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PROBLEMS AND STRATEGIES WHEN USING RATING SCALES IN CROSS-CULTURAL COPING RESEARCH

Roger G. Tweed and Anita DeLongis

1. INTRODUCTION

Culture may significantly influence people's coping strategies. The possibility of cultural differences in coping strategies is suggested in part by the differences between the coping prescriptions of traditional belief systems. For example, the Taoist tradition prescribes adapting oneself to the environment. In this tradition, water provides a model of successful coping because water adapts to the contours of its environment (Lao-Tzu, 1989, chapter 77 Te). Alternatively, the Hebrew and Christian traditions prescribe ruling over the environment, at least as embodied in the cultural mandate in which humans are directed to subdue and have dominion over the Earth; furthermore, in the Hebrew and Christian traditions, when personal efforts fail, humans are encouraged to enlist the assistance of an all-powerful deity to change the environment.

Many additional examples of differing advice can be found when comparing traditional belief systems. Confucius provides a further point of comparison because he, in contrast to the Hebrew and Christian cultivation of dependence on a deity, told his followers to avoid becoming overly interested in questions about spirits. Confucius recommended efforts directed toward self-improvement. In the Buddhist tradition, elimination of personal desire is prescribed as a means of coping with the demands of life. Personal desire is a source of suffering, according to the Four Noble Truths of Buddhism, so elimination of desire brings freedom from suffering.

Thus, depending on which tradition one follows, the appropriate prescription for coping may be to adapt to the environment, bring the environment into submission, rely on a deity, eliminate personal desire, or seek self-improvement. These strategies are not all mutually exclusive, yet these differing ideals suggest possible continuing cultural differences in regions influenced by one or more of these or other traditions. Empirical research has the potential to clarify the extent of variation and consistency in coping around the world.

Roger G. Tweed, Kwantlen University College; Anita DeLongis, University of British Columbia

Studying coping, however, is challenging. Qualitative methods such as ethnographies, grounded theory, or discourse analysis rely on the researcher to select and interpret representative segments from respondents' reports. These methods can be very enlightening, but many psychologists would be unwilling to rely on qualitative methods of study alone because of the possibility that the prior beliefs, assumptions, and the cultural background of the researcher will color the selection and interpretation of the respondents' words. These dangers were illustrated in Freeman's (1999) allegations regarding Margaret Mead's classic book, Coming of Age in Samoa (1928). Her book reported how Samoan adolescents coped with the transition from childhood to adulthood. According to Freedman and at least one of Mead's informants, Mead's book expressed Mead's theories about sexuality more accurately than it portrayed Samoan adolescent strategies for coping with this developmental transition. The accuracy of Mead's work can still be debated as can the selection and interpretation by Freeman, but the incident nonetheless illustrates the danger of relying on selection and interpretation from extended interviews with a small number of informants.

2. CONTEMPORARY COPING RATING SCALES

Quantitative methods such as the use of Likert-type rating scales reduce the role of interpretation (or of hermeneutics to be more precise) in the research process. The rating scales are used as follows: Participants are instructed to recall a particular stressful circumstance. Sometimes the event is specified by the researcher as in Halamandaris and Powers' (1999) study of student responses to exam stress. Other times, the respondent is asked to think of the most stressful event within a particular time period (e.g., in the last 6 months or the last 24 hours). Some of the coping scales are designed to be applicable to a wide range of problems (e.g., Ways of Coping Scale, WOC, Folkman et al., 1986a), but others apply only to specific contexts (e.g., Coping with Health Injuries and Problems scale, CHIP; Endler and Parker, 2000; Chronic Pain Coping Inventory, Jensen et al., 1995; Romano et al., 2003). After reading the instructions, the participants may be asked to write a description of the stressful circumstance under consideration.

Next, the participants read each item on the scale and rate the extent to which they used each strategy listed to cope with the specific stressor described. For example, the first item may say "I stood my ground and fought for what I wanted" (WOC; Folkman et al., 1986a) and beside that item will be the numbers from 0 to 5. One participant may decide that he didn't use that strategy at all, so he will circle a zero for that item. Another participant may decide that she used that strategy somewhat and circle a 3 for that item. A third participant may decide that she used that strategy extensively, so will circle a 5 for that item.

The COPE (Carver et al., 1989) differs from these others in initially being used to assess coping dispositions or habits; in the initial study, participants were not asked to recall a specific event, but instead were asked to report how they generally respond under conditions of stress. In a separate study (also reported in Carver et al., 1989), the COPE was also used more like the other scales to assess coping with a specific stressful situation. Thus, the authors of the COPE suggested that the instrument could be used effectively either to assess coping dispositions by asking participants how they usually cope or to assess situational coping by asking participants to recall a particular incident and report how they coped with that situation.

Factor analyses and theoretical considerations have provided guidance for grouping items on coping scales into clusters measuring particular latent constructs. The Ways of Coping Scale (WOC), for example, a widely used measure, assesses confrontive coping (e.g., "expressed anger to the person who had caused the problem"), distancing (e.g., "went on as if nothing had happened"), self-control (e.g., "tried to keep my feelings to myself"), seeking social support (e.g., "talked with someone to find out more about the situation"), accepting responsibility (e.g., "criticized or lectured myself"), escape/avoidance (e.g., "wished the situation would go away or somehow be over with"), planful problem solving ("made a plan of action and followed it"), and positive reappraisal (e.g., "changed or grew as a person in a good way"; Folkman et al., 1986a). The Coping Inventory for Stressful Situations (CISS; Endler and Parker, 1999) assesses task-oriented, emotion-oriented, and avoidance-oriented coping. The COPE (Carver et al., 1989) assesses a number of constructs including active coping, planning, suppression of competing activities, restraint, seeking instrumental social support, seeking emotional social support, alcohol-drug disengagement, and turning to religion. Recently, attention has been directed toward developing rating scales of coping to assess interpersonal modes of coping, such as empathic responding (O'Brien and DeLongis, 1996) and protective buffering (Lyons et al., 1998). These latter dimensions have been referred to as relationship-focused coping; they tap communal or interconnected ways of coping. Given differences across cultures in interpersonal roles and responsibilities (e.g., Markus and Kitayama, 1991; Miller, 1994), such dimensions of coping may be particularly important for the study of cultural differences. The Coping Schemas Inventory (Peacock and Wong, 1996) is an interesting scale that includes some subscales such as self-restructuring and acceptance that may be especially relevant in culturally Chinese contexts. The inventory is based on the Resource Congruence model (Wong, 1993) which assumes stress involves not only processes of conflict between the self and the environment, but also intrapsychic conflict. The Resource Congruence model also includes a role for proactive coping strategies that build personal resources so that one can cope better with unforeseen future events.

The use of rating scales such as these reduces the need for experimenters to select from and interpret respondents' open-ended responses. The scales, because they rely on self-reports, also allow assessment differentiating not only coping behavior, but also differentiating the cognitions and motivations behind the coping. For example, self-reports can begin to distinguish respondents who are stunned into inaction from respondents who are strategically waiting for an appropriate time to act. Likewise, via self-reports researchers can begin to distinguish cognitive reappraisal from passivity. In most circumstances, coping research will include self-report data, but in spite of the benefits offered by these quantitative self-reports of coping, as with all self-report data, some difficulties arise. This chapter will discuss some of the challenges faced by researchers relying on self-reports, and in particular, those challenges faced by researchers relying on rating scales in cross-cultural coping research.

3. CONCERNS WITH CROSS-CULTURAL USE OF RATING SCALES

Cross-cultural psychologists have highlighted a number of challenges faced by researchers attempting to use rating scales across cultures. Most of these problems are not

unique to coping research and do not necessarily invalidate rating scales, but nonetheless are cause for concern.

3.1. Nay-Saying

First, cultures differ in their tendency to nay-say (Hofstede, 1980). In our experience and according to Hofstede's data, North American participants tend to less strongly endorse items on rating scales than do Chinese respondents. These findings suggest that culturally North American participants tend toward nay-saying more than do culturally Chinese participants (or one could interpret this as a Chinese tendency toward yea-saying). Of course, there are exceptions for particular scales, but across a number of questionnaire studies we have observed a general trend consistent with Hofstede's data when comparing Euro-North American respondents to Chinese respondents. This tendency suggests, and our experience supports this hypothesis, that when researchers calculate an average score across all scales in a coping inventory, the North American participants will tend to have lower averages than the Chinese participants. Japanese participants in our data, however, produced overall averages similar to those of the North Americans. The reasons for the response bias are not completely understood, but the bias creates problems in data analysis because the true differences in coping strategies can be difficult to distinguish from apparent differences due to nay-saying bias.

3.2. Extremism

Second, cultural differences in extremism on rating scales may sometimes create problems. Chen et al. (1995) found that Americans were more likely than Japanese to use extreme ends of rating scales. They conducted studies to examine whether this response bias creates problems in group comparison. According to their results, this response bias will not usually influence substantive findings, but the bias is nonetheless concerning simply because of the potential to obscure substantive findings.

3.3. Reference Effect

Third, a reference effect exists such that responses to rating scales can be influenced by participants' implicit choice of a comparison group to which they compare themselves (Heine et al., 2002). For example, if the data are being collected at a university in Turkey, the participant may implicitly be comparing him or herself to other students at that same university. When asked whether he or she strongly agrees with the value of freedom, he or she may strongly agree, but the researcher may not be aware that the strongly agree is relative to the level of endorsement he or she perceives in his or her peer group. This reference effect seems to be less of a problem when the questionnaire asks objective questions about behaviors than when the questionnaire asks about values (Peng et al., 1997), so this effect may be less concerning when using coping rating scales than when using values questionnaires. Also, the effect may be lessened when the respondents are currently residing in the same environment, such as when data is collected in one university with a multicultural student body.

3.4. Translation Problems

Fourth, translation of standard coping questionnaires may alter the meaning of the items in ways that the researchers do not anticipate. These translation problems can result from low quality translations or from more complex problems. Some questionnaire items may include idioms that translate poorly. The Ways of Coping Scale (Folkman and Lazarus, 1985), for example, asks the respondents to rate their agreement with the following: "stood my ground and fought for what I wanted." The figurative use of "stood my ground" may not translate well into all languages.

3.5. Imposed-Etic Research

Fifth, imposed etic research (Berry, 1989) can create problems. Imposed etic research uses unaltered instruments from one culture for research in a second culture and assumes that the constructs relevant to one culture will also be relevant to the other culture. An imposed-etic approach can create problems because constructs meaningful in one culture may not be meaningful in another (e.g., "Confucian work dynamism" Chinese Culture Connection, 1987). Also constructs central to one of the cultures being examined may not be well represented on common coping scales. This tendency for imposed-etic research to exclude culturally relevant constructs is well illustrated by research with the Chinese Personality Assessment Inventory 2 (CPAI 2, see Cheung et al., 2003 for a review of Asian personality inventories) which includes a personality factor of "interpersonal relatedness." This factor of interpersonal relatedness includes the following facets: harmony, face, and an orientation to reciprocity in relationships (*renqing*). This factor separated from the Big 5 in a joint factor analysis of the CPAI-2 and the NEO-FFI (Costa and McCrae, 1992; Cheung et al., 2001) and offered incremental validity beyond the Big 5 in predicting social psychological variables (Zhang and Bond, 1998), but only became widely known by using an emic approach. Emic methodology, unlike imposed-etic methodology, uses measures derived within and for the culture being examined. Purely emic methodology would produce completely distinct measures for each cultural context, and thus would preclude quantitative comparisons of cultures. A combination of etic and emic methods, however, can increase cultural sensitivity while also allowing quantitative comparison of similarities and differences across cultural groups.

Tweed, White, and Lehman (2004), for example, used the Ways of Coping Scale (WOC; Folkman and Lazarus, 1985) for research in Japan and Canada, but conducted factor analyses in each cultural group to assure that the items showing internal consistency in the West also showed internal consistency in Japan. Also, they noted that two central constructs for the Japanese seemed to be missing from the Ways of Coping. In particular, they spoke to natives of Japan and an expert on Japanese culture and also reviewed a stress and coping questionnaire constructed by Japanese researchers (Ozeki et al.,1994) and noted that the constructs of "waiting" and "accepting the problem" seemed to be relevant to the Japanese, but were not well represented in the WOC items. Thus, items related to waiting (e.g., "waited until I was able to do something about the matter," "I leave things to the passing of time") and accepting the problem (e.g., "tried to think of it as not being all that important") were modified or created in the WOC format. In stress and coping theory, these have been considered largely under cognitive appraisals

of stress (Folkman et al., 1986b), rather than as coping strategies *per se*. Given the importance of these concepts for examining cultural differences in stress and coping processes, it would seem important for future research to assess not only differences in coping with stress, but also, and perhaps more importantly, differences in cognitive appraisals of stress.

Similarly, Cameron et al. (2004) noted, that indirect coping is not well represented on common coping scales though this strategy may be especially common in interdependent cultures (Lebra, 1984). Indirect coping includes keeping a low profile, seeking assistance of a third party, saving face, and drawing on group traditions or resources. They did find evidence that, within a multicultural North American sample, interdependent self-construal was associated with indirect coping, supporting their contention that this coping strategy may be particularly relevant for particular cultural groups.

These types of creative approaches to cross-cultural research are needed because mainstream instruments developed in North America tend to neglect some important coping constructs. As a further example, the Confucian tradition of silent endurance in response to trials is evident in modern research with students from East Asia (Yeh and Inose, 2002), yet this construct is not well represented in mainstream North American coping instruments. Also, there is reason to believe that East Asian participants will often seek social support not primarily as a source of emotional comfort as might be the case for Euro-North American participants, but primarily as a source of advice and concrete assistance (Tweed and Lehman, unpublished data). Wong (1993) used the term "collective coping" to refer to this type of collective effort to solve the problems of a single group member. The Coping Schemas Inventory (Peacock and Wong, 1996) which was built on Wong's (1993; see also Wong and Ujimoto, 1998) Resource Congruence model includes some coping strategies (e.g., accepting the problem and self-restructuring) that might be particularly important in cross-cultural research, but that are not well represented on mainstream North American scales.

Thus, cross-cultural research with coping rating scales raises a number of difficulties. In particular, nay-saying, extremity, reference group differences, or translation problems across cultures can obscure true cross-cultural differences and/or similarities. Also, imposed-etic research can result in miscommunication and/or the neglect of important constructs. Strategies for coping with each of these problems will be discussed, but these are not the only problems facing coping researchers.

4. CONCERNS WITH COPING RATING SCALES IN GENERAL

Even in monocultural environments, if one could find such a research context, coping research would be difficult. Coping researchers in recent years have become more aware of some of the difficulties with studying coping in any context. A number of writers have bemoaned the lack of progress in coping research (e.g., Coyne and Gottlieb, 1996; Somerfield and McCrae, 2000), citing, in particular, the disjunction between the many coping studies that have been conducted and the limited number of theoretically important or clinically useful findings. Some have attributed the lack of progress in part to the way in which coping rating scales have been used (Coyne and Gottlieb, 1996). A second, related reason cited for the lack of progress has been a lack of fit between coping theory and the methodologies that have been employed (Tennen and Affleck, 2000; DeLongis and Holtzman, in press).

4.1. Memory Problems

One of the major difficulties is that most coping research has relied on participants accurately recalling their coping responses. Memory errors, if they are unsystematic, will decrease measurement reliability, and thereby decrease statistical power of all analyses, but will not introduce systematic bias. There is reason to expect, however, that memory errors will sometimes be systematic and biased. Individuals differ in their biases in recollection of past events, and one could even argue that biased recall is itself a coping strategy (Wong and Watt, 1991). Furthermore, in other research domains, both respondents' current state and respondents' theories about the world seem to influence recall of past situations (McFarland and Buehler, 1997; McFarland et al., 1992). There is no reason to believe that recall of coping is immune to these effects, and in fact Ptacek et al. (1994) report surprisingly low correspondence between concurrent and retrospective reports of coping.

Further evidence suggests that retrospective recall of coping will produce overreporting of some types of coping and underreporting of others. For example, Stone et al. (1998) asked participants to carry handheld computers in order to record coping within one hour after occurrence. The participants were randomly prompted by an audible beep on average every 40 minutes over a two day period and asked whether they had been thinking about, discussing, or doing something about a conflict or issue related to work, marriage, or something else. If so, they were asked to identify the issue and report their coping on a 33-item scale. After the two day study, participants were interviewed and asked retrospectively about their coping at those prior time points. The retrospective reports produced higher endorsement of behavioral coping and lower endorsement of cognitive coping than did the momentary reports. Stone et al. argued that retrospective reporting is not necessarily invalidated by these findings. They argued that retrospective coping may accurately capture some broader coping strategies not reported in momentary assessment, but that nonetheless retrospective coping is subject to memory reconstruction heuristics.

If memory reconstruction is influenced by personal theories of the respondents (McFarland and Ross, 1987), then one could expect that in cross-cultural research, individual reports of coping will drift toward the respondents' culturally-influenced theories of how coping proceeds. The drift within various cultures could involve psychological defense mechanisms in which one recalls one's own coping as favorably in line with the culturally prescribed norm. Also, the drift could take place even without defense mechanisms, simply as a result of respondents filling in missing memories with a narrative that make sense to the respondent. Thus, for example, North Americans may drift toward agentic accounts of their coping. In other words, as time passes, North American recollections of coping may drift toward the Judeo-Christian ideal of actively seeking to control the environment. This, admittedly speculative, hypothesis that North American recollections tend to drift toward agentic coping accounts would in part explain Stone et al.'s (1998) finding of increased reports of behavioral coping in retrospective as opposed to momentary reports. In contrast, Taoism, as described above, prescribes adaptation to the environment as the normative coping response, so in Taoist-influenced cultures retrospective memory reconstruction may tend to drift toward the theory that coping takes place as one adapts to the environment. Because memory is somewhat reconstructive, respondents will report more than they can know without even realizing they are doing so.

If retrospective coping reports drift toward cultural narratives, then this tendency creates both potential and problems for cross-cultural research with retrospective coping reports. If this drift occurs, then comparisons of retrospective coping reports across cultures may uncover both cultural differences in actual behavioral and in cultural theories of coping.

Thus, retrospective coping studies have value as first steps in examining cultural similarities and differences. A problem with retrospective coping studies is their inability to distinguish these sources of variance: culturally influenced memory reconstruction versus culturally influenced behavior differences. Only a combination of momentary and retrospective reporting will be able to distinguish which source is causing cross-cultural differences in coping reports. If, for example, Taoist-influenced cultural groups report greater acceptance of the problem both on momentary and retrospective reports, then this would suggest actual differences in coping strategies. If, however, the cultures differ only on retrospective reports and not on momentary reports, then this would suggest that the cultural groups are showing similar coping responses, but that their reconstructions are being influenced by cultural norms.

4.2. Automatic and Habitual Coping

Coyne and Gottlieb (1996) have criticized coping researchers for neglecting to examine habitual, automatic or anticipatory coping responses. For example, defense mechanisms in which the respondent distorts reality (e.g., denial) will likely be unavailable in the respondent's consciousness, so will be largely unavailable on self-reports (Somerfield and McCrae, 2000). One cannot expect respondents to consistently and reliably report whether they distorted reality (e.g., denying the severity of the event or denying their role in causing the event) in response to the stressor. This problem is not limited to rating scales; unconscious processes will be difficult to measure with any form of self-report and even be difficult to assess reliably with more formal diagnostic interviews. The outlook is not totally bleak; some unconscious responses have been operationalized successfully as, for example, with Paulhus' (1984) measurement of self-deception with the Balanced Inventory of Desirable Responding, but nonetheless, unconscious processes will in general remain difficult to measure.

This insensitivity to unconscious coping processes may be particularly concerning for cultural research. Culture has many times been compared to the water in which a fish swims (original source unknown). Fish live within the water, but do not question the nature of the water. Likewise, people live within culture, but until they cross into another culture, they may never question or even recognize the beliefs and assumptions that make their culture unique. For example, according to Markus and Kitayama (1991), people within interdependent cultures will assume that self is defined by its relationships, but people in independent cultures will assume that the self is defined by its traits. These assumptions may not be questioned or even recognized by most people within the culture. Likewise habitual culturally cultivated coping beliefs and responses may be below the awareness of most respondents. For example, North Americans may more frequently than Japanese respond to stressors by taking actions to protect their own self-esteem by distorting reality (Heine et al., 1999), but the North Americans may be unaware of the purpose of their responses, and the responses may be so automatic that they occur without conscious deliberation or realization.

These unconscious processes are an interesting topic of cultural psychology. Shweder (1993), in particular, argued for the importance of unconscious interpretations and representations for cultural psychologists. Shweder has used the term "experience-near concepts" (see also Geertz, 1973) which he described as implicit concepts that influence behavior, that are activated spontaneously, and that are often unconscious. He argued that these concepts reside in a realm for which respondents know more than they can tell. He argued that these experience-near concepts are the appropriate object of study for cultural psychologists. Measurement, however, is exceedingly difficult in regards to implicit beliefs. In-depth interviews or clinical work may begin to uncover these concepts, but raise other equally serious methodological concerns.

4.3. Brevity and Vagueness of Coping Items

Items on coping scales are necessarily written briefly and in relatively simple language, which can lead to problems of multiple interpretations (Coyne and Gottlieb, 1996). For example, Tweed, White, and Lehman (2004) compared Japanese to Canadian respondents on the WOC and found some evidence that Japanese participants engaged in more internally targeted control. They noted, however, that the planful problem solving (e.g., "I made a plan of action and followed it") items on the scale were disappointingly vague. The cultural groups did not differ on the planful problem solving items even though the Japanese reported a greater tendency to "leave things to the passing of time" and "try to think of it as not being that important" (items adapted from Ozeki et al., 1994). This similarity of endorsement for planful problem solving may have hidden very different plans selected by the different cultural groups. Possibly, follow-up interviews (Coyne and Gottlieb, 1996) or think aloud procedures during the completion of the questionnaires would help clarify the meaning of these items to each cultural group.

One of the reasons items on coping scales have historically been worded briefly and, perhaps more importantly, vaguely, has been to allow the items to apply to coping with a wide range of stressful situations. Although such wide applicability obviously has the potential to allow for greater generalizability of findings across situations and populations, there are clear shortcomings to this approach. It may be that, at least in some cases, the meaning of the items varies depending upon the situation in which they are used. The assessment of problem-focused coping efforts seems particularly vulnerable to this problem. For example, Newth and DeLongis (2004) examined coping with pain among patients with rheumatoid arthritis, and found that problem-focused coping was associated with increases in pain. They argued that, in the context of chronic pain, problem-focused coping as assessed by items such as "I doubled my efforts to make things work", might have served as a marker for over-exertion. It may not be problem-solving *per se* that is associated with increases in pain, but rather the over-exertion that might be reflected in such a "doubling" of effort – particularly if that effort is directed towards physical activity. If, on the other hand, one's problem-solving efforts involved seeking appropriate medical care and following a recommended regimen of exercise, diet, and medication, then it appears unlikely that such "problem-solving" efforts would be associated with negative health outcomes. This result provides further evidence that vague items can cause problems.

4.4. One Shot Administrations

Lazarus and DeLongis (1983), Coyne and Gottlieb (1996), Tennen and Affleck (2000) and others have criticized coping researchers for relying on single administrations of a coping checklist. In particular, they argued that this method is inconsistent with the transactional model of coping assumed by many of the researchers. To be consistent with the transactional perspective, the researchers must assume stress is a dynamic and bi-directional relationship between the person and the situation. Coyne and Gottlieb cite the example of coping with an exam. On a single administration of a coping scale, students may endorse an item stating that in response to exam stress, they "avoided being with people in general." Prior to the exam, this type of behavior may indicate problem-focused coping, in particular, focusing one's time on studying. After the exam, this item could indicate social withdrawal due to poor performance. Thus, to be true to the model, coping research should examine not only the type of coping, but also the timing of the coping. One-shot administrations of coping scales will have value as preliminary examinations of cultural similarities and differences, but in order to assess how the timing of coping influences outcomes in various cultures, multiple administrations will be required.

4.5. Non-Representative Samples

One difficulty in psychological research is finding representative samples. Coping research, more than research in many other areas of psychology has drawn on diverse populations including persons with a variety of illnesses, of all ages, from a variety of occupations, and with a variety of stressful life situations. Unfortunately, the few studies examining coping cross-culturally have tended to rely on university students. These studies have value, but a complete portrait of coping requires examination of a wider range of individuals within a culture. An over-reliance on student samples likely minimizes differences in stressors and masks critical differences in coping that might emerge in dealing with more diverse sets of stressors than are typically experienced by students.

4.6. Misguided Reliance on Statistical Controls

Coyne and Gottlieb (1996) criticized researchers who statistically control for important variables such as event type, event stressfulness, participant gender or even participant ethnicity in the hope that this process will make the participants comparable. They argue that this decontextualization of coping will lead to nonsense because coping is always tied to a particular situation and person as indicated by the transactional perspective. Certainly, this concern must be applied to the role of culture in coping as well. Efforts to describe the antecedents and consequences of coping within a cultural vacuum by statistically controlling for ethnicity or culture are problematic. Thus, coping researchers who use multicultural samples and try to use statistical controls to justify ignoring the diversity, risk obscuring the truth.

5. STRATEGIC RESPONSES TO THESE CHALLENGES

Some of these problems are difficult to overcome when using rating scales to study coping. Nonetheless, some suggestions will be made for best practices in studying coping.

5.1. Nay-Saying

A variety of data transformations have been suggested for dealing with nay-saying bias (Fischer, 2004). One strategy is to use a modified ipsatization procedure, variants of which have received extensive use in cross-cultural research using self-report data (Fischer, 2004). This modified ipsatization procedure converts the scores to relative scores, so that each item score indicates whether the respondent used that coping strategy more or less than he or she tended to use other strategies. The procedure is conducted as follows: One calculates separately for each respondent the mean of all coping items, and then subtracts this value from each of the respondent's scores. Tweed, White, and Lehman (2004) found that ipsatization of their WOC data, when comparing Japanese and Canadian participants, left the substantive findings unchanged, but tended to increase effect sizes. Vitaliano et al. (1990) suggested a similar procedure in which coping scores are transformed into proportional scores. Variants of ipsatization, but not variants of proportional scoring have been used often in cross-cultural research.

A complete discussion of the advantages and disadvantages of ipsatization and of the various techniques of ipsatization would go beyond the scope of this chapter (Tweed, Conway, Ryder, and Lehman, 2004), but the basic procedure is less complicated than it might initially seem. If one is using SPSS syntax, for example, one writes a statement computing the mean across all items for each individual (e.g., meancope=mean(qn1 to qn45)). Then, for each item, one writes a statement calculating a corrected variable (e.g., ips_qn1=qn1-meancope). This procedure centers all scores around zero. In other words, each respondent will have an average score of zero on the coping items. A positive score for a particular item will indicate that the individual endorsed that item more than they tended to endorse the other items. A negative score will indicate that the individual endorsed that item less than they tended to endorse other items. Because negative scores make tables difficult to read, one can add a constant to all scores to raise the scores above zero.

5.2. Extreme Responding

The ipsatization techniques discussed above can also be modified to correct for extremity, but we recommend that in most cases simple ipsatization as described above is a better choice. Simple ipsatization may be a better choice because according to the studies by Chen et al. (1995), extremity differences usually do not affect substantive findings and also because the correction procedure can introduce unwanted biases (Tweed, Conway, Ryder, and Lehman, 2004). The transformation to correct for extremity differences is often labeled simply "standardization," but is not the same as more typical standardization of data, so we prefer the term "within-person standardization." In within-person standardization, both the mean and the standard deviation of each participant are transformed. The commands are

only slightly modified from those for ipsatization (In SPSS: A. meancope=mean(qn1 to qn45), B. sdcope=sd(qn1 to qn45), C. std_qn1=(qn1-meancope)/sdcope).

Alternatively, by examining relations within persons across time, researchers can reduce many of the problems inherent in self-report methodologies (DeLongis and Holtzman, in press). For example, differences in response styles, such as nay-saying, are controlled because these are presumably constant within a person across time, allowing an examination of the relationship between, for example, coping and pain without contamination by differences in response sets. More will be said about within-person studies in our discussion of memory problems and our discussion of statistical control.

5.3. Reference Effect

The reference effect discussed above is clearly problematic in research on values. The effect may not be as significant in coping research because people are reporting responses rather than explicitly comparing their responses to those of others (Heine et al., 2002). Nonetheless, there is value is conducting research not only across cultural settings (e.g., comparing Japanese in Japan to North Americans in North America), but also conducting research within multicultural settings in order to reduce the likelihood that results are obscured due to a reference effect. Within a multicultural setting, the likelihood is increased that participants, if they are using a reference group, are comparing themselves to others in the same setting, thereby reducing problems due to different cultural groups using completely distinct reference groups.

5.4. Translation Problems

Translations will never be perfect, but Brislin (1970) recommended back translation to improve translation quality. In this procedure, questionnaires are translated by one person, and then back-translated into the original language by another person. The quality of the original translation can then be assessed by comparing the original questionnaire with the back-translation. His advice is as relevant now as it was over thirty years ago.

5.5. Imposed-Etic Research

As discussed above, combining emic and etic research procedures will allow comparison across cultures. In particular, researching indigenous coping constructs prior to finalizing the research design reduces the likelihood of ignoring important constructs. Researchers can consult with indigenous individuals when planning studies, ask indigenous individuals to review all research materials, and run small pilot studies possibly with a think aloud format. All of these procedures will help uncover poorly worded items, absent constructs, and other problems associated with imposed-etic research. Coyne and Gottlieb (1996) have suggested the use of in-depth interviews with all participants following completion of the coping checklists in order to assess how the participants interpreted the items. Resource limitations, however, may make their suggestion unrealistic for many researchers except during pilot studies or with a small subsample of respondents.

Factor analysis can also help provide a partial assessment of whether constructs translate well across cultures. In particular, the coping inventories can be factor analyzed separately in each cultural group to assess whether items loading on each construct in one culture also load on the same construct in the second culture. Tweed, White, and Lehman (2004) conducted factor analyses of a brief form of the Ways of Coping Checklist in North America and Japan and found that most of the constructs showed coherence in both cultural contexts. Future research papers could go even further and make the replicability of coping factors across cultures a major topic of examination. In particular, confirmatory factor analyses could be used to explore the replicability of these factors. Also, convergent validity could be examined; in particular, a researcher could examine whether the coping scales show anticipated correlations with other variables (e.g., the Big Five personality factors) in all cultures being examined. It would also be of great value to include measures of continuous cultural variables (e.g., Triandis, 1996) with any coping questionnaire because many research consumers will want to know not only whether two cultures differ, but also which continuous variables (Tweed, Conway, and Ryder, 1999) account for the coping differences.

Collaborations between researchers from different cultural groups will help avoid the problems of imposed-etic research. The collaborations may be difficult to build, but offer many potential benefits.

5.6. Memory Problems

In order to reduce the role of reconstructive memory, coping self-reports can be gathered near in time to the actual coping response. Newth and DeLongis (2004), for example, asked people with rheumatoid arthritis to keep daily diaries of their coping, mood, and pain. Daily diary studies not only overcome some of the restrospective memory problems, but also allow within-person analyses over time, thus providing better evidence of causality than do between person comparisons. Newth and DeLongis found that for people with rheumatoid arthritis, cognitive reframing predicted reduced pain. This within-person finding that cognitive reframing predicts reduced pain provides more compelling evidence that coping influences pain than would a between-person finding. In contrast, a between person finding showing a relation between reframing and pain reduction would raise questions about the direction of causality; in particular, reduced pain could be allowing sufficient relaxation to enable cognitive reframing or instead the reframing could be causing the pain reduction. The within-person effect, however, provides stronger evidence that reframing causes pain reduction. Sometimes, the within-person analyses produce different results than the between-person analyses. For example, in a study of alcohol use, Shroder and Perrine (2004) reported, based on a two-year daily diary study that across persons, women with higher stress levels tended to drink more than other women. The opposite was true for men. Within-persons, however, both men and women tended to drink less during periods of increased stress. The within-person findings address different questions than the between-person findings, and one could argue that the within-person analyses are more relevant to the transactional perspective (i.e., an assumption that stress involves an ongoing negotiation between the individual and their environment) than are the cross-sectional between-person analyses.

Newth and DeLongis (2004) used traditional paper and pencil questionnaires for their daily diaries. Likewise, Valiente et al. (2004) asked parents to complete a pencil and

paper daily diary for 14 days. For each day, parents were asked to describe the most stressful experience their child had encountered in the prior 24 hours, rate the stressfulness of the event, and check off the item best describing how their child coped. Compliance can be problematic especially in diary studies. To encourage compliance, research assistants can call participants weekly or on some other regular basis to remind them that their information is required and is valued (e.g., Todd et al., 2004).

One concern could be that participants might neglect to complete the daily diary for a number of days, and then use retrospective recall to fill in information for those intervening days. Todd et al. (2004) sought to overcome this problem by asking participants to complete the measures each evening and then post the envelope the next day. The postmark date could then be checked to assure that the daily diary had been completed on time. In a study we are currently conducting (Holtzman and DeLongis, 2004), we are collecting thrice daily brief telephone interviews to track stress, coping, and social support across time. Still others (Perrine et al., 1995) have used automated telephone answering systems to collect and time-stamp data. And of course, there is always the collection of data via the internet to allow time-stamping (e.g., Lee-Baggley, DeLongis, Voorhoeve, and Greenglass, 2004).

Stone and Shiffman (1994) have helped pioneer the use of ecological momentary assessment (EMA) in order to reduce the role of reconstructive memory in self-reports. In EMA, participants are prompted by a beeper at various times through the day and immediately complete a self-report using either a palm-type device or pencil and paper. Stone et al. (1998; see also Litt et al., 2004) used handheld computers which offer the advantage of recording the time of all entries, thereby making it impossible for participants to procrastinate until the end of the study and then retrospectively fill in the supposedly momentary reports of coping.

Momentary coping assessments are not, however, a panacea. Coyne and Gottlieb (1996) suggest that asking participants to consider a very recent event may cause some participants to choose relatively nonstressful events, thus making the findings potentially less useful. Allowing participants a longer retrospective period may allow them all to draw on a truly stressful event and may improve cooperativeness. Also, Holtzman, Newth, and DeLongis (2004) discuss the onerous requirements of momentary analysis and suggest that these requirements, especially when coupled with the often necessarily high pay for compliance may lead to poorer data because the financially motivated respondents may not respond conscientiously. We expect that continued use of retrospective coping assessments will be necessary for a complete picture of similarities and differences across cultures.

5.7. Automatic or Habitual Coping

Automatic coping is inherently difficult to assess because the responses often occur without the respondent's awareness. Respondents may be unaware, for example, that they are engaging in repression. Some measures of automatic responses have been developed and some interesting findings have emerged. Repression, for example, seems to have maladaptive effects (e.g., Burns, 2000; McKenna et al., 1999). Also, Edith Chen's work examining children coping with asthma from a variety of socioeconomic backgrounds is one useful approach that could be applied meaningfully to the cross-cultural domain (e.g.,

Chen et al., 2003). Chen uses an experimental paradigm in which she provides vignettes to children and asks them about their cognitive appraisals of these situations. Thus, some guidance based on past research is available. Nonetheless measuring automatic responses will continue to be challenging and will require creativity on the part of researchers.

5.8. Brevity and Vagueness of Coping Items

Brevity of coping items can lead to misunderstanding, but coping items are brief for good reason. Long items will try the patience and reading comprehension of respondents. As suggested above, the use of pilot studies with debriefing afterward will help clarify which items are misunderstood or interpreted in a variety of ways by respondents, and these items can be revised. Further, if scales are adapted specifically to be used within a given population coping with a specific stressor, then such problems can be minimized. For example, measures have been developed to tap the use of problem-focused coping (e.g., medication usage; activity limitation) with chronic pain (e.g., Jensen et al., 1995). Even relatively brief items can have a specific meaning if they are written with a particular context and group of people in mind. Coyne and Gottlieb (1996) argue that participants will choose to respond to different types of stressful events, and thus the coping strategies they endorse will have very different meanings within those contexts. Given this, it may be particularly important in cross-cultural work to identify samples coping with similar life stressors. For example, one could limit participants within a particular study to rheumatoid arthritis (RA) patients, and ask them to endorse strategies used within a given (brief) time-frame to cope with the pain caused by their disease. In doing so, one has the ability to compare persons coping with very similar stressors (pain due to RA) on a number of dimensions (c.f., Holtzman, Newth, and DeLongis, 2004).

5.9. One Shot-Administrations

One-shot administrations of coping scales are not without value in cross-cultural research, but the daily diaries and momentary assessment techniques described above provide an opportunity to go beyond one-shot administrations to conduct longitudinal within-person analyses. These longitudinal methods in some ways are more relevant to the transactional model of stress and coping (Coyne and Gottlieb, 1996), can provide more compelling evidence that coping influences outcome, and may provide better answers of which coping strategies at which point in the coping process predict positive life outcomes.

5.10. Nonrepresentative Samples

Research samples are rarely perfectly representative of the population of interest, but creative data collection techniques can improve representativeness. An increasing proportion of studies are being conducted online. In the not too distant past, online data collection required significant technical acumen, but more recently, web hosting agencies such as Surveymonkey and others allow even near technical illiterates to conduct online research. The use of online data collection can enable more work to be conducted with

individuals who are not near a university or who are even in a different country. Further, they can allow quick and timely assessment of geographically distributed crises such as 9/11 (Silver, 2004) and the SARS epidemic (Lee-Baggley et al., 2004).

5.11. Misguided Reliance on Statistical Controls

If we are to further our understanding of the role of culture in coping, it is going to have to be by examining coping across and within diverse cultural groups and making explicit comparisons, rather than by trying to eliminate the differences with statistical controls.

One naturalistic approach, is to use multilevel modeling (Raudenbush et al., 2001; Snijders and Bosker, 1999) to nest participants within their cultural group. In this way, one can examine the effect of culture on stress and coping processes, and can also use the person as his or her own control to examine within person changes in stress, coping and outcomes across time. There are a number of distinct advantages to the use of multilevel models to analyze this type of data (DeLongis and Preece, in press). First, simpler methods, such as ordinary least squares regression analysis, do not take into account the grouping of participants within cultural groups, and therefore the models are misspecified and the results unreliable. A second advantage of multilevel models is that the observed variance is decomposed into variance due to differences between persons and variance due to differences between families so that explanatory variables can be modeled separately. A third advantage is that this method of analysis considers variance in the slopes separately from variance at either level.

This type of analysis is also useful for the examination of daily diary data (DeLongis, Hemphill, and Lehman, 1992). Our approach is to consider days as nested within individuals (e.g., DeLongis, Capreol, Holtzman, O'Brien, and Campbell, 2004; Preece and DeLongis, in press). In turn, these individuals can be nested within the larger cultural groups. When complex data are aggregated, relations between macro-levels cannot be used to make assertions about micro-level relations. However, multilevel analyses allow examination of micro-level relations, as well as how these micro-level relations varied depending upon macro-level variables. That is, we can examine not only how changes in coping across time are associated with changes in mood, health or other outcomes of interest, but also how such relationships vary across cultural groups.

6. CONCLUSION

These strategies suggested above cannot solve all the problems associated with the use of rating scales in cross-cultural research on coping, but can help to increase the validity of these methods. No method of research is perfect. Rating scale data will continue to be sometimes difficult to interpret, but nonetheless, by employing some of these strategies, rating scale data can begin to improve the available portrait of ways in which coping is similar and different across cultures.

Some of the most challenging, but important strategies relate to building scales sensitive to coping strategies particularly common outside of North America. Some researchers have sought to diversify the nature of coping strategies receiving attention (e.g., Wong and Ujimoto, 1998) and these efforts are to be applauded. Future research

collaborations across cultural groups may be especially helpful in highlighting previously ignored coping constructs. These collaborations can draw from the knowledge of multiple cultural groups to increase the likelihood that coping models specify culturally appropriate constructs.

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