

Stress and Coping and Behavioral Organization

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This article presents a new integrative theoretical framework for stress and coping centered on the concept of behavioral organization and the notions that stress disorganizes behavior and coping aims at reorganizing it. Functional analysis of behavioral organization leads to identification of four core domains of control and to a functional classification of types of stressful conditions, types of negative emotions, and types of coping functions linked directly to the control domains. The control domains are represented cognitively by four postulated kinds of beliefs or views people hold with respect to undertaking an action: performance, process, prospect, and profit beliefs. The four basic control beliefs form the core of the present coping belief model of coping. Recognition of the underlying structure of behavior, and of functional categories of stress and coping related to it, can advance theory and research on stress and coping by enriching its psychological content, improving research designs, and leading to reexamination, reinterpretation, and integration of findings existing in the literature that presently are fragmented and unconnected. **Key words:** stress, coping, belief, emotion, control.

B-S = behavior-situation control juncture; CBM = coping belief model; H = helper; HBM = health belief model; O-P = outcome-person control juncture; P-B = person-behavior control juncture; PBSOP = person-behavior-situation-outcome-person action structure; S-O = situation-outcome control juncture; SOCM = stages of change model.

INTRODUCTION

In the first article of this journal's inaugural issue, Franz Alexander (1) composed an inspiring picture of psychosomatic medicine. Psychosomatic medicine was going to "introduce a new synthetic aspect into medicine" that would go beyond anything medicine had ever known before in countering the excesses of reductionistic analytic biology, with its "more or less disconnected details" and "loss of perspective." This new science would study bodily functions as parts of an "indivisible whole," the "whole man," the organism as "an intelligibly coordinated unit," which, like a machine, "can be only understood from its function and purpose." It would be guided by "the fundamental biological fact that the organism is one unit and the function of its parts can only be understood from the point of view of the whole system." What has become of this inspiring vision present at the founding of our Society?

My purpose is to return to Alexander's vision, argue that it was a good one, lament the degree to which we have abandoned it, and indicate one way (among oth-

ers) we might take steps to move closer to it. Readers of the journal nowadays frequently find correlations of psychological and physiological processes, but these part processes do not add up to a functional synthetic whole. The psychological traits and states studied never add up to a cohesive understanding of how human beings actually function. They rather resemble spare parts for a machine we never get around to building. We cannot, for methodological reasons, return to psychoanalytic formulations of human personality, Alexander's special interest, with its emphasis on conflict and schism in the personality. We can, however, be guided by the central psychoanalytic insight that human distress is caused by dividedness and incoherence in the personality. We can also substitute for the complex concept of the "whole person" the more tractable concept of the "whole behavioral system" and take advantage of recent advances in cognitive theories of behavior control.

The approach I propose, a functional psychological approach, starts with the "machine" itself, the functional whole, and examines the internal logic of its parts. Human beings spend nearly all their waking hours pursuing purposes and goals intentionally and voluntarily. What makes intentionality possible? What is it that intentional behavior requires to be intentional behavior at all? A functional psychological approach to answering these questions offers two unique contributions: 1) a way of analyzing the essential components of intentional action and 2) a framework for functionally classifying the full range of stressful conditions and the characteristic ways people cope with each condition.

I propose embedding the stress and coping concepts in a functional model of emotion and behavior control. We need to characterize stress and coping functionally, so their contributions to the functioning of the behavioral system in which they participate can be clarified. When functional categories of control become clearer, coping as a process of control and stress as a burden placed on controls become clearer as well.

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I am assuming that stress is a condition causing behavioral strain or breakdown (functional incoherence), distressing feelings are functionally useful signals of strain or breakdown, and coping responses are efforts to protect or restore behavioral integrity and functional coherence. For research on stress and coping to advance significantly, stress and coping need to be connected in a systematic way to the behavioral processes stressors disrupt and coping responses attempt to protect and restore.

Calls for opening up new ways of thinking about stress and coping by embedding these concepts in the broader topics of emotion and behavior control are not new (2–5). The element of novelty in the present approach is the manner of accomplishing this. The approach draws on perceived control theories of behavior and behavior interruption theories of emotion to conjoin cognition and emotion in an integrated theory of behavior control. I first analytically derive functional categories of cognitive behavior control, next use the categories to construct a functional classification of stress and coping, and lastly link the categories to well-known domains of research on stress and coping.

The present theory is sometimes called a “metatheory” (6). Metatheories typically synthesize other theories into a larger, and sometimes more fundamental, theory, frequently by revealing a hidden structure underlying the other theories. I believe that major current theories of stress and coping are converging and that what they are converging to can be found in the internal logic of behavior. The importance of recognizing this internal logic rests primarily on its potential for unifying and integrating concepts and findings that are presently scattered widely in the literature. Empirical support for the proposed model is indirect; it is the sum of the empirical support for the models that it unifies, which is considerable.

ORGANIZATION OF BEHAVIOR

The present outlook rests heavily on the behavior interruption theory of emotion (4, 7, 8). Interruption theories give an account of what happens emotionally when the functional integrity of behavior is interrupted or disrupted. The main idea is that emotion is functionally useful as a signal of progress toward goals, with negative emotions indicating less-than-expected progress and positive emotions adequate or better-than-expected progress (4). Distressing emotions like fear and anger are likely to occur whenever something breaks into the continuously flowing stream of behavior from outside and interrupts the progress of behavior toward its goals. Distressing emo-

tions provide motivation for taking coping actions to put behavior back on track after it has been derailed by the jolts and shocks of life. The overall goal of coping is to prevent disruption of action agendas and to restore them when they are disrupted. By this account, what makes the loss of a job or an incurable illness a distressing problem calling for coping is precisely that it brings to an end so many streams of goal-seeking activity that ordinarily make life meaningful and worthwhile.

Interruption theories of emotion beg for examination of behavioral organization, its main functional parts, its cognitive controls, the factors that might disrupt controls (“stressors”), how emotions signify disruptions, and what people do to correct specific functional impairments. We can begin the functional analysis of voluntary, intentional behavior by asking several questions: What do people have to know to initiate or continue an action? What are the functional cognitive necessities of voluntary action? What kinds of beliefs must be in place before action can occur? These questions can be answered in a number of different ways. I use an approach that establishes immediate links with the field of stress and coping by showing that four kinds of control beliefs are implicit in Lazarus’ popular transactional coping process model (8, 9).

Lazarus’ coping model (9, 10) has been the most sustained, prolific, and systematic attempt to understand coping. Lazarus conceives stressful encounters as a person-environment transactional process, with two ways of gathering information, trying to answer the questions “What is at stake?” (primary appraisal) and “What can be done about it?” (secondary appraisal), and two ways of trying to manage the problem, eliminating or reducing the source of stress (problem-focus coping) and calming upset feelings (emotion-focus coping). The two coping functions specified by Lazarus, solving problems and managing emotions, are generally recognized to be fundamental but also to be incomplete (see Refs. 5 and 11–14), without a consensus on how the basic coping taxonomy should be changed. The incompleteness of the two coping functions is recognized by Lazarus himself (2, 15).

Lazarus’ transactional coping model, like all transactional models, conjoins two organized systems, the person and the situation or environment in which the person acts. We can begin assembly of the components of intentional, instrumental goal-seeking behavior with these core polar elements, the person and the situation. Adding to this nuclear person-situation structure the instrumental action itself, the behavior and outcome, yields the four-term behavioral formulation person-behavior-situation-outcome, which should be read as “per-

STRESS AND COPING AND BEHAVIORAL ORGANIZATION

son P intentionally produces behavior B, which instrumentally manipulates situation S, which generates outcome O.”

If we remove the situation term from the above four-term contingency, the result will be the three-term framework (person-behavior-outcome) that Bandura (16) proposed in 1977 as a way to distinguish the contributions that self-efficacy expectations (forming the person-behavior link) and outcome expectations (forming the behavior-outcome link) make to the control of behavior. The three-term model of behavior continues to have a major influence on cognitive theories of behavior control. The model is the core of Ellen Skinner's (17) unifying scheme for organizing more than 100 theoretical constructs in the psychology of perceived control, including those formulations presently dominating the field (self-efficacy, locus of control, learned helplessness, and attribution theory).

To make perceived control theory more useful to coping theory, it is necessary to create a theoretical niche for what the inner dynamics of organized situations contribute to the control of behavior. Except for Heinz Heckhausen's (18) theory of achievement motivation, situation constructs are conspicuously missing from perceived control theories. The presently proposed four-term contingency model expands the three-term model by incorporating a situation-outcome expectancy construct. The addition expresses a crucial fact about voluntary, instrumental behavior: The behavior itself does not produce outcomes. Behavior operates on environments or situations, which generate the outcomes. Coping frequently begins with recognition that some situation, some set of circumstances external to the actor *qua* actor (a job, relationship, or one's own body), is problematic and needs attention. Interpretation of the situation is often the psychological watershed of coping, in that the interpretation initiates the coping process and much of the coping activity flows outward from the interpretation. Trying to understand the situational source of stress, for example, breast cancer patients trying to understand what caused their cancer (19) and spinal cord injury patients what caused their accident (20), is itself a major way of coping as well as a prelude to other forms of coping.

To the four-term formulation of action above, I add the person as recipient of outcome feedback results, the return limb of cybernetic regulation, to give the basic behavior control cycle: person-behavior-situation-outcome-person. “Person” on the left side of the behavior control cycle represents the person as subject or agent, that is, as possessor of performance capacities, skills, tendencies, and inhibitions. “Person” on the right side of the formula represents the person as

“interested” object or recipient of behavioral results, that is, as possessor of interests, aims, goals, values, and emotions that are impacted by behavioral outcomes and for the sake of which outcomes are desired and intentionally pursued.

In the present formulation, the complex reality of behavior control is compressed into four functional links or control junctures (control tasks, control “niches”): P-B, B-S, S-O, and O-P. The complete continuous behavior control cycle is referred to as PBSOP. During action execution, action is constantly circling from person to behavior to situation to outcomes to person to behavior and so on around. During action planning, the logical sequence of steps is P-O-S-B-P. That is, from consideration of personal interests and aims, the individual selects an intended outcome, then a situation (external instrumental resources) that can generate the outcome, next behavioral tactics and strategies for exploiting the situation, and lastly personal capabilities for producing the behaviors required (the actual sequence of planning stages is often illogical and much more complicated; cf, Ref. 21). Control junctures are assumed to be potential weak points in behavioral organization, that is, places where behavior is likely to fail or be vulnerable to outside forces breaking into the continuous stream of behavior and where coping efforts are likely to be needed. PBSOP behavior controls, which provide outlets for coping, as well as the need for coping (when disrupted), may be exercised during action planning or action implementation.

Two things are worth noting about the PBSOP action structure. One is that it represents a fundamental functional architecture characteristic of all self-regulating systems; living organisms, organizations, and machines. Even an intelligent robot must “know” a set of targeted outcomes, parts of the environment (situation) that can generate them, specific behaviors that can manipulate the environment, and whether the behaviors fall within its performance capabilities, the “why,” “where,” “how,” and “who” aspects of behavior, respectively. These basic functional elements can also be extracted from generalized intention statements, such as “I will do B to S for O,” (eg, I will attend college for an education or fight city hall for justice). The second thing worth noting is that the PBSOP formula for individual or solo actions, the present focus, can be expanded to encompass social actions by adding a “helper” term to both sides of the formula, HPB-SOPH, to represent how individual interests and aims are altered (P-H) and behavioral capacities are expanded (H-P) by the addition of cooperative partners or coactors.

An action is a meeting place where four primitives come together—a person, a situation, a behavior, and

an outcome. All deliberate actions require four functionally necessary events, an actor being able to act, the act being able to operate an environmental situation, the situation being able to generate an outcome, and the outcome being able to satisfy some need or meet some goal of the actor. The four essential action events are called performance, process, prospect, and profit *events*, respectively. The actor's psychological representation of these events is called performance, process, prospect, and profit *beliefs*. The four control beliefs are conceived to be supported by mental schemata, which are clusters of beliefs, attitudes, ways of thinking, emotional responses, personality tendencies, and decision processes specific to each control domain.¹ Figure 1 shows how the four behavior control beliefs are related to the PBSOP control cycle.

The activity structure defining human action, the goals, instrumental situations, behavioral means, and personal competencies, are *relational* elements, as the hyphens in the PBSOP formula indicate. A goal is a relationship between an outcome and a person, a behavioral means is a relationship between a behavior and a situation the behavior can operate, a competence is a relationship between a behavior and a person, and an instrumental situation is the situation's organized

¹ By the term "belief" I mean an individual's conviction, faith, or trust that something is true or some condition holds. Beliefs may be true or false, rational or irrational, and vary in degree of awareness. It is not necessary that all control beliefs be conscious during action execution or even action planning (see Ref. 22 for empirical research on people's awareness of action components). Some control beliefs may disappear from conscious awareness, especially when the action is habitual and routine or when psychological defenses suppress them. The beliefs may exist merely as assumptions, until behavioral failure forces the individual to examine them.

All voluntary intentional behavior is to some degree deliberately and consciously planned, but people differ strikingly in the extent to which their actions are consciously articulated (23). "Mental schemata" extend beyond beliefs and include individual differences in irrational and unconscious sources of beliefs. For example, an individual's "paranoid schema" of irrational suspicions and apprehensions that the world is poised to play "tricks" will influence the person's construction of "prospect beliefs" (our perceptions of what the world has in store for us when left to its own devices). An "obsessive-compulsive schema" of tendencies to be anxiously preoccupied with controlling situations, and with doing so by acting on them in exactly the "right" way, will shape "process beliefs" (our perceptions of how one's own behavior will affect, and "should" affect, the surrounding world). The present theory asserts that whatever their more distal sources, control beliefs are the *proximal* cognitive causes of voluntary behavior because they are the most immediate cognitive guide for that kind of behavior.

The relationship of the present model of behavior to other, well-established models, like value expectancy theories, perceived control theories, and decision theories, is discussed in more detail elsewhere (L. F. Van Egeren. The functional organization of stress and coping. Unpublished manuscript 1999).

capacity to produce certain outcomes under certain conditions of manipulation, including no manipulation (the actor doing nothing). Because action elements are relational, action itself tends to be functionally cohesive, with functional parts interlocking like pieces of a jigsaw puzzle.

In the present formulation, coping decisions, like all decisions, are shaped by four kinds of considerations or views with respect to undertaking an action, which are denoted by the four control beliefs. One belief is about what future outcomes are likely to be (prospect belief, the psychological representation of the S-O control juncture), another about the behavioral steps needed to change the outcomes (process belief, B-S), still another about personal ability to take those steps (performance belief, P-B), and the last about how outcomes will impact one's life (profit belief, O-P). The core constituents of the beliefs are projected futures, behavioral tactics, doable behaviors, and impacts on goals, respectively. The four beliefs provide a framework, a "theory" of the stressful encounter, within which coping decisions can be made. How a person copes depends on his or her cognitive relationship to self and the world. The four beliefs frame how a picture of that relationship is composed. Three of the four beliefs are similar to the "images" that are thought to control decision-making, according to image theory (21), which has advanced beyond traditional rational decision theories.

RELEVANCE OF PBSOP TO COPING

Let us look at a simple example of how the PBSOP control functions might present themselves as coping issues. Consider the need to cope with the stress of the threat of illness by avoiding illness, in this case, let us say, genital herpes. In this illustration, the functional source of the disease, the individual's sexual relationships, is the to-be-controlled situation S, contracting the disease is the outcome O one wishes to avoid, and preventive behaviors B are the means of avoiding it. We might imagine the individual beginning the process of coping by asking questions like the following: control S-O, "Could I really get genital herpes?"; control O-P, "How would that affect my life?"; control B-S, "What actions can prevent genital herpes?"; and control P-B, "Can I do those actions?"

As I show later, these questions are directly related to the core beliefs of the health belief model of preventive behavior (24, 25). Such questions set the stage for coping by addressing the kinds of issues that must be considered in constructing a deliberate coping action. Answers to the questions are the four basic control beliefs. All four control beliefs must reach a minimum

STRESS AND COPING AND BEHAVIORAL ORGANIZATION

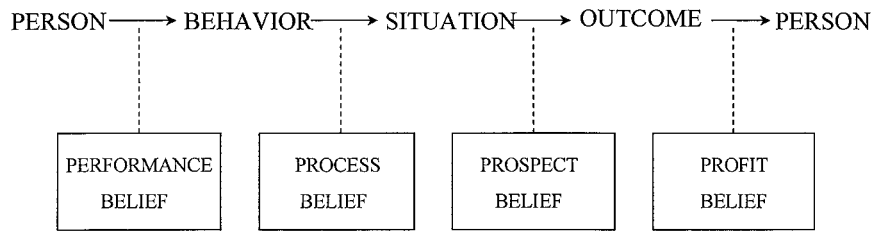


Fig. 1. Representation of control beliefs in the functional organization of voluntary behavior.

threshold strength before an individual can adopt a course of action. Someone who is convinced that he is not personally susceptible to genital herpes (S-O), that genital herpes would have little or no impact on his life if he did contract it (O-P), that there is no effective way of preventing the disease (B-S), or that there is an effective way but he is unable to take the required actions in his own sexual relationships (P-B) will not undertake a course of preventive action.²

FUNCTIONAL CLASSIFICATION OF STRESS AND COPING

In this section, I briefly describe the four basic control beliefs, the kinds of (stressful) conditions that are likely to disrupt behavior by disconfirming the beliefs, the kinds of emotions that are likely to be aroused, and the kinds of coping responses that are likely to be mobilized.³

Performance (P-B) Control

A performance belief is a belief about performance readiness, that is, about the personal ability to execute coping tactics. Perceived performance readiness is based on judgments that personal assets are suitable for and can be allocated to the task. Performance control schemata include a sense of responsibility for actions as well as awareness of various costs to self-

² The claim that control beliefs must possess a certain minimum strength as a precondition of action means that the beliefs are functionally necessary. This claim suggests how the present cognitive theory of behavior control can be refuted. The theory can be falsified by evidence that people routinely undertake voluntary intentional actions while *not* holding one of the four stipulated types of control beliefs or that they are able to reach their goals successfully while holding control beliefs that are seriously false.

³ The description of each control belief includes a small number of references to research indicating that the belief is centrally important in the regulation of behavior. The citations simply illustrate the kinds of empirical literature that are relevant to the importance of the belief; many additional references could have been cited.

The coping questionnaire items that I suggest were either written for this article or taken from Aldwin and Revenson (27), Billings and Moos (11), McCrae (13), or Tobin et al. (28).

esteem if performance falls below standards. Performance beliefs have been investigated extensively in studies of self-efficacy (16, 26).

The most likely types of stressful conditions causing P-B control failures are factors and conditions that tax and burden performance resources and make it difficult to deliver behaviors to standard, which are collectively referred to as (sources of) "impotence stress." Common examples are inadequate training and education, lack of skills, fatigue, and performance-impairing emotions, moods, and illnesses. The most likely types of emotion evoked by P-B control failures are self-regarding feelings of shame, embarrassment, humiliation, or other emotions aroused by insults to personal pride.

Representative questionnaire items for measuring forms of coping aimed at strengthening performance control include "I told myself I could handle it," "I told myself I had to do it," "I took some positive action," and "I accepted the fact that I couldn't do it." Active performance coping frequently involves internal monologues that build confidence, mobilize personal resources, and overcome behavioral inhibitions and performance fears. These forms of coping are fairly well represented in the coping response literature. Passive forms of P-B coping (like the last example given above) rarely appear in the literature.

Process (B-S) Control

Process beliefs are beliefs about the concrete steps needed to reach a goal and move an action agenda forward. Process control involves searching for effective and efficient routes of action, paths connecting instrumental behaviors to action objects. Cognitive representation of this control task can be found in studies of problem-solving processes (eg, Ref. 29) and intervention efforts to improve them, such as mental rehearsal of the processes for achieving goals as a way of recognizing and clarifying the steps one needs to take (30). The broad control issue is seeing one's surroundings as being controllable and one's problems as being solvable, having answers to the how questions of behavior.

The most likely types of stressful conditions causing B-S control failure are those that block efforts to operate on situations, that restrict (retard, prevent, or interfere with) paths of action, limit solutions, or reduce the choice of processes or methods for implementing action plans, such as impediments, barriers, insufficient tangible resources, social exclusion, or restrictions on skill usage (eg, restrictive managerial control over work processes; see Ref. 31), collectively labeled "restrictive stress," the limiting case being total uncontrollability. The most likely types of emotion aroused by process control failure are irritability, anger, hostility, resentment, rage, or other emotions that tend to be provoked whenever the imposition of control (personal will) on surroundings is blocked.

Representative questionnaire items for coping aimed at strengthening process control might be "I tried to think of possible ways to improve the situation," "I tried to find a solution," or "I accepted the fact that nothing could be done about it" (passive form).

Prospect (S-O) Control

We cannot act without a certain amount of conscious anticipation, which requires interpretation of situation dynamics and prediction of events. Prospect beliefs are imagined, projected, and forecasted futures. A person needs to "size up" a situation before acting on it. Sizing up includes an awareness of events the situation is organized to generate on its own and the situation's responsiveness and opportuneness for action. The broad prospect control requirement is to construct a view of the world as organized and resourceful so that it is possible to find places where positive outcomes sought can be anticipated. Cognitive representation of S-O control has been investigated extensively in studies of how people impute structure and organization to the world. Especially relevant are studies of contingency judgments (32) and causality beliefs (33).

The most likely types of stressful conditions causing S-O control failure are all conditions intrinsic to the situation itself giving rise to difficulties in determining the likelihood of events (predictability) and in modifying those likelihoods, such as unfamiliarity, novelty, ambiguity, task difficulty, and inconsistent or contradictory incentive structures or cue structures that mix up positive and negative outcomes (behavioral "traps" are examples; see Refs. 34–36), collectively labeled "unpredictability stress." The most likely types of emotion aroused by control failure are anxiety, fear, or other emotions accompanying uncertainty and wariness about what is going to happen and how the future will turn out.

Representative questionnaire items for coping aimed at strengthening prospect control include "I tried to figure out what was going on," "I tried to find out what might happen," "I tried to see the positive side," and "I just waited to see what would happen because there was no way of telling (passive form)."

Profit (O-P) Control

Profit beliefs are beliefs about how outcomes generated by self or situation are likely to impact one's interests and aims. Profit beliefs are representations of how much one profits (or loses) from an outcome, how an outcome advances the goal agendas of one's life. Three processes are central to profit control: setting goals, controlling tension, and adapting interests and aims to obtained outcomes. Effective control requires accurate judgments about the utility (sense of worth and importance) of outcomes, their value in relation to one's total system of interests, aims, and needs. Profit control has been investigated in studies of goal organization and incentive determinants of goal-setting (37, 38) and studies indicating that disclosure of emotion can significantly alter the impact traumatic events have on one's emotional and physical health (39).

The most likely types of stressful conditions causing control failure are those resulting in disappearance of expected goal objects (loss events) or appearance of events one hoped to avoid (harm events), that reduce their positive value or increase their negative value, or that cause conflict or confusion among values and interests, thereby increasing the difficulty of integrating outcome events into the deeper and more enduring interests and aims of one's life, such as losses, harmful conditions, seductions, temptations, and manipulations of interests (eg, advertising), collectively labeled "disutility stress." The most likely types of emotion aroused by control failure are "loss" emotions, such as disappointment, sadness, and depression, and "harm" emotions, such as pain, which signal that an already obtained outcome event is less desirable or more undesirable than expected or that an event is unacceptably noxious.

Representative modes of coping aimed at strengthening profit control include all ways of coping involving making adjustments in O-P relations or beliefs, for example, depreciating the value of negative outcomes ("I never liked that job anyhow," after losing the job), reprioritizing goals ("I tried to rethink what is important in life"), altering affective responses and attachments to outcomes through emotional release ("I let my emotions out"), or counteraction ("I did something to make myself feel better"). "I decided to accept what had happened" is a passive form of coping, in that the

person resigns himself or herself to an existing O-P relationship without actively trying to modify it. All forms of profit coping attempt to preserve a sense of the worthwhileness of life, the sense that in spite of it all, even in the face of the worst tragedies, there are things worth striving for in life (40).⁴

General social coping responses, such as social support and religion (which may be viewed as a special kind of social support), are conspicuously missing from the above classification scheme. I view these responses as examples of what Antonovsky (41) calls "generalized resistance resources," so named because they are resources that can be applied to meet any kind of demand that is made on people. Generalized resistance resources can be called on to shore up behavior control at any PBSOP control site. Social support and religious faith may strengthen resistance to stress by helping people to affirm or clarify their understanding of a problem (S-O), discover a solution (B-S), mobilize the courage and inner resources to act (P-B), and accept unpleasant outcomes (O-P). Social coping responses derive considerable power from the wide range of things religious faith or friends might do for someone struggling with a problem.

OTHER COPING MODELS

The present analytically derived functional categories of coping responses overlap with categories obtained empirically. This fact can be illustrated by relating the functional categories to several major coping models for which there is considerable empirical support.

Lazarus' Coping Process Model

An immediate interesting consequence of the present approach, which I call the coping belief model (CBM) to contrast it with the coping process approach, to which it is complementary, is that the possible types of appraisals and forms of coping are expanded from two (in Lazarus' model) to four, in a direction that seems necessary on empirical grounds (references cited earlier) as well as on conceptual grounds. Lazarus' primary appraisal question, "What is at stake?," is composed of two functionally and conceptually distinct parts: "What is likely to happen?" (finding answers to this question is the prospect control task in

the CBM scheme) and "How will that affect me?" (the profit control question). Lazarus' secondary appraisal question, "What can be done about it?," also has two distinguishable embedded questions: "Is the stressful situation or problem behaviorally controllable?" (the process control question) and "Am I able to perform the behaviors required?" (the performance control question). For the purpose of diagnosing coping failures, as well as for designing effective intervention programs, it is important to keep these coping functions conceptually distinct. For example, people who fail to attempt to cope because they have given themselves a negative answer to the question "What can be done about it?" may do so for either (or both) of two very different reasons: They are not convinced that any action can effectively modify circumstances (weak process convictions), or they believe that they lack the skills or energy to execute the action (weak performance convictions). Depending on the pattern of beliefs, different kinds of intervention approaches are needed.

Antonovsky's Salutogenic Model

People facing major crises like breast cancer (19), accident victims suffering serious spinal cord injuries (20), and people struggling with plant closures or natural disasters (42) typically need to do much more than deal with the immediate problem and its emotional sequelae. We live within a web of meanings that can be profoundly shaken by traumatic events and unresolved chronic problems. Such events and problems may assault the very foundation of one's entire action agenda and raise broad questions about one's life that threaten behavior controls: "Does my suffering have a purpose and meaning, or is my life pointless?" (O-P); "Am I incompetent and inadequate and responsible for my suffering?" (P-B); "Is the world irrational and unpredictable?" (S-O); "Is what matters most in my life really controllable?" (B-S).

Antonovsky (41, 43) comes closer to addressing such questions and conceptualizing a whole person struggling with the stresses of everyday life than any other coping theorist. The heart of his salutogenic model of what supports health in the face of threats is the "sense of coherence" concept. The concept is defined as the "feeling of confidence that one's internal and external environments are predictable and that there is a high probability that things will work out as well as can reasonably be expected" (41). The sense of coherence is a general orientation toward the world that helps one to "see the world as 'making sense' cognitively, instrumentally, and emotionally" (43). "Confronted with a stressor, the person . . . with a

⁴ The present model suggests that, in the future, the design of stress and coping research can be improved by assessing each of the four major classes of stressful conditions that have been identified and by measuring each of the four major types of coping responses that are functionally possible.

strong sense of coherence will wish to, be motivated to, cope (meaningfulness); believe that the challenge is understood (comprehensibility); [and] believe that resources to cope are available (manageability)."

The present CBM framework of functional coherence is closely related to Antonovsky's sense of coherence concept. Functional coherence for the CBM refers to the strength of control convictions that mentally unify action elements into a cohesive whole. "Comprehensibility" is taken to mean that the world is a rational, orderly place with understandable challenges; one knows what leads to what and consequently knows where to go to stage actions, because outcomes are coherently connected to situations (S-O coherence). "Manageability" is taken to mean that instrumental coping resources and options are available; effective behavioral paths of action exist, because behavior is coherently connected to situations (B-S coherence). "Meaningfulness" (the wish and motivation to cope) is taken to mean that the terms the world offers are sufficiently attractive and satisfying to make coping and struggling with life's problems worth the effort; outcomes are coherently connected to one's genuine vital interests and aims (O-P coherence). Antonovsky did not explicitly list coherence arising from personal competence as a component of a sense of coherence. The felicitous match of one's skills and abilities to the behaviors required by one's routine environments (ie, P-B or performance coherence) is an important source of autonomy and sense of well-being. Autonomy here means specifically that who one *is* can be expressed in what one *does*.

Someone with a well-integrated functional system, that is, with strong control beliefs or convictions, will see the world as being worthwhile, comprehensible, manageable, and supportive of one's autonomy. In the CBM perspective, Antonovsky's global sense of coherence concept shreds out into four distinct dimensions or senses that may be threatened differently by a particular traumatic event: sense of purpose, sense of order, sense of power (controllability), and sense of autonomy (competence). Coping includes efforts to protect these vital senses that emerge out of adaptive behavioral organization, express functional integrity, and give rise to basic human needs to preserve them.

Health Belief Model

The threat of illness is a major source of stress. When coping with the threat of illness by taking preventive actions, disease-producing agents or factors constitute the to-be-controlled situation S and contracting the disease is the outcome O one wishes to avoid. I indicated earlier how PBSOP control domains

are related to issues about disease prevention, using genital herpes in the example. Disease control beliefs suggested by the CBM control structure are closely related to the main belief variables in the health belief model (HBM) (24, 25). The main HBM beliefs are perceived susceptibility to disease, perceived seriousness of disease, perceived benefits of adopting preventive behaviors, perceived barriers to adopting preventive behaviors, and self-efficacy in performing preventive behaviors. Perceived benefits in the HBM refer to the person's opinion about the effectiveness of recommended preventive actions in reducing susceptibility to disease, that is, in controlling the disease-producing system or situation. Perceived benefits are thought to be weighed against the perceived barriers to form action effectiveness judgments. Such judgments correspond to process control convictions in the CBM. The three remaining HBM beliefs, susceptibility, seriousness, and self-efficacy, correspond closely to prospect ("Will I contract disease X?"), profit ("How would disease X affect my life?"), and performance control beliefs, respectively.

Stages of Change Model

Readiness to cope with a major problem by taking action often involves a struggle drawn out over some period of time before the coping action is actually taken. The transtheoretical stages of change model (SOCM) (44, 45) compresses this complex process into five stages that are closely related to the CBM control domains. The first four stages of behavior change proceed in a sequence that is similar to the logical sequence of action planning in the CBM perspective, namely, P-O-S-B-P. The SOCM stages are as follows.

Precontemplation stage. Here the person, say, a cigarette smoker, often wishes to change, to quit smoking, but is not seriously thinking about it or intending to quit. This stage is related to profit (O-P) control, in which the individual has a wish for an outcome but nothing else.

Contemplation stage. Here people are thinking about changing, are "more aware of the pros of changing but are also acutely aware of the cons" (45). People have moved to the prospect (S-O) planning stage, in which the various positive and negative outcomes O connected to the to-be-changed situation S, the smoking habit, are being weighed and deliberated.

Preparation stage. People at this stage are "intending to take action in the immediate future . . . have a plan of action, such as joining a health education class, consulting a counselor, [or] talking to their physician" (45). The smoker has moved to the process (B-S) con-

trol sphere and is choosing routes of action for changing his or her smoking habit.

Action stage. At this stage, "people have made significant overt modifications in their life styles" (45). This stage corresponds to movement to the performance (P-B) control domain in the CBM scheme; the smoker is mobilizing personal resources and taking action.

Maintenance stage. Here the smoker works to prevent relapse. This stage is not represented as a distinct action domain in the CBM framework but is incorporated into the three action feasibility control domains (P-B, B-S, and S-O). Studies of relapse avoidance (46, 47) indicate that relapse avoidance efforts involve primarily thinking about what might come up in a particular high-risk situation (S-O) and what can be done to handle it if it does come up (B-S) as well as developing specific skills to do the things that can maintain abstinence (P-B).

CONCLUSIONS

From a functional standpoint, stressful conditions are factors that disrupt behavioral organization, distressing feelings are signals that disruption has occurred, and coping responses are efforts to restore behavioral organization and coherence. Functional analysis of intentional behavior reveals a basic structure underlying action. Four postulated control beliefs (performance, process, prospect, and profit) cognitively anchor this structure and provide a framework for making decisions, including coping decisions. A functional classification of stressors, coping responses, and negative emotions (distressing feelings) becomes possible. The functional categories are systematically related to perceived control theories of behavior, recent advances in decision-making, and a number of well-known coping models. Recognition of the underlying structure of behavior, and of the functional categories related to it, can advance stress and coping theory and research in three significant ways. First, it can enrich coping theory and research by relating them to psychological theories of emotion, perceived control, and decision-making. Second, it can lead to improved research designs. Third, it can result in reexamination, reinterpretation, and integration of findings existing in the coping literature that are presently fragmented and unconnected.

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