Handbook of Research Methods in Industrial and Organizational Psychology

Edited by

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CHAPTER ELEVEN

Methodological Issues in Cross-Cultural Organizational Research

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A century beyond the founding of industrial and organizational psychology (Muchinsky, 2000) the field has much to celebrate. There has been major theoretical progress in areas as diverse as selection, training, and performance appraisal, as well as organizational attitudes, motivation, stress, leadership, and team dynamics. Likewise, as this volume attests, the field has grown leaps and bounds in its methodological diversity, offering much-needed complexity for the phenomena studied in the field. In this chapter, we take this diversity further by focusing on an often-neglected topic in I-O psychology, namely methodological issues in conducting cross-cultural organizational research. As noted below, for both theoretical and practical reasons, there is an urgent need for the field to become global. Becoming global in emphasis, however, requires added methodological complexity and new judgment in conducting high-quality research, which is the central focus of this chapter.

In what follows, we first discuss the necessity of conducting cross-cultural research in I-O, and the numerous benefits that research on culture can bring to the field. Next, we focus on how culture infiltrates the actual research process itself. We describe the specific cultural concerns that arise during this process, as well as potential ways to take such issues into account in the design and implementation of cross-cultural research. We conclude with a discussion of the future of cross-cultural research methods, and the promise they may offer the field.

Benefits of Cross-Cultural Research in I-O Psychology

Most people reading this chapter would agree that the era of global interdependence is upon us, and is having dramatic changes on the world of work. Cross-cultural business interactions are becoming the norm, rather than the exception. Yet undoubtedly, the increasing need for practical solutions on managing cultural dynamics is not matched in the science of I-O psychology. For example, a perusal of the last 15 years of journals in the field (e.g. JAP, OBHDP, AMJ, Personnel Psychology) revealed that only a total of 6 percent of articles were focused on cross-cultural I-O psychology. In areas such as behavioral decision research, the estimates are even lower (4 percent; see Weber and Hsee, 2000), and in the area of personnel selection, the proportion is dismal (1 percent).¹ Clearly, the amount of empirical activity in the field is at odds with the practical reality of globalization. Despite the low percentage of cross-cultural I-O research, however, we suspect that in the future, it will become more of the prevalent in the field (Gelfand, 2000). In this spirit, below we describe several ways in which cross-cultural research can expand I-O psychology to be more global.

Testing the universality of I-O theories

First, cross-cultural research can expand I-O psychology by separating what is universal from what is culture-specific in organizational phenomena. For example, research on procedural justice has illustrated that the voice greatly enhances perceptions of fairness in organizations (Lind and Tyler, 1988). In a recent study, however, Brockner et al. (in press) questioned the universality of this effect, and found that it was only applicable in cultures that had low power distance (e.g., the USA), as compared to high power distance (e.g., China, Mexico). As such, this study helped to illuminate additional reasons for why the voice is considered so important in the USA (power distance beliefs), to identify boundary conditions for procedural justice theory, and to better understand how to manage in other cultures. Given that many theories in I-O psychology have only been tested in Western contexts (Gelfand and Dyer, 2000), examining their applicability in other cultures is an important mandate for our field.

Expanding the range of behavior

Second, cross-cultural research in I-O psychology can also expand the range of variation on the phenomena that we study. As Berry pointed out, "only when all variation is present can its underlying structure be detected; for with limited data, only partial structures may be discovered" (1980, p. 5). Research, for example, has illustrated that while the five-factor model of personality does replicate across a number of cultures (e.g., Israel, Germany, Japan), there are dimensions of personality in other cultures which do not exist in the USA (e.g., the dimension of *pakikisama*, or involvement in an ingroup, in the Philippines; see Smith and Bond, 1999). Similarly, in the area of leadership, while both performance and maintenance behavioral dimensions have been replicated in China, Ling (1989) also found a third factor, namely personal moral character, to be an important aspect of leadership in this context. Furthermore, expanding the range of behavior may help to elucidate curvilinear, rather than linear relationships. Morris, Avila, and Allen (1993), for example, found a curvilinear relationship between individualism and collectivism and entrepreneurship. Cross-cultural research in other areas of I-O psychology is likely to reveal other nonlinear relationships.²

Illuminating emic phenomena

Another way in which cross-cultural research can expand I-O psychology is by illuminating emic or culture-specific phenomena. First, it is possible that a construct that is found to be universal may be manifested differently in different cultures. For example, crosscultural research has revealed that classic dimensions of leadership, namely, initiating structure and consideration, are found in other cultures (e.g., Misumi and Peterson, 1985). However, the specific behaviors that are associated with these dimensions vary considerably across cultures. Talking about one's subordinate behind his or her back, for instance, is seen as considerate in Japan, yet inconsiderate in the USA (Smith, Misumi, Tayeb, Peterson, and Bond, 1989). Second, by studying a particular culture in depth, cross-cultural research may reveal phenomena that are highly emic. For example, Kashima and Callan (1994) argue that in Japan motivation is regulated through an *amae-on-giri* exchange between supervisors and subordinates. Within this system, subordinates seek to be accepted by and be dependent upon superiors (*amae*). When superiors fulfill *amae*, this produces obligations (*giri*) among subordinates to repay such favors (*on*) through high performance. Crosscultural research is likely to reveal additional culture-specific scripts in organizations.

Reducing ethnocentrism and improving intercultural interactions

Finally, cross-cultural research is needed to help design interventions for effective intercultural interactions. Research indicates that US expatriate assignments have a high rate of failure (between 25 and 40 percent; Triandis, 1994b). Given the high cost of failures, the contribution of research on cross-cultural training is invaluable. In addition, research in cross-cultural I-O will be crucial input for such cross-cultural training programs, which have traditionally been atheoretical (Bhawuk and Brislin, 2000).

In sum, cross-cultural research is important in I-O from both practical and theoretical perspectives. As interest in this area grows, so too will the need for an understanding of the realities of doing high-quality cross-cultural research. Unfortunately, cross-cultural research often proceeds by simply finding a data collection site in another culture (Culture B), administering a Western measure from Culture A, and then automatically attributing any differences between the two as being due to "culture." As discussed below, however, this approach should always be viewed with skepticism, as there are numerous rival hypotheses that need to be ruled out before making such inferences. Below we describe the unique methodological issues and judgment calls that are involved in doing high quality cross-cultural I-O research.

The Cross-Cultural Research Process

One way to conceptualize cross-cultural research is to view the research process as consisting of a number of methodological choices or judgment calls, each of which has implications for the ultimate quality of the research being conducted. McGrath defined judgment calls in organizational research as "crucial decisions that must be made without the benefit of a hard and fast, 'objective' rule" (1982, p. 13). To be sure, all research involves judgment calls. However, when doing research in other cultures, there are numerous unique methodological issues that arise at each stage of the research process – from the conceptualization of the topic, to the choice of methodology, to the implementation of research designs, to analyzing and interpreting data. In this respect, we emphasize that research is a *cultural* process, and as such, culture can influence each stage of research, resulting in the introduction of numerous extraneous variables that are often completely unrelated to the question of interest. Each of these variables, if left unaccounted, can pose rival hypotheses for any difference found across cultures, and, thus, render results equivocal if they are not adequately addressed.

Statistically speaking, the issue of rival hypotheses can be represented in regression terms (Malpass, 1977). We can use an indicator Y' as a measurement of the amount of underlying variable Y, that is possessed by subjects. The problem of rival hypotheses arises when the equation for Y' is $Y' = Y + \Sigma k_i$, where k_i may be any variable other than Y that affects Y' (ibid.).³ In unicultural research, researchers are often aware of possible k_i 's that can be biasing the results. However, in cross-cultural research, there exist multiple cultural k_i 's, which are often unknown to researchers, and, thus, are left unmeasured or controlled (ibid.). Thus, making informed judgment calls about such cultural k_i 's will ultimately increase the quality of the research.

In this spirit, figure 11.1 presents the cross-cultural research process, and the specific methodological issues, or potential cultural k_i 's that arise during the stages of research. The research process is depicted as circular, with built-in evaluation mechanisms at each stage of the process (e.g., discussions with local collaborators, focus groups, pilot analyses) that may cause the researcher(s) to re-evaluate decisions made at previous stages. We emphasize that there should be a continual process of culture-based feedback that parallels the research process and informs all stages of the research. As such, we argue that cross-cultural research should be viewed as a series of "logically ordered – though chronologically chaotic – choices" (McGrath, 1982, p. 71) about potential cultural k_i 's.

While there are innumerable alternative explanations for cross-cultural results – Triandis (1983) has speculated that there are perhaps ten thousand alternative explanations – we focus on cultural k_i 's that are crucial to take into account, and provide suggestions for how such concerns may be addressed. Importantly, our discussion is not meant to provide hard and objective rules to deal with the methodological choices involved in cross-cultural research. Rather, we seek to provide a "roadmap" of the issues on which informed judgments need to be made, and to provide general guidelines. At the very least, we recommend that such concerns necessitate that researchers involve local collaborators (Berry, 1980; Malpass, 1977), have a deep understanding of the culture being studied (e.g., read pertinent ethnographies, consult the Human Relations Area Files (HRAF); see Barry, 1980; Greenfield, 1997; Miller, 1997a), control for or incorporate measures of rival hypotheses in the design of the study itself (Van de Vijver and Leung, 1997), base research on theory (Triandis, 1994b), and use multiple methodologies to show convergence (Triandis, 1983). Ultimately, we recognize that practical constraints may inhibit researchers from dealing with each and every concern that we discuss in a



Figure 11.1 The cross-cultural research process: methodological concerns and rival hypotheses at each stage

single study. At the same time, the more researchers make informed decisions regarding such issues, the greater the probability that the end result will be a high quality product.

Next, we turn to the stages of research, and elaborate upon the unique issues that arise during the cross-cultural research process.⁴

Determining the Research Questions to be Answered

The first step involved in conducting cross-cultural research is to determine the research questions that will be addressed. At this stage, it is crucial to develop a theoretically based program of research in which culture is "unpackaged" rather than simply using geographic location as a surrogate for culture (Gelfand and Dyer, 2000). The notion of "unpackaging" dates back to Whiting (1976), who argued that the concept of culture is too broad and imprecise for scientific use, and instead should be dissected in terms of its constituent elements. Since then, cross-cultural psychologists have advanced models of culture which specify such elements (e.g., Berry, 1976; Berry, Poortinga, Segall, and Dasen, 1992; Gelfand, 1999; Hofstede, 1980; Kanungo, Aycan, and Sinha, 1999; Poortinga, van de Vijver, Joe, and van de Koppel, 1987; Schwartz, 1994). These models include factors such as ecology, social institutions, and family structure at the most macro-level of analysis (Berry, 1976); organizational culture, social norms, and the nature of social situations at the meso-level of analysis (Gelfand, 1999; Aycan et al., 2000); and psychological processes or subjective culture (attitudes, beliefs meaning systems, values, the self) at the most micro-level of analysis (Triandis, 1972; Markus and Kitayama, 1991). As noted by Triandis (1989), elements of subjective culture are often interrelated and form unique dimensions, which have been discussed widely in the literature (Hofstede, 1980; Schwartz, 1994; Triandis, 1995; see also Gannon and associates, 1994). This includes, to name a few, individualism and collectivism, masculinity and femininity, fatalism, cultural tightness/looseness, and power distance.

Although a complete theoretical treatment of culture is beyond the scope of this chapter (see Adamopoulos and Lonner, 1997; Miller, 1997b for good reviews), we emphasize that it is important to incorporate such culture theory into one's research, and to empirically assess the locus of the hypothesized cross-cultural difference in any cross-cultural study. Cross-cultural I-O psychologists, for example, may start with a top-down approach (Betancourt and Lopez, 1993), wherein one begins with a phenomenon of interest and then theorizes about the impact of specific cultural variables on its level or form across cultures. For example, in our work on negotiation (Gelfand et al., under review), we were interested in understanding whether certain judgment biases that have been found to characterize negotiator cognition in the USA are universal or culture-specific. Based on the judgment phenomena of interest (self-serving biases), we then incorporated the theory of individualism and collectivism into the theory and measures of our study, expecting that this bias would be attenuated in the culture of Japan, based on its emphasis on collectivism.

Alternatively, one may use a bottom-up approach, by beginning with a particular aspect of culture (e.g, cultural tightness) and then derive from this theoretically based hypotheses

about an organizational phenomena. For example, Nishii and Gelfand (2000) argued that both cultural tightness/looseness and individualism and collectivism would have implications for the nature of leadership schemas. Grounding their argument on culture theory (Gelfand, 1999; Triandis, 1995), they derived hypotheses regarding leadership in Singapore, Thailand, the USA, and Germany based on these dimensions, and also incorporated measures of such dimensions in their research.⁵

Although both of these examples focused on main effects of aspects of culture on psychological phenomena, it is important to note that cross-cultural research questions may be derived from a number of hypothesized forms. Among other examples, interesting questions include how aspects of culture relate to main effects at macro-levels of analysis (e.g. does individualism and collectivism predict national wealth?; Gelfand, Bhawuk, Nishii, and Bechtold, forthcoming), or main effects at the meso-levels of analysis (e.g., does cultural fatalism affect organizational members' shared beliefs and assumptions?; Aycan et al., 2000). Another approach might be to ask whether aspects of culture *moderate* the relationship between variables at a macro-level or at a micro-level of analysis (e.g. does having choice or control over one's work relate to higher motivation in all cultures?; Sethi, 1998). Increasingly, researchers are also examining how culture exerts cross-level effects (House, Hanges, Javidan, Dorfman, and Gupta, forthcoming). Alternatively, one may be interested in modeling cross-cultural differences in variability (not means) as both predictors and moderators of organizational phenomena (Gelfand, 1999).

While these examples are far from exhaustive, it should be clear that high-quality cross-cultural I-O research will always start with a well-developed theory and will incorporate this theory into the design and measurement of the research program (Malpass, 1977; van de Vijver and Leung, 1997). In addition, while research questions derived from a cultural dimension approach are useful because they allow for a "common metric" to compare cultures, they are inevitably incomplete, and miss important culturespecific information. As such, in planning any research study, it is important to rely on both broad cross-cultural theory as well as rich sources of emic (culture-specific) information about individual cultures (e.g., cultural metaphors: Gannon and associates, 1994; ethnographies), and most importantly, details gleaned from in-depth discussions with local collaborators. Such culture-specific information is not only useful for identifying rival hypotheses (see sections below), but also can illuminate important variables that may account for differences in organizational phenomena that are of theoretical interest.

Sampling of Cultures

After deciding on a research question and determining the level of analysis one is interested in, the second step in conducting cross-cultural research is to determine the cultures that will be included in the study. The determination of which cultures to sample should always be guided by well-developed theory (van de Vijver and Leung, 1997) and not based on convenience sampling (e.g., having a colleague who is willing to collect data). In other words, the sampling strategy in high-quality cross-cultural research is always guided by the specific research question. Most typically, researchers are interested

in testing a theory relating one or more dimensions of culture to organizational phenomena. To examine such questions, it is important to sample a wide range of cultures along such dimensions (i.e., maximize variation in the cultures studied). Fortunately, abundant quantitative and qualitative data sets exist about cultures that should be consulted in making such sampling decisions (Gannon and associates, 1994: House et al., forthcoming; Hofstede, 1980: Schwartz, 1994; also see discussion of ecocultural and sociological databases in the "Specific research methods" section below). If possible, researchers should strive to include more than two countries in a cross-cultural study. Given that cultures vary on a myriad of factors, two-country comparisons make it very difficult to isolate the nature of culture effects in research. Finally, in some studies, very large samples are desired, such as for those that seek to test universal theories of culture (also known as *holocultural* studies) (e.g., House et al., 2001; Schwartz, 1992). Rather than using strict theoretical sampling, in such cases it is important to have a random sample of cultures included which represent numerous regions throughout the world (van de Vijver and Leung, 1997).

Once the particular cultures (or subcultures) have been decided upon, researchers must choose a sampling technique of organizations and individuals within organizations. If the research goal is to make universal generalizations within a culture, it is important to ensure that numerous strata of the population are represented in the study (Pareek and Rao, 1980). Furthermore, when choosing organizations and individuals, it is crucial to have samples that are similar (or, in other words, matched) in terms of critical variables, lest any cross-cultural differences may be really attributable to other ways in which the samples vary. For example, samples should be matched for type of industry, and type and size of organization. Individuals should be matched on the level or positions within organization, for job type, and for numerous demographic characteristics (e.g., age, gender, SES; Aycan, 2000). If such characteristics are thought to vary in a samples, they should be measured and used as covariates when examining cultural differences (van de Vijver and Leung, 1997).

Assessing the Constructs of Interest

When the researcher has determined the cultures to be included in the research, and has enlisted the help of local collaborators, the next consideration is how to most appropriately assess the constructs of interest. This issue can also be construed in terms of sampling, but refers to the sampling of the stimuli to be used, rather than the sampling of research participants (Berry, 1980). In other words, researchers must be concerned with the extent to which the construct and its operationalization is representative of realities in the cultures of interest. Unfortunately, a major problem in cross-cultural research is the use of imposed etic constructs, wherein researchers simply use constructs and measurements that have been developed in the USA (or another country) in other cultures. This strategy is theoretically problematic, as culture may affect the nature of the constructs of interest (e.g., organizational commitment, personality, etc.); as a result, making direct comparisons across cultures on such constructs may be akin to comparing apples with

oranges (Triandis, 1994b). As such, any studies that use imposed etics should always be viewed with skepticism.

There are a number of alternatives to the imposed etic strategy. The first method is to actually test whether the imposed etic strategy is viable using either a convergentdivergent validity study in both cultures (i.e., showing similar patterns for the measurement across cultures) and/or by using simultaneous factor analysis multiple populations (see Gelfand, Fitzgerald, and Drasgow, 1995; Ployhart, under review). For the latter, to the extent there are a different number of factors or unequal factor loadings, or there are unequal factor variances, covariances, and errors of measurement, then constructs are not equivalent across cultures.⁶ However, it is important to recognize that even if factor analytic techniques illustrate that measurement models are similar across cultures, this is not a definitive test of construct invariance. Put in I-O psychological terms, this technique still cannot rule out that there is *construct deficiency* in other cultures, which necessitates the examination of emic perspectives and the involvement of local collaborators, and, thus, a combined etic-emic strategy (cf. van de Vijver and Leung, 1997b).

One combined etic-emic strategy has been referred to as a derived etic approach (Berry, 1969). This strategy begins with the use of an imposed etic, based on the notion that in any research, a particular cultural perspective is needed to start the research process. However, rather than simply assuming such perspectives are representative of the other culture of interest, the researcher then strives to gather emic information (through pilot studies, discussions with collaborators, the use of ethnographies, etc.) to attain an emic understanding of the construct. Based on this new information, the researcher can then begin to compare the emic from the local culture to the imposed etic from the original culture in order to discern overlapping elements (or what is termed a "derived etic"). This strategy was used in a recent study by Wasti (2000) on organizational commitment. Rather than assuming this construct was invariant in Turkey, Wasti examined whether there were additional features of organizational commitment that were important in the Turkish context through intensive interviews with managers. Based on this emic information, the original US-based organizational commitment scale (Meyer, Allen, and Smith, 1993) was revised to include additional culture-specific items. Indeed, this combined etic-emic scale proved to have enhanced psychometric properties and predictive validity in the Turkish context.

Triandis and Triandis (1962) also advocated the use of a combined etic-emic strategy when researchers want to make direct cross-cultural comparisons. They argued that while many concepts may be "etic," they will require different emic operationalizations. For example, the construct of social distance (Bogardus, 1925), or the degree to which a person is close to another person, is relevant in many cultures (Triandis, 1994b). In order to emically define this, however, Triandis and Triandis (1962) used Thurstone scaling, wherein they asked individuals from the USA and Greece to generate many behavioral items which reflected degrees along this continuum (e.g., "I would marry this person," as indicative of low social distance, versus, "I would exclude this person from my country," as indicative of high social distance). Next, additional judges in each country rated behaviors on an 11-point social distance scale and behaviors that had low variability and that represented equal intervals were selected. With this method, although the same behaviors can be included in the scale for both cultures, they can represent different social distance values that were gleaned through emic analyses. Furthermore, this technique allows one to include emic measurements (i.e., culture-specific items) to represent etic constructs as well (see Triandis and Triandis, 1962 for full details).

Finally, another, perhaps more intensive etic-emic strategy has been referred to as a convergence strategy (van de Vijver and Leung, 1997b), which involves developing a completely emic instrument, without regard to other cultures. Thereafter, results from studies using this instrument in the local culture can be compared to results found with instruments developed elsewhere. If results are similar, then researchers can conclude that the constructs are comparable. Most usually, this approach also reveals interesting emic factors that had not been identified in previous research (see the Chinese Culture Connection, 1987, for an example of this approach).

Regardless of which strategy is chosen, it is crucial that researchers carefully examine the constructs of interest in each culture at the very beginning of the research process. As with other stages, emic perspectives and the full involvement of collaborators is crucial.

Choosing a Methodology

The next step in conducting cross-cultural research is to determine the methodology through which the topic will be studied. Cross-cultural psychology was once an area defined by its methodology rather than its content (Berry, 1980; Kim, 1994), and hence cultural researchers have always considered choice of methodology to be an extremely important decision. Importantly, such considerations always involve criteria that are unique to cross-cultural research, including, among others, how appropriate the method is in the other culture, how much depth it affords, how ethically acceptable it is in other cultures, and how replicable it is in the future (See Triandis, 1983 for a full review). To the extent that methods employed do not have these characteristics in other cultures, this presents numerous rival hypotheses (or cultural kis) that may be driving any results found. In addition to these criteria, specific research methods (e.g., laboratory methods, interviewing, observations of behavior) all pose further cultural concerns, and, as a result, introduce additional rival hypotheses when doing cross-cultural research. Below, we first discuss some of the important abstract criteria that should be considered in choosing methods, and then detail specific methodological concerns that arise when using different research methods. Throughout our discussion, we emphasize the importance of gathering emic information to inform one's decisions, measuring and/or controlling for the numerous factors introduced by one's choice of method, and using multiple methods to demonstrate triangulation and to rule out rival hypotheses.

Appropriateness

The criteria of appropriateness asks the question, "Is this method appropriate for all of the cultures being studied?" (Triandis, 1983). Researchers should never assume that a method that is common in their own culture will be acceptable in other. For instance,

the survey method is a very popular approach to empirical social research in the USA (Kuechler, 1998), yet the process of asking individuals to fill out questionnaires is not appropriate everywhere. Several characteristics of US culture coincide with the requirements of the individual survey methodology, including the emphasis upon individualism, freedom of speech as a basic human right of all citizens, high literacy rates, individuals' willingness and comfort at expressing opinions, and familiarity with the testing format. However, it is clear that not all cultures have these characteristics (Kuechler, 1998; Greenfield, 1997). For instance, during survey administration in a cross-cultural study of acculturation, Moshinsky (2000) found that despite instructions to work independently, Russian participants were working collaboratively to answer a survey. As a group, they were reading the questions aloud, deciding upon a group answer, and all circling the same response. These participants found the individual survey methodology to be inconsistent with their cultural experiences and values, and therefore modified the instructions to the more culturally appropriate group consensus task.

Thus, the appropriateness of the task needs to be carefully considered, based upon an analysis of the cultural characteristics of the samples under study. In some cases, it may be necessary for the researcher to adapt the instrument for each culture. For example, Greenfield (1997) discussed the need to adapt Piagetian questions when interviewing children from multiple cultures where the questions would otherwise be inappropriate or incomprehensible. Although such adaptation obviated the possibility of direct, quantitative cultural comparison, it revealed a great deal of information about the phenomenon under study, which would otherwise have been obscured.

Replicability

This criterion asks the question, "If we repeat this study at another time, with a different population, or with a parallel form of this instrument, will we get the same results?" In essence, this criterion also reflects the importance of the reliability of the instruments (Triandis, 1983). Reliability is an important consideration in unicultural research, yet cross-cultural investigators have found that participants may react quite negatively to attempts to gain data on reliability. For instance, Greenfield (1997) describes an interview study in which Zinacantecan subjects refused to answer redundant questions, and were appalled at the ignorance of the interviewer for asking the same question twice. Indeed, in cultures that value creativity and skill at fooling outsiders (Triandis, 1994a), such repetitiveness may lead participants to come up with more and more outrageous answers to the same question. Again, this points to the need to consider the cultural context and how it may interact with the particular method.

Depth

Another important question for choosing an appropriate method is "Will this method allow me to gain adequate depth to understand the phenomenon?" (Triandis, 1983). Interviews provide the researcher with the ability to use probing questions to better understand a phenomenon, whereas single, context-free judgments minimize the depth of information that can be obtained. Similarly, unobtrusive observations and content analysis provide a good deal of information about the context in which the phenomenon occurred, despite the fact that probing cannot be utilized with these methods. The depth of contextual information gained from interviews, observations, and content analysis can be contrasted with the paucity of information received when participants are asked to make single judgments (e.g., which style of management do you prefer?).

In making a choice about methodology and its ability to provide depth, it is also very important to consider the stage of one's research. In other words, depending on the stage of one's research, it may be more appropriate to use unobtrusive, non-reactive methods (e.g., participant observation, content analysis) over more structured methods (e.g., interviews, questionnaires, experiments). Triandis (1994a) suggests that when one knows a great deal about the culture(s) under consideration, structured methods are appropriate. However, if the researcher is less familiar with the culture, unstructured methods allow him or her greater depth and the ability to use extensive probing. Some researchers have presented arguments that quantitative methods should only be employed after qualitative analyses, including ethnographies, have been conducted (Greenfield, 1997). A qualitative understanding of a culture is an important factor in conducting high-quality research, so researchers should work closely with collaborators, and consider consulting the Human Relations Area Files (HRAF) to read ethnographies on the cultures being studied.

Ethical acceptability

Finally, researchers need to ask the question, "Is this method ethically acceptable in all cultures being studied?" This is a very important question that needs to be considered with the help of local collaborators, and through a close analysis of the culture's values, beliefs, norms, and practices. Readers are referred to Warwick (1980) or Tapp, Kelman, Triandis, Wrightsman, and Coelho (1974) for in-depth discussions on the importance of ethics in cross-cultural research. Objections to the method on ethical grounds may have serious consequences for the results of the study. For instance, in some cultures, having strangers interview women without their husbands present would be extremely unethical. Or, in high power (in which there is a large emotional distance between subordinates and supervisors) cultures, employees could find a survey about whether they agree with their bosses' opinions to be demeaning, and hence refuse to respond to the questions, or respond in ways that don't accurately reflect their beliefs. In addition to the ethical acceptability of the method, it is important that researchers take into consideration local norms and values when choosing a topic of study, and the specific content of the study.

Specific Research Methods

A detailed description of each research method and the possible cultural implications of each is beyond the scope of this chapter. Here we provide a brief synopsis of the

strengths and weaknesses of a number of research methods for cross-cultural research, along with references for more in-depth coverage of each method discussed. A summary of the following discussion can also be found in Table 11.1.

Experiments Experimentation provides several notable strengths for cross-cultural research, such as the ability to control and measure potential cultural kis, and to test some causal assumptions. Moreover, the added control provided by this method can also enable researchers to test both explicit aspects of culture (i.e., attitudes of which participants are aware) as well as implicit aspects of culture (attitudes of which participants are unaware). For the latter, for example, researchers may employ complex reaction time tasks used in social cognition research to investigate the accessibility of constructs, and the factors that facilitate or inhibit such accessibility across cultures. At the same time, this method poses several notable challenges. Experiments may be difficult to employ as a method across cultures given that they are highly obtrusive. Furthermore, it may be difficult to manipulate variables in similar ways, and to find a task that is equally familiar and motivating across cultures (Triandis, 1983; Triandis, 1994a). Discovering an appropriate task often takes multiple pilot tests and feedback from collaborators. In addition, involving local experimenters is helpful when dealing with reactance to outsiders (see section below on choice of experimenters). However, such experimental manipulations provide very powerful results if found. For instance, in a study of goal-setting, Erez and Early (1987) implemented experimental manipulations in three cultures, and were able to uncover differences in subjects' cultural values. As mentioned previously, the reliance on theory also helps to rule out alternative hypotheses. We refer readers to Brown and Sechrest's (1980) seminal chapter on experimentation in cross-cultural research, and to Earley and Mosakowski (1995) for an overview of experimentation in international management research.

Questionnaires Paper-and-pencil questionnaires have been used more than any other method in cross-cultural organizational research. This method may be less intrusive than other methods and also affords the collection of a large amount of cross-cultural data. However, the use of questionnaires to assess abilities, personality, attitudes, or other psychological constructs creates a large number of rival hypotheses that need to be investigated. Rival hypotheses for differences in test results include differences in motivation, cultural-group anxiety interactions, differential comprehension of instructions, differential familiarity with the materials, differential reliability, differential validity, and differences in response sets (Triandis, 1983). Despite the problems associated with surveys, they remain popular, and cross-cultural researchers have established methods for measuring and investigating such pertinent rival hypotheses, which are discussed in later sections. Readers should refer to Kuechler (1998) or Pareek and Rao (1980) for overviews of surveying across cultures, see Irvine and Carroll (1980) on testing and assessment, and should refer to Harpaz (1995) for an introduction to surveys in international management research.

Interviews Interviews have been extensively used in anthropological research on culture, but have been less frequently employed in cross-cultural organizational research. This

method has several notable strengths, including that it can provide considerable depth on a research topic and may illuminate rich, culture-specific perspectives. At the same time, the use of interviews as a methodology can require substantial resources. In addition, sampling issues are often difficult to resolve, as the question "who should be interviewed?" is often unclear (Triandis, 1983). Furthermore, interviews raise concerns about the characteristics of the interviewer, about the impact of the interviewer upon participants' responses, and about the lack of standardization across interviews (ibid.). However, interviews are very useful at the beginning stages of research and for qualitative research, and they also tend to be appropriate for more populations than are questionnaires (e.g., in pre-literate societies, with children). As with other methods, it is important to elicit local participation to design the content and structure of interviews, and to use local interviewers when possible. Readers should refer to Pareek and Rao (1980) for an overview of interviews in cross-cultural research.

HRAF and ethnographies The HRAF consist of ethnographies from hundreds of cultures around the world, arranged according to more than 100 categories (e.g., food, clothing, family, labor, law) and subcategories. As such, they can provide in-depth and unobtrusive information about a culture that is based on years of experience. Researchers can consult these ethnographic files as a primary source of information about a culture, which can be used to supplement information gathered from collaborators. The HRAF, however, have been critiqued for their lack of standardization, and missing or dated information (Narroll, 1962). As such, they are best used in collaboration with other methods, and for gaining a deeper understanding of the culture before being one's research program. Readers should refer to Barry (1980) for more information about using the HRAF. Investigators can also choose to employ an ethnographic method in their own research. For more information on ethnographies in international management research, readers should see Brannen (1995).

Observations of behavior There has been very little organizational research done on observations of behavior across cultures. This method, however, is notable in that it can provide unobtrusive data, and can provide information on macro-indicators of culture that are difficult to assess with other methods. One example of unobtrusive observational research within the cross-cultural literature is provided by Levine and Norenzayan (1999), who compared the pace of life in 31 countries, by examining average walking speed, the accuracy of public clocks, and the speed with which postal clerks completed a simple work request (see also House, et al., forthcoming, for a number of unobstrusive behavioral measures in the area of culture and leadership). This method can also enable one to test theories of cultural dynamics, or how events unfold in different cultural contexts. However, as with other methods, researchers need to be careful to assess constructs in way that are culturally appropriate, lest the behaviors be incomparable across cultures. When choosing to do unobtrusive or obtrusive observations of behavior in two or more cultures, researchers should first ensure that the situations exist in all cultures, choose the exact behaviors to be sampled, and then establish a detailed coding scheme. Investigators should consider both videotaping and on-the-spot coding of behaviors, and choose between these options based upon concerns about accuracy and resources (Triandis, 1983). Readers should

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refer to Longabaugh's (1980) chapter on systematic observations in naturalistic settings, and also see Bochner's (1980) chapter on unobtrusive methods.

Content analysis Investigators interested in demonstrating the existence of a cultural phenomenon through an analysis of cultural documents (e.g., proverbs, newspapers, speeches, artistic products) should employ content analysis. This method has not received much attention from cross-cultural I-O psychologists, yet it provides strong evidence for the real-world, cross-situational generalizability of a cultural theory. An example of content analysis within cross-cultural I-O research is provided by Gelfand et al. (2001), who coded US and Japanese newspaper accounts of international negotiations. In addition, it may enable researchers to link proximal, modern-day concerns with more distant, historical sources. For example, in the area of decision-making, Weber, Hsee, and Sokolowska (1998) provide an analysis of historical proverbs across cultures and their implications for understanding the psychology of risk. When utilizing content analysis, researchers need to ensure that they have a detailed sampling plan, have established a reliable coding manual in all cultures, and employ trained coders who are not familiar with the hypotheses (Triandis, 1983). Readers interested in more information on content analysis should see Brislin (1980).

Ecocultural and sociological databases There are a number of resources available to researchers interested in examining the relationship between human behavior and ecological, sociological, economic, or political factors. Such resources are useful for testing multilevel models of culture. For instance, there have been several authors who have suggested that a country's climate may have a direct impact upon human behavior (see Peterson and Smith, 1997; Robbins, DeWalt, and Pelto, 1972; van de Vliert and Yperen, 1996; van de Vliert, Schwartz, Huismans, Hofstede, and Daan, 1999). However, as with the HRAF, such resources may contain missing and/or data information. In addition, databases may label or assess constructs differently than would be done in the local context, and, as such, measurements may be biased. In addition, without a developed theory, the use of such sources can results in "dustbowl" empiricism. Readers interested in learning more about cross-cultural research using ecocultural variables should consult Georgas and Berry (1995) for a theoretical framework, or should reference the following resources: United Nations (1999), *Europa World Yearbook* (1998), IMDS (1999), Kurian (1997), or other existing databases that summarize national statistics yearly.

Summary In sum, investigators need to carefully consider the appropriateness, replicability, depth, and ethical acceptability of each possible method. Furthermore, all research strategies have strengths and weaknesses, and raise different cross-cultural concerns or rival hypotheses. As such, it is crucial to examine the phenomenon of interest with multiple, complementary methods through partnerships with local collaborators. Indeed, especially when researchers are not intimately familiar with another culture of interest, it is recommended that qualitative studies (e.g., ethnographies, narrative analyses, or the study of artifacts) be used before quantitative methods (Greenfield, 1997; Triandis, 1994a and b; Wright, 1995). The importance of triangulation and utilizing multiple methodologies to support cultural research hypotheses cannot be overemphasized.

	Strengths	Cultural concerns and rival hypotheses	Recommendations
Experiments	 Allows for the control of cultural k's May enable testing causality May enable the test of both explicit and implicit aspects of culture 	 May be difficult to manipulate independent variables in similar ways May be obtrusive and tasks may not be equally comprehensible and motivating across cultures Choice of experimenter is important 	 Employ multiple pilot tests and feedback from local collaborators Theoretical specification of relationships between variables Use local experimenters similar to the participants
Questionnaires	 May be less intrusive than other methods Provides the ability to collect data on large number of items 	 Equivalence issues across cultures: differences in motivation familiarity with materials differential reliability differential validity differences in response sets 	 Statistically examine response tendencies and consider controlling for these, if possible Examine the pattern of relationships among variables across cultural contexts
Interviews	 Enables researchers to gain considerable depth on a research question Enables a rich understanding of possible emic perspectives 	 Requires extensive resources May be obtrusive Sampling issues (i.e., "who do we interview?") Interviewer characteristics might differentially impact participants Lack of standardization across participants 	 Use interviews for populations where thi is most appropriate (e.g., cultures with low literacy rates, where the task of filling out questionnaires is inappropriate) Use for complex phenomena, for early stages of research, and for qualitative research Use local interviewers whose characteristics are similar to those of contributions

	Strengths	Cultural concerns and rival hypotheses	Recommendations
HRAF and ethnographies	 Is often based on years of in-depth experience in a culture Provides unobtrusive measures to complement other methods 	 Not all topics or cultures represented Files may have dated information 	 Use in collaboration with other data gathering techniques Use for deeper understanding of a given culture and consult prior to sampling cultures
Observations of ochavior	 May provide an unobtrusive source of data to test hypotheses Can provide in-depth process data to examine cultural dynamics 	 Cultural differences in the prevalence and meaning of behaviors Reliability in coding 	 Ensure that the situations of interest exist in all cultures being studied and enlist help of local collaborators Create detailed coding scheme, and have coders blind to research hypotheses
Content analysis	 May provide rich sources of culture-specific information Can be used to link proximal cultural issues to more distal historical sources 	 Necessary to locate appropriate documents that are nearly equivalent in meaning across cultures Reliability in coding 	 Enlist help of local collaborators to locate appropriate documents Establish a detailed sampling plan Establish reliable coding manual, and have multicultural coders blind to research hypotheses
cocultural and ociological atabases	• Enable researchers to develop and test multilevel models of culture	 Generally only available for a limited number of countries, and a limited set of variables, which are typically macro- level societal and economic variables May include constructs and operationalizations that are biased or 	 Must establish a detailed theoretical model to specify how these macro- and meso-level societal indicators relate to the researchers' theory and other findings

Although triangulation with multiple methods is important in all psychological research (McGrath, 1982), it is critical when trying to discern the impact of a cultural variable, given the number of rival hypotheses for results.

Choice of Task and Instructions

When the investigator has chosen a methodology, the next judgment call is the exact task and instructions that will be used. First, in order to compare two or more cultures on a task, investigators must first demonstrate that the meaning of the task is equivalent across these groups. Berry (1980) referred to this type of equivalence as "conceptual equivalence." Conceptual equivalence has generally been discussed in terms of translation; however it is also important that the task itself be understood equally well across all cultures. For example, there has been much debate about the applicability of ability tests across cultures, with the cultural argument being that groups are not equally familiar with the task, they may have different reactions to the testing situation (e.g., anxiety), they have different definitions of ability, and they might not understand the instructions equally well (Triandis, 1994a). Each of these factors serves as feasible alternative explanations for differences between groups, should they be found. One well-known example of the differential cognitive comprehension of a task is given by Glick (1968), based upon his studies of Kpelle farmers in Liberia. Glick's research was based upon object sorting as an assessment of intelligence. Psychologists in Western contexts had assumed that it was more intelligent for individuals to sort objects according to taxonomic category, rather than by association or color. When Glick asked Kpelle farmers to sort objects, however, they consistently sorted them according to the "less sophisticated, superficial" attributes of color or association. However, rather than concluding that the Kpelle were cognitively inferior, he reworded the instructions numerous ways. Finally, exasperated, he asked them to sort the objects "the stupid way," and the Kpelle farmers sorted the objects into perfect taxonomic categories - i.e., the Western "intelligent" way!

Second, in addition to having equal cognitive comprehension of the task instructions, it is important to ensure that participants in all cultures have equal motivation to perform the task. In other words, comprehension of the task is not enough; it also must be equally engaging across groups. Gelfand et al. (under review) provide an example of the effects of differential motivation. In a study of egocentric biases in negotiation, the authors chose to use an experimental simulation of a negotiation. The simulation required that undergraduate psychology students assume one of two roles, and negotiate over four issues. As a first choice, they chose a task that was motivating for US undergraduate students – negotiating over privileges for a college honor society. However, it became clear from discussions with their Japanese collaborator that this was a vertical individualistic task that had no correlate in Japanese culture. Even though it would have been possible to translate the task, and have it be equally comprehensible, participants would not have been equally motivated to engage in a negotiation on honor societies in Japan.

In sum, the above descriptions and examples make clear that investigators should choose a task collaboratively with all local researchers, and carefully consider the implications of

any questions or concerns that they might have. When all collaborators have agreed upon a task, they should create instructions for the task that will minimize any problems with comprehension or motivation. Either focus groups or pilot analyses should be held in each culture, and the results of these preliminary analyses should be used to make changes in the measure. In the pilot or focus groups, researchers should employ comprehension and motivation checks (see Campbell, 1964, p. 317, as cited in Berry, 1980), or use judgmental methods with which experts evaluate the stimuli (Berry et al., 1992). Triandis (1994b) suggested that during the pre-tests, the investigator should check the ethical acceptability of the method. The materials should ask participants, "What did you think of this task?" and they should be asked to rate the task on a scale to assess cultural differences in meaning (e.g., good versus bad, active versus passive, strong versus weak; see Osgood, May, and Miron, 1975). If a task or situation elicits differential comprehension, motivation, or acceptability, the researcher should abandon the task and reconsider alternatives that do not present these rival hypotheses.

Choice of Language and Translations

After choosing the task that will be employed to assess the research questions, investigators must choose the language in which the study will be conducted and decide upon the procedures to be employed for translation. In many cases, the choice of language is an obvious decision; however, in multicultural societies, where most participants will be bilingual, the choice may not be as obvious. Furthermore, the choice of language in such a culture may have strong implications for the responses that investigators obtain (i.e., language choice is yet another alternative explanation for differences between groups). There have been several studies that have demonstrated that participants' responses can be determined, in part, by the language in which the task is assessed. For example, numerous studies have demonstrated that responses among Hong Kong Chinese differed widely depending on whether instructions were given in Mandarin, Cantonese, or English (Bond and Cheung, 1984; Bond and Yang, 1982; Yang and Bond, 1980). The authors proposed that these differences were due to participants' speculations regarding who was interested in the results - the Beijing authorities, the Hong Kong authorities, or the British authorities - hence the respondents varied their answers accordingly. In a similar vein, there is evidence that bilinguals respond to questionnaires differently, depending upon the language of administration. Bennett (1977) found that bilinguals gave more extreme answers in English than in their native language, and Marin, Triandis, Betancourt, and Kashima (1983) found that bilinguals give more socially desirable answers in English (i.e., communicating to "outsiders"). These studies demonstrate the role that language has in communicating the purpose of the study to bilingual participants. When studying a sample of bilinguals, investigators need to carefully consider the implications of language choice, and make informed decisions based upon discussions with collaborators and pilot analyses, if possible.

With respect to translation, it is necessary for all cultural groups to have equally understandable forms of the research materials, in the chosen language (i.e., translation equivalence; Berry, 1980; Berry et al., 1992). The most widely used and accepted method is the translation-backtranslation method (Brislin, 1980), in which questions are translated from the source language to the second language, and then retranslated back to the source language by an independent translator. Van de Vijver and Leung (1997a), however, have noted that the translations obtained through this method are often stilted, and that in the field of professional translations this method is rarely used. Instead, teams of competent bilinguals both translate and check the documents, and the accuracy of the translation is checked through judgment methods. A more complex method than the translation-backtranslation method is to decenter the documents to be used (Werner and Campbell, 1970). With this method, both the original and the translated versions of the document are altered together in order to improve the quality of them both (van de Vijver and Leung, 1997a). We should note that cross-cultural researchers have argued against translating documents if it can be avoided, because "translation is at best approximate" (Triandis, 1994b, p. 81). Instead, Triandis suggested that the same data-gathering operations be carried out in each culture such that the only text that needs to be translated is the instructions. However, researchers utilizing survey methods will often find themselves in the situation where translation is inevitable, so they should employ the translation-backtranslation technique at a minimum. Readers are referred to Brislin (1980) for a more in-depth discussion of translation in crosscultural studies.

Choice of Experimenter to Conduct the Study

The next judgment call that needs to be made in the research process is that of determining the experimenter who will conduct the study. The experimenter is often the only person who will be in direct contact with the participants. Therefore, this individual can communicate a great deal about who is conducting the study and the purpose of the study, in addition to determining the participants' affective responses to the task. The importance of this choice is obviously dependent upon the method - the choice of a researcher is more critical for methods that require a great deal of interaction between participants and researchers (e.g., interviews, ethnographies). However, the choice of an experimenter has implications for introducing rival hypotheses in any study to the extent that groups may react differently to the experimenter. For instance, some cultures have norms against "outsiders" (Triandis, 1994b), and there are cultural differences on the extent to which it is appropriate or necessary to deceive an outsider (Berry, 1980; Triandis, 1994a; van de Vijver and Leung, 1997). Investigators should also note that it is possible that cultural factors may influence the levels of demand characteristics. For instance, cultural differences in power distance might play a role in the level of acquiescence, or how socially desirable the participants' responses are.

Pareek and Rao (1980) also argue that it is crucial that interviewers' background characteristics be taken into account in order to elicit genuine and unbiased answers from respondents. The background factors of the interviewer can influence rapport, and subsequently cause the interviewee to self-disclose more or less, depending upon his or

her comfort with the interviewer (ibid.). Günther (1998) provided colorful examples of her own experience at gaining access to international families, and interviewing their children for her research. Because of the rules concerning communication between men and women, it took her many months to gain access to the Saudi Arabian community for interviews. Her husband was required to do all of the communicating with the male Saudi Arabian community representative, and, on more than one occasion, her entire family went to visit the family of the Saudi Arabian community representative in order to establish a rapport. After months of building a relationship and waiting, the Saudi Arabian community representative finally granted her access to families in the community for her research. This example points to the importance of cultural understanding and rapport-building when working with individuals from diverse cultures. More importantly, Günther's examples point to the fact that the researcher is not a neutral tool, but rather is a "research instrument" who is actively immersed in the study (Hong, 1998).

In order to minimize the experimenter's impact upon responses, and the possible interactions between the experimenter and the cultural group, it is best for investigators to choose local experimenters. Across all cultures being studied, the ideal is to use experimenters who share similar characteristics other than cultural background (e.g., experimenters in all cultures are female research assistants in their 20s), yet they should have the same cultural background as the majority of participants in the study. Again, the importance of local collaborators in helping the investigator to gain access to appropriate experimenters is critical, as well as in helping to gain access to populations of interest. Having the aid of an "insider" is one of the most crucial ways to gain access to samples, especially in collectivist cultures (see Günther, 1998). Thus, local collaborators will not only help to eliminate rival hypotheses, they are also important in helping to establish the legitimacy of the research and gain access to local samples.

Assessing Additional Variables

The choice of additional variables to include is the final judgment call that the investigator must make prior to collecting data on the topic of study. At this point in the research process, the investigator needs to take into consideration all the rival hypotheses that have not been accounted for at previous stages. This is particularly important given that cross-cultural research may involve static group comparisons, in which individuals are not randomly assigned to the "treatment" (i.e., culture; Malpass, 1977). In other words, in cross-cultural research, there are a large number of variables that might be correlated with the alleged causal variable that could potentially serve as explanations for results. Included in this list of variables are covariates that are derived from one's conceptual framework and one's sampling plan (e.g., demographics), covariates associated with cultural differences motivation, and, in perceptions of the method, the instructions, or the experimenters, and additional covariates identified through an emic analysis, in conjunction with one's collaborators, of possible alternative explanations or results. It is through such emic analyses that researchers are in a much better position to identify additional cultural k_i's that are not present in their own culture.

Analyzing Responses

By this stage, data has been collected, and is ready to be analyzed. As in the previous stages, there are multiple rival hypotheses that must be accounted for the researcher attempts to establish cross-cultural similarities and differences in organizational phenomena. Although a detailed discussion of all such concerns is beyond the scope of this chapter (see van de Vijver and Leung, 1997b for an extensive review on quantitative analysis, and Greenfield, 1997 on qualitative analysis in cross-cultural research), here we focus on three major issues: cultural response sets, issues of equivalence in measurement, and levels of analysis.

One of the most vexing problems in cross-cultural research is the existence of cultural response sets, or systematic tendencies to respond differently to scales across cultures. Two types of response set have been widely discussed in the cross-cultural literature: extreme responding (i.e., systematically using the high and/or the low ends of a response scale) and acquiescence (i.e., showing uniform agreement; Cheung and Rensvold, 2000). For example, Marin, Gamba, and Marin (1992) illustrated that, compared to Caucasians, Hispanics are much more likely to use extreme responses and also to show agreement when responding to research scales. By contrast, other research has illustrated that Asians are less likely to use the extreme ends of the scales than Caucasians (Lee and Green, 1991). As such, when making direct comparisons between scale means across cultures, any observed difference may simply be due to this methodological artifact unrelated to the theory being tested. As a cursory way to examine whether such effects characterize the data collected, the means and standard deviations across all of the items in the study can be examined. In the ideal case, where there are heterogeneous items, across all of the items, one should not observe that there are significant mean differences (i.e., indicative of acquiescence), or that there are significant differences in the variance (i.e., indicative of differences in systematic response patterns). A more sophisticated approach would entail using structural equation modeling to illuminate such response tendencies, as they are often associated with factorial invariance (i.e., affecting both factor loadings, variances, and intercepts) (see Cheung and Rensvold, 2000 for more details). If response sets are found, then one alternative is to abandon any direct comparisons among culture means and, instead, examine patterns within each culture, as well as to incorporate more operant research methods (i.e., unobtrusive observations) to examine the question of interest. Another alternative is to attempt to use statistical controls, such as standardizing data (see van de Vijver and Leung, 1997b for more details). This procedure involves obtaining z-scores for each subject (i.e., dividing each item by the subject's mean, and then dividing this score by the subject's standard deviation), which may help to reduce response sets. This technique, however, can only be justified when there is a large set of heterogeneous items being analyzed (Schwartz, 1992).

There are a number of other measurement artifacts that may also seriously challenge any inferences about observed cross-cultural differences. As discussed above in the section on assessing the constructs of interest, the assessment itself may be biased, and should be examined using structural equation modeling or factor analysis, which are important in discerning whether the structure of the instrument is invariant across cultures (also

known as structural equivalence; see van de Vijver and Leung, 1997b). In addition to the construct level, it is also possible that there is item bias, whereby certain items display alternative patterns, even given that participants have the same level of an underlying trait (also known as differential items functioning). At the very least, researchers need to examine item analyses within each culture to detect items that are not comparable. The use of item response theory (IRT) and related techniques is a more sophisticated method that can help to illuminate such tendencies (see van de Vijver and Leung, 1997b for an in-depth discussion). Even more vexing is the possibility that the constructs and items are invariant across cultures, yet the scales do not have a common origin, which has been referred to as scalar inequivalence (ibid.). These authors recommend a number of techniques to detect such bias, including content analyzing the scales and ordering items based on theory in each culture, as well as using item response theory.

Finally, levels of analysis issues are crucial to take into account when analyzing crosscultural data. Given the complexity in the nature of questions investigated in crosscultural research, researchers may need to examine data at the individual level, group level, and/or culture level. Clearly, the level of theory, measurement, and analysis must be consistent (Klein, Dansereau, and Hall, 1994), and researchers must avoid making the ecological fallacy, whereby phenomena at higher levels of analysis are attributed to individuals. Indeed, there is increasing evidence that relationships between variables may even be opposite at different levels of analysis in cross-cultural research. For example, Hui, Yee, and Eastman (1995) found that job satisfaction was positively correlated to individualism at the societal level, yet was negatively related to individualism at the individual level within the Hong Kong cultural context. Likewise, Triandis, Carnevale, Gelfand, and colleagues (2001) illustrated that collectivism is positively related to deception in negotiation at the culture level, yet allocentrism (an individual level attribute akin to collectivism) was negatively related to deception at the individual level.

This reinforces the need to be very specific regarding the level of analysis to which one is generalizing, as relationships at multiple levels of analysis can reveal very different patterns of results. Indeed, this is particularly important given the trend that crosscultural researchers have been measuring specific culture variables (e.g., power distance beliefs) at the individual level of analysis, and performing regression analyses to demonstrate the link between aspects of culture and individual level phenomena (e.g., Brockner et al., in press). To the extent that phenomena operate differently at the individual and cultural level, however, this strategy may be problematic. As an alternative, some I-O researchers have began to recommend what has been termed "cross-level operator analysis" (CLOP) whereby mean values on culture scales are assigned to every individual (i.e., are assumed to be constant across all individuals), and regression analyses are then performed to examine the impact of this grouping variable on individual phenomena (James and Williams, 2000). However, this method has been criticized because it can lead to Type I errors (Bliese, 2000; Klein et al., 2000; Tate and Wongbundhit, 1983). These concerns can be alleviated by the use of hierarchical linear modeling (HLM). The latter, however, necessitates having large samples, and if one is comparing only several samples, reduced power will be a major concern. Alternatively, if one has very small samples, linear trend analysis may be a useful alternative if sample sizes are equal (Hanges,

personal communication). Regardless of which method is chosen, it is crucial to be attentive to levels issues both in the design and analysis of cross-cultural data.

Drawing Tentative Conclusions and Getting Convergence

In interpreting results and drawing conclusions, as with other stages, researchers should extensively discuss results with collaborators in order to gain emic interpretations of the results. Such emic interpretations should be done independently, as they may be biased if other researchers' have already provided interpretations. In addition, careful attention should be paid to the numerous rival hypotheses that have been detailed in this chapter, and caution should always be taken in making any definitive conclusions before researchers have conducted another study on the same research question, utilizing a different, and complementary methodology. At this point, we begin anew the entire research process, starting again with Stage 1.

Conclusion

In conclusion, in the future, because of both the theoretical impetus to expand the science of I-O psychology, as well as the practical need to help manage cultural dynamics in organizations, cross-cultural research will likely become the norm, rather than the exception, in our field. In this chapter, we have emphasized how culture, the very phenomenon of interest, also adds much complexity to the research process. In particular, we delineated the importance of unique methodological choices that researchers must make during the stages of the cross-cultural research process, and have elaborated upon the implications of such choices. Throughout our discussion, we emphasized that when doing cross-cultural I-O research, researchers must always assume, until shown otherwise, that there are numerous rival hypotheses, or cultural k_i 's (Malpass, 1977) that derive from each stage of the research process - from the sampling plan, to the choice of the constructs, to the choice of the method and experimenter, to the analysis and interpretations of results - all of which can threaten the interpretation of results. Such concerns should be identified, measured, and/or controlled. In addition, we have emphasized the importance of having a theoretical framework within which the research is being conducted, of using multiple methods, and of gaining emic understanding of the cultures being studied throughout the entire research process.

Above all, we have emphasized the importance of involving local collaborators in the entire research process. Fortunately, as our field globalizes, it will be easier to develop cross-cultural collaborations. A researcher new to cross-cultural I-O research, for example, may join a number of associations in order to find scholars doing research that is relevant to their own (e.g., the International Association for Cross-Cultural Psychology (IACCP), the Society for Cross-Cultural Research (SCCR), the Society for Psychological Anthropology (SPA)). In addition, I-O associations are beginning to develop structures

that foster cross-cultural collaborations. For example, the organizational behavior division of the Academy of Management has information on developing collaborations in its newsletters. While we do not provide specific criteria for the development of such collaborations, we emphasize the importance of choosing collaborators who have mutual theoretical interests, who are committed to ethical research, and who are committed to providing feedback and having a voice in the research process (see Tapp et al., 1974 for further discussions on cross-cultural research collaboration).

While this chapter has undoubtedly provided additional judgment calls for the crosscultural researcher, ultimately, we should all have more confidence in the nature of culture and its impact on organizations, which is a central goal for our field in this millennium.

Notes

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- 1. These estimates are based on searches in the aforementioned journals using the term "crosscultural differences," and examining the number of articles that have such terminology compared to the total number of articles published in those journals since 1983. To examine the proportion of articles on cross-cultural issues in selection, we expanded our search to include any journal as well as book chapter.
- Expanding the range of variation also serves another important function in research, namely 2. the ability to "unconfound variables." In some cultures, two variables are so highly correlated (or confounded), that it is impossible to determine the independent influence of each variable on a third criterion variable. However, by doing cross-cultural research, one may be able to find cultures in which such variables are not correlated (are unconfounded), enabling one to assess each variable's affect on other variables. As detailed in Segall, Dasen, Berry, and Poortinga (1990), an interesting example of this is found in the area of clinical psychology in understanding the Oedipal complex. Freud's theory originally proposed that at certain ages, boys would have animosity toward their fathers, as a result of their jealousy of their role as their mother's lover. Although the phenomenon of animosity has not been debated, the cause of it has. Specifically, Malinowski (1927), an anthropologist, argued that such animosity stems from the fact that the father is the disciplinarian, not as a result of his role as the mother's lover. Unfortunately, in Austria (where most of Freud's work was conducted), fathers serve in both roles, and it is impossible to determine the locus of the animosity (and thus the explanations are confounded). However, in the Trobriand Islands, where Malinowski did his research, the variables are unconfounded: uncles serve as disciplinarians, whereas the father retains his role as mother's lover. The natural question, then, is where is animosity directed in the Trobriand Islands? Malinowski's research illustrated that it was directed at uncles, not fathers, as Freud's theory originally proposed. Although this issue has been subject to much scientific debate (see Segall et al., 1990 for further discussion), it nevertheless illustrates the value of cross-cultural research for expanding the range of variation.

- 3. This representation should be considered a metaphor, or heuristic. In fact, the relationship between k and Y need not only be additive.
- 4. We choose the term "cross-cultural" to refer to comparisons among groups who share a language, time, and place, and who develop shared beliefs, values, and norms (Triandis, Kurowski, and Gelfand, 1994). While such comparisons often involve groups which have different geographical borders, it may also involve comparisons of groups within geographical borders which have developed distinct cultures.
- 5. Cultural tightness/looseness refers to contrasting cultural systems that vary on the degree to which norms are clearly defined and reliably imposed. In tight cultural systems, norms are ubiquitious and are very clearly defined, there is a limited range of acceptable behaviors in social situations, and there is little tolerance for deviance from norms. In loose cultural systems, norms are less ubiquitious and are not clearly defined, there is a wide range of acceptable behavior in social situations, and there is tolerance for deviance from norms (Gelfand, 1999).
- 6. Such factor analyses should also be at the appropriate level of analysis i.e., culture-level for a culture-level construct, or individual-level for an individual-level construct (Hanges, 2000; see House et al., 2001 for examples).

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