

Searching for the Structure of Coping: A Review and Critique of Category Systems for Classifying Ways of Coping

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From analyzing 100 assessments of coping, the authors critiqued strategies and identified best practices for constructing category systems. From current systems, a list of 400 ways of coping was compiled. For constructing lower order categories, the authors concluded that confirmatory factor analysis should replace the 2 most common strategies (exploratory factor analysis and rational sorting). For higher order categories, they recommend that the 3 most common distinctions (problem- vs. emotion-focused, approach vs. avoidance, and cognitive vs. behavioral) no longer be used. Instead, the authors recommend hierarchical systems of action types (e.g., proximity seeking, accommodation). From analysis of 6 such systems, 13 potential core families of coping were identified. Future steps involve deciding how to organize these families, using their functional homogeneity and distinctiveness, and especially their links to adaptive processes.

Coping needs more detailed specification . . . because of the bewildering richness of behavior relevant to it. (Pearlin & Schooler, 1978, p. 4)

While there is some empirical support for the existence of . . . primary dimensions of coping, little information is available about the structure of coping—the organization of these coping strategies at more abstract levels of analysis. (Tobin, Holroyd, Reynolds, & Wigal, 1989, p. 344)

In general, coping researchers agree that the study of coping is fundamental to an understanding of how stress affects people, for better and for worse. Although it has proven difficult to document unequivocally, coping researchers argue that how people deal with stress can reduce or amplify the effects of adverse life events and conditions, not just on emotional distress and short-term functioning, but also long-term, on the development of physical and mental health or disorder. Researchers maintain that coping matters.

At the same time, however, little consensus can be found about how to conceptualize or measure the central constructs in the field,

namely, ways of coping. In the broadest sense, ways of coping are the basic categories used to classify how people cope. They capture the ways people actually respond to stress, such as through seeking help, rumination, problem solving, denial, or cognitive restructuring. Categories describe what is happening on the ground during coping episodes, that is, “specific coping responses: the behaviors, cognitions, and perceptions in which people engage when actually contending with their life-problems” (Pearlin & Schooler, 1978, p. 5). They are the mechanisms through which coping has short-term effects on the resolution of the stressor as well as long-term effects on mental and physical well being. The empirical examination of coping categories distinguishes research on coping from closely related work on stress, adaptation, risk, resilience, and competence.

From outside the field, it may seem surprising that such fundamental distinctions were not agreed on long ago. However, from within the field, the problem is obvious. Compas and colleagues (Compas, Connor-Smith, Saltzman, Thomsen, & Wadsworth, 2001) summarized the current state of affairs in a recent review, “In spite of the clear need to distinguish among the dimensions or subtypes of coping, there has been little consensus regarding the dimensions or categories that best discriminate among different coping strategies in childhood and adolescence” (p. 5). Even a cursory survey of categories used in coping scales and coding systems underscores this conclusion. In the more than 100 category systems examined for this article, no two included the same set of categories. Some scales relied on as few as two or three categories, and some included 10 times that number. A simple list of category names contains over 400 different labels. It seems as if the identification of core categories of coping has taken place almost by default, on the basis of the categories that happen to be included in the measures used most frequently.

Lack of consensus about core categories has slowed progress in the field. The most obvious problem is the difficulty in comparing and cumulating results from different investigations. Because the

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Portions of this project were funded by National Institute of Mental Health Training Grant 527594, by National Institute of Child Health and Human Development Research Grant HD19914, and by a Faculty Scholar’s Award from The William T. Grant Foundation. Insightful comments on earlier versions of this article were provided by Lynne Steinberg, Carrie Furrer, Gwen Kelly, Tatiana Snyder, and Teresa Young. We appreciate George Lendaris’s contributions to discussions of level and hierarchy. Teresa Young also contributed to the organization and sorting of the categories and to the literature review. Sandy Grossmann and Ron Yoder worked on early versions of the literature review.

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number and kinds of coping categories are specific to studies, it requires an item-by-item analysis of subscales to decide whether findings are comparable. This makes it practically impossible to aggregate findings relevant to the same stressor and domain, much less to compare results across different stressors or domains. Nor is it possible to compare the use of different ways of coping across age, impeding the study of the development of coping. In their review, Compas et al. (2001) concluded that “There has been little consistency in the application of these various subtypes of coping across different measures and studies . . . leading to considerable difficulty developing a cohesive picture of the structure of coping in childhood and adolescence” (p. 5). The same holds true for adulthood and old age.

Confusion about core constructs is also a barrier to the accumulation of knowledge needed for explanatory and intervention efforts (Sandler, Wolchik, MacKinnon, Ayers, & Roosa, 1997). For example, if the antecedents or consequences of a certain way of coping differ from study to study, it is difficult to determine whether inconsistencies represent the differential functioning of that way of coping across time or domains or whether they reflect differences in the definition of that way of coping across studies.

Disagreement about core coping categories has interfered with methodological progress as well. New questionnaire assessments, representing an enormous investment of effort, appear regularly; however, at the present time, it is difficult to evaluate the clarity and comprehensiveness of the sets of categories on which each is based. The development of alternatives to questionnaire methods presents an even greater challenge. Despite the call for methods that more easily capture the dynamics of coping, the complexity implied by dozens of ways of coping makes it difficult to organize observational coding schemes, code open-ended narratives, or develop succinct daily assessments.

The bottom line is that coping categories reflect both the substance and the scope of the field. They can be considered the building blocks of description on which subsequent attempts at explanation and optimization of coping are built. Hence, they are an important target for scrutiny and debate. The goals of this article are to review the efforts over the past 20 years to construct category systems for classifying ways of coping, to scrutinize and critique the strategies used for this purpose, to ascertain the best practices for future work, and to identify a set of important issues that deserve further consideration. Even if this review is not successful in identifying *the* set of core coping categories, such an attempt promotes discussions that contribute to progress toward this goal.

Framing the Problem

The fundamental problem in identifying core categories is that “coping” is not a specific behavior that can be unequivocally observed or a particular belief that can be reliably reported. Rather, it is an *organizational construct* used to encompass the myriad actions individuals use to deal with stressful experiences. As pointed out by Pearlin and Schooler (1978), “Coping, in sum, is certainly not a unidimensional behavior. It functions at a number of levels and is attained by a plethora of behaviors, cognitions, and perceptions” (pp. 7–8).

We argue that it is useful to distinguish several levels on which coping can be conceptualized, as depicted in Figure 1. At the

lowest level are “instances” of coping. These are the countless changing real-time responses that individuals use in dealing with specific stressful transactions, such as “I wore my lucky socks the day of the surgery” or “I read everything I could find about it.” In operational terms, these are captured by self-reports of actual coping behaviors or by real-time observations. At the highest level are sets of basic adaptive processes that intervene between stress and its psychological, social, and physiological outcomes. This level refers to coping as a “strategy of adaptation” (White, 1974), serving larger evolutionary functions, such as continuing to secure adequate information about the environment or escaping from a potentially dangerous transaction.

The central notion is that the structure of coping spans the conceptual space between instances of coping and adaptive processes. Hence, the critical problem for the field is to construct a complete and coherent set of categories at an intermediate level that organizes innumerable situation-specific highly personal responses with respect to their functions in mediating the effects of stress. We argue that a hierarchical view of coping can be useful as a framework for this task.¹

As depicted in Figure 1, at least two intermediate levels are needed. A set of lower order categories (e.g., problem solving, rumination, venting, escape) must be identified that can reliably classify instances of coping (observations or items) into conceptually clear, mutually exclusive and exhaustive categories. Often labeled *ways of coping* or *coping strategies*, these refer to recognizable action types (Lazarus, 1996). At the same time, these lower order categories must themselves be classified into higher order categories (e.g., approach, emotion-focused coping, accommodation) according to their adaptive functions. Although these, too, are often labeled *ways of coping* or *dimensions of coping*, we refer to them as “*families*” of coping to denote that they represent higher order categories within which lower order ways of coping are nested and that they are, for the most part, multidimensional and multifunctional. Figure 1 suggests that to provide a full account of coping, a category system must accommodate all relevant instances and lower order ways of coping; at the same time, to meaningfully link these actions with longer term processes of adaptation and development, the categories must be organized with respect to their functions.

¹ Historically, attempts to specify a hierarchical set of coping categories have been undertaken by theorists who view coping as a manifestation of ego functioning or personality (e.g., Haan, 1977; Valliant, 1986). Such hierarchies usually include an implied or explicit ordering of categories according to their goodness or maturity. Despite its historical associations, however, the specification of a hierarchy of coping does not necessarily imply evaluations of the adaptiveness of specific coping categories. Moving up and down levels in a hierarchy does not necessarily mean moving between bad and good (or healthy and unhealthy or mature and immature) ways of coping. It simply means moving between subordinate and superordinate categories. For example, if under support seeking comes proximity seeking, comfort seeking, help seeking, and advice seeking, this does not imply that support seeking is somehow superior to any category below it; instead, it denotes that the lower order categories are nested within the higher order category (see also Krohne, 1993; Schwarzer & Schwarzer, 1996).

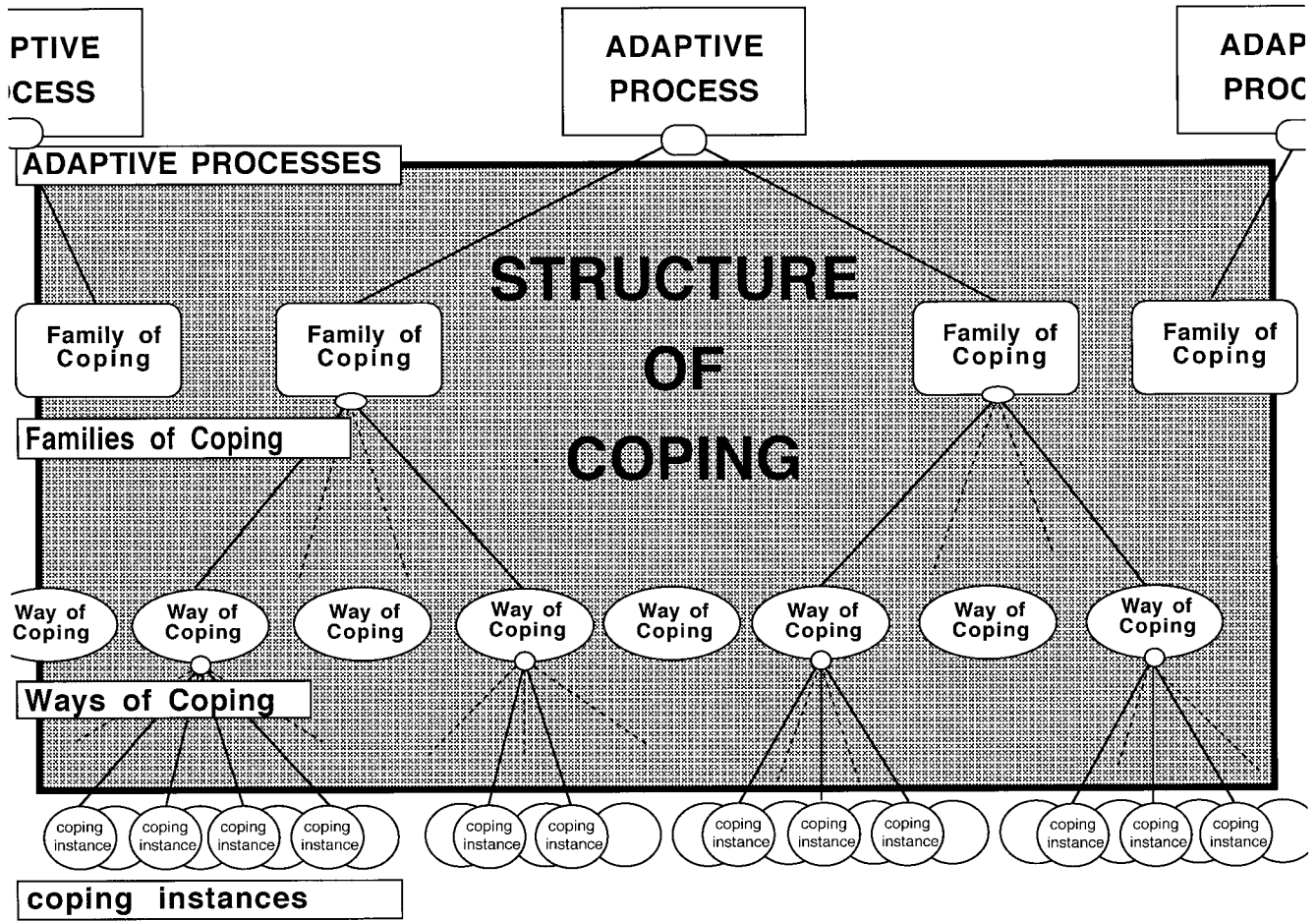


Figure 1. A hierarchical conceptualization of the structure of coping. The figure runs off both sides of the page, indicating that there is not a fixed number of adaptive processes, families of coping, ways of coping, or coping instances.

Overview of the Article

In order to analyze categories and systems used to classify coping, we reviewed a wide range of measures of coping. However, we did not analyze them for their measurement properties. Instead, we focused on how these category systems were created. We considered about 100 schemes used during the past 20 years. An overview of assessments is presented in Appendix A, broken down by whether the assessment (a) is intended for use by adults or adolescents and children, (b) is domain specific or general, and (c) reflects a questionnaire or observation-interview measure. The assessments are presented in more detail in Appendixes B-E. For each system, the stressor (prompt or stem) is noted as well as the categories of coping it includes and the procedures by which the set of categories was derived.

Selection of Category Systems

Three primary strategies were used to locate category systems. First, we conducted a search for articles and chapters that described the construction of a coping measure (e.g., Amirkhan, 1990). We searched PsycLIT using *coping* and the terms *scale*,

measure(ment), *assessment*, *questionnaire*, and *observation*. However, many assessments are not presented in such articles, so as a second strategy, we consulted existing review articles for lists of measures (e.g., Aldwin, 1994; Ayers, Sandler, & Twohey, 1998; Boekarts, 1996; Cohen, 1987; Compas, Malcarne, & Fondacaro, 1988; Compas et al., 2001; Latack & Havlovic, 1992; Ryan-Wenger, 1992; Schwarzer & Schwarzer, 1996). Finally, and less systematically, we attempted to identify the assessments used most frequently in research and to track down the articles in which the measure was most clearly described (e.g., Aldwin & Revenson, 1987). In every case, we considered an assessment to be found only when we located a published description of how the categories were derived and at least a partial list of items (or behavior codes) for each category. Because of our focus on category systems, we did not include coping assessments that focused on only one category (e.g., rumination). We also restricted our search to assessments that were in (or had been translated into) English.

We searched for a broad range of assessments, both in terms of target age of respondent and kind of stressor included. We intentionally surveyed scales used to tap coping at different points in the life span. In Appendix A, the first two columns contain scales

intended for use with adults and the elderly, whereas the third and fourth columns contain schemes for children and adolescents. Moreover, we intentionally included scales designed to tap ways of coping with a wide variety of life events and conditions. Some are considered domain general, in which people are asked to report how they typically cope with negative life events or how they actually coped with a (usually self-identified) recent specific stressful event. We included all of these scales; they appear in the first column of Appendix A. Domain-specific scales are focused on a particular event (rape, cancer, or depression) or domain (marriage, work, parenting, or health); there are a great many of these more specialized assessments. A selection of them, representing a wide range of domains and events, is contained in the second column of Appendix A. For children and adolescents, both self-report coping measures (third column, Appendix A) and coding schemes used to classify interviews or observations (fourth column) were included.

It should be noted that such broad coverage crosses the parameters of a typical substantive review. However, one of our goals was comprehensiveness, not only in terms of categories considered but also in terms of strategies used to construct category systems. We did not assume that all categories would appear at all ages and in all domains. In fact, consistent with current views in the field (Compas, 1998; Lazarus, 2000), we assumed that type of stressor and developmental level play important roles in shaping the kinds of coping that are utilized. Precisely because of domain and age differences in coping, however, any comprehensive consideration needs to include category systems designed for use with multiple age groups and multiple stressors. An exhaustive structure of coping should include the set of coping *options*, only some of which may be realized in specific situations and at specific ages. (It may be worth noting at this point, however, that 12 of the 13 higher order categories of coping identified in later sections as potential core families did appear in scales for both adults and children and in response to both domain-general and domain-specific stressors.)

Approaches to Searching for the Structure of Coping

In critiquing how these systems were created, we concluded that there are two main approaches: inductive bottom-up approaches and deductive top-down approaches. We argue that in order to

create a structure for coping, both are necessary. The first section focuses on bottom-up approaches, in which instances of coping (observations or items) are classified into lower order ways of coping. The two main strategies used for this purpose are exploratory factor analysis and rational sorting. Because the problems with these procedures have been dealt with previously (e.g., Ayers, Sandler, West, & Roosa, 1996; Schwarzer & Schwarzer, 1996), we summarize them only briefly and focus our critique on their strengths and limitations for contributing to a structure of coping. This section ends with a list of more than 400 lower order categories that have appeared in measures of coping, and we propose that any taxonomy of coping can be evaluated for comprehensiveness based on the extent to which it accommodates (some variation of) these categories.

The second approach to searching for the structure of coping is the top-down approach, in which a set of higher order categories (e.g., avoidance, emotion-focused coping, accommodation) or families of coping is identified that can be used to classify these lower order categories. The primary focus of this article is the analysis of strategies used in this approach. We review and critique about 15 major distinctions, dimensions, and superordinate categories that have been used to classify ways of coping, addressing basic issues such as the nature of the dimensions underlying coping, the place of coping modes and functions in identifying coping categories, the conceptual status of social support vis-à-vis categories of coping, and the meaning of intentionality in coping.

The third and final section focuses on hierarchical systems for organizing lower order ways of coping, which combine bottom-up and top-down approaches. Four empirical and two rational hierarchies are analyzed and compared for common higher order categories. The result is a compendium of about a dozen higher order categories or families of coping that appear across systems. Theoretical and empirical strategies are suggested for resolving important differences between systems in how higher order categories are defined and organized and for tackling the issue of how families are linked to adaptive processes.

Desiderata for Category Systems to Classify Ways of Coping

In analyzing strategies, we identified seven criteria for evaluating the usefulness of a category system; they are listed in Table 1.

Table 1
Desiderata for Category Systems to Classify Ways of Coping

Criterion	Description
1	Category definitions are conceptually clear. The criteria for category membership are precise and unambiguous.
2	Categories are mutually exclusive. Each way of coping belongs to one, and only one, category.
3	The set of categories is comprehensive or exhaustive. All core ways of coping can be accommodated by the set of categories.
4	Categories are functionally homogenous. All ways of coping within a category serve the same set of functions.
5	Categories are functionally distinct. Categories are different from each other in the set of functions they serve.
6	Categories are generative. Categories allow for the identification and derivation of multiple lower order ways of coping that belong to them.
7	Categories are flexible. Categories are applicable across stressors, contexts, and age levels.

They reflect both the criteria for any good taxonomy and the special criteria imposed by a hierarchical conceptualization of coping. The first three criteria concern the structure of a category system. Categories should be defined so that they are conceptually clear, mutually exclusive, and exhaustive, that is, able to accommodate all relevant dimensions and categories.

However, these criteria are not sufficient for evaluating the utility of a taxonomy. We assume that many alternative systems to classify ways of coping meet these criteria and are conceptually plausible and empirically defensible. Additional higher level criteria are needed to evaluate the extent to which categories actually organize coping with respect to its links to adaptive processes. Criteria 4 and 5 in Table 1 refer to the functions of coping, specifically that within categories, ways of coping should be functionally homogeneous, and between categories, ways of coping should be functionally distinct.

A category is functionally homogeneous to the extent it is defined so that all ways of coping it includes serve the same set of functions. Ways of coping that are functionally homogeneous should be able to be substituted for each other, either as one way fails or as it is ruled out by the situation, stressor, or developmental level of the person. For example, many lower order categories of coping (such as problem solving, strategizing, instrumental action, and planning) serve the function of finding a set of actions that are effective in bringing about a desired outcome; hence, these can be considered members of the same family. However, many other higher order categories have been suggested that are not functionally homogeneous. For example, emotion-focused coping has been defined in ways that include both constructive emotional expression and explosive emotional discharge (Stanton, Danoff-Burg, Cameron, & Ellis, 1994). Because functionally different ways of coping can be triggered by different appraisals and have distinct (possibly opposite) consequences, categories that combine them are not useful for classifying ways of coping.

The criterion that categories should be defined so they are functionally (and not just conceptually or empirically) distinct states that meaningful differences between categories should refer to sets of functions. For example, several categories of coping, such as calling others, going to others, thinking of others, and praying, can be conceptually (and operationally) distinguished; however, if they serve the same set of functions (e.g., bringing the individual in proximity of a caring other), it is not useful or parsimonious to consider them as belonging to separate families of coping.

The last two criteria refer to scope, stating that category systems should be generative and widely applicable. Categories are generative to the extent that they can be used to derive (and not just classify) the lower order categories or instances they contain. For example, the category active constructive approach is opaque with respect to its referent constituents; however, the corresponding action category of negotiation allows for generation of multiple appropriate members, such as proposing a compromise, prioritizing, bargaining, and persuasion.

Categories are flexible to the extent that they can be applied across kinds of stressors, contexts, and age grades. Often this is a matter of level. For example, a category like aggression, which implies active physical or verbal behavior directed at another person, might be less flexible than opposition, which would include aggressive acts but would also encompass less direct at-

tempts to block others' goals, like noncompliance, as well as anger and frustration expressed against inanimate objects, events, or fate.

Taken together, these seven criteria were used to critique strategies for constructing category systems. We consider the inductive bottom-up approaches briefly first, then concentrate on the deductive top-down approaches, ending with hierarchical approaches, describing and critiquing the most common strategies each approach uses in constructing categories and focusing on those we consider most promising.

Inductive Approaches: Identifying Lower Order Categories of Coping

Bottom-up approaches refer to strategies used to classify instances of coping into lower order categories. In general, such classifications are based on individual items, to which participants indicate the extent to which they showed a specific coping behavior (e.g., "I tried to figure out what to do," "I got advice from someone," "I ignored it," "I drank a lot") in dealing with a particular stressful event or with stress in general. Item pools have been generated in many ways, including open-ended interviews, people's descriptions of what they did in actual or hypothetical stressful situations, focus groups, researcher generation, and review of existing measures and checklists.

The strategy most typically used to classify items is exploratory factor analysis. Another common tactic is rational classification, in which items are sorted into categories by researchers; in some cases, these are tested using confirmatory factor analysis (CFA). We review and critique these ways of classifying items separately because they have different strengths with respect to identifying core categories of coping. (It should be noted that we limit our discussion of rational classification and CFA to systems in which they have been used to classify instances of coping into lower order categories. Their use as strategies to construct and test higher order categories is discussed in subsequent sections.)

Exploratory Factor Analysis

Exploratory factor analyses were used in about one third of the category systems (24 of the 42 adult scales and 10 of the 47 child-adolescent scales); these are presented in Appendix B. In this method, responses to items are analyzed, linear combinations that account for the most variance are determined, and these are grouped into factors. Using conventional cutoff values, the number of factors is determined. The meaning of these factors in relation to categories is inferred on the basis of the combinations of items that make up each factor.

The drawbacks of this strategy are numerous, and many of them have been discussed by other reviewers (e.g., Ayers et al., 1996; Schwarzer & Schwarzer, 1996). A major pragmatic difficulty can be seen in Appendix B: This strategy does not converge on a set of core categories. So far, multiple factor analyses, even on the same set of items, have not produced a replicable set of factors. For example, eight studies that used the same measure (i.e., Ways of Coping Checklist, or WOCC; Folkman & Lazarus, 1980) to examine coping with different stressors produced eight different sets of categories. An examination of the resultant categories shows that the differences between them are not trivial (see Table 2). The number of categories ranged from two (problem and emotion

Table 2
Categories Derived From the Ways of Coping Checklist (WOCC) From Eight Analyses

Study	WOCC version	Categories
Folkman & Lazarus (1980)	Original	Problem focused Emotion focused
Aldwin et al. (1980)	Original	Problem focused Wishful thinking Growth Minimize threat Seeks social support Blamed self Mixed
Parkes (1984)	Modified	General coping Specific coping Direct coping Suppression
Vitaliano et al. (1985)	Modified	Problem focused Seeks social support Blamed self Wishful thinking Avoidance
Folkman & Lazarus (1985)	Revised	Problem focused Emotion focused Wishful thinking Distancing Emphasizing the positive Self-blame Tension reduction Self-isolation Mixed Seeking social support
Folkman et al. (1986)	Revised	Confrontive coping Distancing Self-controlling Seeking social support Accepting responsibility Escape-avoidance Planful problem solving Positive reappraisal
Aldwin & Revenson (1987)	Revised	Escapism Cautiousness Instrumental action Minimization Support mobilization Self-blame Negotiation Seeking meaning
Dunkel-Schetter et al. (1992)	Cancer version	Seek and use social support Cognitive escape-avoidance Distancing Focus on the positive Behavioral escape-avoidance

Note. Mixed = both problem- and emotion-focused coping.

focused) to nine, and only three categories (problem solving, seeking social support, and escape-avoidance) appeared on more than half of the scales. These problems were not specific to the WOCC; they appeared repeatedly for scales that were based on exploratory factor analysis of previously used item pools.

The seven criteria in Table 1 can be used to identify the most serious conceptual problems with the use of exploratory factor analyses as a strategy for constructing category systems: lack of clarity, difficulties establishing comprehensiveness, difficulty determining whether categories are functionally homogeneous or functionally distinct, and problems of flexibility in categories so derived.

Lack of clarity in category definitions. A major drawback to the use of exploratory factor analysis is the difficulty in deriving conceptually clear and meaningful categories. Problems of interpretability can be seen at both the item (instance) and the factor (category) level. The recovery of conceptually clear factors depends on the clarity of each item; items that tap more than one coping category cannot load cleanly on a single factor. However, items generated by participants themselves are unlikely to be conceptually clean because the participants do not know the referent categories. Even items generated by researchers are likely to be ambiguous if researchers have not yet identified the categories to which they should belong.

Problems of interpretability in exploratory factor analyses are highlighted by Ayers et al. (1996) in their discussion of scales used to assess coping in children. They stated that

at times, the resulting scales have been difficult to label and have been linked only loosely to coping constructs in a post hoc fashion. The resulting scales often include items that do not appear to fit together conceptually so that dimensions have been difficult to label. (Ayers et al., 1996, p. 925)

Problems of comprehensiveness. With exploratory factor analysis, it is also difficult to ensure the comprehensiveness of the categories that are derived. Because the extraction of factors depends on the pattern of covariation among items, there is only one way for a category system that includes all core coping categories to emerge from an exploratory factor analysis: The item pool must contain multiple items that tap each category. However, if the categories are not identified a priori, it is difficult to determine whether all categories are represented by enough items to allow each category to be recovered.

Furthermore, in principle, a comprehensive set of categories can never be recovered from an analysis of ways of coping actually manifested by people in a single specific situation. If it is assumed that different kinds of coping are used to deal with different stressors at different ages, then an item pool that is specific to any age, stressor, or context is not likely to be comprehensive with respect to items tapping all core coping categories.

Problems determining functional homogeneity and functional distinctiveness. Arguably, the biggest drawback of exploratory factor analyses for identifying categories of coping is that it is impossible to unambiguously interpret single factors as single categories. Two sets of items can load on the same factor for reasons other than because they tap the same single category of coping. For example, they may tap two ways of coping that have a common underlying emotional tone (e.g., worry: "rumination" and "escape"). By the same token, two sets of items may form two separate factors even if they tap the same category of coping. For example, they may tap one way of coping that can be expressed in two modes (e.g., behavioral avoidance and cognitive avoidance). This is an especially thorny problem when it is desirable to distinguish between two categories that are closely related but functionally distinct. For example, Stanton et al. (1994) noted that "the aggregation of conceptually distinct forms of emotion-

focused coping within some scales" (p. 350) obscures qualitatively different forms of "emotional approach" coping. They argued that attempts to experience, understand, and express emotions should be distinguished from the explosive venting of negative emotions. To empirically recover these categories, however, it was necessary to select and create specific items that mapped onto this distinction.

Functionally heterogeneous categories interfere with explanatory research. If an empirically derived factor includes several functionally distinct categories, each of which actually produces different consequences (or results from different antecedents), then the resultant factor scores will not be able to detect these differential relations. Examples of closely related but potentially functionally distinct categories might include persistence versus perseverance, accepting responsibility versus self-blame, and focusing on the positive versus denial. Closely related categories may be difficult to discriminate even when using items intentionally designed to do so (e.g., Watson, Greer, Prunyn, & van den Borne, 1990). It seems doubtful that they will be distinguished without such tailor-made items.

Rational Classification of Items Into Coping Categories

The second most common inductive strategy is rational sorting, which involves putting together the items that share common features and separating those that differ. Fifteen of the 42 adult scales and 31 of the 47 child-adolescent scales relied on this strategy; these are presented in Appendix C. Rational classification has some advantages over exploratory factor analysis. A major one is conceptual clarity: Researchers can select items based on the clarity with which they tap designated categories and can discard items that tap multiple categories. Moreover, if a category is identified that is marked by only a few items, researchers can select or generate additional items to increase the probability that the category will be reliable and empirically detectable. Researchers may also be more attuned to subtle differences between categories that share common features and be better able to select or generate items that differentiate them.

Nevertheless, the method of rational classification also shares some drawbacks with exploratory factor analyses. Just like factor analysis, rational classification has not converged on a common set of categories. As can be seen from Appendix C, researchers have great latitude in deciding which categories to combine, distinguish, include, and exclude. For example, the number of categories identified through rational analyses ranged from three (Feifel & Strack, 1989) to 28 (McCrae, 1984). An obvious part of the problem is that one of the only bases for judging the validity of rational category systems is their interrater reliability. These criteria evaluate only whether categories *can* be distinguished but are not informative with respect to whether categories *should* be distinguished. Moreover, just as with exploratory factor analysis, unless one assumes that all item pools contain items that tap all core categories of coping, category systems produced by sorting cannot be assumed to be comprehensive.

Confirmatory Factor Analysis

The best approach to identifying lower order ways of coping, and an increasingly common one, involves the use of CFA; systems using this strategy are listed in Appendix D. In this approach, researchers specify a priori the categories they wish to tap, usually

on the basis of open-ended interviews, content analyses, or previous exploratory research. They then select or create multiple items to mark each category. The unidimensionality and distinctiveness of the resultant categories can be examined. CFA is a distinct improvement over exploratory analyses in terms of conceptual clarity and replicability; it is an improvement over rational sorting because alternative theoretically plausible sets of categories can be compared empirically. As with exploratory analyses, however, it is difficult to establish comprehensiveness.

Strengths and Limitations of Bottom-Up Approaches

From our perspective, the most problematic feature of inductive strategies is that they tend to imply a certain structure of coping categories. For example, in exploratory factor analysis, because factors are generated through linear combinations of items, the structure of coping that can be recovered is essentially a list. If the relations are any more complex (e.g., if they form a hierarchy or matrix), then exploratory factor analysis cannot reveal this structure. For example, if the structure among categories is better represented as a matrix, factors may be formed on the basis of the common variance attributable to whatever attributes led to row membership, to column membership, or, more likely, to an unsystematic combination of both.

Rational sorting also typically produces a simple structure of coping categories. Because classification focuses on a determination of which items belong to which categories, it does not require a consideration of the relationships among categories. As a result, it is common for sorting, like factor analysis, to result in a list of categories (see Appendix B). More complex structures of coping are rarely considered. By the same token, CFAs are typically used to test a relatively simple structure of ways of coping, basically a list. These analyses confirm that the categories included are mutually exclusive or are related, but they do not illuminate more complex relations among categories.

As a result, we conclude that bottom-up strategies are not in and of themselves sufficient for constructing a useful taxonomy of coping. Nevertheless, they play an important role. One key ingredient in constructing a taxonomy is a list of lower order categories that any set of higher order categories must accommodate to be considered comprehensive. Inductive bottom-up approaches are a necessary part of compiling such a list. These approaches have the potential to extract from instances of coping, which are virtually limitless, a finite set of clearly defined and empirically verifiable lower order categories. These may be inspired by exploratory factor analyses, rational classification of coping items, open-ended interviews, content analyses, theory, researcher reflection, or any other means. CFA can test whether items designed to tap these categories form unidimensional and discriminable factors.

Lower order categories of coping. Using the category systems reviewed for this article, we prepared a list of all the lower order categories they included. The list, presented in Table 3, contains about 400 lower order ways of coping. We excluded higher order categories (such as emotion-focused, secondary control, or active coping) under which multiple categories were nested;² these are

² Sometimes higher order category labels were used to refer to single lower order categories. For example, *approach* was used to refer to problem solving or *avoidance* was used to refer to escape. In these cases, we included them in the table.

Table 3
Comprehensive List of Lower Order Coping Categories

Total ^a	Coping category variations	Total ^a	Coping category variations
40	Problem solving: 2, 5, 20, 23, 31, 38, 44–47, 49, 54, 60, 62, 64, 68, 69, 75–77 Problem focused: 4, 9, 21, 24, 65, 80, 81 Planful problem solving: 11, 25, 79, 84 Task oriented: 7, 78 Problem management: 42 Instrumental action: 1 Primary control: 87 Direct efforts to maintain control: 82 Work and achieve: 52 Control: 33 Confrontive: 14	12	Positive cognitive restructuring: 44, 62, 75, 77, 82 Positive reappraisal: 6, 11, 15, 34, 49, 79 Placing positive values on negative events: 65
38	Avoidance: 2–4, 7, 12, 13, 15–17, 21, 23–27, 31, 47, 59, 60, 70, 72, 86 Avoidant action: 44, 45, 62, 75–77 Cognitive avoidance: 30, 44, 45, 49, 62, 75–77 Negative avoidance: 51 Positive avoidance: 51	12	Emotional expression: 14, 17, 21, 23, 32, 34, 47, 75, 77, 86 Expressive: 27, 70
34	Seeking social support: 2, 3, 10–12, 15, 20–25, 34, 43, 46, 50, 52, 64, 67–69, 79, 82, 83, 88 Seek and use social support: 30 Seeking help/comfort from others: 37 Support focus: 16 Support mobilization: 1 Talking with others: 41, 78 Family communication: 51 Emotional approach: 42 Guidance/support: 49	11	Cognitive: 16, 27, 54, 71, 72, 76 Active cognitive: 4, 13, 15 Internal: 63, 88
23	Distraction (or diverting attention): 17, 22, 40, 47, 48, 53, 64, 78, 83 Behavioral distraction: 28, 41, 44, 60, 62, 73–75, 77 Cognitive distraction: 28, 73, 74, 82 Cognitive refocus: 68	11	Information seeking: 5, 19, 37, 41, 67, 82, 85, 88 Monitor: 37, 57 Question parents: 86
21	Direct action: 18, 19, 22, 32, 83, 88 Positive action: 41, 55, 58, 67 Active coping: 3, 6, 63 Active behavioral: 4, 13, 15 Rational action: 17, 34 Optimistic action: 36 Behavioral coping: 8, 72	11	Acceptance: 6, 20, 22, 25, 37, 47, 69, 83, 84 Resigned acceptance: 49 Fatalism: 17
16	Aggression: 48, 50, 71 Aggressive action: 12, 77, 84 Verbal aggression: 84 Problem-focused aggression: 76 Emotion-focused aggression: 76, 77 Antisocial action: 12 Hostile reaction: 17, 34 Is irritable, moody, and acts out: 43 Conflict: 26 Confrontive: 79	11	Wishful thinking: 10, 17, 23, 24, 47, 50, 64 Active wishing: 55 Passive wishing: 55 Escapist fantasy: 17 Fantasy: 38
14	Blame self: 1, 10, 17, 19, 24, 26, 34, 52, 59, 78, 86 Self-criticism: 23, 64 Emotional reaction—internalizing: 46	10	Social support—emotional: 6, 44, 55, 62, 74, 75, 77, 84 Social support ventilating feelings: 56 Solace seeking: 39
13	Escape: 20, 33, 47, 73, 74 Escape/avoidance: 11, 78, 79 Escapism: 1, 42 Behavioral escape/avoidance: 30 Evasion: 19 Ineffective escapism: 39	10	Worry (rumination): 27, 47, 52, 78 Anxiety amplification: 58, 65 Anxious anticipation: 78 Fear self-statements: 53 Fear of response to dentist or vice versa: 78 Fear of unlikely consequence: 78
12	Social withdrawal/self-isolation: 10, 17, 23, 34, 52, 53, 55, 63, 64, 67, 69 Feels different and withdraws: 43	9	Social support—instrumental: 6, 44, 62, 74, 75, 77, 84 Active support: 55 Understanding situation through communication with other parents and medical staff: 35
12	Religion: 6, 15, 21, 22 Praying: 40, 53, 71 Seeking spiritual support: 52, 60, 76 Faith: 17, 36	9	Denial: 6, 17, 47, 55, 58, 65, 73, 74 Denial/minimization: 37 Positive thinking (focus on positive): 10, 17, 29, 30, 47, 52, 67, 78 Positive cognitive coping: 32

(table continues)

Table 3 (continued)

Total ^a	Coping category variations	Total ^a	Coping category variations
7	Helplessness: 36, 72, 79, 86 Give up: 50 Lack of coping: 75 Not coping: 52	3	Anger: 51, 61, 72
7	Blame others (projection): 19, 58, 64, 65, 67 Criticize parents: 59 Emotional reaction—externalizing: 46	3	Physical release of emotion: 44, 62, 75
7	Substance use (alcohol/drug/sedation): 6, 17, 20, 21, 34, 71, 72	3	Crying—emotion focused: 76, 77 Crying—problem focused: 76
6	Peer support: 52, 54, 61, 71, 74, 86	3	Hiding feelings: 34 Pretending positive feelings: 34 Insinuating feelings: 34
6	Distancing: 10, 11, 30, 46, 56, 79	3	Emotional numbing: 47 Suppressing feelings: 34 Isolation of affect: 17
6	Seeking meaning: 1, 3 Seeking understanding: 44, 62, 75 Making sense of the loss: 29	3	Tension reduction: 10, 52 Direct emotion manipulation—tension reduction: 74
5	Social joining (belong): 12, 52 Use of words to eradicate difference: 66 Use of activity to camouflage difference: 66 Use of actions to encapsulate difference: 66	3	Increased activity: 40, 53 Engaging in demanding activity: 60 Accepting responsibility: 11, 79
5	Disengagement: 69 Mental disengagement: 6, 84 Behavioral disengagement: 6, 84	2	Assessing blame (responsibility): 17, 25 Cautiousness (cautious action): 1, 12
5	Humor: 17, 21, 34, 41, 60	2	Cognitive self-instruction: 68 Coping self-statements: 40 Compliance: 43, 84
5	Assertive: 12, 36 Direct discussion: 50 Confrontive: 11 Assertive procedural vocalizations: 85	2	Developing social support: 60 Investing in close friends: 60
5	Growth: 38 Drawing strength from adversity: 17 Developing self-reliance and optimism: 60 Developing confidence and optimism: 43 Self-improvement: 55	2	Distract/ignore: 69 Ignore problem: 52 Distract/ignore
5	Physical exercise: 16, 52, 54, 71, 72	2	Distraction/avoidance: 61, 77 Emotional arousal: 47 Physiological arousal: 47
4	Professional help (includes medical): 20, 37, 52, 60	2	Indecisiveness: 17 Uncertainty: 50
4	Approach: 70, 74 Positive approach: 26 Adaptive approach: 73	2	Instinctive action: 12 Impulsive action: 47
4	Planning: 6, 41, 55 Altering plans: 67	2	Not worrying: 41, 67 Perseverance: 17, 25
4	Selective ignoring: 36 Ignore pain sensations: 40, 53 Active forgetting: 17	2	Prepare for worst: 41, 67 Reinterpret pain: 40, 53
4	Substitution of rewards: 17, 19, 36, 49	2	Self-calming: 53, 61 Self-destructive: 27, 48
4	Negotiation (compromise): 1, 36, 50, 55	2	Self-encouragement: 69 Self-appreciation: 34 Self-reliance: 36, 86
4	Negative affect (thinking): 8, 38, 55, 59	2	Specific to medical condition: 53, 69 Stoicism: 69
4	Emotion regulation: 5, 47, 64 Emotion-regulating cognitions: 82	2	Endurance: 48
4	Self-control: 11, 79 Cognitive self-control: 39 Behavior-regulating cognitions: 82	37	Other:
3	Adult—caregiver support: 61, 71, 74		Categorical thinking: 8 Cognitive interference: 47 Constructive automatic thinking: 8 Destructive automatic thinking: 8 Deflecting from one's faults: 34 Devaluation of money: 36 Displacement: 84 Draw on past experiences: 41 Dual focused: 81 Exercise of potency: 36 Help providing: 77 Loss of love: 59 Maintaining family integration, cooperation, and optimistic definition of situation: 35 Maintaining social support, self-esteem, and psychological stability: 35 Making amends: 84 Naive optimism: 8 Non-procedure-related statements and behaviors: 85 Optimistic appraisal and change: 56 Nonpunitiveness: 36 Nonconfrontation: 50
3	Social entertainment: 54, 71, 72		
3	Physical intervention: 86 Verbal intervention: 86 Self-involve: 59		
3	Stop and think: 50 Controlled reflectiveness: 36 Reality-oriented working through: 82		
3	Imaginative: 28 Imaginative transformation—sensation: 28 Imaginative transformation—context: 28		
3	Resignation: 31, 64 Relinquished control: 87		
3	Palliative: 14, 19 Symptom management: 33		
3	Restraint: 6, 17 Inhibition of action: 88		
3	Social comparison: 17, 34 Positive comparison: 36		

Table 3 (continued)

Total ^a	Coping category variations
	Other (continued)
	Parental support: 71
	Pestering: 50
	Reactive behavior: 89
	Reliance on discipline: 36
	Self-adaptation: 17
	Self-appraisal: 25
	Self-initiated behavior: 89
	Self-interest: 26
	Social action: 52
	Somatization: 28
	Stress recognition: 49
	Strive to rest and be alone: 68
	Superstitious thinking: 8
	Suppression: 18
	Suppression of competing activities: 6
	Taking one step at a time: 17
	Thought stopping: 78

Note. List contains all lower order categories from all scales listed in Appendixes A–E. They are grouped by similarity of label (and items). Numbers following the category labels correspond to scale numbering in the Appendixes.

^aTotal number of scales that contained categories from that block.

discussed in the next section. We also excluded categories that clearly did not refer to ways of coping, such as categories labeled *dysfunctional behavior* or *problem behavior*.

In Table 3, the numbers following the category labels indicate the assessments from which the category was taken (as numbered in the Appendixes). Consistent with Ryan-Wenger's approach (1992), we tried to group categories together when the items they included suggested that they were virtually synonymous. This resulted in about 100 blocks of labels. Numbers to the left of blocks indicate how many scales contained that particular lower order category. For example, one group of seven similar item sets included assistance seeking, help seeking, help from others, and advice seeking.

Conclusions about bottom-up strategies. In many ways, this list represents the state of the field in terms of coping categories. Its strengths and drawbacks are apparent. In terms of strengths, the categories are good descriptors of instances of coping. It seems relatively easy to identify or classify observations, interviews, or items using many of these categories. Moreover, despite the fact that there is a finite number, they cover much of the territory of action options during stressful transactions.

Some categories are relatively more common. Five appeared on 20 or more scales: variations on problem solving, support seeking, avoidance, direct action, and distraction. Thirteen more were present in 10 to 19 scales: aggression, self-blame, escape, social withdrawal, religion, positive cognitive restructuring, emotional expression, cognitive, information seeking, acceptance, wishful thinking, emotional social support, and worry. It is worth noting that all 18 of the most common ways of coping appeared in scales designed for use with adults and with children as well as for domain-specific and general stressors.

The drawbacks of the list are also apparent. The sheer number of category labels is somewhat unsettling. Precise definitions of categories are often not available. There is some confusion about

level. Some higher order category labels (e.g., approach) are used to refer to lower order categories (e.g., problem solving). There also appears to be some disagreement as to the scope of categories that should be examined. More than 150 categories appeared in only one system; of those, about 40 (listed at the end of the table) had no counterpart in any other system. Moreover, it seems clear that not every way of coping would be an option during every stressful transaction nor available to children at every age.

Most important for the structure of coping is the fact that these lower order categories are ordered as a list in an essentially arbitrary fashion. There is no correct way to organize this list. The labels could have been blocked in other formats; the blocks could have been ordered using alternative schemes (e.g., alphabetical order). In and of itself, the list reveals nothing about the relationships among the categories. However, it is clear from inspection that the categories are related to each other in many different ways. Some seem synonymous, like instrumental social support, help seeking, and seeking advice. Some seem like different modes of the same action type, for example, behavioral and mental disengagement. Some seem closely related to each other, for example, problem solving, information seeking, and planning. Some seem like opposites, such as support seeking and social isolation.

We argue that an important part of creating a structure for coping is to identify a set of higher order categories that reflect and order the fundamental distinctions underlying lower order categories of coping. One test of the scope of any higher order system is whether it can accommodate the many lower order categories identified as properly belonging to the domain of coping. Most importantly, however, it should be useful in conceptualizing how these ways of coping mediate the relations between stress and functioning. We turn to deductive or top-down approaches and consider their role in accomplishing this task.

Deductive or Top-Down Approaches: Higher Order Categories Used to Classify Ways of Coping

Top-down approaches start with higher order categories (e.g., approach vs. avoidance) and use them to organize multiple lower order categories. As can be seen in Appendixes B–E, several different higher order categories have been suggested. In general, these have been created by rational classification of lower order categories to induce higher order categories, combined with theoretical analysis of functions of coping to deduce higher order categories or dimensions.

The number of higher order distinctions proposed is surprisingly small. The main ones are summarized in Table 4 (see also Rudolph, Dennig, & Weisz, 1995, Table 1). In this section, we use the criteria for useful category systems (from Table 1) to analyze and critique three different kinds of distinctions. The first set of distinctions refers to functions of coping; the most common is problem-focused versus emotion-focused coping (Lazarus, 1996). The second set refers to topological features that can be used to characterize ways of coping (e.g., active, passive, cognitive, and behavioral); the most common of these is approach versus avoidance. The third set of distinctions includes ones that suggest higher order action types. The most common of these is primary versus secondary control coping. We argue that, although some distinctions are more useful than others in identifying families of coping,

Table 4
Higher Order Distinctions Among Coping Categories

Distinction	Definition
Emotion-focused coping vs. problem-focused coping	“Coping that is aimed at managing or altering the problem causing the distress” vs. “coping that is directed at regulating emotional responses to the problem” (Lazarus & Folkman, 1984, p. 150).
Problem-focused coping vs. emotion-focused coping vs. appraisal-focused coping	“Dealing with the reality of the situation . . . seeks to modify or eliminate the source of the stress” vs. “handling emotions aroused by a situation . . . responses whose primary function is to manage the emotions aroused by stressors and thereby maintain affective equilibrium” vs. “primary focus on appraising and reappraising a situation . . . involves attempts to define the meaning of a situation” (Moos & Billings, 1982, p. 218).
Responses that modify the situation vs. responses that function to control the meaning of the problem vs. responses that function for the management of stress	“Responses that change the situation out of which the strainful experience arises” vs. “responses that control the meaning of the strainful experience after it occurs but before the emergence of stress” vs. “responses that function more for the control of the stress itself after it has emerged” (Pearlin & Schooler, 1978, p. 6).
Approach vs. avoidance	“Cognitive and emotional activity that is oriented either toward or away from threat” (Roth & Cohen, 1986, p. 813).
Engagement vs. disengagement	“Responses that are oriented toward either the source of stress, or toward one’s emotions and thoughts” vs. “responses that are oriented away from the stressor or one’s emotions/thoughts” (Compas et al., 2001, p. 92).
Control vs. escape	“Proactive take-charge approach” vs. “staying clear of the person or situation or trying not to get concerned about it” (Latack & Havlovic, 1992, p. 493).
Primary vs. secondary vs. relinquishment of control coping	Efforts to influence objective events or conditions vs. efforts to maximize one’s fit with the current situation vs. relinquishment of control (Rudolph et al., 1995).
Assimilation (vs. helplessness)	“Transforming developmental circumstances in accordance with personal preferences” and “Adjusting personal preferences to situational constraints” (Brandtstädter & Renner, 1990, p. 58).
Accommodation (vs. rigid perseverance)	Coping directed toward changing the environment vs. directed toward changing the self (Perrez & Reicherts, 1992).
Alloplastic vs. autoplatic coping	Responses to stress that involve volition and conscious effort by the individual vs. responses that are automatized and not under conscious control (Compas et al., 1997).
Volitional, effortful, controlled vs. involuntary, automatic coping	“Taking action or doing something” vs. “mental strategies and self-talk” (Latack & Havlovic, 1992, p. 492).
Behavioral vs. cognitive coping	“Utilize methods that involve other people or . . . be done alone” (Latack & Havlovic, 1992, p. 492).
Social vs. solitary	“Efforts undertaken in advance of a potentially stressful event to prevent it or modify its form before it occurs” (Aspinwall & Taylor, 1997, p. 417).
Proactive coping	Coping in which an individual emits an overt motor behavior to deal with a stressful event vs. coping in which “the organism responds to the stressful event by enlisting the aid of a conspecific” (Barrett & Campos, 1991, p. 33).
Direct vs. indirect coping	

all have a role to play in creating a higher order structure. Each set of distinctions is considered in turn.

Distinctions Among Functions of Coping

The first set of distinctions relies on coping functions to classify lower order ways of coping. Coping functions refer to the purpose a coping strategy serves (e.g., to calm emotion). The distinction that is by far the most commonly used higher order category of coping is of this type, namely, problem- versus emotion-focused coping (Folkman & Lazarus, 1980). As can be seen in Appendixes B–E, several researchers use this distinction, and several others have expanded on it, for example, adding appraisal-focused coping (Moos & Billings, 1982) or hypothesizing that coping can regulate behavior, emotion, or attention (Skinner & Wellborn, 1994).

Coping functions can be distinguished from coping outcomes (or consequences). As pointed out by Lazarus and Folkman (1984), “We do not want to confuse coping functions with coping outcomes. A coping function refers to the purpose a strategy serves; outcome refers to the effect a strategy has” (pp. 148–149).

Functions do not reveal anything directly about the consequences of higher order coping categories, that is, what the effects will be when that way of coping is used with a certain stressor in a specific situation at a particular time. For example, an individual can use an emotion-focused strategy, such as an attempt to clamp down on emotional expression, that ends up having the opposite consequence—actually escalating negative emotion.

We argue that the use of single functions as higher order categories is a mistake because all higher order action categories can serve multiple functions. In other words, consistent with Lazarus (1996), we argue that ways of coping cannot be classified by function because functional “categories” are not mutually exclusive. We illustrate this argument by reviewing and critiquing the most common functional distinction—problem- versus emotion-focused coping—and then expand the critique to all higher order “categories” based on single functions.

Distinction between problem- versus emotion-focused coping. Folkman and Lazarus (1980) suggested problem-focused versus emotion-focused coping as important higher order categories for

conceptual reasons. These two categories were used as a mechanism for linking work on emotional reactions to stress, as described by defensive processes, and rational reactions to stressful events, as described by problem-solving processes. After conducting empirical studies in which participants reported using both problem- and emotion-focused coping in nearly every episode, Folkman and Lazarus (1980) concluded,

This points up dramatically . . . that conceptualizing coping solely in terms of defensive processes or problem-solving processes is inadequate. Defensive processes refer primarily to the emotion-focused function of coping, but in the stressful encounters reported here, problem-focused coping was also used in nearly every instance. Similarly, researchers who emphasize the problem-solving aspect of coping are dealing with limited aspects of the coping process as it presents itself in ordinary living. For example, in Janis and Mann's (1977) decision-making model, although emotion is seen as a source of interference with good decision-making, little attention is given to strategies people use to regulate it. . . . This is not to say that there is no place for research on defensive processes or decision-making. However, when coping is the subject of investigation, it is best seen as a complex process involving both the problem-solving and the emotion-regulating function. (p. 227)

Critique of problem-focused versus emotion-focused coping. Any critique of the distinction between problem-focused and emotion-focused coping must include an acknowledgment of its critical role in literally defining the parameters of the field. Current conceptualizations of coping are shaped by consensus that category systems are not complete until they include ways of coping that serve both the function of rational decision making and of dealing with emotion. Without diminishing its important synthetic role, however, we argue that problem-focused and emotion-focused coping are not useful as higher order coping categories (Ayers et al., 1996; Connor-Smith, Compas, Wadsworth, Thomsen, & Saltzman, 2000; Lazarus, 1996).

Three arguments in support of this position follow directly from the first three criteria of a good taxonomy in Table 1. As categories, problem-focused and emotion-focused coping are not conceptually clear, mutually exclusive, or exhaustive. Lack of clarity is especially apparent for emotion-focused coping. When it is used as a higher order label in systems, there is literally no agreement about which lower order categories it encompasses. For example, in some systems, active attempts to calm oneself are considered emotion focused, whereas in others, uncontrolled venting and panic are included³ (Stanton et al., 1994).

Second, the "categories" of problem focused versus emotion focused are not mutually exclusive: Most ways of coping can serve both functions and thus could fit into both categories. For example, making a plan not only guides problem solving but also calms emotion. Venting not only escalates negative emotion but also interferes with implementing instrumental actions. As stated by Lazarus (1996), "Although it is tempting to classify any coping thought or act as either problem-focused or emotion-focused, in reality any coping thought or act can serve both or perhaps many other functions" (p. 293). This may also explain why factor analyses have rarely, if ever, recovered only these two dimensions from analyses of coping items, even from item pools that were selected for their correspondence to the two higher order categories.

Third, the categories of problem- and emotion-focused coping are not exhaustive with respect to lower order categories of coping. Some ways of coping seem to fall outside both. For example, social support seeking appears to be focused neither on the problem nor on emotion but instead to be focused on other people; and accommodation, which includes active attempts to adjust to constraints, seems to be focused on the self.

General critique of single functions as higher order categories. The same critiques can be leveled against any set of higher order categories based on single coping functions. For example, Moos and Billings (1982) suggested three functions for coping: emotion focused, problem focused, and appraisal focused. Appraisal focused referred to coping efforts that function to redefine the meaning of a situation. However, Moos and Billings (1982) also stated explicitly that

these categories are not mutually exclusive. Appraisal-focused coping can be directed at either the instrumental or the affective aspects of a situation (or both). Furthermore, problem-focused coping can help the person deal with the emotions aroused by a situation . . . while emotion-focused coping can provide the resources necessary to handle a problem. (p. 218)

If they are not mutually exclusive, functions cannot serve as higher order categories.

Hence, consistent with Lazarus (1996), we recommend that researchers no longer use the problem- versus emotion-focused distinction (or any other coping function) as a structure for classifying ways of coping. This position is clearly articulated by Lazarus, who stated that "distinguishing between the two functions, but treating them as if they were distinctive types of coping actions, has led to an oversimple conception of the way coping works and is measured in much research" (p. 292). Ways of coping are *not* functions. They are action types that *have* functions. Moreover, any given action type typically serves more than one function.

Topological Distinctions as Higher Order Categories

A second set of distinctions has been used to describe coping modes or methods (Billings & Moos, 1981), essentially identifying topological features by which lower order categories can be distinguished. By far, the most common topological distinction is approach versus avoidance, but others are often cited, including active versus passive and behavior versus cognition. We critique approach versus avoidance, and all such distinctions, as involving multiple dimensions and as being useful primarily for systematically distinguishing lower order ways of coping within a family.

Description of approach versus avoidance. One of the oldest and most often used distinctions to classify ways of coping is approach versus avoidance. More specific variants of this distinction have been captured by other terms, such as sensitization versus repression, monitoring versus blunting, vigilance versus avoidance, and engagement versus disengagement coping (see

³ This critique would also apply to problem-focused coping if it were used as originally defined; it should be able to include focusing on the problem through rumination or catastrophizing. However, it is typically defined as a lower order category equivalent to problem solving or taking instrumental action.

Roth & Cohen, 1986, Table 1, for 14 variations). At the core of this distinction is the contrast between ways of coping that bring the individual into closer contact with the stressful situation as opposed to ways of coping that allow the individual to withdraw. The more specific variations usually refer to an individual's preference for and reaction to information about the stressful event, contrasting the preference for more information with the desire to be shielded from information. Most theorists agree that the key feature distinguishing approach from avoidance is the orientation of the individual's attention. For example, Roth and Cohen (1986) stated that "approach and avoidance are shorthand terms for the cognitive and emotional activity that is oriented either toward or away from threat" (p. 813).

Discussions of approach and avoidance have been especially useful in focusing debate on the importance of avoidance in coping as an antidote to widespread assumptions that the only adaptive response to stress is problem solving, an approach strategy. Both modes of coping can be considered adaptive in that they each support effective action and the integration of traumatic experience. In general, approach coping affords the opportunity for instrumental action and for integration of distressing experiences. In contrast, avoidance coping may alleviate experienced distress and provide safety or conservation of resources in taxing circumstances (Roth & Cohen, 1986). Discussions point out that approach and avoidance are complementary coping processes and that, over the course of dealing with taxing situations, people can and usually do cycle repeatedly between them. In fact, researchers suggest that the processes may be synergistic, for example, the emotional respite gained through avoidance may provide the energy and space needed for more effective subsequent approach responses.

Critique of approach and avoidance. Despite these many important contributions, we argue that the approach-avoidance distinction has not proven useful as a pair of higher order categories for organizing multiple ways of coping. As can be seen in Appendixes B-E, several category systems have attempted to use them in this way. In general, problem solving and support seeking are considered typical approach strategies, whereas emotional discharge and escape are considered typical avoidance strategies. For example, Causey and Dubow (1992) classified problem solving and seeking social support as approach coping, whereas they classified distancing, internalizing, and externalizing behaviors as avoidance coping.

Two obvious problems with this distinction are that (a) category definitions are not clear and (b) as a set, the two categories are not exhaustive. First, disagreement exists about what qualifies as an approach versus an avoidance way of coping. For example, it is possible to argue that the coping response support seeking and its variations (e.g., help seeking, advice seeking, etc.) are rightfully classified as avoidance-type coping strategies because they orient the individual *away* from the stressful event (and toward other people). In addition, it is possible to argue that emotional discharge, in which the distress experience is the center of attention, may better be classified as an approach strategy because the individual is oriented *toward* the stressor, albeit not actively attempting to influence it (Causey & Dubow, 1992; Ebata & Moos, 1991).

Second, these formulations tend to exclude several important categories of coping, such as observation, information seeking, accommodation, aggression, and rumination. Moreover, despite

theoretical disclaimers to the contrary, explicitly formulated approach responses typically include only constructive approaches, whereas avoidance responses typically include only negatively toned responses (Altshuler & Ruble, 1989; Causey & Dubow, 1992; Ebata & Moos, 1991).

The underlying problem with the use of approach versus avoidance is that these two categories actually combine multiple dimensions. For example, the prototypical approach categories, problem solving and direct action, have in common that they are oriented toward the stressor but also that they are active and emotionally constructive. This may explain why other active and emotionally positive responses, such as seeking support or guidance, may be misclassified as approach, even though they are oriented *away* from the stressor. It may also explain why other approach strategies that are more passive, such as observation or accommodation, are frequently overlooked. Finally, this combination also explains why (active or passive) approach strategies that are negative in emotional tone, such as rumination or aggression, have been routinely excluded from approach ways of coping.

The same critique applies to avoidance categories. The prototypical categories, escape or disengagement, are oriented away from the stressor, but they are also active and negatively charged. This may explain why other active negatively charged categories, such as venting or externalizing, have been misclassified as avoidance strategies, even though their focus is *toward* the stressor, and why positive avoidance strategies, such as support seeking and focus on the positive, have been routinely excluded from avoidance formulations.

A system that exhaustively classifies approach and avoidance ways of coping highlights the fundamental problem with these efforts, namely that orientation alone is not a sufficient dimension for capturing the topology of coping. Categories within approach (such as problem solving, aggression, and rumination) are heterogeneous with respect to function, as are categories within avoidance (such as support seeking, escape, and accommodation).

General critique of topological distinctions. We propose that no single topological distinction (dimension) should be used as a higher order category of coping. All lower order categories are multidimensional. For example, problem solving is not just active; it is also oriented toward the stressor and emotionally positive. In the same vein, rumination is not just emotionally negative; it is also passive and focused toward the stressor. As can be seen in the analysis of approach versus avoidance, using any single dimension as a higher order category (in this case, orientation) leads either to the exclusion of important lower order ways of coping or to a functionally heterogeneous set of lower order categories.

Furthermore, we propose that some topological distinctions, such as active versus passive or behavior versus cognition, should not be used as a basis for distinguishing between families of coping. Any kind of action, for example, escape, can be implemented in a variety of modes or methods (e.g., actually leaving, mentally withdrawing). Topological features are unlikely to be the critical characteristics that define functionally different coping categories. For example, the cognitive activity of planning is likely to be more similar in function to the behavioral activity of taking instrumental action than it is to a number of other cognitive activities, such as rumination, focus on the positive, or catastrophizing. Likewise, the passive activity of blaming others is more similar in function to the active strategy of opposition than it is to

other passive strategies like observation, rumination, or acceptance.

Distinctions Used to Identify Higher Order Action Categories

The third, and most important, set of higher order distinctions are ones that contribute to the identification of action types. In this context, action does not refer to its common language usage, as a synonym for behavior. Instead, it refers to the notion of "action schema" from the long European theoretical tradition of action theories (Brandstädter, 1998). Compared with behavior, action is a more complex construct: It incorporates behavior but also requires simultaneous consideration of individuals' emotions, attention, and goals. The same behavior can reflect different actions if it is deployed in the service of different goals. For example, the behavior of pointing, depending on other features of the action, can be part of giving directions, a request to look at something, or emphasizing an angry point. By the same token, very different behaviors, if they serve the same goal, can be considered to belong to the same type of action. For example, shutting one's eyes, counting to 10, and reading a book can all be behaviors intended to redeploy attention and so considered part of the same action category.

Action theories are based on the idea that the natural unit of analysis for conceptualizing transactions between people and their social contexts is not behavior but action. The key idea is that goals and emotions energize and direct attention and behavior and that it is to this amalgam, these actions, that the context (including the social context) responds. Actions describe flexible integrated motor programs with characteristic patterns of behaviors, attention, and emotion, organized according to their goals, which individuals assemble and deploy in response to their appreciation of current internal and external demands (Brandstädter, 1998). This makes them especially useful to coping theorists in characterizing coping instances (Skinner, 1999), which are considered to be transactions with the context that involve not only behavior but also emotion, attention, and goals.

Action types are higher order classes of actions. For example, proximity seeking, studied by attachment theorists, is an action type; it includes an entire range of actions (such as crying, clinging, and crawling) that have a characteristic topological pattern (active and toward the caregiver) and emotion (yearning). The defining feature is the root action tendency or motivation underlying the actions: They are all attempts to bring the person into contact with an attachment figure. Another action type, studied by control theorists, is mastery; it likewise includes a range of actions (e.g., strategizing, experimentation, instrumental action, and hypothesis testing) that have a characteristic topological pattern (active, constructive, and toward the problem) and emotion (determination). The defining feature is that the actions are attempts to produce desired (or prevent undesired) outcomes.

Within the field of coping, the most common distinction between action types is primary versus secondary control or assimilation and accommodation. We describe and critique such distinctions carefully because we maintain that the construction of an action typology is the endgame for identifying a higher order structure for coping (Lazarus, 1996; Skinner, 1999). We should note that not all distinctions covered in this section refer to action

categories per se, but they do all contribute to distinguishing between qualitatively different action types. The conclusion of this section focuses on the role of different kinds of higher order distinctions in contributing to a taxonomy of coping.

Primary versus secondary control coping. Arising from work on perceived control (Rothbaum, Weisz, & Snyder, 1982) and later applied to the study of coping (Band & Weisz, 1988; Weisz, McCabe, & Dennig, 1994), the primary–secondary model of control distinguishes between "primary control, defined as coping designed to influence objective events or conditions; secondary control, defined as coping aimed at maximizing one's fit to current conditions; and *relinquished* control, defined as the absence of any coping attempt" (Rudolph et al., 1995, pp. 331, 333).

This distinction has been pivotal in reexamining assumptions that the only adaptive response to problems is instrumental attempts to fix them and toward a more balanced view that incorporates processes of acceptance and adjustment (cf. Heckhausen & Schulz, 1994). The most common way in which the primary–secondary distinction has been used in the field of coping is as a pair of higher order categories within which lower order ways of coping are nested.⁴ Typical lower order categories within primary control coping are problem solving and instrumental action. Typical lower order categories within secondary control are acceptance and cognitive restructuring (Connor-Smith et al., 2000).

A central problem with this distinction is the lack of clarity about its definitional features. Some researchers have emphasized the functions of the ways of coping (change vs. acceptance). Others have emphasized the target of coping efforts, with primary-control coping targeting the context and secondary-control coping targeting the self (Heckhausen & Schulz, 1995; see also Perrez & Reicherts, 1992, for the distinction between alloplastic coping, which is directed toward changing the environment, and autoplasic coping, which is directed toward changing the self). Different emphases result in differences in how lower order categories are classified. For example, active attempts to change the self through instrumental action (e.g., intentional emotion regulation) could be classified as primary because of the emphasis on instrumental action or they could be classified as secondary because the target is the self.

A second problem is that the primary–secondary distinction is not exhaustive. Because both categories include active intentional attempts and the only alternative is relinquished control (absence of attempts), additional higher order categories are needed to accommodate lower order ways of coping that are more passive,

⁴ Originally, the primary–secondary distinction was used to classify people's goals during coping (Rudolph et al., 1995). From this perspective, primary and secondary are not action categories but instead refer to reasons for showing coping from any action category. For example, this model would distinguish between problem-focused crying as an instrumental strategy aimed at changing the situation and emotion-focused crying as an attempt to come to terms with current conditions (Band & Weisz, 1988). From this perspective, ways of coping cannot be classified as primary or secondary simply by examining the coping responses themselves. Additional information is needed about each individual's goals. In this sense, the primary–secondary distinction would not be part of an action typology; it would be used as a higher order category, with all actions in a typology potentially appearing once with each goal. The use of the primary–secondary distinction to refer to goals is not currently widespread.

are actively disengaged, or are active but not intentional. (See Connor-Smith et al., 2000, for such an expansion.)

Assimilation and accommodation. A related distinction, which arose from action theoretical perspectives on successful aging, contrasts assimilative processes, which refer to “transforming developing circumstances in accordance with personal preferences,” and accommodative processes, which refer to “adjusting personal preferences to situational constraints” (Brandstädter & Renner, 1990, p. 58). These refer to two qualitatively different and independent action categories. The opposite of assimilation is helplessness, whereas the opposite of accommodation is rigid perseverance, such as the continued fixation on unattainable goals or the inability to disengage from ineffective paths of action. This structure (two separate bipolar dimensions) has been confirmed in analyses of self-report measures designed to tap both processes (Brandstädter & Renner, 1990).

Assimilation and accommodation are not seen as opposing processes or as alternative courses of action, only one of which can be followed in a coping episode. Both have been found to be important predictors of successful aging and as critical in dealing with challenges and losses more generally (Brandstädter, 1998). They can be thought of as synergistic. For example, work on selective optimization with compensation (P. B. Baltes & Baltes, 1990; Freund & Baltes, 2002) shows how the accommodative process of selection works together with the assimilative processes of compensation and optimization as effective life-management strategies in the face of loss.

Some researchers prefer the term *accommodation* to the label secondary control because the former does not imply that accommodative processes are secondary or that they have anything to do with control in the standard meaning of the term (Skinner, 1996). In fact, research has shown that although the use of primary control strategies (such as problem solving and instrumental action) is related positively to perceptions of control, the use of secondary control strategies (such as acceptance or cognitive restructuring) is not predicted by low control or even strongly related to perceived control at all (Brandstädter, 1998). The use of accommodative coping as a higher order category to encompass lower order ways of coping like acceptance, cognitive restructuring, focus on the positive, and attention redeployment, is becoming more common (e.g., Skinner & Wellborn, 1994; Walker, Smith, Garber, & Van Slyke, 1997).

Social distinctions. Although coping has often been characterized as a highly individual affair, more and more researchers are emphasizing the social embeddedness of coping processes (Berg, Meegan, & Deviney, 1998). Some researchers have suggested that an important distinction in categorizing coping is the social orientation of the strategy, specifically, whether a way of coping is social versus solitary (Latack & Havlovic, 1992) or is prosocial (engages or solicits others), antisocial (manipulates or coerces others or views others as obstacles), or asocial (prefers to approach a stressor without the assistance of others; Hobfoll, Dunahoo, Ben-Porath, & Monnier, 1994; Latack & Havlovic, 1992). Researchers studying infancy have suggested a distinction between direct coping, in which an individual emits an overt motor behavior to deal with a stressful event, and indirect coping, in which “the organism responds to the stressful event by enlisting the aid of a conspecific” (Barrett & Campos, 1991, p. 33).

Such distinctions raise the larger issue of the heterogeneity and multiple functions that can be served by seeking social support (Schwarzer, Dunkel-Setter, & Kemeny, 1994) and highlight the general finding that the use of this strategy does not seem to have consistent positive or negative effects. It seems possible that all individual ways of coping might have social equivalents. For example, seeking instrumental support seems conceptually similar to active problem solving, seeking emotional support is likely to have many of the same functions as emotion regulation, seeking advice or consultation with professionals might be considered social forms of information seeking, getting together with friends might be considered a social form of distraction, blaming others may be a social form of opposition, and incessant complaints to others may be a social form of rumination. This line of reasoning was followed in the development of the measure by Connor-Smith et al. (2000), who explained that “an independent social support scale was not created because social support can be accessed for many reasons. Thus, items reflecting specific uses of social support were included in problem solving, emotional regulation, and emotional expression” (p. 979).

Some researchers suggest that it would be useful to think in terms of the social functions of coping. The central notion is that just as ways of coping serve functions with respect to the self (e.g., guide action, calm emotion) and to the environment (e.g., remove obstacles, increase the distance from danger), so too might they serve adaptive functions with respect to other people. For example, expressions of opposition serve to warn others about their encroachment on the individual’s goals, social withdrawal signals a need for comfort, and disgust alerts others to contamination (e.g., Barrett & Campos, 1991, Table 2.1). From this perspective, however, social would not be a higher order category; it would be one of the functions to be considered in analyzing the functional homogeneity and distinctiveness of families of coping. However social dimensions are viewed, a key issue is how to fully represent them in typologies of coping.

Effortful versus involuntary responses to stress. A relatively new distinction has been used to formally introduce the issue of volition to coping. Compas and colleagues (Compas, Connor, Osowiecki, & Welch, 1997; Compas et al., 2001) pointed out that responses to stress include not only effortful, intentional, controlled, and volitional responses but also responses that are automatic, overlearned, or involuntary. This emphasis is an antidote to treatments of stress responses that focus exclusively on strategies and often do not consider involuntary responses, such as rumination, catastrophizing, or venting. Consistent with Lazarus and Folkman (1984), Compas et al. (1997) argued that the term *coping* be restricted to effortful responses only.

Most relevant to the present discussion, Compas et al. (1997) suggested that attempts to classify responses to stress should use effortful versus involuntary as its most fundamental distinction. They held that the first set of higher order categories for stress responses should be effortful and involuntary and that all lower order coping categories can be classified as one or the other. The introduction of this distinction serves many purposes for the field. It encourages coping researchers to think broadly about stress responses and to rethink (or reaffirm) the kinds of responses that qualify as coping. It also pushes researchers to sort out the terms of volition, such as intentional, effortful, purposive, (in)voluntary,

goal directed, volitional, controlled, and automatic, as they relate to stress responses.

At the same time, however, we would argue that volitional versus involuntary may not be useful as a higher order distinction between action types. There are two main reasons for this reservation (see also Barrett & Campos, 1991). First, it is difficult to classify action types a priori according to whether they are volitional or involuntary. For example, is proximity seeking an automatic overlearned response or is it intentional? Are all forms of rumination (i.e., concentrating on the negative features of a situation) involuntary? We argue that most types of action are available to many different levels of volition and that the majority of stress responses (even in adults) are automatized to some degree. Even adaptive coping strategies, such as problem solving, negotiation, and distraction, may become overlearned and automatic responses to stress.

Second, many ways of coping may change status as voluntary or involuntary over time or in different circumstances. Some automatic responses come (with development or interventions) to be under voluntary control, and some voluntary responses come to be automatized with practice. Would these ways of coping then change their classification over time, development, or situations? We suggest that the distinction be retained for within-category differentiation (and for prompting discussion of volition in coping) but that its use as a higher order category to distinguish between action types be evaluated further.

“Good news” versus “bad news” ways of coping. Following Lazarus and Folkman’s (1984) plea to unconfound ways of coping from coping outcomes, few researchers have posited higher order categories that separate a priori healthy from harmful types of coping actions. As mentioned previously, some systems do this implicitly, for example, by placing the good news ways of coping in the approach category or the bad news ways of coping in the involuntary category. Theoretically, however, most researchers maintain that it is impossible to determine the adaptiveness or maladaptiveness of any particular way of coping.

We argue, however, that debate of such distinctions is warranted. Whether this is productive depends, to some extent, on how discussions are framed. We agree that any arguments about the “right” or “wrong” way to cope are pointless. If the ways that an individual copes are assembled based on the specific stressor(s) and situational constraints, then any way of coping can be locally adaptive. For example, if a set of stressors is actually uncontrollable, it may be adaptive to give up (to conserve resources). Or, if an important goal is arbitrarily blocked, it may be adaptive to attack the obstacle (to defend the goal). In this sense, given the right circumstances, every possible way of coping can be appropriate, normative, or right.

Nevertheless, we argue that a distinction can profitably be made between families of coping as good news or bad news on the basis of three factors: their long-term developmental consequences, their subjective experience, and their current qualities. If one takes the coping system, which includes not only the individual’s way(s) of coping but also the specific stressor(s) and demands, individual appraisals, and currently available personal and social resources, as the focal unit, then a particular pattern of coping can be considered diagnostic of the state of the entire system. The target state of interest to this distinction is whether it is “good” or “bad”

for the organism, basically whether the individual can handle the demand or is overwhelmed by it.

In terms of developmental adaptiveness, it seems clear that certain ways of coping are “bad news.” People who show prolonged use of ways of coping such as helplessness, opposition, or social withdrawal can be considered at developmental risk. These ways of coping interfere with the accumulation of coping resources and may even contribute to the development of coping vulnerabilities. For example, prolonged helplessness depletes motivational resources (Kuhl, 1984), and habitual rumination escalates depression (Nolen-Hoeksema, 1998). Ways of coping that promote constructive engagement with stressors (e.g., planning, negotiation, meaning making) or with the self’s reactions to them (e.g., through accommodation, support seeking, or emotion expression) contribute to the construction of coping resources, such as self-reliance, confidence, perceived control, and interpersonal trust. In contrast, the prolonged use of ways of coping that deal harshly with the self (e.g., self-blame, social isolation) or with the stressful situation (e.g., blaming others, negative thinking) can, over time, contribute to the accumulation of vulnerabilities, such as low self-efficacy, losing sight of what is important, or interpersonal hostility.

In addition to their cumulative consequences, certain “bad news” patterns of coping signal the current stressfulness of a person–context transaction. They indicate pressure on the system, specifically, that the individual is being exposed to stresses that he or she cannot currently handle. For example, certain kinds of negative involuntary coping, such as rumination, confusion, or panic, signal that the regulatory resources of the person are overwhelmed. Adults who monitor children (as well as adults who monitor themselves) can detect these qualities of coping and use them as information to adjust other parameters of the system (e.g., to back off demands or increase social support).

Pressured patterns of coping are likely to be accompanied by the subjective appraisal of threat as opposed to challenge (Lazarus & Folkman, 1984). This notion raises the possibility that some ways of coping may be expressions of the same underlying action type but may change in their appearance during differentially stressful transactions. For example, under the stress of increasing noncontingency, problem solving may give way to confusion and helplessness; with increased coercion, negotiation may give way to opposition; or with hostile social partners, support seeking may become social isolation. In addition, of course, as pressure is reduced, ways of coping may reemerge as their less threatened counterpart. Finding the categories of coping that are connected in this way allows for the direct study of conditions that may push coping in one direction or the other (Skinner & Edge, 1998).

Although reflecting the state of the entire system, “good news” and “bad news” may be manifested more specifically in the qualities of a particular way of coping. From this perspective, good news ways of coping are ones that are organized, flexible, and constructive. In contrast, the repeated use of rigid, disorganized, or derogatory ways of coping is diagnostic of exposure to unmanageable levels of stress. Unmanageability may be due to the enormity of objective demands, to pessimistic appraisals, to low personal resources, or to insufficient social supports (or some combination of these).

This issue is relevant to typologies of coping because it suggests that the difference between “good news” and “bad news” families

of coping may be an important higher order distinction. Whether this distinction is best characterized as healthy versus unhealthy, developmentally adaptive versus maladaptive, challenge versus threat, constructive versus harmful, or some other construct label is currently an open question.

Strengths and Limitations of Top-Down Approaches

We reviewed and critiqued three kinds of distinctions that can be used to organize lower order categories of coping. The most important set refers to action categories. We hold that the construction of an action typology is critical in identifying a higher order structure for coping (Lazarus, 1996). This is because of the key role actions can play in bridging the conceptual space between coping instances and adaptive processes. On the one hand, the construct of action reflects the organization of the basic components of coping instances (i.e., physiology, behavior, emotion, attention, and goals) during stressful transactions; on the other hand, it suggests potential links to adaptive processes (e.g., Barrett & Campos, 1991; Fridja, 1988). Of the higher order distinctions reviewed, the most relevant for identifying action types are primary and secondary control (or assimilation and accommodation), social distinctions, effortful and involuntary coping, and “good news” versus “bad news” ways of coping. Each distinction has its advantages and disadvantages, but each suggests qualitatively different action types. Hence, we maintain that continued debate about these distinctions is important to the field.

The first two kinds of distinctions, functional and topological distinctions, were not seen as useful as higher order categories per se because all ways of coping have multiple topological features and serve multiple functions. However, both kinds of distinctions have a role to play in the creation of a coping hierarchy. Topological distinctions are important in generating members *within* a family. All types of actions can be carried out in ways that are active and passive and that are cognitive and behavioral. Maintaining topological distinctions within families may be important in addressing developmental, contextual, and intervention issues. Developmentally, cognitive strategies may come to replace or guide behavioral strategies within the same family. In constrained settings, in which certain behaviors (e.g., physical escape) are prohibited, cognitive substitutes from within the same family (i.e., mental withdrawal) may be used. Interventions may rely on behavioral ways of coping, such as distracting activities, to redirect certain cognitive ways of coping, such as to disrupt rumination. In general, topological distinctions are important for systematically identifying and studying the many ways of coping that are included within a family.

By the same token, functions, although they do not make good higher order categories, are useful in evaluating any proposed action typology. An analysis of coping functions is essential for determining the functional homogeneity and distinctiveness of coping families. As stated in Table 1, an essential criterion for action types is that they are functionally homogeneous. That is, all lower order categories contained in a single higher order category should be functionally similar. They are not *uni*-functional—ways of coping serve multiple functions (Lazarus, 1996). However, if they are going to be useful in organizing research on how coping mediates the connection between stress and outcomes (such as mental health), higher order categories should be functionally

homogeneous. For example, within a single family of coping (such as opposition), all ways of coping should have the same kind of effect on emotion (i.e., all would escalate negative emotion), attention (i.e., all would compel attention to constraining features of the situation), and behavior (i.e., all would energize behavior).

None of these distinctions alone, however, purported to be sufficient for a coping taxonomy. Each would represent only part of a system of multidimensional action categories. In the next section, we focus on hierarchical systems of coping that have proposed sets of higher order action types as taxonomies of coping. Six systems are described, evaluated, and compared. We point out similarities and differences in the resultant systems and critique them for comprehensiveness and for connections to the next level of coping, namely, adaptive processes.

Combining the Bottom-Up and Top-Down Approaches: Hierarchical Systems of Multidimensional Higher Order Categories

Few researchers have attempted to empirically test hierarchical category systems. Although a growing number of researchers have begun to use CFAs to test the fit of items into lower order coping categories, only four systems have appeared in which researchers have attempted to construct and empirically examine hierarchical systems that also test the fit of multiple lower order ways of coping into higher order categories.⁵ These are listed in Appendix E. In this section, we describe them and summarize best practices for further such efforts.

In addition, we present two hierarchical systems based on comprehensive reviews and rational classification of ways of coping. As the only two such systems, they are useful as supplements to the empirical analysis of hierarchies for several reasons. They are more exhaustive, they can posit more complex structures than can be easily empirically tested at the present time, and they can be helpful in suggesting links to adaptive processes. We compared all six hierarchical systems for convergence on a set of higher order action categories. Special attention was devoted to an analysis of their differences. This section ends with an attempt to link some of these families to the level above them, namely, to adaptive processes. Taken together, this work provided clear guides for next steps in fashioning taxonomies of coping.

Empirically Tested Coping Hierarchies

Only four category systems for classifying lower order ways of coping have been empirically tested (Ayers et al., 1996; Connor-Smith et al., 2000; Tobin et al., 1989; Walker et al., 1997). These investigations embody the state-of-the-art in the study of category systems. Each signifies a major program of research, involving serious conceptualization efforts, measurement work, detailed and complex data analyses, and cross-validations with multiple large samples. Although none is perfect, all four represent guideposts for empirical efforts to search for the structure of coping.

Figure 2 contains information about the samples, data analysis techniques, and lower and higher order categories (with item

⁵ Other well-known hierarchical systems (e.g., Haan, 1977; Valliant, 1986) have been used in much research, but the hierarchicality of their categories has not been directly examined empirically.

examples) from each study. The studies are analyzed in detail for both their methodology and the resultant category systems. In this section, the three levels of coping involved in each study (item pools, lower order categories, hypothesized and empirical higher order structures) are described; detailed methodological and substantive comparisons and critiques follow. Any criticisms should be taken in the context of the major contribution to the field represented by each program of research.

Coping Strategies Inventory. Tobin et al. (1989) started with a pool of 109 items: 49 from the WOCC (Folkman & Lazarus, 1980) and 60 from structured interviews, open-ended questionnaires about psychological responses to stress, and brainstorming sessions with clinical psychology graduate students. From this original pool, 88 items were selected that were designed to tap seven ways of coping that were "supported by the literature" (p. 347): problem solving, wishful thinking, problem avoidance, social support, cognitive restructuring, self-criticism, and express emotions.

In Study 1, a sample of college students responded to these items with respect to a self-generated specific event that had occurred within the last month, using a 5-point Likert format indicating the extent of use. Exploratory hierarchical factor analysis with varimax rotation was used to test the seven-factor model; a possible eighth factor was found, marked by items that suggested social withdrawal (e.g., "I avoided being with people"). When the resulting eight-factor varimax factor structure matrix was entered into Wherry's (1984) hierarchical program, two sub-subgeneral factors (tertiary), four subgeneral factors (secondary), and eight primary factors were obtained. A general factor, interpreted as reflecting method variance, was also obtained. Two additional studies were conducted to replicate this solution.

In Study 2, a set of items was identified to mark the eighth primary factor, Social Withdrawal. Hence, 72 items, representing eight 9-item scales, were given to an independent sample of undergraduates using the same prompts and response format as Study 1. In Study 3, this procedure was replicated on another sample of undergraduates using the same items and procedures. Evidence was found for a three-level model that included eight lower order scales. Tucker's coefficients of congruence calculated for each factor across the solutions found in Samples 2 and 3 were adequate, ranging from .85–.98 (average .92) for the eight primary factors, from .86–.97 (average .90) for the four secondary factors, and from .87–.95 for the two tertiary factors.

At the highest level, the model distinguished between Engagement and Disengagement coping; the second level distinguished between Emotion- and Problem-Focused Coping. This resulted in four secondary factors: Problem Engagement (subsuming Problem Solving and Cognitive Restructuring), Emotion Engagement (subsuming Express Emotions and Social Support), Problem Disengagement (subsuming Problem Avoidance and Wishful Thinking), and Emotion Disengagement (subsuming Self-Criticism and Social Withdrawal). Although the methods for conducting hierarchical factor analyses used in this study are now outdated (and thus are not discussed further), the resulting categories are included in the comparison of category systems.

Children's Coping Strategy Checklist (CCSC). The category system of Ayers et al. (1996) began with 11 lower order categories of coping (see below) that were derived from content analysis of semistructured interviews with children, combined with a review of the literature on coping during childhood and adolescence.

Items from the pool (selected on the basis of item analysis and CFAs from previous samples) were independently classified by a panel of faculty and graduate students familiar with children's coping into the 11 lower order categories. Eighty percent agreement across raters was required for items to be retained; 45 items (with 3–5 items per scale) were used in subsequent analyses. On the basis of theoretical distinctions and earlier work, the 11 ways of coping were hypothesized to group into five higher order categories: (a) Problem-Focused Strategies (subsuming Cognitive Decision Making and Direct Problem Solving), (b) Direct Emotion-Focused Strategies (subsuming Seeking Understanding, Positive Cognitive Restructuring, and Expressing Feelings), (c) Distraction Strategies (subsuming Physical Release of Emotions and Distracting Actions), (d) Avoidant Strategies (subsuming Avoidant Actions and Cognitive Avoidance), and (e) Support-Seeking strategies (subsuming Problem-Focused Support and Emotion-Focused Support).

The items were administered to children in Grades 4–6 from 10 schools in three school districts. Instructions prompted children to rate items on the basis of how often they use the response when they have a problem using a 4-point Likert scale from 1 (*never*) to 4 (*most of the time*). Responses were analyzed in two steps. First, to verify the homogeneity and unidimensionality of the lower order categories, Ayers et al. (1996) calculated coefficients of internal consistency for each scale and performed separate CFAs in which all items representing a specific lower order category were hypothesized to load on a single latent dimension. These analyses resulted in the deletion of a lower order scale, Expressing Emotions, because of low internal consistency. A second scale, Physical Release of Emotions, did not meet criteria for a good fit with a single factor model; Bentler's confirmatory fit index (CFI; Bentler, 1990), which by conventional criteria sets an acceptable fit at greater than .90, was .84. Because of the high factor loadings of the four items on their respective subscale, this lower order category was retained. For each of the lower order categories of coping, the respective items were then averaged to form single indicators. It is important to note that no overall item-level CFA was conducted. The zero-order correlations among the 10 primary ways of coping were all positive (ranging from .22 to .77).

CFAs tested the goodness of fit of three models to these data: (a) emotion-focused versus problem-focused coping, (b) active versus passive (or approach vs. avoidance) coping, and (c) the hypothesized five-factor model. None of the models provided a good fit to the data. A modified four-factor solution, in which the first two factors were combined to form an Active factor, did provide an adequate CFI (.96) and was a significantly better fit to the data than either of the first two models tested. The resulting category system consisted of four higher order categories, Active Coping Strategies, Distraction Strategies, Avoidance Strategies, and Support Seeking Strategies, which accommodated 10 lower order scales. The intercorrelations among the four secondary factors ranged from .52 to .78.

Ayers et al. (1996) used a second sample to replicate this four-factor model and to examine its fit with data collected in reference not only to how children usually cope but also to how children actually coped with a specific salient stressful event. The How I Coped Under Pressure Scale (HICUPS) was administered, which contains parallel items written in the past tense (to refer to events that have already taken place). Using CFA, they replicated

<p>Tobin et al. (1989) Wherry's (1984) hierarchical program</p>	<p>Ayers et al. (1996) Maximum likelihood CFA (LISREL and EQS)</p>	<p>Walker et al. (1997) Covariance structure analysis (EQS)</p>	<p>Connor-Smith et al. (2000) Maximum likelihood CFA (AMOS)</p>
<p>Derivation sample 252 lower-level college students Cross-validation samples 508 lower-level college students 398 lower-level college students</p>	<p>Derivation sample 217 4th - 6th graders Cross-validation sample 265 4th - 6th graders (two measures) Invariant across age and gender.</p>	<p>Total sample 688 Grades 4-8 (ages 9-16 years) Derivation sample 259 Grades 5-8 subsample Cross-validation samples 248 Grades 5-8 subsample 181 Grade 4 subsample 158 clinic patients (ages 8-18 years) 175 former patients (ages 11-23 years)</p>	<p>Derivation sample 437 college students (ages 16-19 years) Cross-validation samples 364 (ages 12-18 years) 82 (ages 11-17 years)</p>
<p>Stern Subject-generated specific recent stressful event.</p>	<p>Stern Dispositional "When I have a problem, I..." (Samples 1 and 2) Situational Child-identified specific recent problem. (Sample 2)</p>	<p>Stern Recurrent Abdominal Pain "When you have a bad stomach ache, how often do you...?"</p>	<p>Stern Specific recent stressors in different domains: Social stress (Sample 1) Economic strain (Sample 2) Family conflict (Sample 2) Pain (Sample 3)</p>
<p>Problem solving I worked on solving the problems in the situation. I made a plan of action and followed it.</p>	<p>Active Strategies Cognitive decision making: strategizing and planning. Direct problem solving: Taking instrumental action. Seeking understanding: Trying to understand or find meaning. Cognitive restructuring: Positive thinking, acceptance.</p>	<p>Active Coping Problem-solving: Try hard to do something about it. Seeking social support: Ask someone for help. Rest: Lie down to try to feel better. Massage/Guard: Rub your stomach to try to make it feel better. Condition-specific strategies: Eat something. Self-isolation: Try to be alone. Catastrophizing: Feel like you can't stand it any more.</p>	<p>Voluntary Primary Control Engagement Coping Problem-solving: I try to think of different ways to change the problem or fix the situation. Emotional regulation: I keep my feelings under control when I have to and then let them out later when they won't make things worse. Emotional expression: I let someone or something know how I feel.</p>
<p>Cognitive Restructuring I convinced myself that things weren't quite as bad as they seem. I reorganized the way I looked at the situation, so things didn't look so bad.</p>	<p>Distraction Strategies Distracting actions: Efforts to avoid thinking about the problem by engaging in alternative activities. Physical release of emotions: Efforts to work off emotions.</p>	<p>Accommodative Coping Acceptance: Try to get used to it. Minimizing pain: Tell yourself that it's not that bad. Self-encouragement: Tell yourself to keep going even though it hurts. Distract/Ignore: Try to forget about it. Stoicism: Keep your feelings to yourself.</p>	<p>Voluntary Secondary Control Engagement Coping Positive Thinking: I tell myself that everything will be all right. Cognitive Restructuring: I think about the things that I am learning from the situation. Acceptance: I realize that I just have to live with things the way they are. Distraction: I keep my mind off my parents' fighting by (check all that you do) exercising, playing video games, seeing friends, doing a hobby, watching TV.</p>
<p>Express Emotions I let my emotions out. I got in touch with my feelings and just let them go.</p>			

<p>Social Support I found somebody who was a good listener. I talked to someone about how I was feeling.</p>	<p>Support Seeking Strategies <u>Problem-focused support</u>: Seeking instrumental aid or advice. <u>Emotion-focused support</u>: Seeking comfort or understanding.</p>		
<p>Problem Avoidance I went along as if nothing were happening. I avoided thinking/doing anything about the situation.</p>	<p>Avoidance Strategies <u>Cognitive avoidance</u>: Efforts to avoid thinking about a problem, wishful thinking. <u>Avoidant actions</u>: Leaving or staying away from a stressful situation.</p>		<p>Voluntary Disengagement Coping <u>Avoidance</u>: I try to stay away from people and things that make me upset or remind me of the problem. <u>Denial</u>: I say to myself, "This isn't real." <u>Wishful thinking</u>: I deal with the problem by wishing that it would go away, that everything would work itself out.</p>
<p>Wishful Thinking I wished that the situation would somehow go away or be over with. I hoped a miracle would happen.</p>			
<p>Self-criticism I criticized myself for what happened. I blamed myself.</p>			<p>Involuntary Engagement <u>Rumination</u>: ... I can't stop thinking about how I am feeling. <u>Intrusive Thoughts</u>: ... I can't stop thinking about the problems when I try to sleep. <u>Physiological Arousal</u>: I feel it in my body (check all that apply): my heart races, I feel hot or sweaty, my breathing speeds up, my muscles get tight. <u>Emotional Arousal</u>: I get upset by things that don't usually bother me. <u>Involuntary Action</u>: I can't control what I say or do.</p>
<p>Social Withdrawal I spent more time alone. I avoided being with people.</p>		<p>Passive Coping <u>Behavioral disengagement</u>: Give up since nothing helps. <u>Catastrophizing</u>: Feel like you can't stand it any more. <u>Self-isolation</u>: Try to be alone. <u>Stoicism</u>: Keep your feelings to yourself <u>Acceptance</u>: Try to get used to it.</p>	<p>Involuntary Disengagement <u>Emotional Numbing</u>: ... I don't feel anything at all, it's like I have no feelings. <u>Cognitive Interference</u>: My mind goes blank... I can't think at all. <u>Inaction</u>: I just freeze... I can't do anything. <u>Escape</u>: I just have to get away... I can't help myself.</p>

Figure 2. Comparison of multidimensional higher order coping categories from four empirically tested hierarchical systems. Items in column 1 are from the Appendix of "The hierarchical factor structure of the Coping Strategies Inventory," by D. L. Tobin, K. A. Holroyd, R. V. Reynolds, & J. K. Wigal, 1989, *Cognitive Therapy and Research*, 13, pp. 357, 358. Copyright 1989 by Plenum Publishers. Items in column 3 are from Table 2 of "Development and validation of the pain response inventory for children," by L. S. Walker, C. A. Smith, J. Garber, & D. A. Van Slyke, 1997, *Psychological Assessment*, 9, p. 398. Copyright 1997 by the American Psychological Association. Items in column 4 are from the Appendix of "Responses to stress in adolescence: Measurement of coping and involuntary stress responses," by J. K. Connor-Smith, B. E. Compas, M. E. Wadsworth, A. H. Thomsen, & H. Saltzman, 2000, *Journal of Counseling and Clinical Psychology*, 68, pp. 991, 992. Copyright 2000 by the American Psychological Association. All items reprinted with permission. LISREL, EQS, and AMOS are structural equation modeling software programs. CFA = confirmatory factor analysis.

the four-factor structure on the CCSC items (CFI = .96) and found that it was also a good fit with the data from the HICUPS (CFI = .98). In addition, the factor structure was found to be invariant across gender and age groups (9–10 vs. 11–13 years old).

The Pain Response Inventory. Walker et al. (1997) set out to develop a multidimensional instrument to assess children's coping responses to chronic pain, specifically recurrent abdominal pain. Researchers identified 15 distinct lower order categories (see below) using a variety of sources: general and pain-specific coping measures, reviews of the literature on coping with pain, and in-depth open-ended interviews with children with chronic abdominal pain. Three general factors were derived on the basis of the distinctions between active and passive ways of coping (common in the pain literature) and problem- versus emotion-focused coping. Because active and problem-focused coping were seen as conceptually similar, they were combined, resulting in three general higher order categories: Active Coping, Passive Coping, and Accommodative (Emotion-Focused) Coping.

A hierarchical structure was hypothesized in which each of the lower order categories loaded on a single higher order factor: (a) Active Coping included seven subscales (Problem Solving, Seeking Emotional Support, Seeking Instrumental Support, and Distraction, as well as three strategies specific to recurrent abdominal pain, namely, Rest, Massage-Guard, and Condition-Specific Strategies), (b) Passive Coping included three lower order categories (Behavioral Disengagement, Self-Isolation, and Catastrophizing), and (c) Accommodative Coping included four lower order categories (Acceptance, Self-Encouragement, Minimizing Pain, and Ignoring Pain); Stoicism was identified as a potentially important strategy but was not hypothesized to be subsumed under any of the general factors.

Covariance structure analysis was used to test the hypothesized factor structure on data from a first subsample of school children in Grades 5–8, and (on the basis of the results) a modified hierarchical structure was derived that was subsequently cross-validated in two subsamples and two other independent samples. In the first set of analyses, 14 of the 15 subscales were depicted as latent variables that influenced the observed (item) loadings on that factor; the 16th subscale (Condition-Specific Strategies) was summed into a single observed index. Each of the first-order factors (except Stoicism) was depicted as loading on one of the three second-order factors. Stoicism was allowed to correlate with each of the second-order factors. In addition, the second-order factors were allowed to intercorrelate with each other.

This model was not an adequate fit to the data (CFI = .72). Several modifications were made to the primary factors. Items loading poorly on their first-order factors were deleted. In addition, in two cases, primary factors were combined, on the basis of high correlations between them: Seeking Instrumental Support and Seeking Social Support were combined to form a Support Seeking subscale, and Distraction was combined with Ignore Pain to form a Distract-Ignore lower order subscale. The resulting 12 subscales were internally consistent (Cronbach's alphas ranged from .66 to .87). Their correlations with each other ranged from $-.13$ to $.56$.

Although the CFI for this revised model was not provided, it can be assumed that the fit was not adequate because the decision was made in the final model to allow four primary factors to cross-load, that is, to mark more than one of the three higher order factors. Catastrophizing and Self-Isolation were allowed to load (and did

load positively) on both Active and Passive Coping. Stoicism and Acceptance were allowed to load (and loaded positively) on both Passive and Accommodative Coping. Although discussed in more detail below, it should be noted that the decision to allow lower order categories to load on multiple higher order categories can be considered a drawback of this study because it resulted in higher order categories that were not mutually exclusive.

The CFI for the final model was .79 and did not meet conventional criteria (CFI > .90) for an adequate fit; CFIs were not much higher for the subsequent cross-validations (ranging from .77 to .84). In contrast, the ratio of chi-square to degrees of freedom for each model (Church & Burke, 1994) was well under the value of 3–5, set as reflecting an acceptable model. The factor intercorrelations among the three secondary factors were relatively low, ranging from $-.12$ to $.28$.

Responses to Stress Questionnaire. Connor-Smith et al. (2000) developed a measure of coping and involuntary responses to stress in adolescence. The selection of lower order categories relied on a review of the literature and existing instruments but was based primarily on a conceptual model designed to encompass a broad range of responses to stress, including voluntary and involuntary reactions. Nineteen lower order categories (see below) were hypothesized to be subsumed under six broad families. On the basis of a three-tiered hierarchy, the highest level distinction was between Voluntary and Involuntary Responses to Stress (as mentioned previously); the second level was Engagement versus Disengagement, and the third level, nested within Voluntary Engagement and Disengagement Coping, was Primary versus Secondary Control Coping.

This hierarchy resulted in six hypothesized multidimensional higher order families: (a) Voluntary Primary Control Engagement Coping, which included Problem Solving, Emotional Regulation, and Emotional Expression; (b) Voluntary Secondary Control Engagement Coping, which included Positive Thinking, Cognitive Restructuring, and Acceptance; (c) Voluntary Primary Control Disengagement Coping, which included Avoidance and Denial; (d) Voluntary Secondary Control Disengagement Coping, which included Wishful Thinking and Distraction; (e) Involuntary Engagement, which included Rumination, Intrusive Thoughts, Emotional Arousal, Physiological Arousal, and Impulsive Action; and (f) Involuntary Disengagement, which included Emotional Numbing, Cognitive Interference, Involuntary Flight, and Inaction.

Hypothesized models were tested using CFA with three-item parcels. As a result, the primary factors were manifest variables (the average of their items). Internal consistency of parcels ranged from .37 to .76. The entire hierarchical model was not tested; instead, the Voluntary and Involuntary portions were tested separately. Initial tests of the two-tiered four primary factor model of Voluntary Coping revealed that it was not a good fit to the data (CFI not provided). Hence, modification indices were used to make theoretically logical improvements to the model; it should be noted that no item parcels were allowed to cross-load, and error terms were not allowed to correlate.

The major change was that the distinction between Primary and Secondary Control within Voluntary Disengagement Coping was dropped. Distraction (formerly in Secondary Control Disengagement) was moved to Secondary Control Engagement Coping. Wishful Thinking (also formerly in Secondary Control Disengagement) was combined with the Primary Control Disengagement

ways of coping (Denial and Avoidance) and labeled simply Voluntary Disengagement Coping. This modified structure provided a good fit to the data from the derivation sample (CFI = .92) as well as to data from the cross-validation sample (CFI = .92 and .94, for two domains of coping). Moreover, this model provided a significantly better fit than simple two-factor models (Problem- vs. Emotion-Focused or Engagement vs. Disengagement Coping).

A separate set of confirmatory analyses examined the fit between the data from Sample 1 and the proposed two-factor model of Involuntary Engagement and Involuntary Disengagement (see above for lower order categories). The fit was adequate (CFI = .95) and was cross-validated on an independent sample (CFI = .96 and .97, for two domains of coping). All models were a good fit for data from both males and females. It should be noted that the correlation between the Involuntary Engagement and Disengagement factors was high (.90 in the derivation sample) and that the one-factor solution for the Involuntary model was an adequate fit (CFI = .92); however, the two-factor model showed a significantly better fit.

Strategies for testing coping hierarchies. Taken together, the four studies illustrated the best strategy for empirically analyzing the structure of coping—they all used confirmatory analyses to test hierarchical structures. As such, they were informative about the many steps that make up that process as well as the pitfalls common to them. This section, although not intended to advance methods per se, does attempt to summarize procedures that are currently considered most useful for empirically examining hierarchical structures.

Two main parts of this analytic process, each with several steps, can be distinguished. The first part has as its goal to identify the lower order categories (referred to as *primary factors*) and the items that mark them. The second part has the goal of identifying the higher order categories (referred to as *secondary factors*) and the lower order categories that each subsumes. Although the second part is the most interesting from the perspective of testing hierarchies, it is essential that the first part be conducted carefully because it is the foundation on which the second rests.

Part one, identifying lower order categories, began in all studies with the generation of instances of coping that represented the entire domain of interest. Item pools were generated from existing instruments, structured or open-ended interviews, and brainstorming. The second step was to hypothesize lower order ways of coping that could accommodate the range of instances so identified. Content analyses of instances, along with reviews of the literature and theoretical concerns, were used to generate lower order categories of coping. In only one study (Connor-Smith et al., 2000) was an a priori theoretical model used to identify lower order categories, and it is worth noting that this resulted in the inclusion of several lower order ways of coping (e.g., physiological and emotional arousal, involuntary action, emotional numbing) that are not seen in typical coping assessments. In all studies, the lower order ways of coping identified by researchers (ranging from 8 to 15) were action types.

The third step was the selection or generation of items that clearly mapped onto the lower order categories; one study only included items if they could be reliably classified into their designated category by multiple trained raters (Ayers et al., 1996). Although the number of items per scale differed among studies (ranging from three to nine), five to six items seemed the minimum

needed for satisfactory internal consistencies at the level of primary factors.

A key part of this step was to empirically determine whether each lower order way of coping was unidimensional and homogeneous. This was accomplished by examining the fit of a single-factor model to data for each primary factor separately (Ayers et al., 1996). This allowed any problems with the items or the single primary factors to be detected and resolved before examining multiple primary factors or higher order structures. In studies in which this step was skipped, researchers ended up returning to make item adjustments to primary factors after the first round of hierarchical model fitting (Connor-Smith et al., 2000; Walker et al., 1997).

An important next step, although not included in any of these studies, was one designed to test the unidimensionality of the items, specifically, whether all items loaded on only one primary factor (vs. cross-loading on more than one). This can be accomplished by testing a model of all primary factors in which each item loads only on its designated factor. This step is the bridge between the two parts of model testing. On the one hand, it tests whether lower order families are distinct. On the other hand, such a test is needed to determine the best indicators of the lower order factors for use in testing higher order structures, for example, to determine whether it is justified to average items to form parcels marking the primary factors (Bandalos, 2002).

Two of the studies did use parcels as indicators of the lower order categories (primary factors; Ayers et al., 1996; Connor-Smith et al., 2000). Parceling of items reduces the complexity of subsequent hierarchical analyses and improves fit and interpretability when (and only if) the items are unidimensional (Bandalos, 2002; cf. Marsh, Hau, Balla, & Grayson, 1998). The one study that did not use parcels was not able to achieve a satisfactory fit (Walker et al., 1997). However, it is important to note that in the studies that did use parcels, researchers used only single parcels as indicators of each primary factor (averaging all the corresponding items); as a result, the primary factors were all manifest variables. From the perspective of testing a hierarchical structure, it would have been more useful to include multiple indicators of the primary factors, relying on at least two (and preferably three) parcels to mark each primary factor. Multiple indicators would have allowed each primary factor to be treated as a latent variable. Moreover, multiple parcels are needed to test alternative hypothesized relationships between primary and secondary factors—for example, to test whether a lower order factor is part of a higher order factor or actually represents a higher order factor in its own right. The first part of model testing, when carefully conducted, results in a set of unidimensional and distinct lower order ways of coping (primary factors) that are marked by multiple parcels made up of unidimensional items.

The second part of the process of testing hierarchies focuses on identifying the higher order categories and the lower order categories that are subsumed by them. In general, and consistent with current views of coping, models specified that primary factors be allowed to correlate within secondary factors and that secondary factors be allowed to correlate with each other. As is typical, positive correlations were generally found among primary factors (Walker et al., 1997, was an exception). As stated by Connor-Smith et al. (2000), this is “because most individuals use multiple coping strategies and higher levels of distress are associated with

more coping of all types" (p. 983). Better estimates of the relationships among primary factors can be achieved by using proportional scores, which reflect the proportion of responses of a particular way of coping (see Connor-Smith et al., 2000, Table 2, for a direct comparison).

Of greatest interest was the step that tested models depicting hierarchical relationships among primary factors. Studies were most informative when they compared alternative models and when they tested models depicting the complete hypothesized hierarchy. All decisions about the fit of models relied on multiple indicators. In all studies, initial model fitting resulted in modification of hypothesized higher order structures. For the most part, the modifications were theoretically defensible and usually resulted in simpler higher order structures. From the standpoint of criteria for a useful taxonomy, the only problematic decision was to allow primary factors to load on multiple secondary factors (e.g., Walker et al., 1997). This resulted in sets of higher order categories that were not mutually exclusive. If a lower order way of coping can belong to more than one higher order factor, then either the lower order factor is not unidimensional or the higher order categories are not distinct. Before comparing the substance of these four important studies, we review two additional coping taxonomies.

Two Hierarchies Based on Review and Rational Classification

Two systems were found that were based on comprehensive reviews and rational classification of lower order categories. As expected, relative to the empirical hierarchies, these were more comprehensive, more complex, and more theoretically driven; they were especially useful in creating links to adaptive processes. After describing the two systems in this section, we compare and combine the resultant lower order categories and higher order structures with the results of the empirical studies.

Review of children's coping. In 1992, Ryan-Wenger completed a review of lower order categories of children's coping, collecting over 100 categories. On the basis of rational classification, she identified 15 higher order categories (Ryan-Wenger, 1992, Table 2). They are as follows (in alphabetical order): aggressive activities, behavioral avoidance, behavioral distraction, cognitive avoidance, cognitive distraction, cognitive problem solving, cognitive restructuring, emotional expression, endurance, information seeking, isolating activities, self-controlling activities, social support, spiritual support, and stressor modification.

Each overarching category included multiple lower order subscales. For example, cognitive problem solving accommodated nine specific scale categories, such as focus on the situation, processing information, analyze, learn, and problem solving. As with most rational classifications, the resulting higher order coping categories are presented as a list, providing few clues about a coping hierarchy. However, this list is useful in evaluating the comprehensiveness of other taxonomies. Because it was created from an exhaustive review, it should contain most of the lower order categories a taxonomy needs to accommodate.

Coping as action regulation. Our system, presented in Figure 3, is based on an action theoretical model of motivation, a review of child and adult scales (Skinner & Wellborn, 1994), and CFAs of primary scales (Skinner & Edge, 2002a); the hierarchi-

ality of parts of the system is currently being tested empirically (Steinberg, Skinner, & Young, 2002). This system posits 12 higher order families of action types, organized around three classes of concerns (Skinner & Wellborn, 1994, 1997). Each represents a class of concerns that humans can detect and that trigger organized biobehavioral response patterns or action tendencies. Research from the literatures on attachment, perceived control, and self-determination were used to derive the corresponding ways of coping included in each family.

The first set of families is organized around challenges and threats to competence and so involves appraisals of opportunities for (or threats to) control. The second set is organized around challenges and threats to relatedness, and involves appraisals of the availability (or absence) of trusted others. The third set of coping families is organized around challenges and threats to autonomy and so involves appraisals of opportunities for (and threats to) self-determined action. Within each concern, four families are identified on the basis of (a) distinguishing ways of coping that are triggered by appraisals of challenge versus threat and (b) distinguishing between ways of coping that target the self versus the context. The result is 12 higher order coping families, organized into three sets of four and labeled using general action categories.

Each pattern of appraisals triggers its own qualitatively different root action tendency, which has a corresponding pattern of desire, emotion, behavior, and orientation. These root action tendencies are the criteria for family membership. The first set of four (shown in bold in the middle section of Figure 3) is organized around competence (or control) and includes a pair elicited by appraisals of challenge, namely, problem solving and information seeking, and a pair elicited by appraisals of threat, namely, helplessness and escape (Folkman, 1984; Skinner, 1995). For example, the coping family problem solving has an action tendency characterized by active attempts to produce effects, the emotion of determination, and an attentional focus during transactions on discovering how to produce desired outcomes. This action tendency would underlie multiple lower order categories of coping, such as problem solving, planning, instrumental action, strategizing, and so on. In infants, these would include actions that allow for contingency detection and operation, such as experimentation and replication of effects.

The second set of four families (shown in bold in the left section of Figure 3) is organized around attachment (or relatedness) and includes a pair of coping families elicited by appraisals of challenge, namely, self-reliance and support seeking, and a pair elicited by appraisals of threat, namely, delegation and social isolation. For example, the support seeking family is based on an action tendency that is organized around the urge or desire to come into contact with an attachment figure and includes active attempts to signal and reach the support provider as well as a characteristic emotion (yearning) and an attentional focus away from the stressor and toward the support provider. During adulthood, such an action tendency might underlie lower order categories, such as comfort seeking, phoning others, imagining what someone might say, and prayer.

The third set of four (shown in bold in the right section of Figure 3) is organized around self-determination (or autonomy) and includes a pair elicited by appraisals of challenge, namely, accommodation and negotiation, and a pair elicited by appraisals of threat, namely, submission and opposition (Skinner & Edge,

	RELATEDNESS		COMPETENCE		AUTONOMY	
	CHALLENGES to SELF CONTEXT		CHALLENGES to SELF CONTEXT		CHALLENGES to SELF CONTEXT	
Behavior Emotion Orientation	Self-reliance Shouldering	Support seeking Comfort seeking Help seeking	Problem solving Strategizing	Information seeking Study Observe	Accommodation Cooperation Concession Committed compliance	Negotiation Compromise
	Self-soothing Accept responsibility Concern for others	Trust	Encouragement Determination Confidence	Interest Optimism Hope	Acceptance	Blamelessness Taking other's perspective
	Protection Shielding Positive self-talk	Appreciation	Repair Mastery	Prevention Planning	Commitment Conviction Endorsement	Decision making Goal setting Priority setting
	THREATS to SELF CONTEXT		THREATS to SELF CONTEXT		THREATS to SELF CONTEXT	
Behavior Emotion Orientation	Delegation Dependency Demanding Clinging Pestering	Isolation Withdrawal Freeze	Helplessness Random attempts Flailing Falling down the stairs	Escape Flight Avoidance	Submission Perseveration Rigidity Unresponsiveness	Opposition Aggression
	Self-pity Whining Shame	Loneliness Desolation Yearning	Self-doubt Discouragement Guilt	Pessimism Despair Fear	Self-blame Disgust	Projection Blame others Venting Explosion Anger
	Abandonment Irritation	Cutting off	Panic Confusion	Procrastination	Obsession Rumination Intrusive thoughts	Reactance Revenge

Figure 3. Twelve families of coping organized around three concerns, level of distress (threat vs. challenge), and target of coping (self and context). Orient = orientation.

2002b). Each pair is listed above so that, in the first family, the target is the self, and in the second family, the target is the context. For example, within appraised challenges to control, one can target the self by attempting to implement responses that produce desired outcomes (i.e., problem solving), or one can target the context by trying to discover more about available contingencies (i.e., information seeking). In a similar vein, within appraised challenges to autonomy, one can target the self by attempting to adjust one's preferences to current constraints (i.e., accommodation), or one can target the context by attempting to generate more options (i.e., negotiation). These 12 families are designed to accommodate a wide variety of ways of coping.

Comparison of Higher Order Families of Coping

The higher order categories used in the four empirical and two rational systems are combined and compared in Table 5. The table identifies 13 potential families of coping and is organized to provide information about the extent to which each can be considered core. For each candidate, the table lists the following: (a) alternative labels for the higher order category and examples of

some of the lower order categories it would typically include; (b) the number of times such a family appeared across coping scales reviewed for this article, both under that specific label and under closely related labels (calculated from Table 3); (c) whether it appeared in scales across different ages (child-adolescent and adult) and stressors (general and domain specific); (d) whether it appeared in the empirical hierarchical systems and, if so, under what label; (e) whether it appeared in the rational hierarchical systems and, if so, under what label; and (f) whether it has been studied in other areas by other names.

We concluded that five categories of coping are clearly core: problem solving, support seeking, avoidance, distraction, and positive cognitive restructuring. Each was present in at least three of the four empirical systems and both rational systems, appeared in 25%–50% of all systems reviewed, and was used in scales with children-adolescents and adults and domain-specific and general stressors. Four more categories could be considered strong candidates: rumination, helplessness, social withdrawal, and emotional regulation. Each appeared in two of the four empirical systems and both of the rational systems, in at least 20 of the systems reviewed,

Table 5 (continued)

Potential higher order family of coping	No. of appearances in review scales		Appears in this scale type				Category in hierarchical factor analyses ^a	Category in rational sorting reviews ^b	Other labels
	Current label	Variation	Adult, general	Adult, specific	Child, self-report	Child, observation			
Negotiation	4	5	Yes	Yes	Yes	No	1. Stressor modification 2. Negotiation	Assertive Confrontive	
Offer exchange									
Compromise									
Prioritizing									
Opposition	16	7	Yes	Yes	Yes	Yes	1. Aggressive activities 2. Opposition	Externalizing Venting Projection Reactance Dependency	
Aggression									
Blame others									
Delegation			No	No	Yes	No	2. Delegation		
Maladaptive help seeking									
Self-pity									

^a Numbers in this column correspond to the following studies: 1 = Tobin et al. (1989), 2 = Ayers et al. (1996), 3 = Walker et al. (1997), and 4 = Connor-Smith et al. (2000).

^b Numbers in this column correspond to the following studies: 1 = Ryan-Wenger (1992) and 2 = Skinner & Wellborn (1994).

and in scales for different ages and stressors. It is important to note that each of these families also represents a set of constructs that have been the focus of fruitful research on reactions to stress (largely outside the coping area).

Three more families appeared less frequently but likely deserve further consideration: information seeking, negotiation, and opposition. These were not hypothesized as part of any empirical system, but they were distinguished in both rational reviews, appeared in at least 10 of the systems reviewed, were present in scales across age and stressor, and also have their own bodies of literature. Finally, the 13th family, delegation, appeared in only one system and has been studied only in children. At this point, its inclusion is speculative. It should be noted that as part of scale development efforts for the systems described in the Appendixes, item sets tapping each of the 13 categories have been tested separately in confirmatory analyses and found to be unidimensional and relatively homogeneous. For example, sets of items tapping problem solving have been examined in CFAs by several researchers (e.g., Ayers et al., 1996; Tobin et al., 1989).

Table 5 can be used to analyze the convergence of category systems, starting from the more than 400 ways of coping listed in Table 3 to the 13 listed in Table 5. Taken together, the 13 cover much of the range of ways of coping studied thus far. The next section considers each family briefly, focusing on the qualities that define family membership and on the ways of coping included within each family. Following this, we analyze the convergence and differences across systems in terms of how they are organized into higher order categories. Of most interest is the extent to which this set meets the criteria for a useful taxonomy laid out in Table 1.

Problem solving. Appearing in almost every scale, this family was the anchor of good news ways of coping. Problem solving included the prototypical lower order approach and problem-focused categories of instrumental action, strategizing, and problem solving. Many other closely related ways of coping were also considered part of this family, such as planning, logical analysis, effort, persistence, and determination. For example, one of the empirical analyses found that Cognitive Decision Making (including Strategizing and Planning) loaded on the same higher order factor as Direct Problem Solving (Taking Instrumental Action; Ayers et al., 1996). The main controversy surrounding problem solving (discussed below) was whether it should be considered a higher order family in its own right or whether it should be combined with other ways of coping.

Seeking support. Three of the four empirical and both of the rational systems included the family seeking social support. One of the most common families of coping, it was present in 88 of the systems reviewed and is likely to appear in some form in any comprehensive system. Seeking support included a wide array of targets for support (e.g., parents, spouses, peers, professionals, and God) and a variety of goals in going to people (e.g., instrumental help, advice, comfort, and contact). One of the most interesting findings about the structure of support seeking came from a hierarchical factor analysis in which alternative relationships between problem-focused support seeking and emotion-focused support seeking were tested; it was found that a model in which they are considered part of the same higher order factor was a better fit to the data than one in which they were considered part of two different (Problem vs. Emotion Focused) higher order factors (Ayers et al., 1996).

This coping strategy has a history of study under labels such as social support, proximity seeking, and help seeking. The major issue with support seeking (discussed below) was whether it should be considered a higher order family in its own right. In one empirical system, no such category appeared; items involving social partners were included on multiple lower order ways of coping (Connor-Smith et al., 2000). In another, it was considered a part of a higher order family that included other active ways of coping (Walker et al., 1997).

Escape-avoidance. A third common family of coping can be labeled avoidance or escape and includes efforts to disengage or stay away from the stressful transaction. Appearing on over 50 of the systems reviewed, it includes lower order ways of coping, such as cognitive avoidance, avoidant actions, denial, and wishful thinking. Interestingly, two empirical analyses directly tested whether distraction could be considered part of this family, and both found no support for this hypothesis (Ayers et al., 1996; Connor-Smith et al., 2000).

Distraction. A relatively new family of coping, distraction refers to active attempts to deal with a stressful situation by engaging in an alternative pleasurable activity. Distraction, present in over 40 systems, included a wide variety of alternative activities, such as hobbies, exercise, watching TV, seeing friends, or reading. In one system, this was considered a higher order family in its own right (Ayers et al., 1996). However, in three other systems, distraction was considered part of a family of accommodative or secondary control ways of coping that included acceptance and minimization (Connor-Smith et al., 2000; Skinner & Wellborn, 1994; Walker et al., 1997).

Cognitive restructuring. Also a relatively new family of coping, positive cognitive restructuring refers to active attempts to change one's view of a stressful situation in order to see it in a more positive light. Present in over 20 systems, it includes lower order ways of coping, such as focus on the positive, positive thinking, optimism, and minimization of distress or negative consequences. In one system, this was considered a category in its own right (Tobin et al., 1989); in three others, it was considered a part of accommodative or secondary control coping (Connor-Smith et al., 2000; Skinner & Wellborn, 1994; Walker et al., 1997). In another system, it was combined with problem solving to form a family of active coping (Ayers et al., 1996).

Candidates for core families. Four ways of coping, namely, rumination, helplessness, social withdrawal, and emotion regulation, were present in at least two of the empirical analyses and both of the rational systems. *Rumination* refers to a passive and repetitive focus on the negative and damaging features of a stressful transaction; it includes lower order ways of coping, such as intrusive thoughts, negative thinking, catastrophizing, anxiety amplification, self-blame, and fear. These ways of coping have been studied explicitly as a risk factor for depression (Nolen-Hoeksema, 1998). Moreover, rumination has been considered a part of a higher order family of coping referred to variously as *rigid perseveration* (and considered to be the opposite of flexible accommodation; Brandtstädter & Renner, 1990) or *submission* (Skinner & Wellborn, 1994). Together with physiological and emotion arousal, these can also be referred to as involuntary engagement stress reactions (Connor-Smith et al., 2000).

As a higher order family of coping, *helplessness* refers to a set of actions organized around giving up or the relinquishment of

control. Lower order ways of coping include passivity, confusion, cognitive interference or exhaustion, dejection, and pessimism. The construct of learned helplessness (Seligman, 1975) organizes a large literature on reactions to noncontingency and loss of control (Bandura, 1997; Dweck, 1999; Peterson, Maier, & Seligman, 1993; Skinner, 1996). In one of the empirical systems, helplessness was combined with emotional numbing and involuntary escape to form a higher order factor of Involuntary Disengagement (Connor-Smith et al., 2000).

As a family of coping, *social withdrawal* refers to actions aimed at staying away from other people or preventing other people from knowing about a stressful situation or its emotional effects. It encompasses lower order ways of coping such as social isolation, avoiding others, concealment, stoicism, and emotional withdrawal. In one empirical system, social withdrawal was considered a family in its own right (Tobin et al., 1989). In another, it was considered a part of passive coping along with behavioral disengagement, catastrophizing, and acceptance (Walker et al., 1997). Social withdrawal has been studied as an attachment classification, referred to as avoidant attachment (Ainsworth, 1979).

As a family of coping, *emotion regulation* refers to active attempts to influence emotional distress and to constructively express emotions at the appropriate time and place. Lower order ways of coping might include self-encouragement and comforting, emotional control, relaxation, and emotional expression. The links between the larger field of emotional regulation and coping have been the focus of several recent articles (Eisenberg, Fabes, & Guthrie, 1997; Rossman, 1992). Within coping, this family has been identified as a form of constructive emotional approach coping and distinguished from emotion-focused ways of coping that reflect the uncontrolled discharge of negative emotions (Stanton et al., 1994). How this family of coping fits with other families is not completely clear. In one empirical system, emotional expression is considered a family in its own right (Tobin et al., 1989). In another, it is considered a part of primary control engagement coping along with problem solving (Connor-Smith et al., 2000). In one rational system (Ryan-Wenger, 1992), it is considered a part of self-controlling activities along with behavior regulation.

Families from rational classifications. The systems based on rational classification were naturally more comprehensive and so included several families not examined in the hierarchical empirical systems. Specifically, they included the higher order categories of information seeking, negotiation, and opposition. The lower order categories contained in these families are common in assessments of coping (see Table 3).

As a family of coping, *information seeking* refers to attempts to learn more about a stressful situation or condition, including its course, causes, consequences, and meanings as well as strategies for intervention and remediation. A common way of coping in response to the stresses of disease and disability, this family may be similar to other approach forms of coping like sensitization, monitoring, and vigilance (although these latter terms may imply some degree of fixation and rumination). A variation on information seeking, namely seeking understanding, appeared in one empirical system as part of the Active secondary factor marked by Problem Solving (Ayers et al., 1996).

As a family of coping, *negotiation* refers to active attempts to work out a compromise between the priorities of the individual and the constraints of the situation. One of the most common ways of

coping used for interpersonal stressors (e.g., Elias, Rothbaum, & Gara, 1986; Pearlin & Schooler, 1978), it includes lower order ways of coping such as priority setting, proposing a compromise, persuasion, reducing demands, trade-offs, and deal making. In work on self-determination, negotiation is considered to be a constructive autonomous response to coercive threats, actions, or situations (Skinner & Edge, 2002b).

Opposition describes a family that includes lower order ways of coping such as projection, reactance, anger, aggression, discharge, venting, and blaming of others. It is controversial as a higher order category because of its overlap with symptoms of psychopathology, specifically externalizing behaviors. However, it appeared in over 20 systems. Only one family of coping was suggested by one system (Skinner & Wellborn, 1994) and not by any others. That family was *delegation* and included lower order categories such as dependency, maladaptive help seeking, complaining, whining, and self-pity. Although dependency has a long history of study in psychology (M. M. Baltes, 1997; Gewirtz, 1972), these reactions to stress are not particularly common as lower order categories and were not examined in the empirically validated systems.

Taken together, the 13 higher order categories in Table 5 represent a good starting point for further work on the structure of coping. The categories based on confirmatory analyses attest to the empirical soundness of most of these categories; the systems based on reviews suggest that they are relatively comprehensive. Overall, they seem to meet the first three criteria set in Table 1 for a useful taxonomy: (a) definitions are conceptually clear, (b) categories are mutually exclusive, and (c) the set seems relatively exhaustive. Additional families of coping can be suggested by comparing and contrasting candidates with this core set. Productive debate can focus on the qualities that define family membership and on the ways of coping included within each family. The next section considers these issues in detail, invoking the last four criteria from Table 1 (functional homogeneity and distinctiveness, generativity, and flexibility) as a basis for evaluation.

Relationships Among Higher Order Categories of Coping

The final step in creating a structure for coping is to specify the interrelationships among the core families of coping. There was not consensus among the empirical or rational systems on how families of coping are best organized into higher order categories and, specifically, on whether each of these 13 higher order categories should be considered a family in its own right or whether they should be regarded as parts of other higher order families. This section highlights convergence and alternative perspectives on the organization of families. It ends with the suggestion that a consideration of how higher order categories are linked to adaptive processes may be useful in analyzing how different sets of categories fulfill the criteria of functional homogeneity and distinctiveness.

Higher order categories that were not used. First, it is important to note that consensus did exist with respect to certain higher order categories that were not used in any of the hierarchical systems. Specifically, no system relied solely on approach versus avoidance, problem versus emotion focused, or modes of coping (behavioral, cognitive, active, passive, etc.) as higher order categories. Although all systems included problem solving and escape (the prototypical lower order approach and avoidance categories),

these categories were more narrowly defined than approach and avoidance (e.g., escape did not include distraction), and no system relied solely on these two as the only higher order families.

Also, no system used problem focused or emotion focused as higher order families (although Tobin et al., 1989, used the distinction to label part of their hierarchy).⁶ Two other empirically validated systems explicitly tested the problem- versus emotion-focused distinction as higher order categories and found that it did not provide a good fit with the data (Ayers et al., 1996; Connor-Smith et al., 2000).

Moreover, modes of coping did not empirically distinguish between families. Behavioral and cognitive ways of coping were found within the same family. For example, in one system, the Avoidance factor was marked by both cognitive avoidance and avoidant actions (Ayers et al., 1996). In the same vein, both active and passive modes of coping were found within the same family. For example, observation and reading were both considered ways of coping within the family of information seeking, and emotional and physiological arousal were both reactions to stress within the family of involuntary engagement. Overall, topological distinctions (e.g., active vs. passive, behavioral vs. cognitive, or emotional vs. physiological) were *not* useful in distinguishing between higher order families of coping.

Alternative strategies for organizing higher order ways of coping. The empirical and rational hierarchies presented several alternative ways of ordering the higher order families they had in common. The major disagreements centered on how to organize families of coping that refer to active attempts to constructively express or regulate emotions, behaviors, and thoughts, specifically positive cognitive restructuring and emotion regulation and expression.

One rational system considered cognitive restructuring a higher order category in its own right (Ryan-Wenger, 1992). However, an empirical system classified cognitive restructuring as an active way of coping (to be included with problem solving; Ayers et al., 1996). In a variation on the latter perspective, another empirical system considered Cognitive Restructuring and Problem Solving to be separate primary factors, which loaded on the same secondary factor (Problem Engagement; Tobin et al., 1989). In contrast, three other systems classified cognitive restructuring as accommodative coping (or voluntary secondary control engagement coping) to be included with distraction (Connor-Smith et al., 2000; Skinner & Wellborn, 1994; Walker et al., 1997).

Similarly, alternatives were seen for the higher order categories of emotion regulation and emotional expression. In one empirical system, emotional expression was seen as a primary category in its own right and considered part of a secondary factor labeled Emotion Engagement, along with support seeking (Tobin et al., 1989). In another, it was combined with problem solving to form Voluntary Primary Control Engagement (Connor-Smith et al., 2000). The two rational systems grouped these latter regulatory activities under an independent family, labeled self-reliance (Skinner &

⁶ Even as a higher order label, the use of the problem and emotion distinction was problematic. Emotion engagement included social support seeking, and emotion disengagement included social withdrawal. There is no reason to suppose that these social ways of coping are singularly emotional in focus or function.

Wellborn, 1994) or self-controlling activities (Ryan-Wenger, 1992). Two of the empirical systems did not include this family (Ayers et al., 1996; Walker et al., 1997), one because items designed to tap emotional expression did not reach acceptable levels of internal consistency (Ayers et al., 1996).

Some disagreement was also apparent with respect to the higher order category seeking social support. Most systems considered it a family in its own right (Ayers et al., 1996; Skinner & Wellborn, 1994; Tobin et al., 1989). However, one empirical system included it along with problem solving and other strategies to be part of an active higher order category (Walker et al., 1997). In contrast, in another empirical system, items involving social support were distributed across scales according to the functions of the support (Connor-Smith et al., 2000).

Possible organizing principles. From the alternative hierarchical systems and inspection of the 13 coping families, it is clear that many relationships among these higher order categories exist. Some appear to be closely related, like problem solving and information seeking or distraction and avoidance. Some appear to be opposites, like problem solving and helplessness, seeking social support and social isolation, and negotiation and opposition. Some share common characteristics; many pairs can be found in which both are constructive, emotionally positive, rigid, volatile, or disorganized.

Only two systems were tied to overarching theories and explicitly used top-down criteria to organize the higher order families. The hierarchy used by Connor-Smith et al. (2000) suggests that some of these ways of coping are voluntary and others involuntary. Our hierarchy suggests that some ways of coping are triggered by appraisals of challenge or threat to control (competence), others by appraisals of challenge or threat to attachment (relatedness) or self-determination (autonomy). Although some evidence supports these discriminations (Connor-Smith et al., 2000) and linkages (Skinner & Edge, 2002a), they are still largely open empirical questions.

We argue that an additional important standard for judging the usefulness of any hierarchy is the extent to which it can organize families with respect to adaptive processes. In other words, a useful structure of coping, as represented in Figure 1, should not only account for a comprehensive range of ways of coping but should also specify the relations among higher order categories in terms of their function in mediating between exposure to stress and the development of mental and physical health. As stated in Table 1, a set of higher order categories is useful to the extent that each family is functionally homogeneous as well as functionally distinct from every other family. This section turns briefly to the issues raised by these criteria and speculates about how they may help resolve some of the discrepancies among hierarchies and, more importantly, how they may be used to frame questions for future research.

Criteria of Functional Homogeneity and Distinctiveness: Linking Higher Order Coping Categories to Adaptive Processes

The link between families of coping and adaptive processes is based on the assumption (underlying most views of coping during the last century) that the repertoire of human responses to stress has been shaped by evolution. The systems humans use to detect

and respond to threat are evolved ones, anchored in innate species-specific physiology as well as in perceptual and action predispositions. The core notion is that humans come with the capacity and will to detect threats to their safety and have biobehavioral systems that coordinate their responses to threats. The evolutionary advantages of biobehavioral response systems are clear. Compared with reflexes, systems that can accurately discriminate ongoing cues are likely to generate responses that are more attuned to current environmental conditions. In addition, compared with cognitively processed responses, biobehavioral systems are likely to execute appropriate responses more quickly.

Distinguishing among the kinds of threats that can be detected and the related biobehavioral systems for reacting to them is one basis for organizing higher order categories of coping. From this perspective, higher order categories are natural action categories that have evolved to deal with a wide variety of threats. The most common of these are, of course, the fight, flight, and freeze responses to stress. Additional action types have been proposed to supplement these, most recently, tend and befriend (Taylor et al., 2000).

Few attempts have been made to specify the connections between adaptive processes and multiple higher order families of coping. On the one hand, researchers studying adaptive processes typically focus on only one. For example, attachment researchers focus on proximity seeking and control researchers focus on mastery versus flight responses. On the other hand, coping researchers have concentrated their attention on bottom-up approaches to higher order categories, rarely considering their larger adaptive functions (cf. Lazarus, 1991; White, 1974). Some first steps toward establishing links between families of coping and adaptive processes have been offered by functionalist theories of emotion and action regulation. From functionalist theories have come sets of action types based on differing emotions, appraisals, and action tendencies (Barrett & Campos, 1991; Fridja, 1987, 1988; Lazarus, 1991; Saarni, Mumme, & Campos, 1998). We argue that one useful strategy for organizing families of coping involves theory-driven analyses of such action types.

Analysis of adaptive functions. An example from our own work is provided in Figure 4.⁷ For each of the 12 families of coping listed, we attempted to analyze its functions in helping an organism adapt to its environment under stress. These issues have been central topics of discussion in the larger literatures in which each way of coping is embedded. For example, the attachment area has spelled out the evolutionary advantages of proximity seeking as a stress reaction for the young of a species (Bowlby, 1969, 1973), and work on perceived control focuses on the evolutionary advantages of attempts to exert control (Heckhausen & Schulz, 1995).

In general terms, the question can be framed as, How can this response to stress improve the fit between an organism and its environment when the demands on the organism exceed (or are anticipated to exceed) its resources? From this perspective, for example, problem solving is not just often helpful. Instead, it serves an adaptive function by allowing an individual to select and

⁷ It is important to note that such an analysis completely reorders and slightly renames or regroupes the higher order categories from Table 5. The bases for such changes are presented below.

Family of Coping	Family Function in Adaptive Process	Adaptive Process	Also implicated
Problem-solving Strategizing Instrumental action Planning	Adjust actions to be effective	Coordinate actions and contingencies in the environment	Watch and learn Mastery Efficacy
Information Seeking Reading Observation Asking others	Find additional contingencies		Curiosity Interest
Helplessness Confusion Cognitive interference Cognitive exhaustion	Find limits of actions		Guilt Helplessness
Escape Cognitive avoidance Behavioral avoidance Denial Wishful thinking	Escape noncontingent environment		Drop and roll Flight Fear
Self-reliance Emotion regulation* Behavior regulation Emotional expression Emotion approach	Protect available social resources	Coordinate reliance and social resources available	Tend and befriend Pride
Support Seeking Contact seeking Comfort seeking Instrumental aid Spiritual support	Use available social resources		Proximity-seeking Yearning Other alliance
Delegation Maladaptive help-seeking Complaining Whining Self-pity	Find limits of resources		Self-pity Shame
Isolation Social withdrawal* Concealment Avoiding others	Withdraw from unsupportive context		Duck and cover Freeze Sadness
Accommodation Distraction* Cognitive restructuring* Minimization Acceptance	Flexibly adjust preferences to options	Coordinate preferences and available options	Pick and choose Secondary Control
Negotiation Bargaining Persuasion Priority-setting	Find new options		Compromise
Submission Rumination* Rigid perseveration Intrusive thoughts	Give up preferences		Disgust Rigid perseverance
Opposition Other-blame Projection Aggression	Remove constraints		Stand and fight Anger Defiance

Figure 4. Links between higher order families of coping and adaptive processes. An asterisk indicates that that way of coping was considered to be a higher order category in Table 5.

modify actions to be effective in operating existing contingencies. By the same token, information seeking is not just a useful coping option. Instead, it serves an adaptive function by allowing for the discovery of additional contingencies. Ways of coping from both these families promote more organized and effective action. In considering the adaptive functions served by accommodation, it can be argued that it allows for the flexible adjustment of preferences to available options and constraints. In a similar vein, negotiation allows for the creation or discovery of additional options. Ways of coping from both of these families allow for more flexible and priority-driven action.

In accordance with our theoretical perspective, the families were grouped into three main kinds of adaptive processes, all of which (re)align the individual with the environment: (a) adaptive processes that coordinate an individual's actions with the contingencies in the environment, (b) adaptive processes that coordinate the individual's reliance on others with the social resources in the environment, and (c) adaptive processes that coordinate an individual's preferences with the options available in the environment.

From this perspective, all families of coping are considered adaptive. Each is based on the assumption that organisms come with the capacity and will to detect certain classes of organism-environment transactions that are potentially threatening. Such appraisals trigger a flexible response system, which, guided by action tendencies, attempts to bring the organism into a specific kind of functional relationship with the environment. By the same token, no family is considered to be "primary" or "secondary." They are considered to be synergistic in their effects. When control is lost, accommodation can be a healthy alternative to helplessness or rigid perseveration can multiply the loss. When circumstances are coercive, one can focus on the caring of sympathetic others or attempts to conceal problems can increase coercion. At the same time, some families, namely, those triggered by threat appraisals (e.g., helplessness or opposition) also signal a higher level of experienced stress.

The differences between Table 5 and Figure 4 highlight the contributions of analyzing the links between families of coping and adaptive processes. Table 5 presents a list, arbitrarily ordered by frequency, of the most common higher order categories of coping. Figure 4 reorganizes them somewhat (e.g., placing both distraction and cognitive restructuring under accommodation) but, more importantly, describes three sets of four families of coping that are tightly linked to adaptive functions.

Application to the identification of higher order families: Functional homogeneity. The analysis of the adaptive functions of coping is one productive avenue for creating hypotheses about the functional homogeneity of higher order coping categories, which can then be tested empirically. The examples in this section are speculative. There is currently little discussion, and no consensus, about the adaptive functions of different ways of coping. Examples are intended to illustrate the potential usefulness of applying these last criteria as well as to identify issues for further study.

A clear example of a higher order category identified in hierarchical analyses that was not functionally homogeneous is the factor Active coping from Walker et al. (1997). As mentioned previously, this secondary factor included Problem Solving, Seeking Social Support, several specific strategies, Self-Isolation, and Catastrophizing (all loading positively). In their own analyses, Walker et al. found that the lower order factors subsumed in this

higher order category had different relations to different outcomes, an empirical marker of lack of homogeneity. Consequently scores on Active coping that combine these strategies could not be expected to show clear relations to outcomes (or antecedents), and they did not (Walker et al., 1997). Hence, active, as defined in this study, is not a useful higher order category.

To a lesser extent, the same kind of analysis can be applied to the higher order category Active coping identified by Ayers et al. (1996), which included the lower order ways of coping cognitive decision making, direct problem solving, seeking understanding, and cognitive restructuring. The issue is whether problem-solving ways of coping (decision making and direct action) are functionally homogeneous with cognitive restructuring. Both seem to be active, constructive, and approach (problem-focused) strategies. However, the former are aimed at changing the stressful situation, whereas the latter is aimed at changing the self's perspective on it. Hence, in other systems, these are considered as complementary processes (primary and secondary control, assimilation and accommodation) but not as part of the same family. A body of empirical evidence suggests that one major difference between them rests on the appraisals through which they are triggered. Appraisals that a stressor is potentially controllable tend to trigger a problem-solving response (instrumental action, strategizing, etc.), whereas an appreciation of the impossibility of changing a stressful situation is likely to trigger cognitive restructuring or other forms of accommodation (or secondary control coping; Heckhausen & Schulz, 1995).

A third disagreement in the hierarchical analyses centered on emotion regulation, specifically, whether it (a) should be part of a family of self-reliance or self-regulating strategies (Ryan-Wenger, 1992; Skinner & Wellborn, 1994), (b) should be considered a part of the same family as problem solving, potentially subsumed under primary control engagement coping (Connor-Smith et al., 2000), or (c) should be a part of the same family as support seeking, potentially subsumed under emotion engagement (Tobin et al., 1989). More work on the analysis of the functions of emotion regulation in coping as well as further empirical examination of this family of coping is needed (Stanton et al., 1994).

Application to the identification of higher order families: Functional distinctiveness. An analysis of coping functions can also be used to argue that even if some higher order families of coping can be distinguished empirically, they might nevertheless be better considered part of the same family if they serve the same set of functions. As in the previous section, examples are illustrative and intended to stimulate further empirical work.

One clear example involves the issue of whether cognitive restructuring belongs to the same family as distraction. An analysis of their functions suggests that both can be considered active attempts to redirect attention and experience away from the stressful features of a transaction and toward a positive target. This suggests that they may belong to the same family. These commonalities are one reason why several systems consider restructuring and distraction both to be members of a higher order family of accommodation (or secondary control coping; as depicted in Figure 4). A direct empirical examination of their similarities and differences would aid in subsequent decisions.

A second interesting example involves social forms of problem solving, emotion regulation, distraction, information search, and so on. Most systems consider seeking social support a distinct higher

order family. However, perhaps certain forms of social support fulfill the same functions as their individual counterparts, for example, seeking advice may be functionally equivalent to problem solving or seeking comfort to emotion regulation. If so, different forms of social support can be members of many different families, as posited by Connor-Smith et al. (2000).

A final example involves the distinction between Involuntary Engagement and Involuntary Disengagement confirmed in one hierarchical analysis (Connor-Smith et al., 2000). Because of the high correlation found between these two higher order factors, it is possible to question whether they should be considered distinct families. However, an analysis of their forms and functions supports the idea that they have important differences. In involuntary engagement, behavior is stilled and attention is compelled toward the stressful transaction; this might be similar to a freeze reaction. In contrast, in involuntary disengagement, attention is focused away from the stressor and behavior is energized; this might be akin to a flight reaction. Both may be accompanied by negative emotions, result from a high level of stress, and indicate that regulatory resources are overwhelmed, but they may, nevertheless, have different specific triggers and potentially different consequences. From work on successful aging (Brandtstädter & Renner, 1990), it might be hypothesized that involuntary disengagement (like relinquished control) is the result of the failure of primary control coping whereas involuntary engagement might be the result of the failure of accommodation. Further empirical study is needed.

Empirical questions about functional homogeneity and distinctiveness. An important thrust of future work on hierarchies of coping will be to examine the functional homogeneity and distinctiveness of different potential members of higher order families of coping. Already begun (Walker et al., 1997), this work would examine the differences and similarity of lower order ways of coping in terms of their (a) antecedents (e.g., appraisals, self-systems, social contextual contributors), (b) patterns of action (e.g., constituent physiology, emotion, behavior, and orientation), (c) functions (e.g., effects on the stressor, on social partners), (d) consequences (e.g., accumulation of personal and social resources), and (e) long-term development.

One interesting criteria, part theoretical and part empirical, is the extent to which different ways of coping are equifinal, that is, lead to the same goals. As mentioned previously, ways of coping that are functionally homogeneous should be able to be substituted for each other. Examples, some of which were mentioned previously, include substituting mental withdrawal when physical withdrawal is not allowed (e.g., in the work place), the use of lack of cooperation when aggression is not allowed (e.g., with doctors), or the use of distraction when cognitive restructuring is not effective (e.g., for young children).

Such empirical work could contribute to the resolution of disagreements in the hierarchical systems about how to organize cognitive restructuring, emotion regulation, seeking social support, and involuntary engagement and disengagement. It is probably worth noting that until such work is done, the conservative solution is to keep families separate, as was done in the list of potential families in Table 5. Alternatively, analyses can examine lower order categories separately as well as in aggregation (Walker et al., 1997).

Criteria of Scope of Category Systems: Generativity and Flexibility

The final two criteria for a set of higher order coping categories (Table 1) refer to scope. Sets of categories should be generative and flexible. *Generative categories* are ones that allow the derivation, and not just classification, of lower order categories. In general, category labels that refer to single functions (e.g., emotion focused), single dimensions (e.g., active), or combinations of dimensions (e.g., approach) are not as generative as labels that refer to action categories (e.g., primary control coping) or action types (e.g., problem solving). When the definition of labels is controversial (primary control coping) or misleading (secondary control coping), alternative labels may be preferred, such as problem-solving or accommodative coping. However, differences in labels (e.g., avoidance vs. escape) should not obscure their essential similarities. Consensus about the clearest labels for higher order categories will emerge as more consensus about their defining features is reached. For example, the decision among primary control, assimilation, and problem solving as labels for a higher order family of coping will depend on whether this family includes emotion regulation or other assimilative strategies in addition to those covered by problem solving.

Finally, categories are *flexible* to the extent they apply across stressors, situations, and developmental levels. Categories are more flexible when they are not limited to one way of coping but instead refer to a broader family. A concept like families of ways of coping conveys the idea that although there may be a finite number of higher order categories, the specific manifestation of these categories, in terms of ways of coping, is virtually infinite. For example, the family aggression is narrower than the family opposition. Opposition in the peer domain may be expressed very directly at some ages as verbal or physical aggression. However, opposition in the classroom toward teachers, because of convention and the power differential, may be expressed more in terms of blaming others, anger, or lack of cooperation with classroom goals (Skinner, Altman, & Sherwood, 1991).

In the same vein, negotiation should be broadly defined to include negotiation partners that are not just people. In interpersonal situations, with a spouse or peers, negotiation may be expressed very directly as proposals and counterproposals. However, negotiation with an injury may proceed in a very different way ("I may not be able to walk, but I can still get around"). Defining families so that they include ways of coping that can be expressed in response to different stressors and in different settings is important in its own right and is a key step in developing comparable domain-specific measures.

Moreover, flexible families of coping may contribute to the study of the development of coping. If families of coping actually represent basic processes of adaptation, then people of all ages are assumed to have ways of coping from each family in their repertoire. One approach to studying the development of coping would be the analysis of how a particular family of coping changes in its expression with age. For example, one of the few established developmental trends in children's coping is the emergence in late childhood of intentional secondary control coping strategies, such as cognitive restructuring, that allow children to intentionally and effectively acquiesce to stressful situations (like painful medical procedures; Weisz et al., 1994). However, if these are considered

to be part of the family of accommodation (which includes attention redeployment, distraction, and substitution), then these strategies would not be seen as new in any strict sense but instead as the transformation of accommodative processes from ones that are automatic and behavioral to ones that are cognitive and intentional. Such a transformation might characterize many different families of coping during that particular developmental transition. Compared with the study of cognitive restructuring, the identification of a more flexible family of accommodative processes (or attention redeployment strategies) would make it easier to study the developmental progression of coping.

Conclusion

The search for a typology for classifying ways of coping is of fundamental importance to the field, but it is challenging because it involves the successful completion of several different tasks simultaneously. One task involves the identification of a comprehensive list of lower order categories that can be used to classify actual instances of coping into conceptually clear and mutually exclusive action types. A second task involves the identification of a set of higher order categories that can be used to organize lower order categories according to their (multiple) topological features and their (multiple) functions in adaptation. This article attempted to summarize progress on these tasks and to suggest important next steps.

We conclude that the field has succeeded in generating a relatively comprehensive list of lower order categories, reflecting a broad band of coping instances. Instances have been identified from reviews of existing instruments and theories as well as from content analyses of narratives, open-ended interviews, and in vivo observations of coping. Especially important, given that coping options are constrained by many factors, instances of coping have been drawn from a variety of domains, stressors, and age groups. CFA based on clearly defined categories and unambiguous items is the best strategy for identifying lower order categories that are unidimensional and discriminable. Together, these steps have resulted in a long list of lower order categories that probably includes members from all the major families of coping.

The identification of higher order categories is a more complex task. We argue that single functions (e.g., problem vs. emotion focused) are not good action categories because any given way of coping is likely to serve many functions. Nor are topological distinctions (e.g., approach vs. avoidance, active vs. passive, or cognitive vs. behavioral) good action categories, because all ways of coping are multidimensional. We argue that action types (e.g., proximity seeking, mastery, accommodation) are the best higher order categories. Sets of multidimensional multifunctional families of coping can be tested using confirmatory hierarchical analyses. The few systems thus validated, as well as several rational classifications of long lists of lower order categories collected in reviews, converge on a set of about a dozen families of coping.

Alternative schemes have been suggested with respect to how these higher order categories should themselves be organized. Especially problematic are families of coping that refer to constructive emotional approach (emotion regulation, cognitive restructuring) and social support. We conclude that next steps in the resolution of some of these disagreements include analysis of the adaptive functions of these higher order families coupled with

studies focused on their functional homogeneity and distinctiveness; criteria of generativity and flexibility may contribute to decisions about the best labels for coping families. Future research on taxonomies of coping should be based on the best practices used and the cumulative results found in this work to date.

For the field to fulfill its potential, the structure of coping must span the conceptual space between individual instances of coping, which are the countless changing real-time responses people use in dealing with stressful transactions, and meaningfully link them to coping as an adaptive process, which mediates between stress and its long-term effects on mental and physical health and functioning. Instances reflect the "bewildering richness" of actual coping; adaptive functions make clear why coping is essential to an understanding of the effects of stress on development. A good taxonomy that connects these levels of analysis has proven very difficult to construct. We hope that our arguments and suggestions aid the field in continuing to search for the structure of coping.

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Appendix A

List of Coping Assessments Reviewed by Age, Domain (General or Specific), and Type

Adult measures		Child and adolescent scales: General and domain specific		Child and adolescent interview and observational measures	
Domain general	Domain specific				
1 Aldwin & Revenson (1987) Ways of Coping Checklist (revised)	25 Andersson & Ekdahl (1992) Appraisal and Coping Questionnaire Coping with chronic disease	43 Austin et al. (1991) Coping Health Inventory for Children	73 Altshuler et al. (1995)		
2 Amir Khan (1990) Coping Strategy Indicator	26 Bowman (1990) Marital Coping Inventory	44 Ayers et al. (1996) Children's Coping Strategies Checklist How I Coped Under Pressure Scale	74 Altshuler & Ruble (1989)		
3 Aspinwall & Taylor (1992) Ways of Coping Checklist	27 Burt & Katz (1988) How I Deal With Things Coping with rape	45 Brodzinsky et al. (1992) Coping Scale for Children and Youth	75 Ayers et al. (1989), cited in Kliewer (1991)		
4 Billings & Moos (1981)	28 Butler et al. (1989) Cognitive Coping Strategy Indicator Acute pain	46 Causey & Dubow (1992) Self-Report Coping Measure	76 Band & Weisz (1988)		
5 Billings & Moos (1984)	29 Davis et al. (1998) Death of a family member	47 Connor-Smith et al. (2000) Responses to Stress Questionnaire	77 Bernzweig et al. (1993)		
6 Carver et al. (1989) COPE Scale	30 Dunkel-Schetter et al. (1992) Ways of Coping Checklist— Cancer Version	48 Dise-Lewis (1988) Life Events and Coping Inventory	78 Brown et al. (1986)		
7 Endler & Parker (1990)	31 Feifel & Strack (1989) Life Situations Inventory Conflict situations	49 Ebata & Moos (1991) Coping Response Inventory— Youth Form	79 Coleman (1992)		
8 Epstein & Meier (1989) Constructive Thinking Inventory	32 Heidrich & Ryff (1992) Problems of aging	50 Elias et al. (1986) Group Social Problem Solving Assessment	80 Compas et al. (1988)		
9 Folkman & Lazarus (1980) Ways of Coping Checklist	33 Latack (1986) Job-related stress	51 Fanshawe & Burnett (1991) Coping Inventory for Adolescents	81 Compas et al. (1996)		
10 Folkman & Lazarus (1985) Ways of Coping Checklist (revised)	34 Laux & Weber (1991) Anger and social anxiety	52 Frydenberg & Lewis (1991) Adolescent Coping Scale	82 Curry & Russ (1985)		
11 Folkman et al. (1986) Ways of Coping Checklist (revised)	35 McCubbin et al. (1983) Coping Health Inventory for Parents Chronically ill child	53 Gil et al. (1991) Coping Strategies Questionnaire for Sickle Cell Disease	83 Dickey & Henderson (1989)		
12 Hobfoll et al. (1994) Preliminary Strategic Approach to Coping Scale	36 Pearlin & Schooler (1978) Marriage, parenting, household economics, and occupation	54 Glyshaw et al. (1989)	84 Hardy et al. (1993)		
13 Holohan & Moos (1987)	37 Prohaska et al. (1987) Coping with illness	55 Halstead et al. (1993) Ways of Coping Checklist (modified)	85 Manne et al. (1993)		
14 Jalowiec (1988) Jalowiec Coping Scale	38 Quayhagen & Quayhagen (1982) Coping Strategies Inventory Interpersonal conflict	56 Horowitz et al. (1994)	86 O'Brien et al. (1995) Children's Marital Conflict Coping Strategies Interview		
15 Mattlin et al. (1990)	39 Rohde et al. (1990) Coping with depression	57 Lepore & Kliewer (1989), cited in Kliewer (1991) Monitor and Blunting Scale for Children	87 Weisz et al. (1994)		
16 McCall & Struthers (1994)	40 Rosenstiel & Keefe (1983) Coping Strategy Questionnaire Coping with chronic pain	58 Mellor-Crummey et al. (1989) Children's Social Coping Inventory	88 Wertlieb et al. (1987) Child Stress Inventory		
17 McCrae (1984)	41 Sidle et al. (1969) Coping with college choice, early marriage, and important exam	59 O'Brien et al. (1997) Marital Conflict Stimulus and Postconflict Questionnaire	89 Williamson et al. (1989) Early Coping Inventory		
18 Parkes et al. (1984) Ways of Coping Checklist (modified)	42 Terry & Hynes (1998) Coping with failed in vitro fertilization attempt	60 Patterson & McCubbin (1987) Adolescent Coping Orientation for Problem Experiences			

(Appendixes continue)

Appendix A (*continued*)

Adult measures		Child and adolescent scales: General and domain specific	Child and adolescent interview and observational measures
Domain general	Domain specific		
19	Perrez & Reicherts (1992) Stress and Coping Process Questionnaire	61	Rossmann (1992) Child Perceived Coping Questionnaire
20	Robbins & Tanck (1978)	62	Sandler et al. (1994) Children's Coping Strategies Checklist
21	Stanton et al. (2000)	63	Seiffge-Krenke (1993) Coping Across Situations Questionnaire—Finnish
22	Stone & Neale (1984) Open ended	64	Spirito et al. (1988) Kidcope
23	Tobin et al. (1989) Coping Strategies Inventory	65	Tero & Connell (1984) Academic Coping Inventory
24	Vitaliano et al. (1985) Ways of Coping Checklist (modified)	66	Timberlake et al. (1993) Coping with Self and Academic Ability Scale
		67	Tolor & Fehon (1987) Coping Style Questionnaire
		68	Varni et al. (1996) Pediatric Pain Coping Inventory
		69	Walker et al. (1997) Pain Response Inventory
		70	Whitesell et al. (1993)
		71	Wills (1985)
		72	Wills et al. (1995)

Note. Numbers refer to scales in Table 3 and Appendixes B–E.

Appendix B

Coping Category Systems Examined Using Exploratory Factor Analysis

Study, measure, and stressor	Basis for category system	Categories (α)
Adult measures: Domain general		
1 Aldwin & Revenson (1987) Ways of Coping Checklist (revised) Self-report measure Domain general: Specific event	PFA with varimax rotation of revised Ways of Coping Checklist items.	Escapism (.78) Cautiousness (.76) Instrumental Action (.75) Minimization (.74) Support Mobilization (.80) Self-Blame (.72) Negotiation (.65) Seeking Meaning (.71)
2 Amirkhan (1990) Coping Strategy Indicator Self-report measure Domain general	Both PFA and PCA used with varimax rotation. Results not identical but concordant on three factors.	Problem Solving (.92) Seeking Support (.89) Avoidance (.84)
3 Aspinwall & Taylor (1992) Ways of Coping Checklist Self-report measure Domain general: Applied to college entry	Derived with maximum likelihood factor analysis, oblimin rotation.	Active Coping (.82) Avoidant Coping (.86) Seeking Support (.80) Meaning (.68) Active Coping (.62) Planning (.80) Suppression of Competing Activities (.68) Restraint Coping (.72) Seeking Social Support—instrumental reasons (.75) Seeking Social Support—emotional reasons (.85) Positive Reinterpretation and Growth (.68) Acceptance (.65) Turning to Religion (.92) Focus on and Venting of Emotions (.77) Denial (.71) Behavioral Disengagement (.63) Mental Disengagement (.45) Alcohol–Drug Disengagement
6 Carver et al. (1989) COPE Scale Self-report measure Domain general	Theoretically derived from Lazarus's (1966) model and Carver & Scheier's (1981) work on self-regulation. Items subjected to PFA with oblique rotation. Supported model, but active coping and planning items loaded on single factor, as did both social support categories.	Task Oriented (.88/.91) ^a Emotion Oriented (.76/.81) ^a Avoidance Oriented (.77/.83) ^a
7 Endler & Parker (1990) Self-report measure Domain general: Typical response to stress	PCA, varimax rotation.	Global: Destructive vs. Constructive Automatic Thinking (.87/.80) ^b
8 Epstein & Meier (1989) Constructive Thinking Inventory Self-report measure Domain general: Ways people report they generally construe and respond to events involving emotionally significant experiences	Theoretically and factor analytically derived. (18 categories initially hypothesized, 6 interpretable factors found.)	Specific: Emotional Coping (.85/.78) ^b Behavioral Coping (.84/.70) ^b Categorical Thinking (.70/.41) ^b Superstitious Thinking (.75/.59) ^b Negative Thinking (.73/.66) ^b Naive Optimism (.67/.65) ^b
9 Folkman & Lazarus (1980) Ways of Coping Checklist Self-report measure Domain general: Specific event	Theoretically derived. Confirmed with PFA, calling for two factors. Of problem-focused and emotion-focused items, 78% and 68%, respectively, had higher loading on predicted factor.	Problem Focused (.80) Emotion Focused (.81)
10 Folkman & Lazarus (1985) Ways of Coping Checklist (revised) Self-report measure Domain general: List used for exam stress in this article	Common factor analyses, oblique rotation to derive basic categories. Theoretical assignment to problem- and emotion-focused categories.	Problem Focused (.85) Emotion Focused: Wishful Thinking (.84) Distancing (.71) Emphasizing the Positive (.65) Self-Blame (.75) Tension Reduction (.56) Self-Isolation (.65) Mixed: Seeking Social Support (.81)

(Appendixes continue)

Appendix B (continued)

Study, measure, and stressor	Basis for category system	Categories (α)
Adult measures: Domain general (continued)		
11 Folkman et al. (1986) Ways of Coping Checklist (revised) Self-report measure Domain general: Specific event	PFA, oblique rotation.	Confrontive Coping (.70) Distancing (.61) Self-Controlling (.70) Seeking Social Support (.76) Accepting Responsibility (.66) Escape-Avoidance (.72) Planful Problem Solving (.68) Positive Reappraisal (.79)
12 Hobfoll et al. (1994) ^c Preliminary Strategic Approach to Coping Scale Self-report measure Six hypothetical situations, with different levels of stressor severity	Items chosen to fit hypothesized dual-axis coping model (active vs. passive, prosocial vs. antisocial categories). Categories derived through PCA, varimax rotation.	Assertive Action Social Joining Aggressive Action Seeking Social Support Cautious Action Avoidance Antisocial Action Instinctive Action
16 McCall & Struthers (1994) Self-report measure Domain general: Feeling upset or sad	PCA, varimax rotation.	Support Focus (.74) Feeling Focus (.38) Cognitive Focus (.57) Avoidance Focus (.53) Physical Focus (.76)
18 Parkes (1984) Ways of Coping Checklist (modified) Self-report measure Domain general: Specific event	PCA, unrotated. Each item allowed to load on two of three factors.	General Coping (.89) Specific Coping: Direct Coping (.71) Suppression (.56)
20 Robbins & Tanck (1978) Self-report measure "When you do feel tense, what things do you do to try to diminish or relieve these feelings?"	PFA, varimax rotation.	Seeking Social Support Dysfunctional Behavior Narcotizing Anxiety Problem Solving Reliance on Professional Health Care Acceptance or Hanging On Escape
21 Stanton et al. (2000) Self-report and other report measure Domain general: Dispositional (what you usually do) and situational data	Three emotional approach strategies (emotion identification, processing, and expression) are from functionalist theories of emotion. Items selected from published measures and researcher-constructed items. Maximum likelihood factor analysis with promax rotation. Emotion identification items loaded on emotional processing factor.	Emotional Processing (.72) ^d Emotional Expression (.82) ^d Distress-Contaminated (.86) ^d Seeking Social Support (.90) ^d Problem-Focused Coping (.86) ^d Alcohol-Drug Disengagement (.94) ^d Avoidance (.78) ^d Humor (.88) ^d
24 Vitaliano et al. (1985) Ways of Coping Checklist (modified) Self-report measure	Combination of PCA and rational approaches.	Turning to Religion (.92) ^d Problem Focused (.88) Seeks Social Support (.75) Blamed Self (.78) Wishful Thinking (.85) Avoidance (.74)
Adult measures: Domain specific		
25 Andersson & Ekdahl (1992) Appraisal and Coping Questionnaire Self-report measure Coping with chronic disease	PCA, eigenvalue > 1 criteria, varimax rotation.	Self-Appraisal Acceptance Minimization Planful Problem Solving Avoidance Persistence Attribution of Responsibility Support Seeking
26 Bowman (1990) Marital Coping Inventory Self-report measure Coping with recurring marital problems	Items from literature review and interviews. Categories from PFA, direct quartimin rotation.	Conflict (.88) Intropective Self-Blame (.88) Positive Approach (.82) Self-Interest (.82) Avoidance (.77)
27 Burt & Katz (1988) How I Deal With Things Self-report measure Coping with rape	Exploratory factor analysis with equimax rotation	Avoidance Expressive Nervous-Anxious Cognitive Self-Destructive

Appendix B (continued)

Study, measure, and stressor	Basis for category system	Categories (α)
Adult measures: Domain specific (continued)		
30 Dunkel-Schetter et al. (1992) Ways of Coping Checklist–Cancer Version Self-report measure Coping with cancer	Exploratory factor analysis with oblique rotation.	Seek and Use Social Support (.86) Cognitive Escape–Avoidance (.78) Distancing (.80) Focus on the Positive (.85) Behavioral Escape–Avoidance (.74)
35 McCubbin et al. (1983) Coping Health Inventory for Parents Self-report measure Parental coping in care of the chronically ill child	PFA, varimax rotation.	Maintaining Family Integration, Cooperation, and an Optimistic Definition of the Situation Maintaining Social Support, Self-Esteem, and Psychological Stability Understanding the Medical Situation Through Communication With Other Parents and Consultation With the Medical Staff
36 Pearlin & Schooler (1978) Self-report measure Marriage, parenting, household economics, and occupation	Item generation based on thematic examination of interview materials. PCA, varimax rotation.	Marital coping responses: Self-Reliance vs. Advice Seeking Controlled Reflectiveness vs. Emotional Discharge Positive Comparisons Negotiation Self-Assertion vs. Passive Forbearance Selective Ignoring Parental coping responses: Selective Ignoring Nonpunitiveness vs. Reliance on Discipline Self-Reliance vs. Advice Seeking Positive Comparisons Exercise of Potency vs. Helpless Resignation Household economic coping responses: Devaluation of Money Selective Ignoring Positive Comparisons Optimistic Faith Occupational coping responses: Substitution of Rewards Positive Comparisons Optimistic Action Selective Ignoring Negative Affectivity (.85) Existential Growth (.75) Help Seeking (.74) Problem Solving (.73) Fantasy (.72) Minimization of Threat (.53) Cognitive Self-Control (.85/.87) ^e Ineffective Escapism (.83/.84) ^e Solace Seeking (.80/.83) ^e Problem-Appraisal Coping (.71/.76) ^e Problem-Management Coping (.74/.78) ^e Emotional Approach Coping (.68/.61) ^e Escapism (.78/.75) ^e (PCA also detected a fifth factor, Planning for Future Attempts, which was not included in analyses because of low number of items.)
38 Quayhagen & Quayhagen (1982) Coping Strategies Inventory Self-report measure Coping with interpersonal conflict	Items chosen to create parsimonious multidimensional tool that would differentiate sex and age differences in midlife and older adults. PCA, orthogonal rotation.	Negative Affectivity (.85) Existential Growth (.75) Help Seeking (.74) Problem Solving (.73) Fantasy (.72) Minimization of Threat (.53)
39 Rohde et al. (1990) Self-report measure Coping with depression	PCA, varimax rotation	Cognitive Self-Control (.85/.87) ^e Ineffective Escapism (.83/.84) ^e Solace Seeking (.80/.83) ^e
42 Terry & Hynes (1998) Self-report measure Coping with failed in vitro fertilization (IVF) attempt	Items selected to match conceptual categories and as relevant to failed IVF attempt from Holahan & Moos (1987) and Lazarus & Folkman (1984). PCA, varimax rotation.	Problem-Appraisal Coping (.71/.76) ^e Problem-Management Coping (.74/.78) ^e Emotional Approach Coping (.68/.61) ^e Escapism (.78/.75) ^e (PCA also detected a fifth factor, Planning for Future Attempts, which was not included in analyses because of low number of items.)
Child and adolescent scales		
45 Brodzinsky et al. (1992) Coping Scale for Children and Youth Self-report measure General stem: “Think about some problem that has upset you or worried you in the past few months.”	PCA, varimax rotation. Items selected from literature review to capture approach vs. avoidance and cognitive and behavioral manifestations.	Assistance Seeking (.72) Cognitive–Behavioral Problem Solving (.81) Cognitive Avoidance (.80) Behavioral Avoidance (.70)

Appendix B (continued)

Study, measure, and stressor	Basis for category system	Categories (α)
48 Dise-Lewis (1988) Life Events and Coping Inventory Self-report measure General (ages 12–14 years)	PCA, oblique rotation. Also includes Life Events Checklist for Early Adolescents.	Aggression (.86/.85) ^f Stress Recognition (.79/.80) ^f Distraction (.81/.89) ^f Self-Destruction (.76/.83) ^f Endurance (.62/.68) ^f
51 Fanshawe & Burnett (1991) Coping Inventory for Adolescents Self-report measure General stressors (ages 12–18 years)	Items selected from Patterson & McCubbin (1987), ACOPE. PCA, varimax rotation, followed by item selection to maximize interitem correlations and face validity.	Negative Avoidance (.74) Anger (.77) Family Communications (.74) Positive Avoidance (.67)
54 Glyshaw et al. (1989) General, frequency of using coping strategy (Grades 7–10)	PFA, varimax rotation. Items from Wills (1985).	Problem Solving (.81/.84) ^g Cognitive Coping (.75/.68) ^g Peer Support (.88/.91) ^g Social Entertainment (.68/.71) ^g Physical Exercise (.74/.66) ^g
58 Mellor-Crummey et al. (1989) Children's Social Coping Inventory Self-report measure Peer rejection (Grades 4–6)	Items created to reflect theoretical categories. PCA, oblique rotation supported hypothesized structure. Items with low factor loadings were dropped.	Positive Coping (.60) Denial (.63) Projection (.70)
60 Patterson & McCubbin (1987) ACCOPE Self-report measure How often child uses behavior when faced with difficulties or feeling upset	Conceptual organization based on developmental needs of adolescents. Items generated using responses from structured interviews. Coping patterns derived through PCA, varimax rotation.	Anxiety Amplification (.68) Ventilating Feelings (.75) Developing Self-Reliance and Optimism (.69) Developing Social Support (.75) Solving Family Problems (.71) Avoiding Problems (.71) Seeking Spiritual Support (.72) Investing in Close Friends (.76) Seeking Professional Support (.50) Engaging in Demanding Activity (.67) Being Humorous (.72) Relaxing (.60)
61 Rossman (1992) Child Perceived Coping Questionnaire Self-report measure Variable stem "What do you do to feel better?"	PCA, oblimin rotation.	Use of Caregiver (.73) Distraction–Avoidance (.64) Distress (.29) Use of Peers (.57) Self-Calming (.61) Anger (.67)
63 Seiffge-Krenke (1993) Coping Across Situations Questionnaire–Finnish Self-report measure Coping with eight problem situations Examples: Discontented with self, bad grades, quarrel with parents (adolescents)	PCA, varimax rotation	Active Coping (.80) Internal Coping (.77) Withdrawal (.73)
68 Varni et al. (1996) Waldron–Varni Pediatric Pain Coping Inventory Parent- or self-report measure Coping with pain (child, adolescent, and parent forms)	Items generated through review of pediatric and adult pain coping literature. Categories derived through PCA, varimax rotation.	Cognitive Self-Instruction (.77) Seek Social Support (.74) Strive to Rest and Be Alone (.73) Cognitive Refocusing (.68) Problem-Solving Self-Efficacy (.67)
71 Wills (1985) "When I have a problem, I ___."	Iterated PFA, varimax rotation.	Decision Making Adult Social Support Cognitive Coping Peer Social Support Substance Use Physical Exercise Aggression Social Entertainment Individual Relaxation Parental Support Prayer

Note. Numbers in the first column refer to scales in Table 3 and Appendix A. PFA = principal-factor analysis; PCA = principal-components analysis; Mixed = both problem- and emotion-focused coping; ACOPE = Adolescent Coping Orientation for Problem Experiences.

^a Male/female. ^b Original/short form. ^c Reliabilities ranged from .66 to .76, except Instinctive Action, with .44. ^d Dispositional data, self-report. ^e Time 1/Time 2. ^f Derivation sample/replication sample. ^g Junior high sample/senior high sample.

Appendix C

Coping Category Systems Derived Through Rational (Theoretical) Methods

Study, measure, and stressor	Basis for category system	Categories (α)
Adult measures: Domain general		
4 Billings & Moos (1981) Self-report measure Domain general: Specific event	Theoretically derived: Method from Lazarus (1981), Moos (1976, 1977). Focus from Antonovsky (1979), Lazarus (1981), and Pearlin & Schooler (1978).	Method of coping: Active cognitive (.72) Active behavioral (.80) Avoidance (.44) Focus of coping: Problem focused Emotion focused Appraisal-focused coping: Logical analysis (.53) Problem-focused coping: Information seeking (.63) Problem solving (.66) Emotion-focused coping: Affective regulation (.63) Emotional discharge (.41) Active cognitive strategies (.62) Active behavioral strategies (.74) Avoidance strategies (.60)
5 Billings & Moos (1984) Self-report measure Domain general: Specific event	Theoretically derived, revision of Billings & Moos (1981).	Avoidance Positive reappraisal Religion Active cognitive Active behavioral Social support Hostile reaction (.83) Rational action (.78) Seeking help (.78) Perseverance (.39) Isolation of affect (.53) Fatalism (.68) Expression of feelings (.68) Positive thinking (.74) Distraction (.60) Escapist fantasy (.74) Intellectual denial (.52) Self-blame (.77) Taking one step at a time (.35) Social comparison (1 item) Sedation (.63) Substitution (1 item) Restraint (.63) Drawing strength from adversity (.71) Avoidance (1 item) Withdrawal (.55) Self-adaptation (.67) Wishful thinking (.71) Active forgetting (.52) Humor (.71) Passivity (.43) Indecisiveness (.59) Assessing blame (1 item) Faith (1 item)
13 Holohan & Moos (1987) Self-report measure Domain general: Specific event	Conceptual and empirical derivation described in Billings & Moos (1981).	Self-directed coping: Search for information Suppression of information Reevaluation Palliation Self-blame Blame of others Environment-directed coping: Active influence on stressor Evasion Passivity Reorientate (substitution) Help from others
15 Matlin et al. (1990) Self-report measure Domain general: Specific event	Revision of Stone & Neale (1984) categories with one item per strategy.	
17 McCrae (1984) Self-report measure Domain general: Specific event	Items generated by Ways of Coping Checklist and literature review. Categories assigned by examining item content and intercorrelations.	
19 Perez & Reicherts (1992) Stress and Coping Process Questionnaire or Umgang Mit Belastungen im Verlauf Self-report measure Coping with different stages of hypothetical situations. Also used with computer-assisted recording system to assess coping with actual stresses as they occur	Theoretically derived.	

(Appendixes continue)

Appendix C (continued)

Study, measure, and stressor	Basis for category system	Categories (α)
Adult measures: Domain general (<i>continued</i>)		
22 Stone & Neale (1984) Open-ended self-report measure Domain general: Specific event Provided one-sentence description of categories. Asked, "Did you do anything that fits this category?"	Rationally derived coping categories to form Daily Coping Checklist.	Distraction Situation redefinition Direct action Catharsis Acceptance Seeking social support Relaxation Religion
Adult measures: Domain specific		
28 Butler et al. (1989) Cognitive Coping Strategy Indicator Self-report measure Cognitive coping strategies with acute pain	Theory derived: Turk et al.'s (1983) taxonomy of cognitive coping strategies for pain and catastrophization. (PCA revealed two factors: Catastrophizing & the remainder.)	Imaginative inattention (.87-.89) Imaginative transformation—context (.75-.86) Imaginative transformation—sensation (.86-.90) Attention diversion—external (.80-.84) Attention diversion—internal (.83-.85) Somatization (.74-.79) Catastrophizing (.84-.86)
29 Davis et al. (1998) Interview—finding meaning Coping with death of a family member	Theoretical distinction between two aspects of finding meaning in loss.	Making sense of the loss (.85/.87) ^a Finding something positive in the experience (.90/.87) ^a
31 Feifel & Strack (1989) Life Situations Inventory Self-report measure Coping with conflict situations (middle-aged and elderly men)	Theory derived: work of Lipowski (1970), Ilfeld (1980).	Problem solving (.82) Avoidance (.75) Resignation (.75)
32 Heidrich & Ryff (1992) Structured interview Coping with problems of aging, actual and hypothetical	Categories derived by content analysis of responses by two independent raters.	Direct action Passive cognitive coping Positive cognitive coping Emotional expression
33 Latack (1986) Self-report measure Coping with job-related stress (role ambiguity, role conflict, and role overload)	Categories theoretically derived; cluster analysis and researcher judgment used to select items.	Control (.79/.85/.85) ^b Escape (.70/.71/.54) ^b Symptom management (.70)
34 Laux & Weber (1991) Self-report measure Coping with hypothetical anger and social anxiety situations	Patterns of reaction related to coping intention, specific emotions, and social presentation concerns.	Open expression of feelings Hiding feelings Suppressing feelings Pretending positive feelings Insinuating feelings Self-blame Hostile reactions Rational action Minimization Positively reappraising Passivity Drinking alcohol Deflecting from one's faults Seeking social support Social comparison Self-appreciation Humor Withdrawal
37 Prohaska et al. (1987) Self-report measure Coping with illness	Intended to assess active attempts to deal with the problem, attempts to minimize stress associated with problem, and to self-monitor.	Rest-relaxation (.71/.68) ^c Acceptance (.69/.79) ^c Seeking help—comfort from others (.56/.53) ^c Delay—monitor (.68/.75) ^c Denial—minimization (.82/.81) ^c Gather information (.65/.66) ^c Use of medical care ^d

Appendix C (continued)

Study, measure, and stressor	Basis for category system	Categories (α)
Adult measures: Domain specific (continued)		
40 Rosenstiel & Keefe (1983) Coping Strategy Questionnaire Self-report measure Coping with chronic pain	Items for subscales (lower level categories) were chosen to represent six cognitive and two behavioral coping strategies selected from review of relevant laboratory and clinical studies. Higher categories derived from PCA, oblique rotation.	Cognitive coping and suppression: Reinterpreting pain sensations (.85) Coping self-statements (.72) Ignoring pain sensations (.81) Helplessness: Catastrophizing (.78) Increasing activity level (.71) Control over pain ^e Ability to decrease pain ^e Diverting attention and praying: Diverting attention (.85) Praying (.83) Seek information Talk with others about problem Try to see humorous aspects Don't worry about it Become involved in other activities to distract Take positive action Be prepared for the worst Make several alternative plans Draw on past experiences Try to reduce tension (eat, drink, smoke, exercise)
41 Sidle et al. (1969) Self-report measure Coping with three scenarios: college choice, early marriage, and important exam	From literature review. One item per strategy in scale.	Seek information Talk with others about problem Try to see humorous aspects Don't worry about it Become involved in other activities to distract Take positive action Be prepared for the worst Make several alternative plans Draw on past experiences Try to reduce tension (eat, drink, smoke, exercise)
Child and adolescent scales		
46 Causey & Dubow (1992) Self-Report Coping Measure Self-report measure Variable stem: "When I get a bad grade . . ."	Approach vs. avoidance and problem focused vs. emotion focused.	Approach: Seeking social support (.84) Problem solving (.84) Avoidance: Distancing (.69) Emotional reaction—internalizing (.66) Emotional reaction—externalizing (.68)
49 Ebata & Moos (1991) Coping Response Inventory—Youth Form Self-report measure General (adolescents, ages 12–18 years)	Organization of previous conceptually and empirically derived scales: approach vs. avoidance and cognitive vs. behavioral methods.	Approach—cognitive methods: Positive reappraisal (.79) Logical analysis (.72) Approach—behavioral methods: Guidance—support (.71) Problem solving (.73) Avoidance—cognitive methods: Cognitive avoidance (.70) Resigned acceptance (.55) Avoidance—behavioral methods: Alternative rewards (.71) Emotional discharge (.69)
50 Elias et al. (1986) Group Social Problem Solving Assessment Self-report measure Problematic interpersonal situations (ages 9–12 years) Work sheets ask for responses to scenarios; coding manual for responses	Theoretically and empirically derived.	Stop and think Mutual compromise Direct discussion Support seeking Nonconfrontation Give up Wishful resolution Pestering Aggression Uncertainty (Median α = .70; range = .53–.83.) ^e
52 Frydenberg & Lewis (1991) Adolescent Coping Scale General stressors (adolescent)	Items based on interviews. Conceptually grouped by researchers.	Solving the problem (.87): Relax (.54) Work and achieve (.68) Solve the problem (.72) Physical recreation (.64) Friends (.74) Focus on positive (.68) Belong (.67) Social support (.80)

(Appendixes continue)

Appendix C (continued)

Study, measure, and stressor	Basis for category system	Categories (α)
<i>Child and adolescent scales (continued)</i>		
52 Frydenberg & Lewis (1991) (continued)		Reference to others (.89): Social support (.80) Spiritual support (.85) Professional help (.84) Social action (.70) Nonproductive coping (.87): Friends (.74) Worry (.73) Belong (.67) Keep to self (.70) Self-blame (.76) Ignore the problem (.68) Tension reduction (.69) Not coping (.58)
53 Gil et al. (1991) CSQ for Sickle Cell Disease Coping with sickle cell disease (child and adolescent)	13 subscales (6 items each), based on Coping Strategies Questionnaire (CSQ; Rosenstiel & Keefe, 1983) and authors' work with adults with sickle cell disease. Higher order categories obtained through PCA, promax rotation.	Coping attempts: Diverting attention (.72) Reinterpret pain (.67) Ignoring pain sensations (.70) Calming self-statements (.72) Increased behavior activity (.55) Negative thinking: Catastrophizing (.76) Fear self-statements (.70) Anger self-statements (.67) Isolation (.69) Passive adherence: Resting (.72) Taking fluids (.89) Praying and hoping (.67) Heat-cold-massage (.66)
56 Horowitz et al. (1994) Self-report measure Variable stem	PFA with varimax rotation, items selected from Ways of Coping Checklist (Folkman et al., 1986) and modified to create a shortened version appropriate for adolescent inner-city respondents.	Social support-ventilating feelings (.78) Optimistic appraisal and change (.75) Distancing (.72)
57 Lepore & Kliever (1989), cited in Kliever (1991) Monitor and Blunting Scale for Children Self-report measure Four scenarios: doctor visit, broken roller coaster, bad report card, and storm at school	Monitoring and blunting	Monitoring (.71) Blunting (.83)
59 O'Brien et al. (1997) Marital Conflict Stimulus and Postconflict Questionnaire Likelihood of given response to videotaped marital conflict	Items based on literature review. Grouped by face validity.	Avoid (.84) Self-involve (.78) Predict negative outcome (.74) Blame self (.71) Criticize parents (.66) Loss of love (.68) Efficacy (.62)
64 Spirito et al. (1988) Kidcope Self-report measure Variable stressor, recalled personal stressor or standard hypothetical stressor (children and adolescents)	10 commonly mentioned coping categories in the coping literature were selected.	Distraction Social withdrawal Cognitive restructuring Self-criticism Blaming others Problem solving Emotional regulation Wishful thinking Social support Resignation (Test-retest correlations ranged from .41 to .83 over 3-7 days.)
65 Tero & Connell (1984) Academic Coping Inventory Self-report measure Coping with perceived academic failure		Positive coping: Problem-focused strategies Placing positive value on negative events Defensive: Projection Denial coping Anxiety amplification

Appendix C (continued)

Study, measure, and stressor	Basis for category system	Categories (α)
Child and adolescent scales (continued)		
66 Timberlake et al. (1993) Coping with Self and Academic Ability Scale Coping with self-concept and academic talent	Adapted from an earlier study of child coping with mild physical differences.	Use of words to eradicate difference (.62) Use of activity to camouflage difference (.62) Use of actions to encapsulate difference (.72)
67 Tolor & Fehon (1987) Coping Style Questionnaire Coping with hypothetical stressful situations. Choose two most likely and two least likely of 10 coping strategies (adolescent)	Literature review.	Problem focused: Taking positive action Seeking information Withdrawing Altering plans Seeking support Emotion focused: Focusing on positive Not worrying Detaching self Preparing for worst Blaming others Expressive strategies Avoidant strategies Approach strategies (Test-retest reliabilities over 2 months ranged from .44 to .73, averaging .62.)
70 Whitesell et al. (1993) Self-report measure Coping with anger-provoking peer situations (young adolescents, 11–15 years old) Structured alternative format, that is, item structure “Some kids __, BUT other kids don’t __” to reduce social desirability influences on responses	Identified from previous studies and literature on stress and coping.	Behavioral coping (.75) Cognitive coping (.76) Physical exercise (.87) Anger (.80) General avoidance (.78) Social entertainment or “hanging out” with peers (.88) Substance use coping (.89) Helplessness (.80)
72 Wills et al. (1995) Self-report measure “When I have a problem with __, I __.” 32 items assessed coping in four typical adolescent domains: parents, school, sadness, and health (adolescent)	Derived from previous inventories.	Child and adolescent interview and observational measures
73 Altshuler et al. (1995) Structured interview in response to vignette of child in stressful medical situation Same coding scheme used to categorize child self-reports of their own coping following hospitalization	Extant models of coping and basic cognitive developmental research.	Behavioral distinction (aided distraction) Cognitive distraction (unaided distraction) Escape Denial Adaptive approach (κ ranged from .85 to .96 on 25% of sample.)
74 Altshuler & Ruble (1989) Structured interview in response to vignette of child required to wait quietly for positive or negative event	Approach vs. avoidance.	Approach (.84) Direct emotion manipulation (.57) Avoidance (.80): Behavioral distraction (.57) Cognitive distraction (.67) Escape (.87) Denial (.73) Social support: Informational (1.0) Affective (.82) Peer (1.0) Adult (.91)
75 Ayers et al. (1989), cited in Kliewer (1991) Structured interview about everyday stressors of last week and three worst stressors of previous week		Cognitive decision making Direct problem solving Problem-focused support Positive cognitive restructuring Seeking understanding Emotion-focused support Expressing feelings Physical release of emotions Distracting actions Avoidant actions Cognitive avoidance Problem behavior Lack of coping (κ s ranged from .74 to 1.0, averaging across six pairs of raters.)

Appendix C (continued)

Study, measure, and stressor	Basis for category system	Categories (α)
Child and adolescent interview and observational measures (continued)		
76 Band & Weisz (1988) Structured interview in response to scenarios: loss–separation, medical procedure, conflict with authority, peer difficulty, school failure, and physical accident	Primary vs. secondary control and problem-focused coping vs. emotion-focused coping.	Primary control strategies: Direct problem solving Problem-focused crying Problem-focused aggression Problem-focused avoidance Secondary control strategies: Social–spiritual support Emotion-focused crying Emotion-focused aggression Cognitive avoidance Pure cognition Relinquished control: Doing nothing (α s ranged from .82 to .94, $M = .87$, on sample of 32 responses.)
77 Bernzweig et al. (1993) Structured interview in which a child reports coping strategies used when self or another same-sex child is distressed with three hypothetical stories	Based on Ayers et al. (1990) and the Band & Weisz (1988) coding scheme.	Direct problem solving (self-distressed): Adult mediation (other-distressed; .68) Help providing (other-distressed; .52) Distracting and avoidant actions (.70) Expressing feelings (.84) ^f Problem-focused support (self-distressed; .77) Emotion-focused support (self-distressed; .63) Cognitive decision making (.84) ^f Cognitive avoidant (.72) Do nothing (.80) ^f Direct problem solving Aggressive actions Distracting actions Avoidant actions Emotion-focused aggression Emotion-focused crying Problem-focused support Emotion-focused support Positive cognitive restructuring
Questionnaire in which mother reports child coping strategies used when child or another same-sex child is distressed with four hypothetical stories		Combined from all three situations: Coping strategies Positive self-talk Attention diversion Relaxation, deep breathing Thought stopping Task orientation Talking with someone else Problem solving Catastrophizing cognitions Focus on negative affect—pain Focus on negative affect—fear, embarrassment Escape–avoidance Fear of unlikely consequence Fear of response to dentist or vice versa Self-denigration, self-blame Anxious anticipation Worry–rumination (Interrater reliability ranged from 77% to 100%.)
78 Brown et al. (1986) Structured interview in response to scenarios: dental situation (shot), giving class report, and personal situation (For first two scenarios, asked what children thought when in these situations. For personal situation, asked what children thought and did)	Coping vs. catastrophizing cognitions distinction from research on adult cognitive strategies for coping with pain. Specific categories from experimenters review of children’s responses. (Data derived.) Not all categories were used in all three situations.	Confrontive coping Self-controlling Seeking social support Accepting responsibility Escape avoidance Planful problem solving Positive reappraisal Helplessness (Interrater agreement 83% on random 10% coded by second rater.)
79 Coleman (1992) Structured interview in response to lack of competence in four academic scenarios	Categories modeled on Folkman & Lazarus (1985), with addition of helplessness.	

Appendix C (continued)

Study, measure, and stressor	Basis for category system	Categories (α)
Child and adolescent interview and observational measures (continued)		
80 Compas et al. (1988) Asked to generate ways they could have handled two self-selected stressful events, one academic event and one interpersonal event	Problem focused vs. emotion focused.	Problem focused Emotion focused ($\kappa = .88$, academic stressor; $\kappa = .87$, social stressor.)
81 Compas et al. (1996) Structured interview: intention of coping strategies in child coping with parental cancer (ages 6–32 years)	Problem focused vs. emotion focused.	Problem-focused coping Emotion-focused coping Dual-focused coping
82 Curry & Russ (1985) Observed behavior during dental work and structured interview immediately after	Integration of categories selected from literature review.	Behavioral coping strategies: Information seeking Support seeking Direct effects to maintain control Cognitive coping strategies: Reality-oriented working through Positive cognitive restructuring Defensive reappraisal Emotion-regulating cognitions Behavior-regulating cognitions Diversionary thinking (Interrater reliability for individual categories ranged from .76 to .98.)
83 Dickey & Henderson (1989) “When you are at school what bothers or upsets you?” “How do you make yourself feel better?” Stress types included: school work, peer relationships, relationships with teachers, family events, personal injury or loss, loss of comfort, space, or time, discipline, or miscellaneous	From Stone & Neale (1984).	Direct action Distraction Social support Acceptance Redefinition Catharsis Relaxation Miscellaneous
84 Hardy et al. (1993) Structured interview, thoughts, feelings, and actions in response to incidents specified by mother, using these stress types: peer conflict, authority conflict, medical stress, school failure, peer separation, and physical accident	Categories modeled after Band & Weisz (1988), Carver et al. (1989), and Folkman & Lazarus (1988).	Planned problem solving (primary) Compliance (secondary) Making amends (primary) Venting emotions (secondary) Social support—instrumental (primary) Social support—emotional (secondary) Behavioral disengagement (secondary) Mental disengagement (secondary) Displacement (secondary) Acceptance (secondary) Physical aggression—confrontation (primary) Verbal aggression—confrontation (secondary)
85 Manne et al. (1993) Behavioral observation of stressful medical procedures (venipuncture)	Categories modeled on prior work by authors and others on behavior during invasive medical procedures.	Non-procedure-related statements and behaviors (.92) Information seeking (.99) Assertive procedural vocalizations (.96)
86 O’Brien et al. (1995) Children’s Marital Conflict Coping Strategies Interview Structured interview on coping with marital conflict (ages 8–11 years)	“Review of the child-coping literature in conjunction with an examination of a subset of the spontaneous coping responses that children had.” (O’Brien et al., 1995, p. 350)	Avoid–Self-rely: Avoid Self-rely Seek social support: Seek peers—siblings Seek authority Self-involve: Verbal intervention Self-blame Physical intervention Other coping: Question parent Express feelings Helpless (Overall $\kappa = .85$.) Primary control coping (.95) Secondary control coping (.86) Relinquished control (.97) (κ s for 20 randomly selected subjects.)
87 Weisz et al. (1994) Structured interview on strategies and goals for coping with low-controllability stressors associated with leukemia	Primary vs. secondary control.	Primary control coping (.95) Secondary control coping (.86) Relinquished control (.97) (κ s for 20 randomly selected subjects.)

(Appendixes continue)

Appendix C (*continued*)

Study, measure, and stressor	Basis for category system	Categories (α)
Child and adolescent interview and observational measures (<i>continued</i>)		
88 Wertlieb et al. (1987) Structured Interview: Child Stress Inventory	Adapted from Lazarus & Folkman (1984) and Greene & Yando (1980).	Coping focus (.53) Self Environment Other Coping function (.53) Problem solving Emotion management Coping mode (.64) Information seeking Support seeking Direct action Inhibition of action Intrapsychic Sensorimotor organization Reactive behavior Self-initiated behavior (Interrater reliability on items ranged from .80 to .94.)
89 Williamson et al. (1989) Observation instrument: Early Coping Inventory (ages 4–36 months)	Items delineate a behavioral characteristic that is documented in research literature as highly relevant to coping in young children. Observer rates the adaptive use of each behavior, from nonuse or maladaptive use, to effective and appropriate use across situations.	

Note. Numbers in the first column refer to scales in Table 3 and Appendix A. PCA = principal-components analysis.

^a Six months/13 months postloss. ^b Role ambiguity/conflict/overload. ^c Sample 1/Sample 2. ^d Medical care items analyzed separately because they tapped different aspects of medical care utilization. ^e Items assessing coping effectiveness were included with coping strategies in factor analysis.

^f Because of low occurrence, these categories reflect percent exact agreement, rather than κ coefficient.

Appendix D

Coping Category Systems Examined Using Confirmatory Factor Analysis

Study, measure, and stressor	Basis for category system	Categories (α)
Adult measures: Domain general		
14 Jalowiec (1988) Jalowiec Coping Scale Self-report measure Domain general: Coping style	Confirmatory factor analysis was used to compare seven possible models for 30 coping items. The trichotomous model provided the best goodness of fit.	Confrontive (.85) Emotive (.70) Palliative (.75)
Child and adolescent scales		
43 Austin et al. (1991) Coping Health Inventory for Children Parent-report measure—46 items Child adaptation to chronic illness (school age)	Items developed through literature review and interviews. Items were then grouped into five conceptually distinct coping patterns. Confirmatory factor analysis, allowing some items to load on multiple factors to improve fit.	Develops Confidence and Optimism (.84/.77) ^a Feels Different and Withdraws (.80/.82) ^a Is Irritable, Moody, and Acts Out (.86/.85) ^a Complies With Treatment (.72/.74) ^a Seeks Support (.81/.82) ^a
55 Halstead et al. (1993) ^b Ways of Coping Checklist (modified) Specific stressor from past month (adolescents)	Confirmatory factor analysis attempting to replicate Vitaliano et al.'s (1985) five-factor solution with adults. All Blamed Self items were deleted because of a lack of variability (80% or more gave some response). Individual items were combined by raters into factored homogeneous item dimensions to achieve a normal response distribution.	Problem Focused: Self-Improvement Positive Action Reflective Planning Compromise Seeks Social Support: Emotional Support Active Support Wishful Thinking: Active Wishing Passive Wishing Avoidance: Isolation Denial Negative Affect Active Coping: Cognitive Decision Making (.66/.68) ^c Direct Problem Solving (.65/.69) ^c Seeking Understanding (.54/.61) ^c Positive Cognitive Restructuring (.54/.61) ^c Avoidant Coping: Cognitive Avoidance (.59/.60) ^c Avoidant Action (.51/.49) ^c Distraction: Distracting Action (.62/.61) ^c Physical Release of Emotion (.59/.55) ^c Support: Emotion-Focused Support (.65/.63) ^c Problem-Focused Support (.67/.62) ^c
62 Sandler et al. (1994) Children's Coping Strategies Checklist Self-report measure How often child does this to solve problems or feel better	Confirmatory factor analysis of higher level dimensions based on Ayers (1991). Subscales based on Sandler et al. (1990).	

Note. Numbers in the first column refer to scales in Table 3 and Appendix A.

^a Preliminary sample/confirmatory sample. ^b Alphas ranged from .77 to .85, except Avoidance, which ranged from .47 to .60. ^c First wave/second wave.

(Appendixes continue)

Appendix E

Category Systems Examined Using Hierarchical Factor Analysis

Study, measure, and stressor	Basis for category system	Categories (α)
Adult measures: Domain general		
23 Tobin et al. (1989) ^a Coping Strategies Inventory Self-report measure Domain general: Specific event	Exploratory hierarchical factor analysis.	Engagement: Problem Engagement Problem Solving Cognitive Restructuring Emotion Engagement Express Emotions Social Support Disengagement: Problem Disengagement Problem Avoidance Wishful Thinking Emotion Disengagement Self Criticism Social Withdrawal
Child and adolescent scales		
44 Ayers et al. (1996) Children's Coping Strategies Checklist (CCSC) Self-report measure—45 items How I Coped Under Pressure Scale (HICUPS) Self-report measure—45 items CCSC: General stem, "When I have a problem . . ." indicating how often each behavior is used (Grades 4–6) HICUPS: Coping with a specific remembered stressful event	Content analysis of structured interviews used to generate 11 conceptually distinct categories. (Expressing feelings subscale dropped because of low reliability.) Maximum likelihood confirmatory factor analyses used to compare alternative frameworks for higher order categories.	Active Coping Strategies: Cognitive Decision Making (.72/.71) ^b Direct Problem Solving (.68/.71) ^b Seeking Understanding (.72/.74) ^b Positive Cognitive Restructuring (.68/.62) ^b Distraction Strategies: Physical Release of Emotions (.64/.65) ^b Distracting Actions (.60/.65) ^b Avoidance Strategies: Avoidant Actions (.64/.64) ^b Cognitive Avoidance (.72/.61) ^b Support-Seeking Strategies: Problem-Focused Support (.46/.57) ^b Emotion-Focused Support (.50/.60) ^b Coping (Voluntary): Engagement Coping Primary Control (.72–.84) Problem Solving (.48–.67) Emotional Regulation (.46–.60) Emotional Expression (.61–.76) Secondary Control (.79–.84) Positive Thinking (.60–.67) Cognitive Restructuring (.52–.65) Acceptance (.50–.68) Distraction (.45–.62) Disengagement Coping (.67–.88) Avoidance (.32–.88) Denial (.46–.60) Wishful Thinking (.48–.73) Involuntary Response: Involuntary Engagement (.88–.92) Rumination (.69–.78) Intrusive Thoughts (.69–.78) Physiological Arousal (.52–.71) Emotional Arousal (.63–.72) Impulsive Action (.72–.80) Involuntary Disengagement (.81–.88) Emotional Numbing (.37–.63) Cognitive Interference (.57–.75) Inaction (.63–.74) Escape (.51–.67)
47 Connor-Smith et al. (2000) ^c Responses to Stress Questionnaire Multiple domain-specific versions (social stress, economic strain, family conflict, recurrent abdominal pain; adolescent)	Involuntary vs. voluntary responses to stress, each of which may involve engagement or disengagement with the stressor. Primary and secondary control coping was hypothesized for both voluntary engagement and disengagement coping. Maximum likelihood confirmatory factor analysis to conform model.	

Appendix E (continued)

Study, measure, and stressor	Basis for category system	Categories (α)
Child and adolescent scales (continued)		
69 Walker et al. (1997) ^d Pain Response Inventory Coping responses to recurrent pain (school-age children and adolescents)	Three higher order factors derived from problem-focused vs. emotion-focused and active vs. passive theoretical distinctions. Lower order strategies from review of general and pain-specific coping literature. Covariance structure analysis used to adjust model to good fit for data.	Active (.68-.76): Problem Solving (.74-.78) Social Support (.87-.88) Rest (.67-.70) Massage-Guard (.68-.78) Condition Specific Catastrophizing (.77-.84) Self-Isolation (.76-.91) Passive (.64-.78): Catastrophizing (.77-.84) Self-Isolation (.76-.91) Disengagement (.66-.83) Stoicism (.75-.86) Acceptance (.72-.80) Accommodative (.72-.82): Stoicism (.75-.86) Acceptance (.72-.80) Minimizing Pain (.66-.81) Self-Encouragement (.65-.71) Distract-Ignore (.76-.85)

Note. Numbers in the first column refer to scales in Table 3 and Appendix A.

^a Alphas ranged from .71 to .94, $M = .83$. ^b CCSC/HICUPS. ^c Reliabilities represent range of alphas across all four domains. ^d Reliabilities represent range of alphas across samples.

Received June 28, 2001
Revision received July 31, 2002
Accepted July 31, 2002 ■

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