.com/dictionary/religion.

² In deliberating whether to include studies based on student samples, we opted to reject them, considering that the psychological variables (values, beliefs, etc.) we are investigating are contextual, relating to working

environments and personal work experience occurring at the time of the survey, or prior to that.

³ Several cross-cultural studies were not included in our analysis, as they failed to meet the criteria for inclusion, namely: (a) studies that did not utilize work-related values or attitudes (e.g., Biswas-Diener & Diener, 2006; Biswas-Diener, Vitterso, & Diener, 2005; Diener, Scollon, Oishi, Dzokoto, & Suh, 2000; Ng, Diener, Aurora, & Harter, 2009; Sriram & Gopalakrishna, 1991; Wirtz, Chiu, Diener, & Oishi, 2009); (b) studies that used student samples, and did not survey practicing or potential workforce respondents (e.g., Bond, 1988; Connection, 1987; Newman & Nollen, 1996; Oishi & Diener, 2001; Schimmack, Oishi, & Diener, 2002; van deVliert & Janssen, 2002); (c) studies that included less than the minimum of 15 countries (e.g., Rotondo Fernandez, Carlson, Stepina, & Nicholson, 1997); (d) studies that decided on a clustering solution *a priori*, and did not base their clustering solution on an empirical analysis of psychological variables (e.g., Georgas et al., 2004; Minkov & Blagojev, 2009; Schmitt et al., 2007); (e) studies that did not analyze raw data, or did not use an independent database (e.g., Hickson & Pugh, 1995; Pearce & Osmond, 1999); and (f) studies that did not provide a clustering solution or individual country scores from which a clustering solution could have been generated (e.g., Basabe, Paez, Gonzalez, Rimé, & Diener, 2002; Furman, Porter, & Stern, 2002; Laurent, 1983; Mole, 1990; Tixier, 1994).

⁴ These sources have been updated since publication, but their data have not been published in any available academic outlet.

⁵ An updated version was published in 1998, but Smith et al. employed the 1994 edition.

⁶ Clustering of three studies was achieved through our secondary analysis: Foley's two cluster sets originating in different MNEs were amalgamated; individual country scores of Smith et al. (2002) were hierarchically clustered. The two MDS plots of Smith et al. (1995, 1996), both derived from Trompenaars' (1994) data, were combined.

⁷ Cohesiveness represents the dissimilarity of countries within a cluster. It is computed as the weighted average proportion apart of intra-cluster members, p_w , defined as $p_w = \frac{\sum_{i=1}^{n-1} \sum_{j=i+1}^n a_{ij}}{\sum_{i=1}^{n-1} \sum_{j=i+1}^n m_{ij}}$, where n is the number of elements in the Consensus cluster, a_{ij} is the number of studies in which the i th and j th countries in the Consensus cluster appear in different clusters, and m_{ij} is the number of studies that consider both the i th and j th countries in the Consensus cluster. Thus p_w measures

the average weighted proportion apart for countries within a given cluster, which can be translated into *cluster cohesiveness*. Clusters whose members *always* occur together in a cluster have $p_w=0$. The value increases as clusters become less cohesive.

⁸Table available on demand.

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