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Aaron Antonovsky

UNRAVELING THE MYSTERY OF HEALTH

How People Manage Stress and Stay Well

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Unraveling the Mystery of Health

How People Manage Stress and Stay Well

Jossey-Bass Publishers
San Francisco • London • 1988

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UNRAVELING THE MYSTERY OF HEALTH
How People Manage Stress and Stay Well
by Aaron Antonovsky

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Jossey-Bass Inc., Publishers
350 Sansome Street
San Francisco, California 94104
&
Jossey-Bass Limited
28 Banner Street
London EC1Y 8QE

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Library of Congress Cataloging-in-Publication Data

Antonovsky, Aaron.
Unraveling the mystery of health.

A joint publication in the Jossey-Bass social and behavioral science series and the Jossey-Bass health series.
Bibliography: p. 211
Includes index.
1. Sick—Psychology. 2. Health behavior.
3. Stress (Psychology) 4. Adjustment (Psychology)
I. Title. II. Series: Jossey-Bass social and behavioral science series. III. Series: Jossey-Bass health series. [DNLM: 1. Stress, Psychological. WM 172 A635u]
R726.5.A58 1987 155.9 86-27386
ISBN 1-55542-028-1

Manufactured in the United States of America

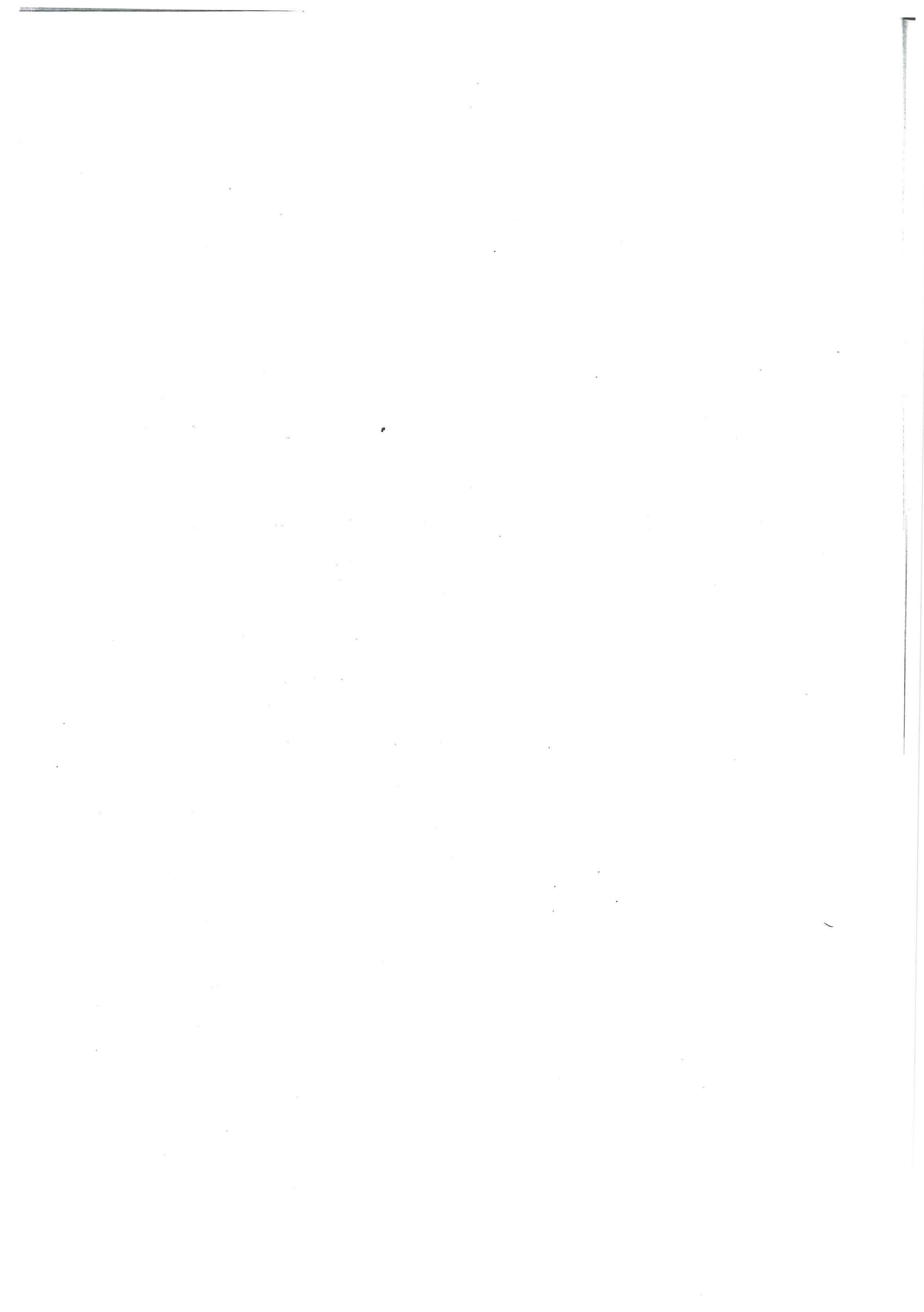
The paper in this book meets the guidelines for permanence and durability of the Committee on Production Guidelines for Book Longevity of the Council on Library Resources.

JACKET DESIGN BY WILLI BAUM

FIRST EDITION
First printing: February 1987
Second printing: April 1988

Code 8705

A joint publication in
The Jossey-Bass
Social and Behavioral Science Series
and
The Jossey-Bass Health Series



Contents

Preface xi

The Author xix

1. Toward a New View of Health and Illness 1
2. The "Sense of Coherence" Concept 15
3. Similarities of the Concept to Other Views of Health 33
4. Measuring the Concept: A New Scale 63
5. How the Sense of Coherence Develops over the Lifespan 89
6. Pathways Leading to Successful Coping and Health 128
7. Solving the Mystery: Issues for Further Exploration 163

Appendix: The Sense of Coherence Questionnaire 189

References 195

Index 211

In memory of my parents,
Isaac and Esther,
who died at 94 and 89,
from whom I learned about the sense of coherence

Preface

In 1970 a very concrete experience occurred which led to a fundamental turning point in my work as a medical sociologist. I was in the midst of analysis of the data in a study of adaptation to climacterium of women in different ethnic groups in Israel. One of these groups consisted of women born in central Europe between 1914 and 1923, who were, therefore, aged 16 to 25 in 1939. We had, for a reason I never quite remembered, asked a simple yes-no question about having been in a concentration camp. Imagine a table comparing emotional health ratings of a group of concentration camp survivors to those of a control group. The plausible stressor hypothesis is confirmed beyond the .001 level. Looking at the percentages of unimpaired women, we find that 51 percent of the control group women, compared to 29 percent of the survivors, were in quite good overall emotional health. Focus not on the fact that 51 is far greater than 29, but consider what it means that 29 percent of a group of concentration camp survivors were judged to be in reasonable mental health. (The physical health data tell the same story.) To have gone through the most unimaginable horror of the camp, followed by years of being a displaced person, and then to have reestablished one's life in a country which witnessed three wars . . . and still be in reasonable health. This, for me, was the dramatic experience which consciously set me on the road to formulating what I came to call the salutogenic model, formally published in 1979 in *Health, Stress, and Coping.*

Some readers will surely be familiar with the book. For

those who are not, let me recapitulate the argument. My point of departure was grounded in the data which indicate that at any one time, at least one third and quite possibly a majority of the population of any modern industrial society is characterized by some morbid, pathological condition, by any reasonable definition of the term. Illness, then, is not a relatively rare deviance. A pathological orientation seeks to explain why people get sick, why they enter a given disease category. A salutogenic orientation (which focuses on the origins of health) poses a radically different question: why are people located toward the positive end of the health ease/dis-ease continuum, or why do they move toward this end, whatever their location at any given time?

The first answer I considered, as suggested in a voluminous literature, was that their life stressor experiences—stressors ranging from the microbiological to the societal-cultural levels—were low. But, I argued, this hypothesis is untenable. In the very nature of human existence, stressors are omnipresent. Yet many people, though far from most, even with a high stressor load, survive and even do well. Barring stressors that directly destroy the organism, people's health outcomes are unpredictable. *This is the mystery the salutogenic orientation seeks to unravel.* Confronting a stressor, I proposed, results in a state of tension, with which one must deal. Whether the outcome will be pathological, neutral, or salutary depends on the adequacy of tension management. The study of factors determining tension management, then, becomes the key question of the health sciences.

Since I was not concerned with the study of diseases (as significant a question as this is), my tentative answer to the question was expressed in the concept of *generalized resistance resources* (GRRs)—money, ego strength, cultural stability, social supports, and the like—that is, any phenomenon that is effective in combating a wide variety of stressors. Reviewing the literature, I discussed a very wide range of GRRs, ranging from immunopotentiators to magic. But what was lacking was a culling rule by which one could identify a phenomenon as a GRR without having to wait and see whether it worked, or, better still, to understand how a phenomenon served as a GRR.

The answer to the salutogenic question that I developed

was the *sense of coherence concept* (SOC). What is common to all GRRs, I proposed, was that they facilitated making sense out of the countless stressors with which we are constantly bombarded. In providing one repeatedly with such experiences, they generate, over time, a strong sense of coherence. This central concept of the book was defined as *a global orientation that expresses the extent to which one has a pervasive, enduring though dynamic, 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.*

Most of the rest of *Health, Stress, and Coping* was devoted to reviewing the empirical evidence which suggested that the SOC-health hypothesis was plausible. There were studies whose findings linked given variables to health without offering explanations. Other studies proposed ad hoc explanations of such linkages. In both cases, I suggested that the SOC construct would more adequately help us to understand the data. Of even greater import, the model suggested the possibility of integrating a considerable body of seemingly disparate findings and ideas.

This, in brief, is the salutogenic model. The book seemed to have appeared at the right time. Disenchantment with the increasingly expensive technology of the medical care system, concern with the ever less humane overtones of the focus on the organic pathology of diseases, the beginning of a movement toward self-care, a growing awareness of the role of social factors in shaping well-being—all these set the stage for a serious consideration of the origins of health. *Salutogenesis* has a long way to go before it becomes a household word like *alienation*; and the sense of coherence is still, to my discomfort, all too often called the sense of control or the sense of cohesion. But the concepts have begun to take hold; the mode of thought has become more familiar.

Health, Stress, and Coping was written as a culmination, a pulling together of the variety of research problems with which I had wrestled for well over a decade. I had no clear audience in mind. What the book did, I believe, was propose a model and set an agenda. The present volume takes up the items on this

agenda. The intellectually curious reader interested in the historical development of the salutogenic model would do well to go through the first book, but such preparation is hardly essential for an understanding of this one.

This new book's intended audience is quite varied, since I am concerned with a problem rather than with a discipline. First and foremost, perhaps, it is addressed to those in the new and rapidly expanding field which is most often called behavioral medicine (Matarazzo and others, 1984; Gentry, 1984): social, developmental, and clinical psychologists and social workers who, as researchers, teachers, and therapists, are directly confronted with human struggles in a stressful world. I should also like to think that the book will be meaningful for those who make up my own primary reference group, medical sociologists. I find it somewhat distressing that we have largely left the issues of stressors and coping, so clearly rooted in macrostructural and cultural contexts, in the hands of the psychologists, who ask relevant but different questions. Social epidemiologists (or at least those who do not simply define themselves, as the quip has it, as broken down by age and sex) and others in the realm of public health will, I believe, find my work most germane to their concerns. In writing this book, I have also had another group in mind: nurses, going through the fascinating throes of formulating a new professional identity, are perhaps more open to my ideas and ways of thinking than almost anyone else. For the same structural reason, graduate students, who read voraciously and have not yet attained paradigmatic closure, concerned with health and illness, whatever their fields, will respond to the book. And finally, I continue to hope (sometimes against hope) that at least some physicians will see more than the disease. I should like to think that doctors, particularly those specializing in primary care (but also those in fields like rehabilitation medicine and geriatrics), will find that the book gives them powerful tools for understanding, and perhaps even for action.

What, then, is the book about? Let me give a brief overview. I start, in Chapter One, with a detailed explanation of why, more than ever, I am persuaded that the salutogenic orien-

tation, that thinking in terms of the mystery of movement toward the ease pole of the ease/dis-ease continuum, is a significant and radically different approach to the study of health and illness than the pathogenic orientation. In presenting this explanation, I consider the implications primarily for research and understanding, but the clinical implications, I trust, are also made clear.

In Chapter Two I seek to clarify my present understanding of the SOC concept. This has emerged from a series of life history interviews, from discussion of the concept with many colleagues, and from matching it with and differentiating it from the published ideas of others. The three components of the concept—comprehensibility, manageability, and meaningfulness—are presented, the concept of referent boundaries is introduced, and consideration is given to the distinction between the strong and the rigid SOC. This chapter also includes a reconceptualization of the stressor concept as a *generalized resistance deficit* (GRD), which leads to its integration with the GRR concept. Stressor life situations are distinguished from stressor life events.

Chapter Three acknowledges developments which have been most gratifying to me, namely, the work of others which has appeared since 1978 and which asks the salutogenic question and/or proposes answers which at least in part are compatible with the SOC concept. The studies of Thomas Boyce, Suzanne Kobasa, Rudolf Moos, David Reiss, and Emmy Werner receive particular attention in the course of discussion of concepts like hardiness, resilience, invincibility, and permanence.

We then turn, in Chapter Four, from the realm of theoretical development and conceptual clarification to the problem of empirical testing of the salutogenic model. The evidence for the plausibility of the model presented in *Health, Stress, and Coping,* especially in Chapter Six, consisted largely of post-hoc reinterpretation of the results of pathogenically oriented studies. Those, I wrote, were sufficient "to establish a prima facie case for the plausibility" (1979, p. 161) of the SOC-health hypothesis. A fair number of studies have appeared in the interim whose results, I believe, strengthen the case. But the time has come to

test the hypothesis and not simply confirm its plausibility. Though I am enthusiastic about utilizing a variety of methods to test the model, my own expertise lies in the use of survey questionnaire instruments. The chapter details how a closed questionnaire to measure the SOC was developed, a story which is seldom carefully told. In the course of this story, direct quotes from depth interviews are presented to give life to the concept. The chapter closes with a presentation of the evidence for the reliability and validity of the questionnaire.

In Chapter Five, I discuss the child-rearing patterns and subcultural and cultural patterns of social organization that build up the GRRs out of which a strong SOC emerges. This socialization process is presented in a life-cycle framework from infancy through adulthood. The question of how the SOC is shaped leads us to an issue that, in my experience, is most disturbing for many of those who have been attracted to the concept: the dynamics of the SOC in adult life, and particularly the question of planned modification and utilization of the theory by practitioners.

Consideration of the dynamics of the SOC leads to Chapter Six, focusing on the pathways through which the SOC and health are related. After identifying the dual issue involved in coping with stressor life events, instrumental problem solving and the regulation of emotion, a three-stage primary appraisal process is delineated, which then takes us to the selection of an appropriate coping strategy, action, and feedback evaluation. GRRs are defined as *potential* resources, which the person with a strong SOC can mobilize and then apply in seeking a solution to the instrumental problem. The subsequent section focuses on the ways in which the strength of the SOC is central to regulation of the emotional tension generated by confrontation with stressors. The theme throughout the chapter is the process of preventing the transformation of tension into stress. In the last section of this pathways chapter, I turn directly, though with some trepidation, to neurophysiological, endocrinological, and immunological mechanisms through which the SOC influences health outcome.

This brings us, in Chapter Seven, to a relatively brief dis-

cussion of four issues which, though not crucial to the salutogenic model, have taken on considerable meaning and interest for me. The first issue is how to locate the fundamental meaning of the SOC concept in the context of what is emerging as a most crucial problem throughout the sciences, the problem of "order out of chaos," to borrow the title of a Nobel laureate's recent book (Prigogine and Stengers, 1984). The second is whether it is meaningful to speak of the SOC as a group property, characteristic not only of the individual but of social systems like the family, community, social class, and national society. The third question is how the SOC is related to elements of well-being other than health, such as happiness, morale, and life satisfaction, or to successful task performance. Finally, I seek to explain why, unequivocally rejecting understanding of the SOC as a state characteristic, I find it important to see it as what I call a dispositional orientation rather than a personality trait. In this discussion, I stress, on the one hand, the sociocultural origins of the SOC and, on the other, make a clear distinction between orientation and overt behavior.

A final word before turning to substance. I am, of course, persuaded that the salutogenic model has much cogency. We are now at a point where this persuasion must be tested by empirical research. Where such research will bring the model a decade hence cannot be predicted. If I have been motivated by one purpose to write this volume, it is to reinforce those who are already at work—to spark ideas in the minds of those colleagues who share with me the enchantment with the mystery of health.

In *Health, Stress, and Coping* I expressed my indebtedness to those whose work has been of major significance for me. The indebtedness remains. I would only repeat the names of Hans Selye and John Cassel, whose fruitful work was carried on to their last days. I do wish, however, to call the reader's attention to Chapter Three in this volume, "Similarities of the Concept to Other Views of Health." In these past years, the intellectual, and often personal, encounters with the colleagues whose work I discuss in this chapter have been pleasurable and com-

pelling. I have learned from them—even when I think they are wrong.

The book began to be drafted during a relaxed sabbatical year at the School of Public Health, University of California, Berkeley. It was again a pleasure to be hosted by Leonard Syme and to test my ideas both in our talks and in the seminar he arranged for me to give. By chance, as I was writing the last lines of this book, I received a letter from one of the participants in the 1977-78 seminar I had given at Berkeley. Referring to salutogenesis and coherence, he writes: "I must say it has influenced my life direction. . . . I currently consult with a state developmental disabilities agency with interest in strengths and 'resistance resources' rather than in the disability. . . . [How exciting it is] looking at the grins on our children's faces when they see how good they really are, although different." If this is the kind of impact my teaching and writing have had, I have been well rewarded.

Though the word processor has replaced the typewriter, the human being has not been replaced. My sincerest thanks to Milka Sampson. Not working in her native language, she did superbly in moving from my scribblings to a final document.

Above all, I must express my gratitude to Helen. At a deeper level, I have learned from her how unimportant being in control is when there is a loved, trusted other with whom to live. At the working level, it was Helen who proposed the term "the sense of coherence" to say exactly what I wished to say. As a developmental psychologist with anthropological training, she was able to be a most competent professional critic. Her extraordinary combination of no-holds-barred evaluation with the gentlest ways of saying critical things, enriched by problem-solving suggestions, has been of immense help. If writing the book has provided life experiences strengthening my own SOC, it is in good part thanks to Helen.

Beersheba, Israel Aaron Antonovsky
December 1986

The Author

Aaron Antonovsky is Kunin-Lunenfeld Professor of Medical Sociology and chairman of the Department of the Sociology of Health in the Faculty of Health Sciences, Ben Gurion University of the Negev, Beersheba, Israel.

Antonovsky was born in Brooklyn in 1923 and attended Brooklyn College, where his undergraduate studies in history and economics were interrupted by service in the United States Army during World War II; he was awarded the B.A. degree in 1945. He did his graduate work in the Department of Sociology at Yale University, where he had his first contact with the new field of medical sociology, and was awarded the M.A. and Ph.D. degrees in sociology in 1952 and 1955, respectively. He taught evenings at Brooklyn College from 1955 to 1959, and in 1956 he became research director of the New York State Commission Against Discrimination. He was a Fulbright Professor of Sociology at the University of Teheran in 1959–1960.

With his wife Helen, a developmental psychologist, he emigrated to Israel in 1960 and accepted a post at the Israel Institute for Applied Social Research in Jerusalem, with which he is still affiliated. In the early 1960s, he began to teach in the Department of Social Medicine, and he started a research project with Judith Shuval on the latent functions of health care institutions. This project was followed by work on multiple sclerosis, coronary artery disease, menopause, preventive dental-health behavior, and early detection of cancer, as well as a series of studies on social class and various aspects of health and ill-

ness. His papers on social class differences in mortality and morbidity over time have become landmarks in the increasing concern in industrialized societies with persisting inequalities in health.

In 1972, Antonovsky was invited to take a central part in setting up a community-oriented school of medicine at Ben Gurion University of the Negev. In addition to his responsibility for developing the behavioral science component of the curriculum, he also served for nine years as chair of the admissions committee, developing a student selection process which downplays grades and test scores and emphasizes values, commitments, and demonstrated responsibility.

In 1977-78 and again in 1983-84, he took sabbatical leave, serving as visiting professor at the School of Public Health, University of California, Berkeley. At present, he has embarked on a longitudinal study, supported by the National Institute on Aging, of the impact of retirement on health.

Unraveling the Mystery of Health

How People Manage Stress and Stay Well

1

Toward a New View of Health and Illness

Scarcely a week passes in which I do not encounter a paper to which my response is "My God, if only the author had thought salutogenically!" A recent example, possibly piquant: Laudenslager and others (1983) were concerned with the immunosuppressive consequences of shock treatment administered to rats under different psychosocial conditions. Their data support the hypothesis that the rats given inescapable shock would show the lowest level of lymphocyte proliferation—that is, the most immunosuppression—compared with the other three groups: escapable shock, restrained controls, and home-cage controls. This finding constitutes the total focus of the authors' discussion. But in presenting the data, they note in passing that on one of the two measures of lymphocyte proliferation there was no significant difference among the three control groups, while on the second the escapable shock group showed the highest level, significantly different not only from the inescapable shock group but also from the restrained controls. "Thus the ability to exert control over the stressor completely prevented immunosuppression," the authors duly write (p. 569). The discussion disregards what seems to me this most exciting finding. Evidently a shock stressor can have salutary consequences for an organism, provided it is escapable. But when one thinks only of the pathogenic consequences, one misses the vista that such a finding opens up.[1]

[1] This is not nitpicking. Even in a journal presumably oriented toward health, encountered during the final drafting of this chapter, refer-

The contention that the salutogenic orientation is not just the other side of the coin from the pathogenic orientation but, rather, is radically different and at least of equal significance must meet several tests. First, does it provide a powerful impetus for looking at data in a different way, a way in which the pathogenically oriented researcher would not ordinarily analyze the data? Second, does it lead to the formulation of different significant questions and hypotheses? And third, perhaps the most stringent test of all, does it provide the basis for hypotheses that conflict with those derived from a pathogenic orientation, allowing the testing of the two approaches? These tests are formulated in terms of research. Analogous questions are applicable to the work of the practitioner.

Let me be quite unequivocal about the two sources of the salutogenic orientation. The first is the fundamental assumption of heterostasis, disorder, and pressure toward increasing entropy as *the* prototypical characteristic of the living organism. This assumption, in stark contrast to that of the pathogenic orientation, which assumes that now and then "normally self-regulatory, homeostatic processes become disregulated" (Schwartz, 1979, p. 565), led me to explore the epidemiological data on health and illness, which brought me to the inescapable conclusion that disease, however defined, is very far from an unusual occurrence.[2]

It may well be that the pessimistic cast of my nature and philosophical outlook—the second source—shaped this very fundamental assumption and the way I read the data. But personal motivations are irrelevant to the contention, if it indeed meets the tests proposed.

In Chapter 2 of *Health, Stress, and Coping* (Antonovsky,

---

ence is made to the Laudenslager paper only to note immunosuppression, disregarding the issue I point out above (*Investigations,* 1984).

[2] There is no reason to present additional data to those presented in chapter 1 of *Health, Stress, and Coping,* although such data are familiar to me. One could document decline in cardiovascular mortality (not necessarily in morbidity) but also make reference to AIDS, chronic pain, herpes, and violence. The thesis that deviance is "normal" (Antonovsky, 1979, p. 15) would remain.

1979, pp. 36–37) I briefly considered the "other side of the coin" question. Let me now turn to a considerably more elaborate set of arguments that have fortified my commitment to the salutogenic orientation. I would point to six aspects of the issue.

Continuum or Dichotomy?

The first aspect may well lead to the alienation of some who have responded most enthusiastically to *Health, Stress, and Coping,* because they read into it what they wished to and did not see what I intended to say. Surely in part the fault is mine, for here and there as I reread what I wrote, and occasionally listen to what I say in talking about the book, I find references to putting the salutogenic question as "How come anyone ever 'makes it'?" or "How can we explain health rather than disease?" Given the (in my view, most welcome) development of the holistic health movement and the increased emphasis on health maintenance and promotion, my putting the question in this way has led to my being perceived as part of that camp. Flattering as this may be, it is unmerited, for it derives from a misinterpretation.

By and large, the health-oriented emphasis, no less than the traditional medical disease-oriented position, is based on the perception of a fundamental dichotomy between healthy and sick people. Those who adopt the former position would allocate attention and resources to keeping people healthy, preventing them from becoming sick. Those who take the latter stance focus on treating those who are sick, seeking to prevent death and chronicity and to restore health if possible. The former argue that it is much more efficient to invest resources in health maintenance; the latter respond—to the extent that there is any dialogue—that no humane society can disregard the present suffering of those who are sick.

What both disregard is that the shared underlying dichotomous premise is a less powerful way of looking at matters than what I have called the health ease/dis-ease continuum. We are all terminal cases. And we all are, so long as there is a breath of life in us, in some measure healthy. The salutogenic orientation pro-

poses that we study the location of each person, at any time, on this continuum. Epidemiological study would focus on the distribution of groups on the continuum. The clinician would seek to contribute to movement of individual persons for whom he or she is responsible toward the health pole.

Coser's (1963) study of two hospital wards exemplifies the implications of adopting one or the other approach. In both cases the patients were extremely ill, quite close to the sick pole of the continuum. But in one ward, staff labeled the patients as terminal cases, concentrating on neatness, cleanliness, order, and comfort (in that order). In the other, the unit was formally defined as a rehabilitation center. As one of sociology's classic dictums has it, "If men define situations as real, they are real in their consequences." Since the study focused on the problem of staff alienation, its major finding was that the "terminal ward" nurses were far more alienated. We are not provided with any information about the consequences for the health status of the patients. I would, however, be surprised if differences in use of pain medication, death rates, and perhaps even "recovery" were not apparent.

The Story or the Disease?

Adoption of the dichotomous mode of thinking tends to lead inexorably to a narrow focus on "the coronary in 504," in the familiar language of house staff. The focus is narrow in two senses. First, attention is given to the pathology, not to the human being who has a particular medical problem. Conceivably this approach is justified and powerful in acute medical emergencies, so beloved of TV dramas. But in most cases, to be blind to the sickness of the person, to his total life situation, to his suffering, is not only inhumane; it leads to a failure to understand the etiology of the person's state of health. Second, the pathogenicist becomes a narrow specialist in one particular disease, rather than gaining an understanding of dis-ease, not to speak of health ease. He may live, eat, breathe, and dream of that disease; he learns nothing, reads nothing, and talks of nothing but that disease. There is neither personal nor structured

communication between the cancer expert and the coronary disease expert. That both deal with phenomena that have a common name—*disease*—and therefore must have something in common is disregarded.

I would make it clear that my concern here is not with the question of humane sensitivity. The pathogenically oriented clinician is as likely to be compassionate as is the salutogenically oriented one. The former, however, is bound to miss data of great etiological significance that become available to the latter, who investigates the "story" of the person. In the same way, the researcher, looking for the specific germ that causes the disease, is prevented from learning from advances in other fields. And once again, those who focus on prevention of specific diseases are subject to the same blinders.

The concept of the story is taken from Cassell's profound analysis (1979) of the medical concept of causality. In it he tells of the elderly patient hospitalized for a serious, advanced problem of the knee. Symptom identification, diagnostic hypothesis, confirmation, and institution of appropriate therapy followed in short order, leading to discharge—and ensuring rehospitalization in short order. For what was learned only by accident by a medical student was that this elderly gentleman had been widowed a year before, had moved to this strange city where he had no friends or relatives, had only a small income, and lived in a fourth-floor walk-up. The knee was very real and very serious. This was what had led to hospitalization this time; the next time, it could have been malnutrition, pneumonia, or depression and suicide attempt. The salutogenic approach does not guarantee problem solution of the complex circularities of people's lives, but at the very least it leads to a more profound understanding and knowledge, a prerequisite for moving toward the healthy end of the continuum.

Salutary Factors and Risk Factors

The pathogenic orientation is committed to the proposition that diseases are caused by bugs—microbiological, psychosocial, chemical, or what have you—singly, as in the germ the-

ory, or multifactorially, as the more sophisticated have it. The Type A behavior pattern contributes to coronary heart disease, learned helplessness to depression, or internalization of hostility to cancer, to take some examples now current. Hypotheses are formulated not only with respect to specific diseases, as noted above, but overwhelmingly in terms of risk factors. The risk factor, or the stressor, has captured the imagination. Consider, for example, the overwhelming investment in the Holmes-Rahe (1967) life events scale in the field of stress research.

The salutogenic orientation, in contrast, leads one to think in terms of factors promoting movement toward the healthy end of the continuum. The point is that these are often *different* factors. One moves toward it not only by being low on risk factor A, B, or C. In the field of stress research, the idea is best understood if one contrasts the focus on stressors to the concern with coping mechanisms. But even in this field, the question most often asked is how one copes with a given stressor, rather than what factors not only act as buffers but contribute directly to health. In the field of industrial sociology, it has long been known that there are some factors that contribute to work satisfaction and others—different ones—that contribute to dissatisfaction. The question one asks—about movement toward pathology or movement toward health—determines the hypotheses.

Let me give a few examples. Dirks, Schraa, and Robinson (1982) formulated hypotheses predicting which of 587 discharged severe, chronic asthma patients would be rehospitalized within six months. The data confirm their idea that panic/fear responses on the MMPI and symptom mislabeling are good predictors. Their concern, then, is with the maladaptive, pathological outcome. But 68 percent of the patients were not rehospitalized. Had the researchers been salutogenically oriented, they might have sought hypotheses about strengths, predicting *non*-rehospitalization among this severely ill population.

Similarly, Zimmerman and Hartley (1982) identified the 14 percent of women employed in four companies who had high blood pressure. They obtained data on forty variables, al-

most all of which express hypotheses predicting to hypertension. Almost accidentally we learn that only 6 percent of the workers in the two unionized plants were hypertensive, compared with 25 percent in the nonunionized plants. We have, of course, no way of knowing whether the former "compensated" by being depressive instead of hypertensive. This could only be learned from a study that dealt with overall health. We cannot ask the authors to forget their interest in hypertension. But we can suggest to them that if they had formulated hypotheses predicting to normotension, they might have learned a great deal.

During the past few years, when I have urged the salutogenic approach to colleagues, I have been amazed and delighted at the fruitfulness of the hypotheses generated when one asks, "What predicts to a *good* outcome?" True, I am doubly pleased when the sense of coherence (SOC) is seen as relevant to the question. But even when it is not, consideration of salutary factors has inevitably led to promising directions. My experience has largely been with research colleagues; my hunch is that the approach would be no less fruitful in the hands of clinicians.

The Stressor: Pathogenic, Neutral, or Salutogenic?

Implicit in the above is that the pathogenic orientation invariably sees stressors as pathogenic, as risk factors, which at best can be reduced, inoculated against, or buffered. True, some stressors—for example, the ax descending on one's head—are very predictably destructive of health, irrespective of one's coping resources. But the assumption that "stressors are inherently bad" is tenuous.

After discussing the ubiquity of stressors at length (1979, pp. 93-96), I made clear why I thought that this assumption was misleading. I called attention to Selye's suggestion about eustressors and the concept of potentiation, in the context of my distinction between tension and stress. The point, then, need not be elaborated here, although I would note that, judging from responses to the book, relatively few people, to my

regret, have paid attention to what I regard as an important and fruitful distinction. The issue is raised in the present context—the arguments for the importance of the salutogenic orientation—because it is indeed an understanding that flows from this orientation. Thinking pathogenically, one conducts studies and designs experiments testing hypotheses that stressors are pathogenic (sometimes adding "unless buffered"). Thinking salutogenically opens the way for studying the consequences of demands made on the organism to which there are no readily available or automatic adaptive responses—a generally accepted definition of a stressor—when there is good theoretical reason to predict positive health consequences.

It would, of course, be most valuable were studies designed in advance in these terms. But at the very least, surely researchers should be open to looking at their results with such a possibility in mind. Alas, this is seldom so, even when the data stare one in one's face. The illustration about shocked rats given at the opening of this chapter provides a case in point. My recalculation (1979, p. 167) of the data in the well-known Nuckolls, Cassel, and Kaplan (1972) study of complications in pregnancy suggests that "being high on stressors, given high social supports, is salutary," a point not noted by the authors. *Advances,* the journal of the Institute for the Advancement of Health, recently made its initial appearance and represents an outstanding scientific effort to further the understanding of mind/body interactions and their effects on health and disease. Each issue contains abstracts of more than a score of recently published studies. One reviews these in vain for more than one or two references to terms like *eustressor, potentiation,* or *activation response. Moderators, buffers, mitigators,* yes; but the stressor, the disturber of homeostasis, continues to be seen as inevitably unfortunate. True, Cannon, Selye, and many others called attention to the functional character of the stress response—that is, to mobilize the organism. But always, the stressor itself, though it may be prevented from causing damaging consequences, is unfortunate. Salutogenesis opens the way, as it were, for the rehabilitation of stressors in human life.

Adaptation or the Magic Bullet?

The second argument for the power of the salutogenic orientation focused on the question of etiology and diagnosis. By understanding the story of the person—note, not the patient, for salutogenesis constrains us to look at people on a continuum—rather than the germ or germs that caused a particular disease, I proposed, we can arrive at a more adequate diagnosis. I turn now to the implications of the two orientations for therapy. The pathogenic orientation leads researchers, practitioners, and policy makers to concentrate on the specific disease diagnosed or on prevention of specific diseases, particularly among high-risk individuals or groups. On the social level, it leads to mounting wars against disease X, Y, or Z. The ambience that comes into being is that which Dubos (1960) so cogently warned against, "the mirage of health." Salutogenesis, more pessimistic, leads us to focus on the overall problem of active adaptation to an inevitably stressor-rich environment. The key term becomes *negative entropy,* leading to a search for useful inputs into the social system, the physical environment, the organism, and lower-order systems down to the cellular level to counteract the immanent trend toward entropy. Not accidentally and of considerable import, it opens the way for cooperation between biological and psychosocial scientists. When one searches for cures for particular diseases, one tends to stay within the confines of pathophysiology. When one searches for effective adaptation of the organism, one can move beyond post-Cartesian dualism and look to imagination, love, play, meaning, will, and the social structures that foster them. Or, as I would prefer to put it, to theories of successful coping.

Perhaps the best, and certainly the most dramatic, example I can give of this difference between the two orientations is, for this once, not in reference to scientific studies but to a personal experience. In November 1982 I was teaching interviewing to beginning medical students in Israel. The setting was a well-baby clinic, the reluctant interviewee a twenty-six-year-old mother who had brought her three-week-old infant, while her

fourteen-month-old little girl trailed behind. Her reluctance, the nurse told us, was understandable: her four older children waited at home. After a few words about the uneventful delivery, she remained quiet in response to the student's next question, which referred to the presence of her husband at the delivery. Fortunately, he had learned how to wait patiently and use nonverbal expressions of concern. The woman then told him, in almost inaudible words, that her husband had been killed in the fighting in Lebanon some four months earlier. The rapport had been created, and she began to speak, going on for nearly an hour. At first, the picture that emerged was the one we had expected. The terrible blow could not be recalled. But the Rehabilitation Division of the Ministry of Defense had already arranged her move to a more spacious apartment, an adequate pension, financial assurance of her children's education, and the like. The diagnosis had been made, the therapy designed.

But the student, who had learned Cassell's concept of the story, had been taught to get a picture of the person's life, and patiently elicited what no one else had been successful in learning. As a child, Mrs. R. had been raped by her father. Pregnant at sixteen, she had had no alternative but to marry the man whose death had made her a war heroine. She was often beaten, related to as a baby-making machine, and no more than occasionally provided for financially. The death had been the most fortunate thing that had ever happened to her. For the first time in her life, she now had the possibility—no more than that—of a decent human existence. Clearly, her strength was inadequate to transform this into a reality. Solution of financial problems, the assigned therapy, was necessary but far from sufficient. It was a magic bullet, not an adequate basis for active adaptation.

At this point, a parenthetical but crucial point is in order. I am fully aware that one implication of the salutogenic approach for the institutional organization of a society's health care system is the endless expansion of social control in the hands of those who dominate this system, a danger that Zola (1972) and others have called to our attention. As a behavioral science teacher of medical students, I have long been sensitive

to the dangers of having them learn that just about everything in a patient's life is relevant to their functioning as physicians. I have no easy out in dealing with this intractable contradiction. The direction of the answer, to the extent that there is one, lies precisely in the question of who dominates the system, on the institutional as well as on the immediate, interpersonal level of the doctor/patient relationship. But, important as the issue is, I can do no more here than call attention to its existence.

The "Deviant Case" or Hypothesis Confirmation?

Finally, I would call attention to an unfortunate by-product of scientific methodology that is ignored by the pathogenic orientation. The good scientist formulates a hypothesis, when there is a basis for doing so, rigorously submits it to testing, and rejoices when it is supported in repeated testing. Having studied, repeatedly and in diverse ways, the relations between smoking and lung cancer, or race and hypertension, and having met the criterion of biological plausibility, we can speak of causality, identify high-risk groups, and propose solutions. Perhaps the most fruitful hypothesis of this sort in the psychosocial field is that linking the Type A behavior pattern to coronary disease.

And yet, no matter that the statistical relationship between risk factor and health outcome is shown by the computer printout to be $p = .0000$, only part of the variance is accounted for. The pathogenicist is content with hypothesis confirmation; the salutogenicist, without disdaining the importance of what has been learned, looks at the deviant case. Who are the blacks who do not have hypertension? Who are the Type A's who do not get coronary disease? Who are the smokers who do not get lung cancer?

The study by Shekelle and others (1981) is a classic pathogenic paper. I cite it precisely because I regard it as an important study, although further data are required before we can comfortably and fully accept its hypothesis. Depression, as measured by the Minnesota Multiphasic Personality Inventory, they proposed, is predictive of cancer mortality. Using data from a

longitudinal, prospective seventeen-year study, they found that the subjects who had been classified as depressed were more than twice as likely to die of cancer as the nondepressed. The relative risks of the two groups are significantly different. But we are talking of cancer mortality of 7.1 and 3.4 percent, respectively. Of the 379 men defined as depressed, the great majority did not die of cancer or other causes. Thus the deviant case, as is so often true, is in the great majority. What protected him? Once we pose this question, I suggest, we can begin to generate hypotheses to explain salutogenesis and develop methodologies to test these hypotheses. Content with the most important confirmation of our initial hypothesis, however, we usually do not move ahead.

Pathogenesis and Salutogenesis: A Complementary Relationship

I can now summarize what is meant by the salutogenic orientation. It derives from the fundamental postulate that heterostasis, senescence, and increasing entropy are core characteristics of all living organisms. Thus: (1) It leads us to reject the dichotomous classification of people as healthy or diseased in favor of their location on a multidimensional health ease/disease continuum. (2) It keeps us from falling into the trap of focusing solely on the etiology of a given disease rather than always searching for the total story of a human being, including his or her sickness. (3) Instead of asking, "What caused (or will cause, if one is prevention-oriented) a person to fall prey to a given disease?"—that is, instead of focusing on stressors—we are enjoined to ask, "What are the factors involved in at least maintaining one's location on the continuum or moving toward the healthy pole?"; that is, we come to focus on coping resources. (4) Stressors come to be seen not as a dirty word, always to be reduced, but as omnipresent. Moreover, the consequences of stressors are viewed not as necessarily pathological but as quite possibly salutary, contingent on the character of the stressor and the successful resolution of tension. (5) In contradistinction to the search for magic-bullet solutions, we are urged to

search for all sources of negative entropy that may facilitate active adaptation of the organism to the environment. (6) Finally, the salutogenic orientation takes us beyond the data obtained from pathogenic inquiry by always looking at the deviant cases found in such inquiry.

I trust that this discussion and the examples given in each case have, at the very least, given food for thought to researcher and practitioner alike and indicated the basis for my contention that the salutogenic orientation is not just the other side of the coin and does meet the three tests proposed (looking at data in a different way; asking different questions; suggesting alternative hypotheses). I do think that the pathogenic orientation, which underlies many advances in knowledge and practice, cannot explain much of the data we have. Further, its near-total domination of our thinking has many limiting consequences. Having thus taken an unequivocal position, I would make it clear that I by no means advocate abandonment of the pathogenic orientation. It is important, for example, that work on the theory, prevention, and therapy of cancer continue; that the pathogenic consequences of stressors be considered; that we look for magic bullets. My plea, rather, is that we see the two orientations as complementary and that there be a more balanced allocation of intellectual and material resources than presently exists.

If I were to sum up the most important consequence of the salutogenic orientation in one sentence, I would say: Thinking salutogenically not only opens the way for, but compels us to devote our energies to, the formulation and advance of a theory of coping. Having adopted this orientation, I was led in due course to formulating the concept of the sense of coherence as the core of the answer to the salutogenic question. I am persuaded that this answer has merit. But, as in all of science, the question is always more important than a given answer. It is to my present understanding of the SOC concept and to other elements of the salutogenic model that I now turn.

Before doing so, however, I would clarify one matter. I have earlier referred to my pessimistic bent. The underlying premise of salutogenesis is indeed pessimistic, yet paradoxical-

ly, the vista it opens up, though sans illusion, is far from dark. It has been better put than I could have done, in a book by Fries and Crapo (1981). Readers of *Health, Stress, and Coping* may recall a reference to Oliver Wendell Holmes's "wonderful one-hoss shay" (Antonovsky, 1979, p. 195). I had been tempted to include all of the poem from which this is taken but decided not to, mistakenly assuming that most of my readers recalled the poem from their childhood schooldays. Fries and Crapo, I was delighted to see, gave in to the temptation. Thus their very serious biological study is suffused with a spirit much in accord with salutogenesis. In brief, they argue that, despite the fixed age span of the human organism, despite the "spontaneous molecular degradations inherent in the finite rate of entropy production in metabolizing systems" (p. 39) that underlie the inevitable processes of aging, a "rectangularization" of the human curve of survival is well under way. Thus, with appropriate social and individual behavioral measures, people, like Holmes's deacon's carriage, can live lives of vitality till very close to the end of their biologically allotted span of years.

No matter that I do not share Fries and Crapo's optimistic reading of the data and am more sensitive than they to possibilities of reversals in the decline in secular trends of morbidity and mortality. What we share, I believe, is that if we keep our eyes wide open to reality, the way is open to increasing our understanding of coping. Their solutions are not mine. But again, it is the question that is important.

2

The "Sense of Coherence" Concept

If, in emphasizing the importance of the salutogenic question, I have seemed diffident about my particular answer to the question, this has been unintentional. I am quite persuaded, until data compel me to modify or change my position, that the sense of coherence is a very major determinant of maintaining one's position on the health ease/dis-ease continuum and of movement toward the healthy end. True, neither I nor others have as yet directly submitted the model to empirical test, a subject to which I shall return. At the same time, both related empirical studies and the responses of many colleagues to the book that appeared in 1979 have reinforced my conviction. Over and over again, I have been told, "Your sense of coherence theory makes sense."

Then why on earth has it not yet been tested? I must admit that part of the answer lies in my envy of the division of labor found in physics. I have been tempted to say, "I am the theoretician; now you experimentalists do the testing." (Which, of course, would allow me to say, should ugly facts not conform to theory, that the test was not well done.) And part lies in the burden of work in a consuming medical school in Beersheba. But the major part of the answer is to be located in the sense that before I could embark on empirical work, there were several crucial conceptual issues to be clarified. That this has taken me longer than expected is hardly surprising. It is to the conceptual progress that I believe has been made that I now turn. Five issues will be discussed: (1) the three now-identified components of the SOC, (2) the relations among the three com-

ponents, (3) the concept of boundaries, (4) the strong and the rigid SOC, and (5) stressors as generalized resistance deficits.

Comprehensibility, Manageability, and Meaningfulness

Consideration of the definition of the SOC (1979, p. 123) and the discussion that follows it highlights the concept's essentially cognitive character as originally conceived. Influenced by information theory, I divided the perception of stimuli into seeing them as information or noise. I wrote of a "way of seeing the world . . . as predictable and comprehensible," of "form and structure," of "lawfulness."

Although the concept was tentatively satisfying, I did not feel ready to operationalize it without further clarification. A series of in-depth, largely unstructured interviews with a wide variety of persons, fifty-one in number, was initiated. All had two characteristics in common: they had experienced major trauma, and they were reported to be coping amazingly well. The question that guided the interviews was how they saw their lives. Analysis of the protocols led us to classify sixteen persons as having a strong SOC and eleven as being at the other end of the scale.

I then searched the protocols of these two extreme groups, looking for themes consistently found in one group and markedly absent in the other. Repeatedly, I was able to identify three such themes, which I now see as the three core components of the SOC. I call these comprehensibility, manageability, and meaningfulness. The persons we had identified as having a strong SOC were high on these components, in stark contrast to those we had identified as having a weak SOC. The details of the pilot study and quotations from the interviews are given in Chapter Four.

Comprehensibility is indeed the well-defined, explicit core of the original definition. It refers to the extent to which one perceives the stimuli that confront one, deriving from the internal[1] and external environments, as making cognitive sense,

[1] As a sociologist, I have been pleased by the attention given in the stress literature to both the micro and the macro social-environment

as information that is ordered, consistent, structured, and clear, rather than as noise—chaotic, disordered, random, accidental, inexplicable. The person high on the sense of comprehensibility expects that stimuli he or she will encounter in the future will be predictable or, at the very least, when they do come as surprises, that they will be orderable and explicable. It is important to note that nothing is implied about the desirability of stimuli. Death, war, and failure can occur, but such a person can make sense of them.

Given the original definition as the basis for classifying respondents, it came as no surprise that the comprehensibility theme was so clearly identified. The second theme was at least foreshadowed in the phrase "a high probability that things will work out as well as can reasonably be expected" (1979, p. 123). Yet the emphasis remained cognitive, expressed in the phrase "a solid capacity to judge reality" (p. 127), rather than in the more emotional, confidence-expressing term "things will work out." But in the interviews, the most striking theme that emerged, at least in terms of frequency, sounded consistently by those who had been classified as having a weak SOC and never noted by the strong-SOC respondents, was that of the sad sack, the *shlimazl* (the one on whom the soup gets spilled), or, in the occasional extreme version, a touch of paranoia. Things happened to one, invariably unfortunate things, and this will continue to be the case in life. At the other extreme, events in life are seen as experiences that can be coped with, challenges that can be met. At worst—and recall that these are people who have undergone very difficult experiences—the event or its consequences are bearable.

I came to call this second component *manageability* and formally define it as the extent to which one perceives that resources are at one's disposal which are adequate to meet the demands posed by the stimuli that bombard one. "At one's disposal" may refer to resources under one's own control or to resources controlled by legitimate others—one's spouse, friends,

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sources of stressors and coping resources. Yet I have been amazed, in recent years, that many seem to have forgotten that a man by the name of Freud ever lived and that internal stimuli and conflict are omnipresent.

colleagues, God, history, the party leader, a physician—whom one feels one can count on, whom one trusts. To the extent that one has a high sense of manageability, one will not feel victimized by events or feel that life treats one unfairly. Untoward things do happen in life, but when they do occur, one will be able to cope and not grieve endlessly.

The third component, *meaningfulness,* was also foreshadowed in the original discussion, when I warned against "too great an emphasis on the cognitive aspect of the sense of coherence" (1979, p. 127) and referred to the importance of being involved "as a participant in the processes shaping one's destiny as well as one's daily experience" (p. 128). But it was not until the interview protocols were studied that the significance of this component became apparent. I now see it as representing the motivational element. Those classified as having a strong SOC always spoke of areas of life that were important to them, that they very much cared about, that "made sense" to them in the emotional and not only the cognitive meaning of the term. Events that went on in these areas tended to be viewed as challenges, as worthy of emotional investment and commitment. Frankl's (1975) work had come to my attention only after my book was written and undoubtedly influenced the choice of the name of this component. By contrast, those whom we had classified as having a weak SOC, at the extreme, gave little indication that anything in life seemed to matter particularly to them. Short of this, they grudgingly granted that this or that life area was important, but only in the sense that it imposed wearisome burdens, unwelcome demands they would much rather do without. Formally, the meaningfulness component of the SOC refers to the extent to which one feels that life makes sense emotionally, that at least some of the problems and demands posed by living are worth investing energy in, are worthy of commitment and engagement, are challenges that are "welcome" rather than burdens that one would much rather do without. This does not mean that someone high on meaningfulness is happy about the death of a loved one, the need to undergo a serious operation, or being fired. But when these unhappy experiences are imposed on such a person, he or she will willingly take up the chal-

lenge, will be determined to seek meaning in it, and will do his or her best to overcome it with dignity.

I can now formally redefine the SOC as follows:

> *The sense of coherence is a global orientation that expresses the extent to which one has a pervasive, enduring though dynamic feeling of confidence that (1) the stimuli deriving from one's internal and external environments in the course of living are structured, predictable, and explicable; (2) the resources are available to one to meet the demands posed by these stimuli; and (3) these demands are challenges, worthy of investment and engagement.*

Relations Among the Three Components

Specification of the three components of the SOC raises a problem not dealt with in my 1979 book, where the concept was seen as a unitary one—namely, how are they interrelated? In discussing the links between generalized resistance resources (GRRs) and the SOC, I had defined the former as phenomena that provide one with sets of life experiences "characterized by consistency, participation in shaping outcome, and an underload-overload balance" (p. 187). Such repeated life experiences build up the SOC. It might be noted that had I given adequate thought to these types of experiences, I would earlier have seen that they are closely linked, respectively, to comprehensibility, meaningfulness, and manageability. The implicit assumption was that a GRR necessarily provided all three types of experiences.

By and large I suggest that this is indeed the case, and hence there would be good theoretical reason for expecting the three components to be inextricably intertwined. And indeed empirically, in the national survey conducted in Israel referred to below, the intercorrelations among the components were very high. But they were not perfect. And indeed, one can conceive of situations in which a person's experiences will lead her or him to be high on one component and low on another. This

might even be true not only in very specific, temporary situations but in a general life situation. For example, one might find oneself in a social role that, although it provides life experiences of consistency and a reasonable underload-overload balance, does not provide the experience of participation in shaping outcome because one's potentials are ignored. This is the classic situation of the contemporary middle-class housewife. Being in such a role, and having these kinds of experiences, would lead one to score high on the comprehensibility and manageability components of the SOC, but to be low on meaningfulness.

Let us, then, consider this question by thinking of the eight possible types that emerge when we dichotomize each of the three components (see Table 1). The two types (1 and 8)

Table 1. Dynamic Interrelatedness of the SOC Components.

	Component			
Type	*Comprehensibility*	*Manageability*	*Meaningfulness*	*Prediction*
1	High	High	High	Stable
2	Low	High	High	Rare
3	High	Low	High	Pressure to move up
4	Low	Low	High	Pressure to move up
5	High	High	Low	Pressure to move down
6	High	Low	Low	Pressure to move down
7	Low	High	Low	Rare
8	Low	Low	Low	Stable

who are high or low on all three pose no problems. We can anticipate that theirs is a quite stable pattern, viewing the world as highly coherent or incoherent. But what of the other combinations? Two others (2 and 7), I suggest, will rarely be found: those that combine being low on comprehensibility and being high on manageability. High manageability, it seems clear to me, is strongly contingent on high comprehensibility. A requirement for the sense that resources are available to one to meet demands is that one have a clear picture of what those demands are. Living in a world one thinks is chaotic and unpredictable makes it most difficult to think that one can manage well.

Being high on comprehensibility, however, does not necessarily mean that one believes one can manage well. This brings us to types 3 and 6. I regard these as being inherently unstable. High comprehensibility combined with low manageability leads to strong pressure to change. The direction of movement will be determined by the sense of meaningfulness. If one strongly cares and believes that one understands the problems confronting one, there will be a powerful motivation to seek out resources, being loath to give up the search until they are found. Without any such motivation, however, one ceases to respond to stimuli, and the world soon becomes incomprehensible; nor is one impelled to search for resources. The notation for these two types would be as follows:

High C + low MA + high ME ⟶ high C + high MA + high ME
High C + low MA + low ME ⟶ low C + low MA + low ME

The centrality of meaningfulness is likewise seen in considering the two final types. Even if one is high on both comprehensibility and manageability, knowing the rules of the game and believing that the resources are at one's disposal to play successfully, without caring (type 5) one soon comes to fall behind in one's understanding and lose one's command of resources. By contrast, one low on comprehensibility and manageability but high on meaningfulness (type 4) is perhaps the most interesting case of all. Such a person is likely to show a profound spirit, deeply engaged in the search for understanding and resources. There is no guarantee of success, but there is a chance. This is precisely the story of Viktor Frankl and an amazing number of others, though not most, in Auschwitz and the Warsaw ghetto. This is also the story of many, though not most, in Synanon (Yablonsky, 1965; Antze, 1979). The notation for these two types would be as follows:

High C + high MA + low ME ⟶ low C + low MA + low ME
Low C + low MA + high ME ⟶ ?

If there is merit to this little game, it suggests that the

three components of the SOC are, though all necessary, of unequal centrality. The motivational component of meaningfulness seems most crucial. Without it, being high on comprehensibility or manageability is likely to be temporary. For the committed and caring person, the way is open to gaining understanding and resources. Comprehensibility seems next in importance, for high manageability is contingent on understanding. This does not mean that manageability is unimportant. If one does not believe that resources are at one's disposal, meaningfulness will be lessened and coping efforts weakened. Successful coping, then, depends on the SOC as a whole.

Boundaries

Chapter 5 of *Health, Stress, and Coping,* by title and repeated reference, refers to the SOC as a "generalized, long-lasting way of seeing the world and one's life in it." But in our depth interviews, we found, over and over again, persons whom we classified as having a strong SOC who did not see their entire objective world as coherent. It became clear that all of us set boundaries. What goes on outside these, whether comprehensible, manageable, and meaningful or not, simply doesn't matter much, is not of importance to us. For one person the scope may be very broad; for another, relatively narrow. The boundary notion suggests that one need not necessarily feel that all of life is highly comprehensible, manageable, and meaningful in order to have a strong SOC. Quite conceivably, people might feel that they have little investment in national or international politics, are tone-deaf with regard to art or religion, have little competence in manual or cognitive skills, little concern for local volunteer groups or trade union activity, and so on, and yet have a strong SOC.

The crucial issue is whether there are spheres of life that are of subjective importance to the person. If not, then, as suggested by the discussion above on relations among the components of the SOC, there is little likelihood of having a strong SOC. If there are, then the question arises whether the person sees these important areas as comprehensible, manageable, and meaningful.

Having said this, I must make two further points. First, I do not think it is possible to so narrow the boundaries as to put beyond the pale of significance four spheres—one's inner feelings, one's immediate interpersonal relations, one's major activity, and existential issues (death, inevitable failures, shortcomings, conflict, and isolation)—and yet maintain a strong SOC. Too much of our energies and our selves are inevitably bound up with these spheres to deny that they are significant. If one does so, then by definition one is low on meaningfulness. But if one grants that they are important in one's life, the question still remains whether they are also meaningful, in the sense that they are perceived as challenges worthy of the investment of energy. It should be noted, with respect to one's major activity, that the question is not necessarily one of intrinsic satisfaction (so often the focus of intellectuals). One can find little joy in one's work, in keeping house, in going to school, or in being in the army. But if one is persuaded that the work has meaning because this is how one supports one's loved family, cares for one's children, prepares for a career, or protects one's country, one can still have a strong SOC.

Second, narrowing one's boundaries, particularly by excluding one's relation to the larger social order, does not mean that the real world will not objectively influence one's life. The most apolitical person in the world may be drafted, sent to war, and killed. A lack of interest in whether one's community water supply is fluoridated will not obviate the effect on one's children's teeth. I have intentionally given these two examples that refer to health consequences. No claim is made that the SOC is the only variable that influences one's health.

There is one further implication of the boundary concept to which I would call attention. Pearlin (1980, p. 185) discusses the possibility of relegating life areas to "a marginal place in his life" as a way of avoiding distress.[2] Polanyi, in another context, is cited by Gatlin (1972, p. 109) as referring to "the

[2] Actually, Pearlin's example refers to work. As indicated, I doubt very much that anyone can so easily dismiss what one does for a major part of one's waking hours. What one can do, as suggested, is give it a different meaning. If one fails to do so, one's SOC will be impaired.

principle of boundary control." It may well be that one of the most effective ways a person with a strong SOC maintains her or his view of the world as coherent is to be flexible about the life areas included within the boundaries considered significant. Sensing that the demands in a given area are becoming less comprehensible or manageable, one can, temporarily or permanently, contract the scope of the boundary of concern—always with the proviso that this does not apply to the four crucial spheres mentioned above. And by tentatively, in exploring fashion, and perhaps later permanently, broadening the boundary to include new areas of life, a strong SOC can be reinforced. Research on retirement from work provides a fine example of the possibilities of this two-way flexibility. The strong-SOC person, entering retirement, can phase out his or her involvement in the realm of paid work while becoming engaged in new spheres such as community action or esthetic expression.

The SOC questionnaire, to be discussed below, does not refer to this issue of the flexibility of boundaries. It was designed to be applicable to the life situation of all adults cross-culturally and hence was limited to the four spheres I regard as crucial. It may well be that in future empirical work it would be wise to include a measure of such flexibility.

The Strong and the Rigid SOC

In *Health, Stress, and Coping* (pp. 158-159) I briefly considered the problem of what I called the fake SOC, although a more apt term would be *rigid* or *inauthentic*. I felt intuitively that there had to be some way of distinguishing between the calm confidence of a person with a very strong SOC and the rigidity of the inauthentic SOC. As one who has mostly conducted large-scale survey research, I thought the solution to the problem posed by this distinction was simple: I would eliminate the very high scorers. There was something wrong, I felt, with calling someone who claims to understand almost everything, who thinks that almost all problems have an answer, and for whom doubt is intolerable, a person with a very strong SOC. And indeed, in the several studies thus far conducted using the

SOC questionnaire (see below), 4 to 5 percent of the respondents gave the high-SOC response on almost every item. These could easily be eliminated without damage to the study.

I also had a sneaking hope that such people would "go away." For someone who saw everything as comprehensible, boredom would become a profound stressor, likely to erode the sense of meaningfulness. I thought of Mr. Jones in Conrad's *Victory,* a perfect exemplar of this pattern. When one thinks there are solutions to all problems, reality imposes itself and one is shattered. Adaptation to changing reality is also crippled when there is total libidinal investment in the present reality. This may well be the case, if one follows such people over time. But at any given time, there are people who insist that just about everything is comprehensible, manageable, and meaningful. The basic theoretical problem of distinguishing between strength and rigidity is not solved by the mechanical solution of disregarding the very high scorers. And it is the theoretical, not the technical, problem which interests me. The first clue to a solution of the theoretical problem came from thinking about the data on the health status of groups like the Mormons (see, for example, Lyon and others, 1978). When one is deeply rooted in an institution which has long met the test of survival in history and which constitutes the central source of one's SOC, one is most likely to have a strong rather than a rigid SOC. The answers to new adaptive problems can always be fitted into the old tried and tested framework. By contrast, the lonely individual, or the one attracted to a new, ephemeral gospel that gives one a set of answers which seemingly solve the terrible anxiety of nothingness if only one clings tightly to the life raft, is likely to be drowned by the perpetual waves of life.

This line of thinking, in turn, led to a consideration of Kohut's (1982) distinction between the sense of self and the sense of identity (although Kohut does not use *sense of*). Whereas the former refers to the basic layers of the personality which provide a central purpose, a sense of abiding sameness and continuity, identity refers to the social role complex of the individual. A strong self makes possible a firm identity; but it is not basically dependent on the explicit identity in which at any

one time the self is manifested. Should superior force intervene, one is likely to seek and find alternative identities. Should one find that the specific role complex has become inadequately expressive of the self, one will have the strength to give it up and locate alternative identities. In our terms, then, the person with a strong self and a firm identity will be one with a strong SOC. He or she is likely to be engaged in work and love, to have cathectic investment (to use Freudian terminology), assuming the social structure and cultural context facilitate the identity.

The person with a weak self and a weak identity will, of course, have a weak SOC. But, as Kohut points out, a person with a weak self may, in frenzy, latch on to a given identity in rigid fashion, seeking to allay the terrible anxieties that prey on one precisely because the self is weak. Such a person would have a rigid SOC, whose substantive perceptions of high comprehensibility, manageability, and meaningfulness allow of no substitutions. I can see no way of identifying such people except serious qualitative depth research. (A frightening, though extremely subjective and possibly distorted, picture is given in a very personal account of Jehovah's Witnesses [Harrison, 1978].)

We all know the very religious persons, true believers. Some are hysterically rigid. But many others are calm, quite at peace with themselves, even though they seem to have all the answers. Is there not a paradox here? Are they not likely to have a rigid rather than a strong SOC, apt to crumble when confronted with the need to adapt to new conditions? The theoretical solution I find most enlightening is borrowed from Koestler's (1967) discussion of biological hierarchies—that is, the relations between systems that constitute subsystems of larger systems. His key phrase which identifies the secret of successful adaptation and survival of such hierarchies, and which is later applied to social systems as well, is first found on p. 42: "*fixed rules,* which, however, leave room for *flexible strategies,* guided by *feedback.*" Or, as he puts it in his appendix called "General Properties of Open Hierarchical Systems":

> 3.2 The rules—referred to as the system's *canon*—determine its invariant properties, its structural configuration and/or functional pattern.

> 3.3 While the canon defines the permissible steps in the holon's activity, the strategic selection of the actual step among permissible choices is guided by the contingencies of the environment [p. 342].

The true believer, then, with a strong rather than a rigid SOC, is not at all an automaton. He or she is indeed committed to and guided by fundamental principles, fixed rules. But there can be considerable individual autonomy with regard to the strategies applied in a given environment. When the larger system—in our case, the church, the school of thought, the party—freezes in history, prohibiting such autonomy, disregarding feedback, then indeed the true believer's SOC will be rigid, or else the transformation will not be tolerated.

Gatlin's work (1972), which led me to Koestler, confronted the issue in terms particularly congenial to my own thinking, influenced as it was by information theory. Stored information—as in a very well-organized library, in the image she uses (pp. 48-49)—means lowered entropy (greater order). When new books arrive, that is, when the environment changes, there is an increase in potential information, with a parallel increase in entropy. Gatlin's solution for optimal functioning and survival is the minimax solution of game theory (p. 110), that is, a flexible balance of closedness and openness of the system. The rigid-SOC person holds fast to Koestler's canon, to Gatlin's stored information. The strong-SOC person seeks a balance between rules and strategies, between stored and potential information. There is confidence that sense can be made of the new information. There is little felt danger in seeing the world as a challenge and in being open to feedback.

Stressors as Generalized Resistance Deficits

We now turn to the final issue to be raised with regard to conceptual clarification of the salutogenic model. In the diagram on pages 184–185 of *Health, Stress, and Coping* that summarizes the model, the stressor variable is located off to the side, in keeping with my emphasis on coping resources and the SOC. Defined as "demands to which there are no readily avail-

able or automatic adaptive responses" (p. 72), stressors have as their major consequence the generation of a state of tension. But there were several hints that stressors can also usefully be viewed in a different manner. On page 188, reference is made to cataclysmic stressors, which "bring in their wake a variety of unpredictable experiences. Inevitably, then, they result in a significant weakening of one's sense of coherence." Moreover, on page 119 I had noted that "the absence of some GRRs can become a stressor."

Despite these insights, I had not yet arrived at the way I see the matter now. The same reasoning that was applied to GRRs, namely, that a GRR by definition creates life experiences characterized by consistency, participation in shaping outcome, and an underload-overload balance and thus gives rise to or reinforces a strong SOC, can also be applied to stressors. I propose, then, that we can speak of "major psychosocial generalized resistance resources-resistance deficits" (GRR-RDs) as one unified concept. In each case—wealth, ego strength, cultural stability, and so on—a person can be ranked on a continuum. The higher one is on the continuum, the more likely is it that one will have the kind of life experiences that are conducive to a strong SOC; the lower one is, the more likely is it that the life experiences one undergoes will be conducive to a weak SOC. A stressor, in sum, can be defined as a characteristic that introduces entropy into the system—that is, a life experience characterized by inconsistency, under- or overload, and exclusion from participation in decision making.

The attractiveness of this reconceptualization, I suggest, is not only that it is parsimonious. It gives an added dimension to our understanding of stressors. But if we are to speak fruitfully of GRR-RDs, distinction must be made among three kinds of stressors that have been identified in the literature: chronic stressors, major life events, and acute daily hassles. The three, of course, flow into one another, and sharp boundaries cannot be delineated, but they are nonetheless qualitatively different.

The chronic stressor, much like the GRR, is some life situation, condition, or characteristic that is crucially descriptive of a person's life. It is precisely what Fried (1982) means, I be-

lieve, when he writes of endemic stress, which is defined as "the phenomenon of persisting or increasing scarcity, perduring conditions of loss or deprivation, and continuing experiences of inadequate resources or role opportunities" (p. 6). I suggest that one can ask about any "chronic," that is, enduring, relatively permanent and continuous, phenomenon—one's historical context, culture, group membership, social role, interpersonal situation, temperament, personality—the same crucial question: To what extent does it provide sets of life experiences characterized by being toward one or the other end of the three continua conducive to a strong or weak SOC? If toward the former, the phenomenon is a GRR; if toward the latter, a GRD. But in any case, chronic resources or chronic stressors, built into the life situation of the person, are generalized and long-lasting. They are the primary determinants of one's SOC level.

People also, however, experience major life events that are specifiable in time and space. These are the stressors that have, in the wake of the work of Holmes and Rahe (1967), so much preoccupied stress researchers. I would call these discrete events—death of a family member, divorce, being fired from work, addition of a new family member, outstanding personal achievement, retirement—*stressor life events.* Even when such events are expected and happen "on time," they fit the definition of "no automatic responses" reasonably well. What is important about such an event is not the event itself but the many consequences to which it gives rise. If stressor life situations have negative consequences for the SOC, no such prediction can be made for stressor life events. They, and the chains of events that follow in their wake, produce tension. It is the strength of the SOC of the person experiencing such events that will determine whether the outcomes will be noxious, neutral, or salutary. This process is analyzed in extensive detail in Chapter Six.

The events listed above, taken from Holmes and Rahe's list, are all assigned relatively high "life change unit" scores. But there are many discrete events in our lives that, positive or negative, have been seen as stressors, included in the Holmes/Rahe list or elsewhere, and sometimes (if negative) called "daily hassles." They may meet the criterion of a demand to which there

is no automatic adaptive response—for example, failing a driving test, an unusual compliment or insult from one's boss, a minor accident to one's child, or one's child's success in a school play. But I must confess that these events are of very little interest to me, because I can see no way in which they can have any impact on the SOC or on health status. If, on the one hand, a person is indeed subject to continual and numerous daily hassles (or pleasures), my guess would be that they derive from a more fundamental life situation, a chronic resource or stressor. If, on the other hand, the events are occasional and idiosyncratic, they may truly be disregarded, even though they do require adaptation.

Lazarus, who introduced the concept of daily hassles into stress research, seems ambivalent about the concept. On the one hand, he tends to focus on the proximal, discrete event; on the other, he does include chronic environmental conditions, ongoing worries or concerns, and distressed emotional reactions (Lazarus, 1984a, p. 376). Later in the same paper (p. 379) he comes close to my own position, when he hypothesizes that what may be of most importance are "the powerful hassles that have major significance for a person's long-range values and goals [and that] create a particular pattern of vulnerability."

The methodological implication of this reconceptualization is of considerable significance. The Holmes/Rahe Social Readjustment Rating Scale, as well as the many versions that have since been used, derived from a pathogenic orientation. Stressors were assumed or hypothesized to be bad for the health. Others limited this hypothesis to negative events, exits, or uncontrolled or unexpected events. Common to all these approaches was the failure to specify *why* this should be the case. In proposing the salutogenic model, I focused on GRRs, as defined, which build up a strong SOC, crucial to one's ability to manage tension well. I grudgingly granted that one had to continue to measure stressors but shared in the failure to specify why. Subsuming stressors, and particularly chronic, endemic stressors, under the overarching concept of GRR-RDs provides a theoretical basis for constructing a measurement tool that links the resources

and stressors—would that I could coin a single word!—through the SOC to health outcome.

Let me give one example of how the application of this approach might make a difference in analyzing a significant set of data. The example is taken from the work of a colleague who has made important contributions to the study of stress and health, which will be discussed in the following chapter. Moos and his colleagues in the Social Ecology Laboratory at Stanford University have devoted many years to the study of diverse social environments. In this work, they have identified ten dimensions, in three domains, that can usefully be applied to a fundamental description of many different environments. In a recent study (Billings and Moos, 1982), they applied this approach to the study of work environments. Their research was designed to "focus on the extent to which work and family resources attenuate the relationships between work stressors and individual adjustment" (p. 218).

Four subscales of the Work Environment Scale, measuring high work pressure, high supervisor control, lack of autonomy, and lack of clarity, were combined to provide a composite measure of work stressors. Three other subscales, measuring job involvement, peer cohesion, and supervisor support, were combined to provide a composite measure of work resources. Stressors and resources, then, are conceptually and operationally distinguished, as appropriate to an approach that is generally called the buffering hypothesis. The data do show that, generally, both the resources and the stressors have direct (positive and negative, respectively) effects on personal functioning. Moreover, the resources mediate the impact of work stressors.

But let us examine the two composite independent variables more closely. Are they really conceptually separable? If low autonomy is a stressor, is not high autonomy a resource? Cannot the same be said for low and high clarity, for high and low control? (The fourth subscale, work pressure, is more problematic, for it is not inherently either stressor or resource.) If high involvement is a resource, is not low involvement a stressor? Cannot the same be said for high and low peer cohesion, for high and low supervisor support?

My concern at this point is not to consider the basis for selection of Moos's ten dimensions. There is, I believe, a high degree of at least compatibility between his approach and that of the SOC, as I shall try to show below. Instead, I have here focused on the possibility of conceptual enrichment that would derive from integrating the stressor and resource concepts. Whether an analysis using one unified index would indeed provide a more adequate understanding of social reality remains to be seen. The effort, it seems to me, is worthwhile. It might be noted that Moos himself, in a later paper (1984, p. 7), makes the same point, when he writes: "We identified orientations toward cohesion and independence as two of the most important social-environmental resources. . . . Conversely . . . lack of emphasis on these factors is a significant source of stress."

3

Similarities of the Concept to Other Views of Health

My intellectual debts to many colleagues are clearly specified throughout *Health, Stress, and Coping.* Although my own research over many years, at least in retrospect, showed a fairly direct line that ultimately led to the salutogenic model, I could not have developed this model had I not learned much from Selye, Dubos, Holmes and Rahe, Kohn, Cassel, and many others. Nonetheless, completing the book left me not only with a sense of exhilaration but also with a sense of relative isolation. In posing the question of salutogenesis, I had detached myself from my own work as well as from the work of just about everyone else. With the exception of a few workers in the early fifties in the field of child development who focused on "mental health" (which usually turned out to be coextensive with one's own values), everyone focused on the need to explain pathology. Further, the sense of coherence answer to the salutogenic question intensified the feeling of isolation. The study of social supports was coming into vogue at the time. But, by and large, social support was regarded as an intervening variable, a buffer against life events in mitigating illness outcome. Alternatively, the lack of social support was seen as pathogenic. None sought an integrated answer that could explain location on the health ease/dis-ease continuum.

Now, six years later, I no longer feel alone. My question is being asked increasingly; serious searches for answers, at least in part congruent with the SOC concept, are being undertaken. This is not to say that the salutogenic model has come to domi-

nate research and thinking in health/illness social sciences. No such danger. More and more, however, elements, variants, and alternatives have surfaced. The evidence lies not only in the modest, academic best-seller sales of the book, in the invitations I have received to speak and to write, and in the audience response to what I have had to say. More important is the serious published research of colleagues. It is to a consideration of this work that I now turn, both to convergence and to discrepancy and disagreement.

Having broken what I believe to be new ground, I am subject to a powerful temptation to see echoes of my ideas everywhere. Thus, reading Erikson's "re-view of the *completed* life cycle" (1982), I was surprised and pleased to encounter the following sentence in his discussion of integrity, which he sees as the dominant syntonic trait in the last stage of life. "This in its simplest meaning," he writes (pp. 64–65), "is, of course, a sense of *coherence* and *wholeness* that is, no doubt, at supreme risk under such terminal conditions as include a *loss of linkages* in all three organizing processes: in the Soma . . . in the Psyche . . . and in the Ethos, the threat of a sudden and nearly total loss of responsible function in generative interplay" (italics in original). I do not know whether Erikson borrowed the phrase "sense of coherence" from me. Yet his discussion of integrity, in which he uses phrases like "a tendency to keep things together" and "a comradeship with the ordering ways of distant times," surely has much in common with my formulation, including the similarity between what I call a rigid SOC and what Erikson calls "pseudointegration as a defence against lurking despair."

Similarly, a bell is rung when I read in Cassell (1976, p. 35): "As Levi-Strauss has pointed out, normal thought continually strives to *understand* the universe even though its dynamics cannot be *controlled* and events refuse to reveal their *significance*" (italics mine). What closer reference can there be to comprehensibility, manageability, and meaningfulness than is contained in this sentence? But I must resist the temptation, even when I am persuaded that we are talking the same language. I will, therefore, limit my discussion of convergences to the work of a few persons who have written at some length and whose ideas are clearly spelled out and in considerable compati-

bility with mine. I do so in the hope that the reader, in his or her own thinking and research, will join what I see as a promising groundswell.

Hardiness

It is most appropriate to initiate this discussion by considering the work of Suzanne Kobasa, developed out of Maddi's existential theory of personality. In late 1981 a doctoral student asked me how the SOC concept linked to Kobasa's hardiness concept. I could only reply that I had no idea, and turned to her first two papers reporting her research. In January 1979 (thus she could not have read my book), I was delighted to find, she had defined her problem clearly (Kobasa, 1979, p. 2): "The presence of subjects with high stress scores who are not getting sick . . . [has] been overlooked in the popular and professional literature on stress and illness." In this and a series of subsequent papers, Kobasa and her colleagues have continued to focus on the salutogenic question, develop the concept of hardiness, and submit it to empirical test.

Kobasa sees her concept of personality-based hardiness as a composite of three inextricably intertwined components: commitment, control, and challenge. In her own terms, these are defined as follows:

Commitment

- Persons high in commitment tend to involve themselves in whatever they are doing, rather than perform in an alienated, perfunctory manner [Kobasa and Maddi, 1982, p. 1].
- Commitment is the ability to believe in the truth, importance, and interest value of who one is and what one is doing . . . and thereby the tendency to involve oneself fully in the many situations of life, including work, family, interpersonal relationships, and social institutions . . . an overall sense of purpose [Kobasa, 1982b, p. 6].

Low commitment, as suggested in the first definition, is understood as alienation. (Considerably before *salutogenesis*

was coined, we had suggested that commitment and alienation formed a continuum, urging that the former end be studied. See Antonovsky and Antonovsky, 1974.) And indeed, Kobasa's operational measure of commitment consists of eighteen alienation items, all negatively keyed, half of which relate to alienation from work and half to alienation from self. The scale asks for degree of agreement with items like:

- I wonder why I work at all.
- Most of life is wasted in meaningless activity.
- The attempt to know yourself is a waste of effort.

In one of her studies, however, a twelve-item scale was constructed using items from the above alienation scales, from a "vegetativeness versus vigorousness" scale (involving attitudes like apathy, indifference, and aimlessness), and, unfortunately, items from a powerlessness scale–unfortunate since Kobasa herself (see below) sees powerlessness as an expression of low control rather than low commitment.[1] Nonetheless, even in this study, she writes: "High ratings of agreement with the twelve items of this scale signal an absence of involvement provided by the feeling that what one is or could be doing is meaningful and relevant" (Kobasa, 1982a, p. 712).

Control

- Those high in control believe and act as if they can influence the events of their experience, rather than being powerless in the face of outside forces [Kobasa and Maddi, 1982, p. 1].
- Persons with control seek explanations for why something is happening not simply in terms of others' actions or fate, but

[1] Of the six variants of alienation identified by the leading scholar in the field (Seeman, 1983), Kobasa's commitment is clearly related to self-estrangement, normlessness, cultural estrangement, and social isolation. Seeman's powerlessness is precisely Kobasa's control, whereas his meaninglessness has no parallel in her work, much as her challenge has no parallel in his work.

> also with an emphasis on their own responsibility. . . . They feel capable of acting effectively on their own [Kobasa, 1982b, p. 9].

Kobasa has thought in terms of, and conducted empirical research in, middle-class American culture. Hence her emphasis on "influence the events of their experience" and her use of an External Locus of Control Scale and a Powerlessness Scale to measure control. The fifteen-item negatively keyed Powerlessness Scale asks for degrees of agreement with items like:

- Thinking of yourself as a free person leads to great frustration and difficulty.
- Most of my activities are determined by what society demands.

The Locus of Control Scale poses choices on twenty-three pairs of statements, such as "In the long run, people get the respect they deserve in this world" versus "Unfortunately, an individual's work often passes unrecognized no matter how hard he tries."

Kobasa's conceptualization and measurement of control are solidly rooted in the very extensive locus-of-control literature and are appropriate to the respondent populations of executives and lawyers with whom she has worked and, more generally, to a culture based on individualism and free enterprise. Hardy people, in this respect, are people who reject the notion that luck, chance, or unfriendly powerful others determine one's fate and who optimistically believe that they can shape it, with desirable outcome.

Challenge

- Persons high in challenge regard life changes to be the norm rather than the exception, and anticipate these changes as a stimulus to growth rather than a threat to security [Kobasa and Maddi, 1982, p. 1].
- From the perspective of challenge, much of the disruption

> associated with the occurrence of a stressful life event can be anticipated as an opportunity and incentive for personal growth. . . . persons who welcome challenge . . . are characterized by an openness or cognitive flexibility and tolerance of ambiguity [Kobasa, 1982b, pp. 7-8].

The example Kobasa gives of the hardy person, to illustrate the challenge component, is of someone who loses his job. Though not necessarily delighted about this turn of events, he will exploit the opportunity to consider alternative, more satisfying work and will see it as a challenge. In the context of her study of lawyers (Kobasa, 1982a, p. 709), there is an implicit linkage of the challenge component to the distinction between transformational and regressive coping. The former refers to exploiting the stressful situation as an opportunity for personal growth.

In her earlier studies, Kobasa used the fifteen-item Security Scale of the California Life Goals Evaluation Schedules (Kobasa and Maddi, 1982, p. 4) as an operational definition of challenge. Agreement with items like the following indicated a respondent *low* on challenge:

- The young owe the old complete economic security.
- Public supported medical care is the right of everyone.
- From each according to his ability; to each according to his need.

In the lawyer study, however, a fourteen-item set of regressive coping strategies with stress at home and at work was used (got angry, smoked more, became apathetic or indifferent). And, as will be seen below, Kobasa has indicated an awareness of the continuing methodological problem of operationalizing the challenge component.

In sum, intrigued by the oft-overlooked fact that some persons, despite a high stressor load, maintain and even improve their health status, Kobasa proposes a tripartite hardiness model as a key explanation.

The Sense of Permanence

I had accidentally encountered Thomas Boyce's first paper (Boyce and others, 1977) and had made a mental note of the finding that stable family routines and rituals are negatively related to respiratory tract illnesses in children. But it was only when I read his two later papers (Boyce and others, 1983; Jensen and others, 1983) that I was moved to initiate contact and write, suggesting that we were talking the same language. Since then there has been more personal contact, along with an increasing belief that we are asking the same question and proposing an answer along the same lines.

Being a pediatrician, Boyce became interested in conditions that facilitated children's staying healthy. His medical training led him to propose that "family routines may have a biological, developmental foundation in an intrinsic human predisposition toward rhythmic activity" (Boyce and others, 1983, p. 195). The child who grows up in a home in which there are many "observable, repetitive behaviors which involve two or more family members and which occur with predictable regularity in the day-to-day and week-to-week life of the family" (Jensen and others, 1983, p. 202) is likely, Boyce and his colleagues hypothesized, to be the healthier child.

The 1983 papers went even further. In the discussion of ritual, and in reference to the sociological and anthropological literature, the word *meaning* is used several times. Further, it is noted that "ritual action [enables] a satisfactory handling" of a crisis. The emphasis, however, throughout the papers is on routines, with other elements only hinted at.

In his subsequent work, Boyce and his colleagues have adopted *the sense of permanence* as the name given to their key construct. This is defined (Boyce, Schaefer, and Uitti, 1985, p. 1281) as "the belief or perception that certain central, valued elements of life experience are stable and enduring." The paper strongly stresses the meaningfulness that this belief gives to life.

Despite the hint in the earlier paper that established routines often provide one with the tools for handling problems,

the definition above makes no reference to this aspect of one's way of seeing the world. However, in the discussion of the instrument designed to measure the sense of permanence, one component of the construct is specified as "the awareness of *self* as reliable and consistent" (p. 1281). Later (p. 1285) it is noted that "our findings are consistent with recent studies . . . on mastery and self-esteem." It should also be noted that moving from a focus on rituals to thinking in terms of permanence and continuity implies that not all life change is necessarily stressful or deleterious to health—only those changes that damage one's feelings of permanence.

In sum, Boyce, taking his departure from a biological premise of rhythmicity integrated with the assumption of a human need for continuity, has developed a model that incorporates three components: repetitive behaviors, valued elements of life experience, and self-awareness as competent and reliable. These provide the basis, Boyce proposes, for movement in the direction of health.

Domains of the Social Climate

Reference has been made earlier to the work of Rudolf Moos and his colleagues in the context of the conceptual unification of resources and stressors.[2] We now turn to the full body of his work, in relative brevity. The model he has evolved, I believe, can reasonably be interpreted, in fundamental ways, as most congenial with the salutogenic model. Although, as a clinical psychologist, he tends to be far more concerned than I am with mental health, task performance, and social functioning outcome, and although he too is often constrained to make do with data on pathology, his central question is that of health: How do "most people shape acceptable resolutions to difficult circumstances while some manage not only to survive but also

[2] This idea has also been suggested by Boyce, Schaefer, and Uitti (1985, p. 1280), who write that "it is also plausible to hypothesize that the health effects of both stressful events and social support might be explained in part by their tendency to either weaken or sustain a child's sense of continuity or permanence."

to mature in the face of overwhelming hardships" (Moos, 1984, pp. 6-7)?

The diagram that sums up his model has five panels:

- Panel V, called "Health and well-being," elsewhere (Moos, 1985) called "Health and health-related criteria," represents the level of personal functioning of the individual.
- Panel IV refers to the response process of the organism in responding to stimuli and includes both cognitive appraisal and behavioral coping responses, as well as emotional responses, that are seen as directly affecting health outcome.
- Panel III includes both "stressful life circumstances" and "social network resources" that affect, and are affected by (for, throughout his diagram, Moos includes not only direct and indirect effects on the eventual outcome variable but also feedback, reciprocal effects of one variable on another), the variables in Panel IV. If I interpret Panel III correctly, what is meant is what I call the life experiences of a person. That this is a reasonable interpretation can be seen by considering Panels I and II, the investigation of which has been the central concern of Moos's research program.
- Panels I and II are called, respectively, the "environmental system" (including physical, policy, suprapersonal, and social climate factors) and the "personal system" (including sociodemographic, self-concept, health status, and functioning factors). In other words, these are the social-structural, cultural, psychological, and physical characteristics of the external and internal environments of the person which shape the stressors and resources, the life experiences, we confront.

It is not only this overall similarity between our two models, however, that has led me to include a discussion of Moos's work in this section on convergences. It is, rather, the substantive analysis of the domains of the environmental system that Moos has developed over the course of years of research. Starting from the study of psychiatric treatment settings, Moos and his colleagues have studied learning environments in

high school classrooms and university student living groups, health care settings, work and family environments, and so on. Their basic, consistent question has been "What are the underlying characteristics of human contexts and how can such contexts be conceptualized as dynamic environmental systems?" (Moos, 1984, p. 6).

On the basis of this work, Moos identified, and developed operational measures of, ten dimensions that characterize a wide variety of social climates, grouped in three underlying domains. The three relationship dimensions are called involvement, peer cohesion, and support. The three personal growth, or goal orientation, dimensions are called autonomy, task orientation, and work pressure. The four system maintenance and change dimensions are called clarity, control, innovation, and physical comfort.[3]

"Relationship dimensions," Moos writes, "assess the extent to which people are involved with and supportive of each other." He also uses words like *expressiveness, commitment,* and *motivation.* "Personal growth, or goal orientation, dimensions assess the underlying goals toward which a particular setting is oriented." Whatever the task may be, then, these are the dimensions that relate to achieving it. "System maintenance and change dimensions deal with the degree of structure, clarity, and openness to change that characterize that setting." Moos sees the personal growth, or goal orientation, dimensions as channeling the direction of change, while the other two dimensions influence commitment, the extent of change, and the personal costs involved (Moos, 1985, pp. 366–367).

The careful reader will have noted what, at first sight, seems to be an important characteristic of Moos's analysis of

[3]In applying his general model to the development of a family environment scale (Moos and Moos, 1981), Moos uses slightly different names for the ten dimensions. "The Relationship dimensions are measured by the Cohesion, Expressiveness, and Conflict subscales. . . . The Personal Growth, or goal orientation, dimensions are measured by the Independence, Intellectual-Cultural Orientation, Active-Recreational Orientation, and Moral-Religious Emphasis subscales. . . . The System Maintenance dimensions are measured by the Organization and Control subscales" (pp. 1–2).

the environmental system (Panel I). The three domains of which he has written are explicitly defined as *objective* characteristics of the social environment. But, as noted earlier in the discussion of the resources and stressors of the work environment, Moos's data derive from respondents' *perception* of this environment. There is no inherent reason that an environment cannot be studied in these terms on the basis of observations by an independent reporter. Theoretically, one could make a good case for hypothesizing that these "objectively ascertained" characteristics of the environment are more powerful predictors for health outcome than the subjective perception of those involved in the environment. Or one could reasonably argue the opposite. Both approaches merit study.[4]

Moos, then, has hypothesized that one's perceptions of one's environmental system give rise to resource and stressor life experiences (Panel III), which, in turn, affect one's coping (Panel IV) and, finally, health outcome (Panel V).

Vulnerable but Invincible

When I first met Emmy Werner on her trip to Israel some years ago, she had not yet published the third volume of her longitudinal study of all children born in 1955 on the island of Kauai (Werner and Smith, 1982). Even though I knew very little about child development, her own specialty, there was a sense of basic communication between us. We were, I learned, asking the same question and moving very much in the same direction in answering it. Subsequently, when her book appeared, marking the culmination of one of the most exciting research efforts of which I know, I was convinced that I had been right.

In his foreword to the book, Garmezy details the excitement that the manuscript generated among a group of colleagues organized at the Palo Alto Center for Advanced Studies

[4] For consideration of this issue in a related field, see Kohn (1985, p. 4), who writes: "My second presupposition is that . . . analyses of the relationship between work and personality should begin with *objective* conditions of work . . . rather than with workers' *subjective* appraisals of these job conditions."

in the Behavioral Sciences to study "stress-resistant" children. He refers to the paradox posed by Lois Murphy decades earlier, asking how such an achievement-oriented society as the United States could devote itself overwhelmingly to the study of pathology. "It is possible," he writes (p. xvii), "only if our mental health practitioners and researchers are predisposed by interest, investment, and training in seeing deviance, psychopathology, and weakness wherever they look"—in other words, by the dominance of pathogenesis. "We are," he concludes, "on the threshold of a *Zeitgeist.*" Would that I were as optimistic as Garmezy! While there may be some truth in his estimate with respect to mental health and developmental functioning in children, this is hardly the case in the area of physical health in adults. Having said this, I nonetheless feel it is important to bring Werner and Smith's work to the attention of the reader, in the context of my discussion of convergences.

Werner's two earlier books had focused on the catalogue of distress and its correlates found in the seventeen-year follow-up of the cohort of Kauai children. The third volume turns to the salutogenic question.

> Yet there were others, also *vulnerable*—exposed to poverty, biological risks, and family instability, and reared by parents with little education or serious mental health problems—who remained *invincible* and developed into competent and autonomous young adults. . . . This report is an account of our search for the roots of their resilience, for the sources of their strength [p. 3].

The researchers identified forty-two girls and thirty boys who, by age two, were marked by at least four risk factors, which had been found in the earlier analyses to be highly predictive of health and behavioral problems, and yet by age eighteen were doing well. They were compared with two control groups of children who, with the same background and characteristics, had developed serious problems by ages ten and eighteen, respectively.

I shall not go into the fascinating details of the findings. But I cannot resist a few quotations:

> . . . a more internal locus of control, a more positive self-concept, and a more nurturant, responsible, and achievement-oriented attitude toward life . . . a sense of coherence in their lives and were able to draw on a number of informal sources of support [p. 154].
>
> There was structure and rules in the household, but space to explore in and less physical crowding . . . an informal, multiage network of kin, peers, and elders who shared similar values and beliefs, and from whom the resilient youth sought counsel and support in times of crises and major role transitions [p. 156].

The Family's Construction of Reality

David Reiss's work (1981) was first brought to my attention by a friend and colleague of his to whom I was expounding my model. He stressed the great compatibility between our work. With impatience, I awaited the leisure of an impending sabbatical, when I could give full attention to Reiss's rich, complex, and difficult volume. Reiss's fifteen years of research had started from an interest in the information-processing patterns of families with a schizophrenic child. In the course of his studies, he developed a model of how families perceive and give meaning to their worlds.

Reiss writes of the constant bombardment of innumerable stimuli from within and without; of the possibility of drifting with terror and then dissolving in uncertainty; of the development of filters and the possibility of organizing the stimuli. "We can detect patterns among the stimuli and gain a measure of understanding; we can relate them to ourselves and gain a measure of meaning" (p. 155). And he goes on to say, on the same page, "The family has come to play a central role in providing understanding and meaning of the stimulus universe for

each of its members . . . a set of explanations . . . that serves as the primary organizer of internal and external experience." A family's problem-solving style is a consequence of a set of enduring assumptions that, taken together, constitute its construction of reality.

Reiss identifies three crucial dimensions of the construction of reality: configuration, closure, and coordination. Configuration is defined in terms of seeing structured patterns rather than chaotic, unpatterned stimuli, as "order, organization, and coherence" (p. 74), as conceiving "the world as governed by an underlying and stable set of discoverable principles" (p. 249). Subsequently, he again uses the word *coherence,* asking whether the family assumes that there is "a knowable, structural coherence underlying and explaining the experienced world" (p. 209).

Unfortunately, Reiss does not make a clear distinction between configuration and closure. Thus he writes (p. 108): "We have defined configuration as reflecting the family's sense of optimism and mastery in a novel and ambiguous social setting . . . [the] new social world is ordered and discoverable." The idea of mastery also seems to be included in closure, the second dimension, which is never formally defined. Reiss describes "delayed closure," most characteristic of the "normal" family that copes successfully, as a behavior style that utilizes past experience and knowledge and organizes cooperation in order to solve present problems successfully (p. 80). Although reference here is to behavior, rather than to a construction of reality, the implication is clear that a delayed-closure family assumes that this style is natural and most conducive to managing well. Delay is easily tolerable, because there is confidence that problems can be solved. The "premature closure" family, in contrast, as I read Reiss's argument, is most frightened of its inability to solve problems and anxiously, almost hysterically, jumps on the first solution that presents itself, for it has no rich repertoire of successful problem solving to draw on.

Reiss's third dimension, coordination, also receives no formal definition, but his meaning is clear. He differentiates among three belief patterns. First, there is the isolate family,

whose members believe in going their separate ways, staying far away from one another. Their perceptual world is not of close linkage. Second, there is a pattern of "coarse and simplistic" consensus (p. 75), a belief in agreement for the sake of agreement and a fear of disagreement, lest a tenuous balance be disrupted. Third, the "normal" family believes in consensus too, but on a more profound level. It is a consensus that emerges out of a sharing process, considering individual members and their differences. This type of family regards as essential the particular contribution of each individual member to coping with problems.

Reiss, then, describes what he calls the construction of reality of the "environment-sensitive family" as high on configuration, high on delayed closure, and high on complex coordination. It would take us too far afield to discuss Reiss's ingenious and complex empirical work which led him to develop a powerful and testable model and how this model is applicable to the study of family coping with crises and health outcome. But the relevance of his work in a chapter devoted to convergences should be clear.

Comparisons

Table 2 summarizes what may be called the code words of each of the five colleagues whose work has been discussed. I trust that the summaries have made it clear that we all share a central concern in asking the salutogenic question. Kobasa, Boyce, and Werner have done so very explicitly. Moos and Reiss do so more gingerly, still somewhat constrained by their clinical backgrounds. Similarly, we all share the crucial assumption that how one sees one's world—or, better still, in Reiss's phrase, one's construction of reality—is a decisive factor in coping and health outcome. Kobasa and Reiss are explicit about this, while it is implicit in the work of the others. I now turn to a consideration of the extent to which their answers to the salutogenic question are identical or near-identical to, compatible with, or in contradiction to my own answer: the SOC and its three components. Hence their concepts have been juxtaposed with mine.

Table 2. Components of the SOC and of Five Comparable Models.

Sense of Coherence	*Kobasa*	*Boyce*	*Moos*	*Werner*	*Reiss*
Meaningfulness	*Commitment* Self-involvement; low alienation	Central valued elements of life experience	*Relationship* Cohesion, autonomy, support	Network sharing values and beliefs	*Coordination* A complex sharing process to develop consensus
Comprehensibility	*Challenge* Change is normative	Observable, repetitive behaviors; predictability; regularity	*System maintenance* Clarity, organization, consistency	Structure and rules	*Configuration* Order, organization, coherence
Manageability	*Control* Internal LOC; low powerlessness	Awareness of self as competent and reliable	*Goal orientation* Independence, work, pressure, load	Internal LOC	*Closure* Optimism, mastery; organize cooperatively to solve problems

In Chapter Two I suggested that meaningfulness, the motivational component of the SOC, was the crucial component, providing the drive to enhance one's understanding of one's world and the resources at one's disposal. In a sense, there would seem to be the most disparity between this concept and the five models. Only Kobasa, in using the word *commitment,* seems to be talking explicitly about the same idea. Yet paradoxically, whatever words are used, it seems to me that we are all talking about exactly the same thing.

In defining meaningfulness, I wrote of life areas which make sense to one emotionally, which one cares about, and in which events that go on are viewed as challenges worthy of commitment. Kobasa writes of commitment to self and vigorous involvement in one's life. The four others, true, do not directly refer to a person's orientation, to the way the world is seen. However, in contrast to Kobasa, who has not considered the sources of commitment, and very closely congruent with what I have written about the sources of meaningfulness, they all speak of the social climate, to use Moos's phrase, which provides certain kinds of life experiences. In Chapter Five, where the sources of meaningfulness are discussed, I will point to experiences of participation in shaping outcome and of eliciting valued responses from significant others. Boyce writes of central, valued elements of life experiences; he emphasizes the meaningfulness of rituals in which all family members participate and continued experience in which the sense of one's worth is conveyed to one. Very closely consonant with this emphasis on family experiences, Reiss, considering coordination, discusses the complex sharing process engaged in by the healthy family in order to develop consensus, a process in which the worth and contribution of each family member are emphasized. Werner, though less explicit, describes the social network characterized by shared values and beliefs that helps explain the emergence of the vulnerable but invincible person. And Moos, elaborating the relationship dimensions, speaks of involvement, support, commitment, and motivation.

The second component of the SOC, comprehensibility, is, with one striking exception (Kobasa), thoroughly congruent

with the work of the colleagues reviewed. In *Health, Stress, and Coping,* this component, which emphasizes seeing the world as ordered, predictable, and explicable, was taken as the very core of the SOC. This centrality is most evident in Boyce's work. Routine, ritual, and behavioral rhythmicity—in sum, the sense of permanence—surely make for seeing the world as comprehensible. Almost too much so, I suggested to Boyce. It seemed to me that he was neglecting the possibility that routines might become rigid and pervasive, excluding open-ended situations and surprises. The world, after all, is constantly changing, particularly so for the child, who is Boyce's focus of attention. I suggested the phrase *harmonious continuity* rather than *permanence,* in order to avoid the danger of frozen ritualization and to allow for organic growth and for integration of life changes like marriage, birth of a child, the empty nest, and retirement into one's scheme of things. Permanence, in other words, disregards the effects of change that takes one by surprise on manageability, as well as the effects of no longer appropriate rituals on one's sense of meaningfulness.[5]

This problem does not exist, as far as I can tell, in the way Moos, Werner, and Reiss formulate matters. Moos explicitly considers the issue in discussing the system maintenance and change dimensions. He not only asks about the extent to which the environment provides for clarity, consistency, and organization versus confusion; a dimension of no less importance is the extent to which the system is open to change. One of Werner's key phrases is *structure and rules.* Further, her emphasis on exposure of the child to extensive networks, all of whose members hold similar values and beliefs, likewise suggests a dynamic but stable environment, with good feedback, which provides the basis for seeing the world as predictable. Finally, Reiss's discussion of configuration is, in almost the very same words as my own, equivalent to the comprehensibility component.

By contrast, Kobasa's model, in this respect, is consider-

[5] For a discussion of the consequences of frozen ritual, using the example of elderly Jews conducting a Passover seder with children who no longer care, see Antonovsky (1985 and 1986).

ably at variance with my approach. Her concept of challenge stresses an orientation to change rather than to stability as the normative mode of life. The contradiction is sharpest when one considers Kobasa's operational definition of challenge, the Security Scale, some of whose items have been quoted above. I am not certain how a person high on comprehensibility would answer these items, which are in essence value judgments. Surely one might well agree, as I personally do. I would be scored low on challenge.

The reader, then, will not be surprised that I was pleased to learn that in Kobasa's first two studies with published data the Security Scale, measuring the challenge component of hardiness, is of no predictive value to health, with some indication that the reverse may even be true (Kobasa, 1979; Kobasa, Maddi, and Courington, 1981). In personal correspondence, Kobasa has noted her own sense of the inadequacy of the Security Scale in measuring what she means by *challenge.* "What I am trying to measure," she writes to me, "is not simply adventurousness or eagerness for chaos. Crucial for me is the person's ability to view change, the unexpected, the unpredictable as opportunities . . . and turn them into something 'coherent.' " If this is indeed the case, then surely there is much more agreement between us than there would have seemed to be. And, in fact, in the revised version of the Hardiness Scale (Kobasa, 1985), Kobasa has all but abandoned items rejecting the desire for security and given more prominence to items rejecting closed, unambiguous situations, inflexibility, and intolerance of ambiguity, such as "Thinking of yourself as a free person just makes you feel frustrated and unhappy." My own emphasis on the comprehensibility component would still be missing from the hardiness model. I regard that emphasis as essential. In order for one to confront events as a challenge, in Kobasa's terms, one must believe that the events are, or at least can become, ordered and understandable. I do think it likely that further empirical work and conceptual clarification will lead to an even greater convergence between the hardiness model and the SOC.

Perhaps the greatest difference between the SOC and the other approaches considered concerns the manageability com-

ponent. But this difference derives from a difference in cultural origins. Having had some anthropological training and field experience, and having lived for many years in Israel (after many years in America), I am acutely aware, perhaps more so than my colleagues, that there are many possible cultural roads to a sense of manageability. We are all concerned with a sense of confidence in being able to cope with life's problems. But we tend to differ on the nature of this sense.

Kobasa's use of Rotter's Internal-External Locus of Control Scale and Werner's reference to an internal locus of control are explicitly at variance with my approach. This culturally narrow scale posits only two alternatives: either *I* control matters or someone or something "out there" does. It posits a fundamental mistrust in power being in the hands of anyone else. Such a stance may be appropriate, unless carried to the paranoid extreme, in the context of a culture based on individualism and free enterprise. But these are not the only two alternatives. One may be very high on my manageability as well as on Kobasa's theoretical understanding of control when there is strong trust in legitimate others as well as in oneself. This does not mean that one has no responsibility; quite the contrary is true. It does mean that power need not be in one's own hands, except the power to accord or withdraw the legitimacy of others.

When Kobasa writes about not feeling victimized by events and having a sense that one will be able to cope, as she does in discussing the challenge component, this is quite compatible with the sense of manageability. The issue is much less apparent in the work of the other writers. Boyce, as noted, makes only brief reference to satisfactory handling. Moos, discussing the goal orientation dimensions, emphasizes autonomy and independence, disregarding the possibility of interdependence and trusting reliance on the resources of others. Reiss does come closest to my approach, in his commitment to the idea that it is the family, not the individual, that confronts a problem, the family that has a sense of optimism and mastery. But in order for full agreement to emerge, my colleagues would have to enlarge their concept from "I control resources that will allow me to cope well" to "Resources are available to me,

in my hands or in the hands of reliable, trusted others, that will allow me to cope well."

In a delightful and significant paper that is highly germane to this issue, Weisz, Rothbaum, and Blackburn (1984) distinguish between "two general paths to a feeling of control." The first is the one on which American researchers have focused, exemplified in Rotter's conceptualization. But there is an alternative, as exemplified in Japanese culture. What the authors call "secondary control" allows one to prepare for future events and gain "*predictive secondary control*" by inhibiting unfulfillable expectations and also to identify with powerful others and "thus promote *vicarious secondary control* . . . in order to enhance one's sense of strength or power." They also write of "finding reasons and purpose in events that cannot be altered." (All excerpts are from pp. 955–956.) In this paper, and the two comments by Japanese researchers that follow, the distinction between the two paths to a feeling of control is illustrated by considering American and Japanese practices in child rearing, religion, work, and psychotherapy.

The problem confronting all of us, then, is to comprehend the concept of the sense of manageability—whatever label we use—so that its social-psychological significance will not be culture-bound.

I had completed writing this discussion of convergences when my attention was brought to an empirical study of thirty families, conducted by Oliveri and Reiss (1984), in which they used Moos's Family Environment Scale and Reiss's Card Sort Procedure. On theoretical grounds, the authors anticipate association between the two sets of dimensions measured. Thus they write (p. 37):

> First, the sense of mastery over the social environment implied in the CSP dimension of configuration bears an obvious resemblance to the FES dimension of independence and achievement orientation; the view of the environment as structured and orderly, also implicit in the configuration dimension, suggests a parallel with the FES dimen-

> sion of organization. Second, two aspects of the CSP dimension of coordination—the view of the family as a unitary, bounded group and the collaborative approach to solving problems—are suggestive of associations with FES dimensions of cohesion, expressiveness, and (inversely) conflict. Finally, the flexibility and openness to environmental input implied in the CSP dimension of (delayed) closure would suggest a positive association with the FES dimensions of intellectual-cultural orientation and active-recreational orientation; closure might also be expected to be inversely associated with control and moral-religious emphasis, since these FES dimensions are plausible indicators of the rigidity and dependence on tradition attributed to early-closure factors.

The parallels between my own work and that of Reiss and Moos, summed up in Table 2, are largely, though not completely, compatible with Reiss's interpretations. Moreover, in his study, Reiss found that there were no correlations between his and Moos's measures, an empirical finding which he suggests may best be explained on methodological grounds. It would take us too far afield to here analyze the discrepancies. My present concern has been to point to convergences.

One final word is in order. We have all wrestled with the question of developing a model that will predict to health; but if one asks whether these are *explanatory* predictive models—that is, how do hardiness, the sense of permanence, and so forth lead to enhanced health—one is drawn up short. Only Boyce, positing a biologically shaped need, really confronts the issue. In Chapter Six I consider the question in some detail. This should not be taken as a criticism or as a sign of a failing in the models but as an indication of how much work there is to be done.

Partial Affinities

Discussion of these five models does not exhaust the story. The work of a number of investigators during the past six

or seven years can be seen as close to one or another aspect of the salutogenic model. Here I comment briefly on several of these studies.

Between the publication of *Life Stress and Bodily Disease* (Wolff, 1949), the first major work on the stress process following Selye's pioneering studies, and the first volume edited by Dohrenwend and Dohrenwend (1974), the "psychosocial stressor event leads to illness" line of thinking dominated the field of research. My own paper in the Dohrenwends' volume, like most of the others, focused on stressors, although I did advance the concept of resistance resources. But the field was beginning to change. By the time of the second compilation by Dohrenwend and Dohrenwend (1981), a very significant shift in emphasis had taken place, expressed most succinctly in the word *mediators*. Rabkin and Struening's paper (1976), appearing in *Science,* gave prominence to the word. Two major streams of work, interrelated but distinguishable, began to gain equal status with the work on stressors. Following the lead of Lazarus —whom one might even call Mr. Coping, considering his seminal contributions from the early sixties till this day—more and more studies investigated the buffering effects, the interactions, or, as Lazarus would put it, the transactional relationship between stressors and coping styles, patterns, resources, and so on. (See Monat and Lazarus, 1977.) Second, social supports became the fashion of the day. (It would be impossible to start citing from this by now vast literature. The most pertinent and competent review of which I know is Broadhead and others, 1983.)

But overwhelmingly, whether the "mediators" are seen as buffers or as direct contributors to lower levels of illness, the "life stress process" literature, as it is now called (Pearlin, Lieberman, Menaghan, and Mullan, 1981), is pathogenic in orientation. (For one of the best overall theoretically grounded integrative reviews of this literature, which has the advantage of covering both European and American work and being medically knowledgeable, see Levi's [1979, p. 5] "theoretical model for psychosocially mediated disease.") Moreover, much of this literature is concerned with mental illness—or, to be more accurate, with depressive symptoms—as the dependent variable. Thus, although I read it with much interest and learn much, I

would not include this body of work in "Convergences." My concern here is, rather, to take brief note of some studies that ask a salutogenic question and propose answers, even when these differ from the SOC.

To my regret, even though Leo Srole is an old friend and the author of the first alienation scale, it was not until I read his paper reporting the 1974 restudy of the mental health of a metropolitan population (Srole and Fischer, 1980) that I learned of a much earlier paper of his (Srole, 1967) that is thoroughly salutogenic in origin and has glimmerings of the SOC concept. Writing at the time of the War on Poverty, when he returned to further analyze the Midtown data, he sought to understand the pathogenically oriented finding that 47.3 percent of the true poverty stratum was in the Impaired category of mental health classification. Then came the shift in attention to "those who are deviant in the specific sense that they have come through the entanglement [of deep poverty] with few or no apparent signs or symptoms of mental impairment." Who is this "species of those caught in the web of poverty but remaining psychologically intact" (p. 135), Srole asked. Calling on his personal and scholarly familiarity with the Winnebago Indians and the history of European Jews, he proposed that three key sociocultural resources were instrumental in "eugenically fortifying and immunizing against the potentially shattering impact of extreme, exogenous adversity" (p. 137): a stoic fortitude, "be grown up" ethos; strong kinship alignments; and a sense of special group identity. Srole does not pursue the question of how these resources are translated into powerful weapons of coping. (Had he done so, or had I read his paper at the time of its publication, the SOC concept might have emerged a decade earlier.)

The distinction has been well put by Danish and D'Augelli (1980). The dominant mode of thought of prevention, they point out, whether primary, secondary, or tertiary (in their case, of psychopathology), assumes a homeostatic, or equilibrium, model of human functioning. The goal of intervention is to maintain balance, or, if it has been disturbed, to restore the situation that existed before the problem emerged. The model of human development they counterpropose presupposes growth

and change and requires the specification of goals (in my terms, for example, movement toward the health end of the ease/disease continuum). This leads them to argue that not only are crises "not considered by definition pathological or problematic . . . [but] growth is preceded by a state of imbalance or crisis which serves as the basis for future development" (p. 109).

Vaillant, a psychiatrist, has skillfully employed "good mental health" as a predictor of healthy survival. In a most valuable series of publications reporting on various aspects of a forty-year prospective study of the development of male college students started in the early 1940s, much has been learned on the relationship between mental and physical illness. But for my purposes, the chief lesson is reported in a brief paper (Vaillant, 1979). Here his focus is on a subgroup of ninety-five healthy young men, about whom he writes: "I have been impressed with how little effect stress per se has had upon their lives" (p. 732). Seeking to explain not only survival but excellent health well into the fifties, Vaillant hypothesizes that the dominant mode of defense mechanism manifested in adulthood was the most powerful predictor. He sees the person's unconscious mode of adaptation to stressors, not the evasion of stress or a conscious coping process, as the decisive variable explaining health. He identifies "a fourth and most desirable class of defense. These most mature mechanisms include humor, altruism, sublimation, and suppression. . . . Twenty (80 percent) of the twenty-five men who deployed predominantly mature defenses before age forty-seven remained in excellent health after age fifty-five; none died or became disabled." This is a far greater proportion of healthy persons than found among those employing less mature defenses. What mature defenses do, Vaillant goes on to say, is "bind people to the user . . . make his or her social milieu more predictable and supportive" (p. 733).

If Vaillant, using the psychoanalytic concept of defense mechanisms and posing a salutogenic question, has hinted at answers at least compatible with the SOC, Thomas, in a similar study but in a very different psychological tradition, in which temperament is seen as an expression of innate biological endowment, has done the same. The study was originally "designed

to determine youthful predictors of premature disease or death" (Betz and Thomas, 1979, p. 81). A large set of biological and psychological data was collected from a cohort of 1,337 Johns Hopkins University medical students graduating in 1948–1964. The subjects have been followed annually, using a mail questionnaire. In the late seventies, the data were analyzed "to portray the individual as a biological-cultural organism with an inherent, core style in experiencing and engaging in the events of his life" (p. 81). The concept of temperament, seen as a dispositional tendency given at birth and constant over time, was used as the principle to organize the data.

In two earlier studies on samples of 45 and 127 from the original cohort (Betz and Thomas, 1979), the focus was on specifying the methods for classifying respondents into the Alpha, Beta, and Gamma temperament types on the basis of data collected during the medical school years. Results point to the significantly greater vulnerability to major disorder and death of the "Irregular-Uneven" Gamma type than of the "Slow-Solid" Alphas or the "Rapid-Facile" Betas. But one sentence presages a later paper: "Also, subjects in the Beta temperament group appear to have the most stamina and resistance to disease" (p. 88).

In this paper, Thomas (1982) uses the dictionary definition of *stamina,* the central concept: "The physical or moral strength required to resist or withstand disease, fatigue, or hardship; endurance. [Derived from] *stāmen,* . . . the thread of human life." There is some retreat here from the commitment to constitution in the earlier paper. The discussion speaks of individuals "born with different potentialities and susceptibilities which life experiences may then mold into a protective shield . . . or into special vulnerabilities. . . . The kaleidoscope model . . . states that *many* genetic and environmental factors enter into the health equation . . . the pattern is constantly changing" (p. 75). Unfortunately, however, Thomas devotes the bulk of the paper to noting the characteristics of those stricken with suicide, cancer, or heart disease and does nothing to develop the concept of stamina. But at least Thomas and her colleagues have begun to abandon the pathogenic model and have suggested a word that may well turn out to be useful.

At first glance, a series of theoretical developments and empirical studies that derive from social learning theory and cognitive-oriented behavioral therapy would seem to have little to do with salutogenesis and the SOC. Yet I find myself reading these studies with some sense of kinship. Thus Bandura's theory of self-efficacy (1977), which seeks to explain engagement in any behavior, including health behaviors, might well be extended to apply to successful coping with stressors. Is it too far-fetched to suggest that the three conditions for efficacious behavior (see Saltzer, 1982) in Bandura's theory are analogous to the three components of the SOC? First, there is the belief that the intended outcome of a given behavior is of value to one (that is, meaningfulness); second, the belief that performing the behavior will indeed lead to that outcome (that is, comprehensibility); and third, the belief that one can successfully perform that behavior (that is, manageability).

Bandura's "high efficacy" person is acknowledgedly linked to Rosenbaum's person high on "learned resourcefulness" (Rosenbaum, 1983). Having turned Seligman's work on learned helplessness on its head, Rosenbaum proposes that "normal" individuals acquire a basic behavioral repertoire that allows them to cope successfully with high-risk factors. True, he focuses solely on the cognitive-emotional restructuring of internal events, such as emotions, pain, or undesirable thoughts, rather than on using resources to modify the external factors that may have led to the internal stressor. I confess I find little substantive similarity between the emotional-cognitive map of the internal and external environments expressed in the SOC components and Rosenbaum's techniques to handle stressors: using self-instruction, applying problem-solving strategies, delaying gratification, and self-regulating internal events. The former refers to one's belief system of what things are like; the latter, to reports of what one does. But there is a link between the two, in that a belief system implicitly underlies an action system (and in that an action system feeds back into and affects a belief).

Meichenbaum and his colleagues also focused on the acquisition of coping skills—for example, self-relaxation, problem solving, and self-instructions. These strategies were at first intui-

tively and empirically derived. In the course of working with patients with a wide variety of problems, a general treatment paradigm of stress-inoculation training was evolved. In due time, this paradigm was embedded in a theory heavily indebted to Lazarus's transactional view of stress. What is of interest here is the first phase of Meichenbaum's therapeutic approach, conceptualization (Meichenbaum and Cameron, 1983). What, Meichenbaum and Cameron ask, are the "tacit assumptions and beliefs that give rise to habitual ways of construing the self and the work" (p. 7)? But even before the discussion of this phase, a number of the "general considerations" have the flavor of the SOC components: develop a collaborative relationship with the client; be sensitive to the client's personal or cultural style, for example, exerting control versus a sense of subjective serenity; define the problem as a challenge; create a sense of curiosity and adventure. These are hints; the discussion of conceptualization is even more analogous to the SOC. Meichenbaum and Cameron speak of the basic need "to identify the determinants of the problem" (p. 13) via a "translation process" that reduces the clients' "confused understanding of their problems" and provides them with "conceptual frameworks" (pp. 26-27). On this basis, "a blueprint for organized adaptive responding" can be developed and the client can gain reassurance that he can cope (p. 28). Finally, they stress that "throughout, clients . . . [should] collaborate in the generation of this reconceptualization" (p. 29). Though applied to a therapeutic situation confronting a concrete problem, the conceptualization stage, at least implicitly, is aimed at strengthening the sense of comprehensibility, manageability, and meaningfulness of the client.

Finally, we turn briefly to the work of Shalit (1982). Engaged in an extensive series of studies in Sweden, concerned largely with effective performance in the military, Shalit has exploited, refined, and extended Lazarus's work on coping in terms highly compatible with the SOC model. His AIM (Appraisal Integration Model) takes as its point of departure "the concept that the more coherent a picture an individual can attain of his situation or environment, the better his potential for acting on or interacting with this environment" (p. 4). The ap-

praisal process, then, starts with a judgment of the nonambiguity and certainty of the stimulus, or what Shalit calls "coherence." "The most stressful condition . . . is the inability to clarify what the environment is. This is the basic hurdle . . . the universal and primary stress factor" (p. 7). This judgment allows one to move on to what Lazarus calls the stage of primary appraisal, named by Shalit "valence," as indicative of the value, meaningfulness, relevance, or danger/benignness of the situation. Having decided that the situation does indeed have meaning for one, one moves to coping appraisal—"the appraised congruence between perceived resources and the perceived demands of the situation" (p. 9). Since Shalit is concerned with actual behavior in concrete situations, he goes on to speak of a final "status appraisal" relevant to the particular situation and reappraisal following an adaptive response. It is, however, the first three stages that concern us here. Clearly, they are parallel to comprehensibility, meaningfulness, and manageability. Shalit has devoted his efforts to developing and applying a Wheel Questionnaire designed to map the appraisal stages, to test his model empirically (with promising results), and to apply it to the group level. He has not dealt with the question of a generalized trait characteristic (as opposed to a state characteristic) that might be called strength of appraisal. He and I differ on a significant issue, in that he claims that unless one reaches a reasonable level of comprehensibility (coherence, in his terms), one cannot decide whether the situation is meaningful (has valence), whereas it seems clear to me that one can have a very high level of investment in a situation or life area that is perceived as chaotic. Despite these differences, we are surely concerned with the same problems and moving along similar lines in seeking answers.

I trust the reader will now understand why I no longer feel isolated. I have sought—with some success, I hope—to avoid the temptation to see salutogenesis and the sense of coherence everywhere. Nonetheless, and taking into account the likelihood that I may well have missed important studies, the fact that the work of Kobasa, Boyce, Moos, Werner, and Reiss is

very directly germane to my model, and the studies included in the last section only a bit less so, seems to me to point to a significant trend in this field of scientific endeavor. I haven't the slightest illusion that a new *Zeitgeist* has come into dominance. Pathogenesis and risk factors still give the overwhelming tone to work on the stress process and still consume the great bulk of resources. Yet we are no longer in 1978.

One final note, of which the reader may not be aware. Although I have little concern with whether my writing is labeled sociology, epidemiology, or what have you, I do identify myself as a sociologist, and the community of sociologists is still a major reference group. Yet, despite the fact that medical sociology in Europe and America is a leading subdiscipline, I have not been able to include reference in this chapter to the work of any sociologist except an early paper by Srole. I think this unfortunate, for surely a sociological perspective can add greatly to clarification of the meaning of the salutogenic question and to a search for answers. Precisely the same point is to be made for medical anthropology.

4

Measuring the Concept: A New Scale

"There are, then, many cultural roads to a strong sense of coherence," I wrote (1979, p. 156). As one whose life has been rooted in two different cultures, whose research has focused on class and ethnic subcultures, and who has traveled extensively, I have tried to avoid the trap of thinking the world is well represented by a sample of American university students in Psychology 101. In much the same way, I am fully aware that there is far more than one powerful methodology in science. Once the salutogenic model had been constructed, however, and the temptation to leave its testing to others overcome, I faced the question of which methodology to choose. It was only natural for one whose career had largely been in survey research to think in its terms. The immediate goal became the construction of a closed questionnaire to measure the sense of coherence, in order to test the core hypothesis that the SOC is causally related to health status. That is the subject of this chapter.

But at the very outset, I must emphasize that there are many alternative ways of legitimately measuring the SOC and testing the model. "*Our perspective is but a piece of a myriad of action in Sociology, not the only, right action.* The division of labor in sociology needs *all* perspectives on styles of both theoretical and empirical renderings of research data." This is the stance taken by Glaser (1978, p. 3), with Strauss, the founder and developer of grounded theory. It is a stance with which I am in total agreement. I have learned much from their work and that of their colleagues, particularly in its rich application to the

study of health (see, for example, Strauss, 1975), and would be delighted were their perspective and techniques applied to the salutogenic question. Similarly, ethnomethodology's "immaculate description" of persons with strong and weak SOCs would enrich our understanding. The same can be said for structured interviews, similar to the technique used to identify the Type A behavior pattern, or for projective tests. We can only learn and advance by use of different methodologies. Having made this point, I can now turn to the methodology I have chosen.

The Pilot Study

It cannot be said that, once *Health, Stress, and Coping* was completed, the SOC was only a vague intuitive notion. It had been explicitly defined (p. 123) and the definition discussed at length. Conceptual clarification, nonetheless, is not easily translatable into operational definition, particularly if one wishes to use the words of ordinary people. I would get bright ideas for question items, often at strange times of the day and night, and I accumulated scraps of paper. But before going ahead, I decided to conduct a pilot study. In Chapter Two I discussed the pilot study in terms of its contribution to conceptual clarification. It is here considered as a first step in operationalization of the SOC.

For my purpose at this stage, no representative sample was needed. As noted in Chapter Two, I turned to various sources and asked for individual references to persons who met two criteria. First, the person was known to have undergone severe trauma with inescapable major consequence for his or her life: severe disability (eighteen persons), loss of loved person (eleven), difficult economic conditions (ten), concentration camp internment (eight), or recent immigration from the Soviet Union (four). Second, the person was thought by the referee to be functioning remarkably well.

The fifty-one persons interviewed[1] ranged in age from

[1]I am most grateful to Zehava Rosenblatt for conducting, transcribing, and helping to analyze all the interviews. In turn, both Zehava

twenty-one to ninety-one, except for four teenagers. Thirty were men, twenty-one women. Almost all interviews were conducted in the homes of the respondents, located in Beersheba (thirty-three), the Tel Aviv area (ten), and various Negev (southern Israel) communities (eight). Twelve respondents had been born in Israel; the others came from seventeen countries (nineteen from European countries and twenty from North Africa and the Middle East). Although the modal family status was being married with two children (M+2), the entire range from single through M+8 to divorce, widowhood, and living with a significant other was included. Occupationally, too, the entire gamut was covered, ranging from unemployment and manual labor through senior officials and professionals (and eight housewives). Of the fifty-one, however, it is of interest that no fewer than fifteen were at higher-level administrative and professional jobs—a hint about who our referees thought were highly successful copers. The population, then, was quite heterogeneous, except that all were Jewish.

Following up the introductory letters or phone calls, which conveyed our interest in how people had coped with difficulties in their lives (and after encountering almost no refusals), essentially a simple question—"Please tell about your life"—was sufficient, at most with an occasional probe, to obtain, in most cases, a rich human document. Interviews were transcribed, immediately thereafter, as close to verbatim as memory would allow, using brief notes made during the interview. Other than the four interviews with youngsters, which were more like chats for half an hour or so, interviews ranged from an hour to three and a half hours.

The transcribed interviews were read by three colleagues and me, guided by familiarity with the salutogenic model and the explicit definition given in *Health, Stress, and Coping.* Each of us independently classified each respondent on a ten-point scale of strong to weak SOC, subsequently collapsed into strong,

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and I are indebted to the more than twenty referees and, above all, to the respondents. Each of their life histories provided a moving experience for us.

moderate, and weak. Fortunately for the purposes of the study, many referees were not fully aware of how moderately or marginally many of the respondents were coping, as evidenced by our classification of a considerable number of them into a moderate or weak SOC.[2] There was a reasonable degree of agreement in classification. Of the forty-seven adult respondents, twenty-nine (62 percent) were placed by three or four of us in the same category: sixteen (34 percent) strong, six (13 percent) moderate, and seven (15 percent) weak. There was enough agreement among us, with regard to another eleven (23 percent) of the respondents to allow us to place them in either the moderate (seven) or the poor (four) SOC category. Considerable disagreement was found with respect to seven (15 percent) of the protocols.

As a first result of an empirical venture at testing whether the SOC concept had consensual validity, these results did not seem bad. But the goal of the pilot study was precisely to improve the basis for such validity. The next step was to review, in great detail, the protocols of the sixteen persons who had been classified as having a strong SOC and those of the eleven at the opposite end. My search was for elements in the way one looked at life that were common in the former group but absent in the latter, and vice versa. Over and over again, a number of phrases, sometimes even exact words, emerged, expressing ways of looking at one's experiences and the world. There is no doubt that my examination of the protocols was not with a totally fresh eye. Thus it is not accidental that this stage was concluded with three concepts that bore similarity to the three characteristics of life experiences quoted earlier from *Health, Stress, and Coping*. But whereas in the book these characteristics had not been spelled out in any detail, I now had some hold on the language people used to express them.

[2]I am aware that I have here identified strength of the SOC with adequacy of coping, an inadmissible procedure when one intends to test the hypothesis that the SOC predicts to coping outcome. In the pilot study, there is no doubt that our subjective impressions of adequacy of coping influenced our judgment of SOC. As will be seen below, the measure of SOC is clearly distinguishable from health measures.

I would like to share with the reader extracts from some of the interviews, which led both to the explicit formulation of the three components of the SOC and to the phrasing of questionnaire items. (For the full text of exemplary strong and weak SOCs, see Antonovsky, 1984a.) The extracts are direct translations from the Hebrew, in which all interviews were conducted.

Respondents with a Strong Sense of Coherence

Respondent 1 (male, 50, M+2, director of welfare institution, Holocaust survivor)

> [Referring to historic events of World War II] While these events for me are living memories, they didn't, as it were, refer to me specifically. I had no sense of personal affront. What happened, happened to all of us. [As a child of 15 in the ghetto] I both continued my studies and joined the underground, learning how to use weapons. . . . This kept me sane. . . . I was pessimistic, didn't believe that I or others would come out of it all alive. . . . But I didn't believe in giving up my identity just to stay alive. [In the concentration camp] Death was not a daily event, but happened each moment. But we were insulated, for again, it was a collective event, not aimed at me personally. [After the war] It was natural that I would come to Israel . . . go to the army . . . then go to study.

Respondent 2 (male, 52, M+4, senior civil service, economic deprivation)

> I saw the kibbutz realistically, not idealistically. . . . There are tensions everyplace. The question is how you take things like jealousy or arguments. . . . Education means giving up things, adjusting to others. You can't expect that others adjust themselves to you. [In talking about his

work] I love my work, the job is a challenge. . . . Sure, there are tensions. . . . But I haven't quit, because I overcome them, don't take them to heart. . . . If I do leave, I'm not at all afraid of such a change. . . . I try not to take things to heart.

Respondent 4 (male, 90, M+2, retired, economic deprivation)

How we overcame all the difficulties in our lives? You need patience. You have to believe in the Promise, a word I learned in Bulgaria. . . . It doesn't have to be God. It can be another force, but you have to have faith. Otherwise you can't suffer so much and go on. . . . How can your health be when you're so old? But I have no complaints. . . . I don't see so well, I can't read, that's what bothers me. I work in the center for the blind about three hours a day, together with my wife. . . . I've always worked, and always looked for work.

Respondent 16 (female, 45, W+2, technician, death of husband)

[After husband's inexplicable death, which might have been related to an earlier army injury] I refused to enter a claim, to exploit my husband's death. Maybe it's crazy, but I felt I was being loyal to his spirit. . . . I did make some inquiries but stopped after a while. There's no point in digging and digging; it won't change the important thing. . . . I never turned his death into a ritual. Instead, I devoted myself to the children. . . . But we needed money desperately, and I got a job in my husband's plant. . . . I had good friends and began to go out with them. [After some four years] Biologically, a woman can get used to being alone, but it's everything else that matters. . . . And now that the children are a bit older, I can do what's good

for me and not only think of them. . . . Again, I began to learn who I am, what I can give, and what I need.

Respondent 17 (female, 47, M+1, voluntary activity, son killed in battle)

You can ask me about anything you'd like including my son. He was twenty-one when he fell in the war. . . . Most of my life I've been deeply involved in voluntary activities. [Trained as a teacher but stopped work after second child born.] I enjoyed being at home, although I also kept on studying special teaching techniques. . . . What really gave me a push . . . I began to see how important community activities were, especially nursery schools for working mothers. . . . It involved me day and night but never interfered with things at home. . . . Somehow, I just care a great deal. . . . When we were sitting *shiva* [mourning], I got the urge to go back to the sources. . . . My friends helped me, helping me to get back to my work quickly. But the urge came from me. . . . I decided you just have to overcome, I won't let myself be broken. . . . You have to go on functioning, do what has to be done. [After speaking of her grandmothers and other women who knew tragedy] What they all had in common was community activity. You get strength from it, it's like recharging your batteries, you have a good feeling . . . of course you want to scream, but I didn't. . . . And then I have my husband and my son.

Respondent 22 (female, 21, M, pregnant, switchboard operator, polio disability, economic deprivation)

I would walk a great deal intentionally, even against doctor's orders. . . . I laugh a great deal, laugh with everyone. . . . When my first serious

boyfriend left me because of his family's pressure, it hurt, but I knew it was for the best, because there would only be problems with his family. . . . I love to dance, to swim. . . . My husband's family just loves me. . . . I got pregnant right after we were married but lost the baby because I got the measles from my sister. The doctors scared me about getting pregnant again, but we wanted a baby. So far I'm doing fine. . . . I'm happy about my work and am good at it. . . . At school, when I was training, and in my earlier job, I always got compliments, always got along well and did well . . . sometimes, when I'm alone, I think about myself, think how I can't do anything without the prosthesis, but with it I can do everything. . . . I always had a strong will, never felt that there was something wrong with me. . . . You have to know how to use your life.

Respondent 36 (male, 42, D, switchboard operator, blind since age three)

At first my family didn't let me be independent, especially for a Jewish kid going out among Arabs [in North Africa]. But I was interested in everything. Listened to the radio, learned from my friends, they would read books to me. . . . Sure, I felt that I had a handicap, but what let me not feel it was that I didn't see it as a tragedy. . . . Sure, I'm different from other people—they see and I don't. But it doesn't bother me. It's a fact of life. It's not a punishment because I stole or lied. . . . I don't get mad, always laugh and sing. [After describing all he learned and dreamt about Zionism and Israel] When I finally came, things weren't strange, I understood what was going on. . . . I never felt that I was getting a raw deal. . . . I wasn't happy about not working all these years, but the family had money, and I could learn things. . . . [De-

scribes his training at a center for the blind] I learned Braille and to get along on my own in the street and then learned to operate a switchboard. . . . I'm delighted about my job, especially helping to train others, although I wish I had more time to read and to play the organ. . . . Some years ago I was pressured into an arranged marriage. I'm just sorry I didn't have the guts to call it off beforehand. It turned out that we had nothing in common, and we got divorced. . . . I'm religious, but not a rabbi. . . . I love Judaism, tradition. It makes me feel optimistic, real optimism. I always say that things will be good. . . . I never despair. . . . I have nothing to complain about. It's all a matter of will. . . . I'm only sorry I'm not yet married. . . . What I can do, I do; what I can't, well . . . You have to take life as it comes.

Respondent 43 (female, 55, M+1, housewife, son killed in army action)

Coming to Israel, everything worked out beautifully. . . . [After son was killed] When something terrible happens, people look for someone to blame. But I don't, absolutely not. . . . I decided that I want to remember him alive, full of joy and happiness. . . . Maybe the fact that our lives had been so good all those years was what gave us strength. . . . I said that you just have to overcome, it's not a matter of make-believe. . . . Even when we sat *shiva,* I said that no one was to blame. Evidently it just had to happen and that's it. . . . It helped me, that I believe in fate. . . . All of life is ups and downs. . . . We're made of flesh and blood, not iron . . . but maybe man is stronger than iron. [After telling of her married daughter's death] It all hurts terribly, but I live in the real world. I can still share in the joys of others. . . . Sometimes I even feel that I got too much from life. . . . Maybe

I wouldn't even appreciate everything I got had these things not happened. . . . You swallow your tears and go on.

Respondents with a Weak Sense of Coherence

Respondent 3 (female, 50, W+2, housewife, widowed three years earlier)

I'm a sick woman, I always suffered from something, even before the tragedy three years ago when my husband died. . . . They tossed him out of the hospital, as if there was nothing wrong. But I knew from his looks that he was sick. . . . I believe in fate. True, I don't know who runs it, because I don't believe in God anymore. . . . I couldn't look in his father's eyes—he died a year later—or in my older son's eyes. . . . I didn't cry at the funeral, but I've been crying ever since. . . . My life has been full of losses even from before. . . . Things are rough, I don't have any faith left in anyone. . . . All of life is full of problems, only in dying there are no problems. . . . I don't even think of going out with a man or of getting married again. . . . We used the rhythm method, but there were accidents, and I had several abortions. My husband didn't want to understand. When he threatened to go to other women, I said I didn't care, just so long as he left me alone.

Respondent 13 (male, 38, M+3, unemployed, leg disabled in noncombat army accident)

I don't know why they sent you to me, I'm not rehabilitated. Nothing can be done in a case like mine. . . . Every time I call the [rehab] office, the clerk lies. When I come, I feel like a sad sack. . . . They're all a Mafia. . . . It's not my fault that I

haven't been rehabilitated. . . . Every day is a test, standing in line in a store or office. . . . I'm just waiting for a taxi license that they promised me. . . . Last year my father went on a trip [to the Judean desert] and just disappeared. . . . The kids are nervous, don't study, just cry. My wife, too, takes it hard. . . . I don't have any more strength, I just collapse. . . . There are people that just get screwed by the doctor in the rehab office: he lowered my disability from 27 to 10 percent. . . . They give a guy without teeth a walnut to crack. I'm just a ball that the higher-ups play with.

Respondent 30 (male, 44, M+4, laborer, disrupted childhood family, combat breakdown)

[After detailing his troubles as a child and after being sent to Israel, with some fantasies about being a boxer] Everyone screwed me. I liked the kibbutz, you can forget about all your troubles there. And I'm a worrier, all the time I think about what's going to be in life. . . . [In the army, again and again things happened to him, and always] They screwed me. . . . [After the army] They just didn't let me get settled in life, no one gives a damn. . . . Once I was a night watchman, it was cold as hell, so I fell asleep, and someone squealed. . . . [After he got married] I couldn't get work, so we went to live with my wife's parents and they supported us for a year. Whenever I tried to work, I was told I just mess things up. . . . Now my son is in the army, and he's also miserable. . . . What can I do? By now I'm tied to the wife and kids. . . . They take me to reserve duty all the time, it's just killing me. . . . I wanted to commit suicide. . . . Later they sent me to B.Y. [psychiatric hospital], where they stole all my things. . . . They ruined my whole life. . . . Now I'm working, what else can I

do. . . . It's all because my father died when I was a kid and I kept wandering around. . . . It's tough with the kids. Sometimes they get on my nerves and I shove them around. My wife works too. What do you expect, she's got no choice. [At the close of the interview, he asks] And what are you going to do for me?

Respondent 29 (female, 59, M+2, mid-level administrative position, Holocaust survivor)

[After World War II] I married the first Jewish man I met. We belonged to two different worlds; our marriage was never a success. . . . I brought a child into the world . . . devoted my life to her . . . terrible guilt feelings . . . a constant breaking the wall with my head. . . . I gave up everything. . . . She's a successful professional but is very nervous and a big liar. . . . I've had endless disappointment from her. When I love, it's without limit. Hatred too with me is without limits. . . . What I do regret is that I saved my sister in the concentration camp . . . ended up by breaking off with her. I don't know how to compromise. . . . I'm not happy with my work, always under stress. . . . I have to stand my ground, be like a thousand animals, not let anyone harm me. . . . All of life is a constant battle. [After detailing a series of physical illnesses] I just have to keep on dragging the burden. . . . [My son-in-law] doesn't trust me . . . has no feeling for me. . . . When I get angry, I feel like I'm being stabbed in the chest. . . . We have no friends, live a close life. . . . When I make a reckoning of all the failures, I don't see a glimmer of light. . . . I have no hope, no strength, only will power. . . . Never show that you have a weak spot. . . . You have to act, like on a stage. . . . If you don't pretend, you'll be in the grave. There's no

pity, only exploitation. It's my fault that I'm so devoted, never worried about myself.

Drafting the Questionnaire

I had had much experience in drafting questionnaires and teaching questionnaire design. But I had never faced the problem of constructing an index designed to be more than a one-study tool, although I was, of course, familiar with many social science indexes. Turning to a variety of research methods texts, I met disappointment. There were many pointers about what made for a good or a bad questionnaire item. I found statistical techniques, such as item-total score correlations or factor analysis, that clarified dimensionality and indicated which items did or did not belong to what was to be used as an index. Perusal of many indexes, such as Rotter's Internal-External Locus of Control Scale, psychosomatic indexes, or alienation scales, showed a clear pattern. The researcher compiled items intuitively or from the literature that on face value seemed to be related to or expressive of the theoretical concept requiring operationalization. This concept, and this concept alone, dictated whether an item was to be included. Other elements of the item were held constant—the time period, for example ("During the past two weeks, have you . . .")—or disregarded. The final index was a matter for computer decision.

Operationalization of the SOC, however, necessitated a constraint to be imposed at the stage of item construction. A core element in the theoretical concept was the insistence that the SOC is a "global" orientation, a way of looking at the world, a dispositional orientation rather than a response to a specific situation. Explicit commitment is made to the hypothesis that one cannot have a strong (or weak) SOC about this one area of life and be at a different level with respect to other areas of life. This made it essential that the questionnaire refer to a wide variety of stimuli or situations. Such reference would have to be done consciously and systematically. In other words, each item would have to be designed so that it would consist of intentionally selected elements other than that part of the item referring to the SOC.

To clarify this point, let us look at some items from a well-known scale. The Alienation from Self scale (Kobasa and Maddi, 1982) contains the following two items: (1) "The attempt to know yourself is a waste of effort." (2) "The belief in individuality is only justifiable to impress others." The author of the items clearly felt that the items as wholes had face validity, seeming to measure the construct. Empirical work would test whether this is the case. But examine the items closely. The first can be understood to refer to the respondent or generically to anyone; the second clearly refers to a generalized belief. The second includes reference to others, the first does not. The first has a cognitive emphasis absent in the second. These differences are not systematically varied throughout the questionnaire but are simply given no thought. We know enough about questionnaire construction to know that every word included, not only a key word or the general sense of the item, affects the response. My goal in constructing an SOC scale was to avoid this pitfall.

The tool that allows one to do so, facet design, was developed by Guttman (see Shye, 1978). It is based on the notion of a Cartesian space. The researcher specifies facets of what is to be measured and the important elements in each facet. The profile, or structuple, consists of a particular combination of one element in each facet and provides the basis for the formulation of a given item. A mapping sentence, presenting the facets and elements, formally subsumes in succinct fashion the entire potential for questionnaire items (see Figure 1).

In the present case, it was clear that the first facet to be considered was the SOC (the response mode), with its three components of comprehensibility, manageability, and meaningfulness. Every item would be limited to expressing one of these components (or, technically, elements). This facet, thus, is the response mode of the respondent to a given stimulus. In other words, a questionnaire item would ask: To what extent do you perceive stimulus X as comprehensible? (For example: How often do you find that you don't understand what other people are saying to you?) A second item would ask: To what extent do you perceive stimulus X as meaningful? (For example: How

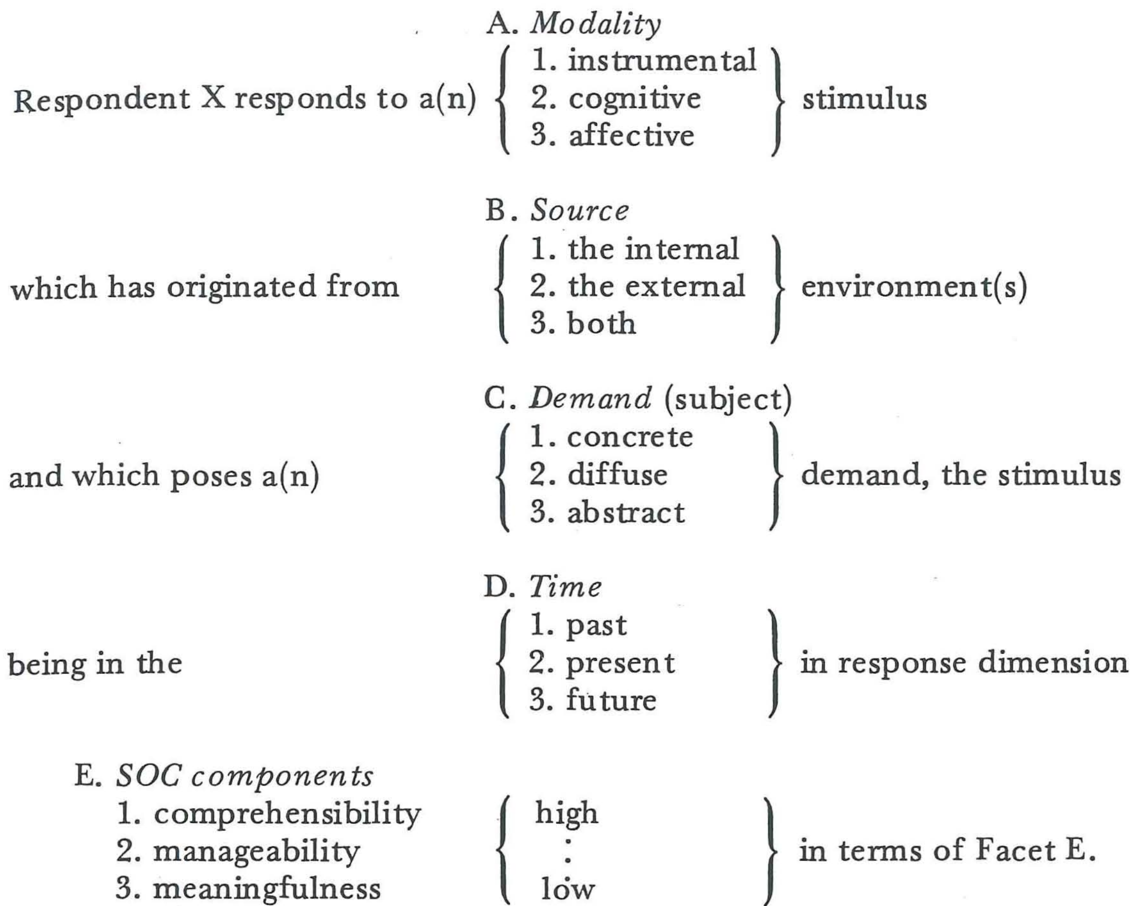

Figure 1. Sense-of-Coherence Mapping Sentence for Questionnaire Design.

often do you find that you don't care about what other people are saying to you?) A third item would ask: To what extent do you perceive stimulus Y as comprehensible? (For example: How often do you find that you don't understand what you read in the papers?) And so on.

The next step was to determine important facets of the stimuli and the elements to be included under each facet. Four facets were selected: the modality of the stimulus (instrumental, cognitive, or affective), its source (internal, external, or both internal and external), the nature of the demand it posed (concrete, diffuse, or abstract), and its time reference (past, present, or future).

The facet technique is a tool, used by each researcher in his own style. Guttman prefers to work from the theoretical concept to the formal mapping sentence to item construction. My own preference is a going back and forth, from intuitive

and literature-derived items to a draft of a mapping sentence to new items and back again. Neither facets nor elements are holy. Different researchers, starting from the same concept, may end up with different mapping sentences, which may then be compared and make significant contributions to conceptual clarification. (I should also add that the process is sheer fun.)

One arrives at the penultimate stage of this procedure when one has a satisfying mapping sentence and a bank of items each of which represents a profile. The mapping sentence at which I finally arrived is given in Figure 1. As an example, let us take item 25[3] in the final questionnaire: "Many people—even those with a strong character—sometimes feel like sad sacks (losers) in certain situations. How often have you felt this way in the past?" (response range from "never" to "very often"). This item is defined as a manageability item, with profile A3, B1, C3, D1 (see Figure 1); that is, it is an affective stimulus ("feel"), originates from the internal environment, poses an abstract demand, and refers to the past.

This sentence, even if one limits oneself to one item per profile, allows eighty-one comprehensibility, eighty-one manageability, and eighty-one meaningfulness items, far too many for field research. I judged that somewhere between twenty-five and forty items would provide a good, feasible basis for an index of the SOC. Some items were dropped because they represented duplicates of the same profile. Perusal of the mapping sentence generated some new items. At the end of this process, I had thirty-six items, each representing a different profile—that is, a wide range of stimuli—and was ready to pretest.

[3]This item was chosen as an example not only because it refers to one of the most striking themes noted in the pilot study and because data analysis showed it to be one of the strongest items but also because it exemplifies a problem in constructing an instrument designed to be useful cross-culturally. The questionnaire was originally designed in Hebrew, which has a word (*misken*) that conveys perfectly what was meant. In translating it into English, my native language, I forgot that my English was of World War II vintage, when "sad sack" was a type familiar to most Americans. "Loser" may be the best contemporary equivalent. It refers to the fellow to whom unfortunate things happen, the *shlimazl,* on whom the *shlimihl* spills the soup.

Using that favorite of researchers called samples of convenience, I tested the questionnaire time and again. Studying the distribution of responses on each item, correlation matrices, the results of a discriminant powers test, and smallest-space analysis printouts led to discarding some items, rewording others, and creating a few new items. At the end of this process, I had a twenty-nine-item questionnaire, comprising eleven comprehensibility, ten manageability, and eight meaningfulness items. The questionnaire is given in the Appendix. We now turn to its psychometric properties.

Psychometric Properties

The twenty-nine-item SOC questionnaire appeared in print in Antonovsky (1983). It was first field-tested, in Hebrew, with an Israeli national sample and has since been used by me and various colleagues with other samples, in Hebrew and in English, though little published research has as yet appeared. Before turning to examination of its formal properties, one point is in order, which is seldom if ever referred to in discussion of psychometric properties. Whether the questionnaire was used in interview or in self-completion format, I found it extremely rare that items were left unanswered. Moreover, and more important, it has been my experience and that of others that respondents *enjoy* the questionnaire. This observation is not a hard datum, but it is, if my impressions and those of colleagues are correct, germane to use of the questionnaire.

Normative Data. As noted, the SOC questionnaire has been used in a number of studies. The basic normative data from these studies are presented in Table 3. (I am grateful to my colleagues who have made these yet unpublished data available to me.)

Perhaps the most important thing to be noted about the data in Table 3 is the elementary fact that the questionnaire can be used cross-culturally, although as yet it has been used only in Hebrew and English. The distribution of responses, as shown by the range of scores and the standard deviations, points to an instrument that makes considerable distinction among members of different populations. The coefficients of variation (standard

Table 3. Normative Data from Studies Using the SOC Questionnaire.

Population	*N*	*Range*[a]	*Mean*	*Standard Deviation*	*Coefficient of Variation*	*Cronbach's Alpha*	*Date*
Israeli national sample	297	90-189	136.47	19.82	.145	.837	1982
New York State production workers	111	62-189	133.01	26.45	.199	.933	1985
U.S. undergraduates–I	336	63-176	133.13	20.09	.151	.881	1983
U.S. psychology major undergraduates	59	—	139.71	20.86	.149	—	1984
U.S. undergraduates–II	308	—	132.40	21.96	.166	.879	1985
Israeli army officer trainees–I	117	98-196	158.65	17.02	.107	.882	1985
Israeli army officer trainees–II	338	90-199	160.44	16.69	.104	.880	1985
Israeli army officer trainees–III	228	109-203	158.99	17.19	.108	.891	1985

Israeli health workers	33	116–190	151.42	17.50	.116	.910	1983
Edmonton health workers	108	101–192	148.63	17.15	.115	.881	1983
Nordic occupational health workers	30	95–187	146.10	19.90	.136	—	1985

Note: The present version of the questionnaire, used in the 1985 studies, has a slightly different ordering of the items than that used in the earlier studies. There had been an indication that a concentration of several similar items might raise scores slightly. These were dispersed.

The two dashed lines are intended to differentiate among (1) the homogeneous army groups; (2) the homogeneous health workers; (3) diverse populations.

[a]The theoretical range on the twenty-nine item, seven-point semantic differential questionnaire is 29–203.

deviation/mean), designed to indicate heterogeneity of responses (Blalock, 1972, p. 88), are considerable (from .10 to .20), even in the most homogeneous of the samples. The Israeli army officer trainee groups are all male, are of a very narrow age range, and completed the questionnaire in a situation that pressured to searching for the socially desirable answers; that is, though assured the instrument was for research purposes only, many undoubtedly thought that in some way their responses could affect their success in the training course.

Reliability and Validity. The consistently high level of Cronbach's alpha, which ranges from .84 to .93, points to a respectable degree of internal consistency and the reliability of the instrument.

Many years ago, in a paper which I believe appeared in the *American Psychologist* but which I have been unable to locate, the author defined face and content validity in terms of the extent to which the items and the questionnaire as a whole make sense to the researcher and to a few colleagues in chats across the lunch table. I have been able to go a bit beyond this, I hope, by using facet design as a basis for questionnaire construction. I should here add that, before going out into the field, I asked four colleagues to go over each item and, first, indicate whether they thought it appropriate and, second, record its facet profile. This led to some occasional rewording. I believe, then, that the twenty-nine items do indeed cover the important aspects designed to be measured.

One measure of criterion validity is available. In 1981, Ruben Rumbaut and his colleagues at the University of California, San Diego, having read *Health, Stress, and Coping,* constructed a battery of one hundred SOC items. This was administered to 302 undergraduate respondents. Factor analysis was used to reduce the battery to a twenty-two-item questionnaire. They then used this instrument in a study with a sample of 102 college students, elderly persons, and Indochinese refugees. In this study, they found that their SOC scale, measuring the SOC concept as they understood it, had a reasonable degree of internal consistency. They also present evidence for convergent and discriminant validity (Rumbaut, Anderson, and Kaplan, forth-

coming). Here, then, is an instrument developed in complete independence (my correspondence with Rumbaut started only after their study had been completed) but designed to measure the same concept. They had not yet read anything written after the 1979 book. When I saw the questionnaire, I found an undue emphasis on what in the interim I had come to call the manageability component, and a few of the items were, I thought, inappropriate. But no matter. This is how one tests criterion validity.

In 1983, Rumbaut administered his twenty-two-item SOC scale and my twenty-nine-item scale to a sample of 336 undergraduates. He also included two other instruments. The alphas of the two scales were .903 and .881, respectively (compared, it might be noted, with .706 of Rotter's very widely used Internal-External Locus of Control Scale). The correlation between the two SOC scales is .639, a most respectable indication that they are measuring a similar construct, although it is of course true that the stringent requirement of criterion validity that the criterion be previously validated had not been met. (Some, then, may prefer to call this a test of concurrent validity.)

The data from the same study also allow tests of convergent and discriminant validity. In the middle-class American culture in which this study was conducted, it is reasonable to expect a significant positive correlation between the SOC and Rotter's Internal-External Locus of Control Scale, on which a high score expresses a perception of events as being in the control of the perceiver rather than in the hands of chance or powerful others. The correlation between the twenty-nine-item SOC and the Internal-External Locus of Control is .385; it is slightly higher (.425) when using the twenty-two-item SOC scale.

It seems reasonable to expect that SOC will be negatively related to anxiety, if we understand the latter concept to characterize a person whose world tends to be chaotic, who feels undesirable and unmanageable symptoms, and who wonders just where he or she fits into things. Discriminant validity is suggested by the significant negative correlation between the

twenty-nine-item SOC and the Sarason Test Anxiety Scale used (−.212; −.201 on Rumbaut's twenty-two-item SOC scale).

The same study provides a set of limited data that bear on the predictive validity of the SOC scale. Brief measures of self-rated health and of stress were developed. Neither the locus-of-control scale nor the twenty-two-item SOC scale correlates with the health and stress measures. Test Anxiety scores do have significant positive correlations (.123 with the health measure and .109 with the stress item), but these are lower than the correlations between them and the twenty-nine-item SOC scale (−.208 and −.151, respectively).

Further evidence of the validity of the SOC scale is found in the data in Table 3. A valid scale should produce differences on mean scores among samples that would be expected to differ (the known-groups technique). The highest mean scores among the various samples are found in the three groups of Israeli army officer trainees. These young men are an extremely select group, in superb health, and highly motivated to succeed in a very meaningful challenge situation. At the other extreme, we find the Israeli national sample, the American production workers, and the three groups of American undergraduate students. The first sample is, of course, highly heterogeneous; the second is a largely upper-working-class group; the three student groups, though only slightly younger than the officer candidates, are in a life situation in which an outlook on life is just being crystallized. The three health worker groups (the Israeli and Edmonton samples were largely nurses; the Nordic respondents included physicians, social scientists, and other public health professionals) are clearly middle-class people, engaged in respected and often satisfying work. They would thus be expected to score higher than total population, worker, or undergraduate student groups, though not as high as the officer trainees. The rank order of the means reflects these expectations. Moreover, the psychometric properties of the data on the three officer samples are near-identical, as is also true of the two undergraduate samples, both of which are made up of liberal arts students in state universities.

An indication of predictive validity is found in the Israeli

national sample data. Since this was a cross-sectional study, nothing, of course, can be said about causality. Using a nine-point ladder scale, respondents were asked to rate their own health status. Responses were collapsed into five categories, as were the SOC scores. The percentage in the best health category declines linearly as we move down the SOC scale, from 33 to 12 percent. Whereas only 7 percent of the highest-SOC group are in the poorest health category, 35 percent of the lowest-SOC group are (Antonovsky, 1983, p. 16).

Validity data are also found in a study by Dana and others (1985). They administered the SOC scale to a sample of 179 psychology undergraduates, using a battery of other measures to test its validity. They found a correlation of .72 between the SOC scale and Rumbaut's twenty-two-item SOC. The correlation between the SOC scale and a forty-item scale designed to measure SOC which had been independently developed in 1981 (Payne, 1982), with which I had not been very happy, was significant but much lower (.39). Of more importance, the authors' analyses of the relations between the SOC scale and a variety of health and other measures lead them to conclude as follows: "The Antonovsky SOC score was consistently and significantly related to all positive health measures while being significantly and negatively related to all illness measures. . . . The Antonovsky-MHLC [Multidimensional Health Locus of Control] relationships are also congruent with salutogenesis. . . . This demonstration of predictable SOC relationships with a variety of external measures is remarkably consistent" (pp. 2–3).

Shortened versions of the SOC scale have also been used in two Israeli studies of drinking behavior. In both cases, the mean SOC scores of those defined as alcoholics are significantly lower than those of the comparison groups. In an unpublished study of sixty-nine fifteen- and sixteen-year-olds, using an SOC scale adapted for adolescents, a correlation of –.79 was found with the Trait scale of the Spielberger State-Trait Anxiety Inventory. Another study, using a short, adolescent SOC scale with two groups of fourteen- through eighteen-year-olds (N = 61 and 263), showed correlations of –.56 and –.62 with A-trait scores (Antonovsky and Sagy, 1986).

Of the studies referred to above, three have appeared in print: my own study of an Israeli national sample (Antonovsky, 1983), the study of Israeli adolescents (Antonovsky and Sagy, 1986), and the study of New York State production workers, originally a master's thesis (Fiorentino, 1985) and now in a journal (Fiorentino, 1986). One other (Rumbaut, Anderson, and Kaplan) is in press. Judgment of the track record of the SOC scale must, then, be held in abeyance until published reports of the psychometric properties of the scale appear in refereed journals. There is, however, sufficient evidence to warrant the tentative conclusion that the scale is an adequate representation of the SOC construct. We do have, I believe, a tool that, for those who think the salutogenic hypothesis makes theoretical sense, can be used. The scale will undoubtedly undergo modification in the future. But for the time being, it is ready to go.

In one of the first empirical studies testing the SOC/health hypothesis using the SOC scale, Margalit (1985) studied a sample of thirty-two children identified by teachers, using a symptom questionnaire, as hyperactive and a control group in grades four to six. The former had a significantly lower SOC score, which "reflected that their environment seemed less ordered and predictable; expected (age-appropriate) tasks seemed less manageable, and to a large extent seemed meaningless" (pp. 361-362).

Relations Among Components of the SOC

In Chapter Two I discussed the relations of the three components of the SOC, comprehensibility, manageability, and meaningfulness. I argued that they were "inextricably intertwined," although they can be distinguished theoretically. Empirically, I suggested, it can be expected that some people will be, for example, high on comprehensibility and low on manageability, although this would be an unstable situation.

As indicated above, the questionnaire was constructed using the SOC as one facet, and eleven, ten, and eight items of the final scale represented the three elements, respectively. It

might, at first sight, seem possible to assign three separate subscores and study the empirical relations among them.

In the Israeli national study (unpublished data), the three intercorrelations were .45, .59, and .62. In the study of undergraduate psychology students referred to above (Dana and others, 1985), the authors focused on the relations among the components. They found correlations of similar magnitude (.52, .60, and .72). Of greater importance, they used measures of construct equivalents for each of the three components—for example, the Order subscale of the Edwards Personal Preference Schedule for manageability. The correlations between each component and its construct equivalent were indeed significant. However, they found that each of the components was just as related to the other construct equivalents as was the SOC component supposedly closest. "These construct measures," they write, "did not distinguish among Antonovsky subscales" (p. 2).

Factor analysis of the Israeli national sample data had also demonstrated that the three component scores were not empirically separable. Such results were not surprising. The goal had been to construct an SOC scale, to which each component contributed. The very design of the questionnaire items precluded three separate subscales with low intercorrelations: Although each item is either a comprehensibility, a manageability, or a meaningfulness item, the items from each subscale share elements from the other four facets with items from other subscales. Thus, for example, the eleven comprehensibility items have three references to past, six to present, and two to future stimuli, while the ten manageability items have four, three, and three, respectively. The SOC facet pulls the items apart; the other facets push them together. Use of a technique called smallest-space analysis (Shye, 1978), which allows multidimensional analysis, provides evidence that this is indeed the case.

If the goal had been primarily to study how comprehensibility relates to manageability, it would have been necessary to adopt a different approach to questionnaire construction, so that each item intended to represent one of the components would be cleanly different in its entirety from items intended to represent another component. The reader is duly warned,

then, that the present version of the SOC scale is not wisely used to study component interrelations. This question remains on the agenda of unfinished business.

My apologies for this chapter to the reader not particularly concerned with technicalities and ready to take on faith that the SOC questionnaire is indeed a feasible, interesting, reliable, and valid instrument that can be used to test the salutogenic hypothesis. Others are justly not so charitable. But I would close on the note on which I opened: There are many methodologies that can test the hypothesis. A closed questionnaire is only one road to follow.

5

How the Sense of Coherence Develops over the Lifespan

Life Experiences and Their Contexts

In *Health, Stress, and Coping* (1979, p. 80), I had made use of Galdston's (1954, p. 13) metaphor to illustrate the ubiquity of stressors: "Dynamic homeostasis can be likened to a man walking a tightrope from one end to the other, balancing himself even while he changes clothes and takes on and discards a variety of other objects." In a recent paper (Antonovsky, 1985, p. 275), I expanded the metaphor, writing: "We begin to lose our balance and recover it; or slip, catch the rope, and return to a standing position; or fall into a net and again regain the rope; or fall, hurt ourselves acutely or are damaged chronically; or we are destroyed. Some complete the course, with ups and downs, but successfully—and what a glorious, exhilarating experience it has been, whatever the sadness that it has ended."

The metaphor is useful in conveying the flavor of the salutogenic image of life. For purposes of the present chapter, a more powerful metaphor, incorporating the salutogenic question and the SOC answer and placing them both in proper context, is "the bias of the downstream focus," which has begun to appear in the moderately anti-medical establishment literature. Contemporary Western medicine is likened to a well-organized, heroic, and technologically sophisticated effort to pull drowning people out of a raging river. Devotedly engaged in this task, often quite well rewarded, the establishment members never raise their eyes or minds to inquire upstream, around the bend in the river, about who or what is pushing all these people in.

Among those who have most forcefully adopted this metaphor, we find a school of thought that has emerged with great vigor in the past few years, variously called behavioral health, behavioral medicine, or health psychology. At the core of its thinking is the concept of "the life-style behavior of the individual." Obeisance is paid to poverty and to environmental pollution. But, as summed up by the U.S. Secretary of Health, Education, and Welfare in 1979, "Indeed, a wealth of scientific research reveals that the key to whether a person will be healthy or sick, live a long life or die prematurely, can be found in several simple personal habits . . . people who practiced seven of these simple habits lived, on the average, eleven years longer than those who practiced none of them" (quoted in Matarazzo, 1984, p. 17). McKeown (1979), one of the first to bring the life-style issue forcefully to world attention, had been more sophisticated. He at least implied that life-styles derived from and were reinforced by social and cultural organization. Examination of the Matarazzo volume or a parallel state-of-the-art review (Gentry, 1984), both excellent books in their own right, reveals the extraordinary extent to which this school of thought tends to assume that people are jumping into the river of their own volition and refusing to learn to swim.

My own work has been taken up by this school. I was invited to contribute a paper to the Matarazzo volume (Antonovsky, 1984a), and the SOC concept is referred to in Gentry. It is particularly germane to this chapter that it be clear that, in an important sense, I would dissociate myself from this school. To continue the metaphor, my fundamental philosophical assumption is that the river is the stream of life. None walks the shore safely. Moreover, it is clear to me that much of the river is polluted, literally and figuratively. There are forks in the river that lead to gentle streams or to dangerous rapids and whirlpools. My work has been devoted to confronting the question: "Wherever one is in the stream—whose nature is determined by historical, social-cultural, and physical environmental conditions—what shapes one's ability to swim well?" I did not inquire into the causes of poverty, war, unemployment, or pollution, never dreaming that anyone would understand my work as implying

that these were not fundamental to understanding movement along the health ease/dis-ease continuum.

I did commit myself to the argument that how well one swims is determined in good measure, though not solely, by one's SOC. Given the same objective characteristics of the river, people will manage more or less well. The sanitary conditions of New York's Lower East Side at the turn of the century did not predispose to a low mortality rate. But given such an environment, some individuals and groups did much better than others (Antonovsky, 1961, pp. 117-118). I sought their secret.

The answer proposed was the SOC. Analyzing the sources of the SOC, I devoted a fair number of pages (136-152) in *Health, Stress, and Coping* to going beyond the intrafamily, personality-shaping experiences; I related the SOC explicitly to social class and to societal and historical conditions, which, in determining the generalized resistance resources available to people, create prototypical patterns of experience that determine location on the SOC continuum. There are, of course, individual variations within subcultures, affected by genes, constitutional predispositions, and luck. Perhaps the error lay in assuming that readers would be sociologically sophisticated, clearly understanding the context.

The reader, then, is requested to recall, in the ensuing discussion, that being male or female, black or white, upper or lower class, Canadian or Kampuchean, Cuban or Costa Rican—with all that these social categories imply—is decisive in determining the particular patterns of life experiences that engender a stronger or weaker SOC.

What does "pattern of life experiences" mean? Readers will recall that the SOC concept had been developed in the course of the search for a theoretical explanation of how GRRs such as social supports or a strong ego identity are linked to health. I looked for a parsimonious culling rule that could define a GRR. Influenced by information theory arrived at via Cassel's (1974) emphasis on predictable responses and feedback, I put this rule in terms of a "characteristic, phenomenon, or relationship . . . that provides extended and continued experience in making sense of the countless stimuli with which one is con-

stantly bombarded" (Antonovsky, 1979, p. 121). This "experience" was not systematically explored. References to its three characteristics—consistency, an underload-overload balance, and participation in shaping outcome—were intuitive and scattered (pp. 86, 155, 187). In the very definition of the SOC (p. 123) as well as throughout the book, the emphasis was on comprehensibility and predictability. Despite the caveat that it had an affective as well as a cognitive component, the SOC was essentially seen as perceptual. The load balance and participation elements of the life experiences were linked to seeing the world as ordered rather than chaotic.

Not until the pilot study had been conducted and, in its wake, the three components of the SOC clarified was a fuller understanding of the nature of the life experiences that lead to the SOC developed. The intuitive identification of the above three characteristics had been on the right track. Now we can see the links more directly. Consistent experiences provide the basis for the comprehensibility component; a good load balance, for the manageability component; and, least clear of all, participation in shaping outcome, for the meaningfulness component. This last requires explication.

Many life experiences can be consistent and balanced but not of our own making or choosing in any way. For any life experience, one can ask whether we have taken part in choosing to undergo that experience, in judging whether the rules of the game are legitimate, and in solving the problems and tasks posed by the experience. When others decide everything for us—when they set the task, formulate the rules, and manage the outcome—and we have no say in the matter, we are reduced to being objects. A world thus experienced as being indifferent to what we do comes to be seen as a world devoid of meaning. This is true in immediate personal relations, in one's work, and in whatever spheres are included within our boundaries. (As noted in Chapter Two, this does not mean that such experiences will not affect our lives.) It is important to stress that the dimension is not control but participation in decision making. What is crucial is that people approve of the tasks set before them, that they have considerable performance responsibility, and that what they do

or do not do have an effect on the outcome of the experience. This formulation thus has room not only for the largely autonomous person but also for the loyal party member, the religious believer, the work-group participant, and the child in the healthy family described by Reiss (1981), engaged in a complex sharing process in order to develop consensus (see Chapter Three).

But we must go one step further, as I came to realize in analyzing the role of the housewife (Antonovsky, 1984a, p. 127). At first glance, it would seem that the experiences of this role clearly meet the criterion of participation in decision making and that the central problem of the housewife in this context is overload. It took me some time to realize that if participation in decision making is to lead to meaningfulness, it must be in activity that is socially valued. The housewife's role is central to her ego identity. She may have an interest in art and come to say that it is not really important to her. But she cannot say that being a housewife is not important to her, for it both consumes so much of her time and energy and it is the role in which she is socially identified. Even when she has chosen to enter the role (and often it is not a matter of choice), the message is clearly conveyed to her that what she does is not particularly important. In a work-oriented society, she does not "work." In an instrumentally oriented society, the sociologists disregard her instrumental functions and talk vaguely of integrative functions. The tax structure makes it clear that her activities are worth little. In a society that evaluates people in terms of how socially mobile they have been, the housewife starts and ends her role career on the same rung of the ladder. In sum, she has decision-making power with respect to process and product in a sphere that, in Western societies, is not held to be of much account. There is little basis for seeing the life experiences of the housewife as strengthening the meaningfulness component of the SOC. This should be qualified. Conceivably, one's role may be socially valued in a given subculture or by one's significant others, even while being disvalued by the broader society. This may well be adequate for a sense of meaningfulness. But social valuation there must be.

Having clarified what I mean by "pattern of life experi-

ences," I can now turn to a systematic, if brief, consideration of the life cycle in which I shall concentrate on sketching the conditions that underlie the emergence and reinforcement of a strong SOC. Once again it must be stressed: there are many cultural paths to a strong SOC. This does not mean that all cultures and subcultures are equally conducive to a strong SOC. The stressors that inhibit the SOC and the GRRs that enhance it are far from being randomly or equally distributed in all human communities. They may be fairly similar in a middle-class Stockholm community, a skilled-working-class Mormon family in Salt Lake City, and an ultra-Orthodox Jewish family in Jerusalem, despite the vast cultural differences. But they differ greatly in London's Kensington and Johannesburg's Soweto. The life experiences, then, must be considered on a fairly high level of abstraction.

Infancy and Childhood

Comprehensibility. Attachment theory from Bowlby (1969) to Rutter (1981a) has given us a profound basis for understanding the interactive development of the infant and child. Bowlby proposed, as Boyce (1985, p. 155) puts it, that "infants are born with a biological tendency to behave in ways which promote proximity and contact with their parents" and, we may add, with others in their immediate environment. Boyce takes us a step further in "postulating an elemental human need for stability . . . a child's evolving attachment to its social environment would be viewed as a critical element in fulfilling its need for stability" (p. 161). The infant, in other words, can interact in ways that promote stable, consistent responses—interaction which, we have recently begun to learn, can occur almost immediately after birth. (See the lovely photographs of the facial expressions of the thirty-six-hour-old infant in Field and others, 1982.)

Here I must interject a comment pertinent to the style of almost all writing on infant and child development. There is an assumption that what *should* happen, according to the author, does indeed happen as the child develops. Pick up almost any

text and you will find phrases like "the infant becomes progressively aware," "the child discovers and comes to comprehend," "the mother lives through, and loves with, her breasts." At best, this description of "reality" is qualified by "this is what normally happens," with great surprise, expressive of a pathogenic orientation, when it does not happen. It is to Erikson's great credit that throughout his work he has taken pains to write of crisis and challenge, of "*a succession of potentialities*" (1959, p. 52). The crucial question is always *the extent to which something happens* and its consequences.

I make this point here in order to stress that, in concrete reality, one cannot take the life experiences of consistency, load balance, and participation for granted. In fact, I tend to think it somewhat of a miracle when they are indeed on a high level. Take the idyllic picture of the well-to-do mother, delightedly devoted to finding her full expression in caring for her baby, intelligently aware of the latest pediatric literature, relaxed and happy. The phone never rings; the baby is never irritable; she never has a fight with her husband, feels a lump in her breast, is informed that her father has had a heart attack, or finds her purse snatched while walking with the baby in the park. And, of course, no other person, not babysitter, older child, neighbor, or husband, ever interacts with her baby. In this never-never land, the infant will indeed develop a profound attachment to the mother and, through it, experience life as thoroughly consistent. Erikson's basic-trust challenge will be fully and successfully met. The mother will have "become an inner certainty as well as an outer predictability" (Erikson, 1963, p. 247).

Real life, of course, is far more complex. For a large proportion of the world's infants and children, the only things that are predictable are hunger, discomfort, and pain, never adequately assuaged by being held closely, and a vicious cycle of apathy, withdrawal, failure to thrive, shrinking, and death. But given satisfaction of those elementals, there is the possibility of what Boyce calls "a growing awareness of the continuity inherent in social relations" (p. 162). The infant can begin to learn that objects, and particularly those most important "objects" called people, can disappear but be counted on to reappear. The

small child can be likened to the researcher working with natural experiments. Day in, day out, the hypothesis is tested that there is consistency, continuity, and, in Boyce's term, permanence. I do not know what level of statistical significance the child sets for accepting the hypothesis, for coming to the conclusion that real-life experience has provided adequate evidence that consistency is normative. Watching children, one often gets the impression that even the happiest of conclusions is tentative, for they continue to conduct their own experiments.

Over time, then, the infant and child may become persuaded that his or her world, physical and social, can be counted on not to be constantly changing. The variety of stimuli, from within and without, may become familiar and routinized, as may happen with responses. To the extent that this happens, the first picture of the world begins to become comprehensible. At this point, again, a warning must be issued not to fall into an assumptive trap, as Condry (1984) does, in a paper that is important and will be referred to below. "The motive is inherent in the child to pick up the organization inherent in the world," he writes. "The child does not structure reality so much as he or she discovers and comes to comprehend and represent the structure that is already there" (p. 489). The objective world of Condry's middle-class American children may have a significant degree of inherent structure. For the three-year-old left in the care of her somewhat older sibling while her mother is at work, playing in a dilapidated tenement dwelling, with a succession of "fathers," the "inherent structure" is not readily apparent. I do not wish to be misunderstood. There is probably a greater degree of structure in the life of the seven-year-old Bedouin girl tending sheep in the arid fields just a few kilometers from my home than there is in Ithaca, Condry's university town. The reality of consistency is empirical, not to be blithely assumed. It is not necessarily there to be discovered by the child.

Meaningfulness. If the reality of stimuli and responses is indeed consistent, if the child indeed picks up the structure, the next question that arises is that of the quality of the response. The response may be consistent, but it need not be gratifying.

The crying hungry child may be consistently responded to by being slapped or ignored, guided by the scheduled-feeding advice my pediatrician colleagues dislike being reminded that they used to give. Or he may be cuddled and fed. This brings us to the set of experiences conducive to a sense of meaningfulness, participation in decision making in socially valued activity.

I cannot quite agree with a recent fashion which suggests that the child socializes the family as much as it is socialized by the family. But there is no doubt that even the infant is a proactive being, unequivocally pressuring the environment to act, seeking to shape its behavior. To the extent that desired outcome is contingent on the infant and child's actions, it can reasonably be said that early on there is participation in decision making. The crux of the matter is whether the quality of the response is embedded in positive affect. Coldness, hostility, and disregard, even when obvious physiological needs are met, convey a clear message of disvaluation. Play, touch, concern, and voice, expressed in infinite cultural variety, state: You matter to us.

Manageability. Experiences of load balance are not totally absent from early infancy, but they are present largely in a negative sense. Demands in toilet training that precede physiological maturity, feeding patterns that violate biological reality, and the like can be seen as imposing an overload burden. The negative consequences for the development of a sense of manageability may be devastating. The issue of a positive development really begins to come to the fore when the young child is ready for Erikson's unhappily named challenge of autonomy (for it is not really autonomy in any full sense that can be expected). The child becomes neurophysiologically ready to withhold and to let go (of stool, objects, or temper), to move, explore, and manipulate, and to wait. The child is, then, ready for choice. Such increasing readiness makes rules, demands, and challenges relevant to load balance. When it is not patently absurd that we should be expected to fulfill a given demand (posed from within or without), when the demand is somehow "reasonable" in our eyes or in the eyes of those who importantly surround us, that is, when it is accepted that we can either

will to fulfill it or not, then the experience has significant consequences for our load balance.

Condry's (1984) analysis of the process of gender identity formation is useful in understanding the forces in childhood that begin to shape the sense of manageability. His interest is in sex roles, although, as he notes, these are part of the wider variety of social roles we acquire in the course of primary and secondary socialization. His central assumption is that "we acquire [sex roles] because they allow us to act competently in the world. They afford control of the social world . . . to anticipate and manipulate the correlations and causal structure of the world" (p. 489). In other words, sex roles enable us to feel that we are competent. This applies to all our other social roles as well.

Condry's basic mode of thinking, as noted above, begs the crucial question. "We develop both ways of perceiving the world and thinking about the world which are accurate and efficient, and we develop skilled patterns of interaction with the world, which we are able to use in order to carry out our intentions" (p. 490). Some children are more successful in doing this, some less so. The issue is precisely what are the experiences that foster or inhibit such development.

The issue is two-sided. On the one hand, the social world of the child places demands on him or her, to which the child wills or does not will to respond. On the other hand, the child makes demands to do this or that and to have others do this or that, to which the response is more or less rewarding. Putting it this way allows us to see that the underlying dimension of the relationship between the child and his or her social world is power, inevitably unequally distributed. The child's vulnerability and dependence are still quite extreme, providing great motivation to begin acquiring the behaviors, skills, attitudes, and values appropriate to establishing a social identity, to knowing one's place.

We need make no assumptions about innate motivations or temperament. What we can say is that, looking at one side of the coin, if the child does will to do something, for whatever reason, the response can be one of four kinds: being ignored,

refused, channeled, or encouraged and approved. "Go see what the children are doing and tell them to stop it," Anna Freud is reputed to have quoted the upper-class German mother's instruction to the governess. When the balance of responses is of this kind, the child begins to learn that demands stemming from the inner environment produce overload, are destined to result in punishment and incompetence. There is nothing one can do right.

At the other extreme, providing a balanced pattern of the four kinds of responses makes for a strong sense of manageability. Some things the child wills to do are ignored. If they prove to be frustrating, they will be extinguished; if rewarding, reinforced. In either case, the "decision" has been the child's. Other things are prohibited and punished, a clear message that not all in the world is manageable. But if these two responses to what the child wills to do in response to demands from his inner environment are relatively minor, and the large part of the picture is either channelization (this way yes, that way no; now no, but later yes) or encouragement (providing a double reward of enjoyment in the activity and approval from significant others), underload and overload are avoided.

I have looked at this side of the coin first—demands from the internal environment—because, though crucial to load-balance experiences, it is often disregarded, as if the only thing that mattered were what the social world proposes to and demands of the child. Kohn's work on parental values and child-rearing patterns (1977), to which I referred at length in *Health, Stress, and Coping* (1979, pp. 142-147), links the two sides of the coin. Parents who have "an orientation that is one of complexity and flexibility, alternatives and self-direction, meaning, consistency, choice, and a sense that problems are manageable and solvable" (p. 147) are likely to respond to the things the child wills to do in the mode of the previous paragraph. At the same time, they are more likely to propose and to demand behaviors that neither underload nor overload the child. The likelihood is small that the child will be left totally to his or her own devices, the essence of underload for a child. If anything, the error will be in the direction of overload, of setting too rapid a pace for demanded development. Such parents will in-

sist on posing challenges, with the saving grace of sensitivity to the price paid for posing too many insoluble tasks. Or, in other words, the stronger the SOC of the parents, the more likely they are to shape the set of life experiences of the child so that it leads in the same direction.

These, then, are the major alternative kinds of experiences that provide the initial propelling force in a person's life in the direction of a stronger or weaker SOC. But before turning to analysis of adolescence as the second broad era that reverses, stabilizes, or strengthens this direction, I must add one major corrective. In most cultures, the infant has one major caretaker and shaper of the experiences that begin to mold the SOC, although other less or more shadowy figures may be involved. Starting in early childhood, and increasing rapidly with age, the child is exposed to a broader social environment. As Condry (1984, p. 499) puts it with reference to the four- to fourteen-year-old American child, "The distribution of environmental sources of information [in my terms, stimuli, demands, or messages] is divided in about equal quarters among the parents, the peers, the school, and the television set." In one of the earliest studies of the kibbutz, Faigin (1958) analyzed the surprising extent to which the group of toddlers operates as a socializing agent upon its members and takes over "the values of the culture in which they are being reared and uses these actively in setting standards for each other's behavior" (p. 123). In this cultural setting, we may expect relative consistency in the messages sent to children, determined jointly by parents, caretakers, and the group of toddlers. When Faigin studied kibbutz children, there were no TV sets, and trips to the city were rare occasions. This world has changed, and even in the kibbutz the messages to the child have become more complex. How much more, then, in the world Condry describes! But complexity itself is not the issue, and it may even be advantageous, for it opens greater opportunities for balanced-load challenges and for participatory, valued experiences. The problem it poses is, above all, that of consistency. When parents reward (or punish) one kind of behavior, teachers another, playmates a third, and the mass media

a fourth—sexual behavior is perhaps the most dramatic example in contemporary Western cultures—it is hard to be sanguine about the chances for consistent life experiences.

Adolescence

The *Sturm und Drang* image of adolescence is indeed a tempting, dramatic characterization of constant turbulence, confusion, self-doubt, and marginality. To the extent that it is an accurate reflection of reality, as it is in some culture settings, one would expect that whatever basis has been laid in childhood for a strong SOC will be upset in adolescence. One is always too tall or too short, too fat or too thin, too dumb or too smart, with no breasts or too big breasts, too confined or too free to walk the streets of the city, too young to do this and too old to do that, gawky, acned, and confused. If messages from the various worlds of the child were contradictory, how much more is this so for the adolescent! Yet this is not inherently necessary in human culture.

In a paper that has become a social science classic, Benedict (1938) contrasted the discontinuities between the life of the child and the adult in America with the carefully staged continuities and consistencies of messages in other societies. Her discussion focuses on three central facets of human life: responsibility, power relations, and sex role. In American culture (at least of that time), the child was expected to bear no responsibility, to be submissive, and to be asexual; as an adult, one bears full responsibility, is dominant, and plays a very clearly defined sex role. Adolescence is the battleground of such revolutionary transformations. By contrast, Benedict stresses the age-graded continuities characteristic of many societies. Even in societies where there is apparent behavioral discontinuity—for example, a childhood period of passive homosexuality that is taboo in adulthood—ritualized societal ceremony facilitates the transition. The messages are clear, unequivocal, and conveyed unanimously.

The central problem confronting an adolescent in all cultures is to "put one's act together," to develop "a defined personality within a social reality which one understands . . . [to]

derive a vitalizing sense of reality from the awareness that his individual way of mastering experience is a successful variant of the way other people around him master experience and recognize such mastery" (Erikson, 1959, p. 89). The importance of this formulation in the present context is twofold. First, one can infer the three components of the SOC: "successful variant" and "sense of reality" imply comprehensibility; "recognize such mastery" implies manageability; and "vitalizing . . . awareness . . . individual" implies meaningfulness. Second, the formulation is appropriate to boys and to girls, to adolescents in tribal cultures, in the Chicago black ghetto, in the *Hitlerjugend,* and in the Israeli kibbutz, as well as in a Western middle-class suburb. The crucial question is the extent to which the cultural context and the social-structural reality impede or facilitate the life experiences we have been discussing.

At the risk of oversimplification, three major cultural paths adolescents may traverse can be identified: the complex open society, which provides a wide variety of legitimate, realistic options; the integrated, homogeneous, and relatively isolated culture or subculture; and the devastating, confusing sociocultural context, which makes it impossible to make sense out of life. Condry (1984, p. 502) puts it succinctly in his discussion of the pivotal gender role, which may be taken as a proxy for the totality of social roles through which the adolescent is called on to express identity and elaborate an image of the world: "observing what is available in the culture, organizing and making sense of this information, and coming to understand where he/she fits in the scheme." Each of the three cultural paths offers a different information complex.

Life is never easy and painless, even for the most fortunate of adolescents. But consider the boy who has grown up in a childhood of age-graded continuity in a pleasant upper-middle-class suburb of New York (or its equivalent in Sweden, Japan, or Israel). A wide variety of challenging legitimate options are consistently presented to him by sophisticated parents, peers, teachers, and the mass media. His experiments with marijuana, sex play, and career crazes are smilingly and tolerantly criticized. He goes on to Reed College, takes a year off to wan-

der around Amsterdam or the Brazilian jungle, graduates, spends another two years in the Peace Corps, and enters Harvard Law School, cohabiting with a genuinely peer young woman. His parents drink but are not alcoholic. On the few occasions when he has battled with them, a most pleasant evening was spent with his doting widowed grandmother or cousins, after which he returned home as a mini-prodigal son. His Israeli peer has spent four years as an army officer. His Japanese peer, more in a hurry, is already on the lower rung of a corporate ladder, while his Swedish peer, headed for medical school, has worked as an aide in a psychiatric hospital.

Social class, history, and sex, as well as genes and idiosyncratic fortune, have here combined to foster an emergent strong SOC. The information and choices offered by the environment were always clear and realistic. The interplay between individual proclivities and the choices tentatively made was always seen as legitimate and valued, even when the choices turned out to be unfortunate. Of course, our young man could have got involved in "illegitimate" options, such as hard drugs, religious cults, or fathering a child. He could have found out that his father was not his biological father; that his homosexual urges were totally unacceptable even in his liberal family; that following in his father's corporation-law career was deeply alien to him. And the chances are even greater that his sister, who had followed a similar path, had always, deep down, got the message that all this was well and good but that she was, after all, a woman destined for home and hearth. Culture, class, and history offer no ironclad guarantees of a pattern of life experiences of consistency, load balance, and participation in decision making. They do allow statistical prediction.

One variant of this successful path to a strong SOC, at least until early adulthood, is seriously and delightfully (at least for me, since it deals with my childhood and adolescence) portrayed in Blau's (1967) little-known "In Defense of the Jewish Mother." This variant may be an even more efficient and effective road to a strong SOC than is the upper-middle-class liberal world portrayed above, with its key danger: when everything is legitimate, when distinctions are not made between real

achievement and failure, when the canon (see Chapter Two) is unclear, when choice is unbounded, the burden on the adolescent is too great. Blau likens the childhood and adolescence of American Jewish children of immigrants to those of young people in contemporary Japan and points out the similarity to the pattern that may obtain in other immigrant groups who manage to maintain a clear culture relevant to the new society. The tight family structure, the strong bonds of love and mutual dependency between mother and child, the centrality of education as a value and achievement as a goal, the clarity of identification as Jew in an open American society, the legitimacy of emotional expression tempered by the prohibition of physical aggression, the information network in the community, the deferred gratification pattern, the mobilization of family resources for the children, the experience of struggle to become self-reliant—all these were protective against the paralyzing dependence on the adolescent peer group so often resulting from too early independence and permissiveness.

A second major cultural path during adolescence toward a strong SOC is found in those historically rooted, homogeneous, socially and culturally isolated groups who live in modern societies, may even take full part in them on one level, but are not of them on a more profound level. This is particularly true of religious groups. They give unto Caesar his due, but not of their souls and their way of life. The adolescent growing up in such a culture experiences life, in a way, much as described by Benedict in writing of isolated tribal societies. For the Mormon adolescent in Provo, the Jewish boy or girl in orthodox Williamsburg, or the Komsomol youngster in Kiev, life is a rich tapestry of myth, ritual, and models. The road to righteousness is strewn with dangers to be avoided, challenges to be met, skills to be acquired. The rewards to the worthy are considerable, and most have the potential to be found worthy. Lapses are taken seriously, so that there is a sense of the person's being taken seriously, but they may be pardoned. There are, of course, those who fall by the wayside, thereby making a major contribution to a sense of one's own being among the elect.

I am not suggesting that every such isolated, homogene-

ous community is conducive to the life experiences that make for a strong SOC. There are those cultures which convey to the adolescent that life is terror, that he or she is doomed to evil and destruction, perpetually unworthy and helpless, that any thought, doubt, or effort is sinful, that only one rigidly defined pattern of behavior is permissible, and that even death offers no release. No serious anthropologist would claim that all cultures have found equally effective modes of survival. Once again, my concern here has only been to take note of the fact that there is more than one pattern of adolescent experience that may provide a second basic layer, after childhood, of orientation to one's world as comprehensible, manageable, and meaningful.

For a large number of the world's adolescents, however, whether in central Africa, central Europe, or the American Midwest, life is a constant reminder of a world that is alien, hostile, incomprehensible, and absurd. The core of adolescence for these youngsters is, paradoxically, the consistent message that life is unpredictable, that there is no place in life for you. Hunger and cold and pain are bad enough in themselves. But the adolescent in the barrio, ghetto, or shantytown knows very well that there are many who are well fed and well clothed and have never seen a rat in their lives. Schools convey the message that Horatio Alger is still possible, but these adolescents know the reality of the unemployment rates of their older brothers and sisters and the miserable jobs of their fathers and mothers. There are the immediate gratifications offered to dull the pain: drugs and sex and violence. For the moment, they seem at least to offer a promise of a load-balance experience. The illusion is soon stripped bare, expressed brutally in the suicide and homicide rates and, for girls, in adolescent pregnancy. The lovely little toy soon becomes a yowling infant, marking an end to any possibility of choice. There are, of course, exceptions, the miracles of the strong mothers (much more often than fathers) who somehow manage to nurture and protect and give strength, opening a way to escape.

Note must be taken, in the world of the 1980s, of one further alternative: the world of fundamentalist apocalypse. A leader arises who offers the solution to all problems, a clear,

consistent message, a legitimate channel for the expression of aggression, a promise of redemption, and membership in the community of the elect. Or this can be a social movement. A special ethic of redemption, self-sacrifice, and identification emerges. This route cuts across social classes and cultures: it is found in Hitler's Germany, Khomeini's Iran, Mao's Red Guards, Gaddafi's Libya, and, in a special version, on Western campuses. (See Feuer, 1969, for a most relevant historical analysis of intergenerational conflict which is highly prescient.) The world of fundamentalism is hardly confined to youth. But insofar as it has appeal to those who, for whatever reason, are most direly in need of simplistic, clear-cut answers, it is particularly germane to adolescence.

Does it work? Does it reinforce the basic layer of an SOC set down in childhood or, for those whose childhood was wanting in this respect, allow reconstruction? With all my instincts and values, I would like to say no. I would like to say that the rigidity of an SOC that emerges in such a context inevitably makes it fragile, inauthentic, and doomed to shattering. But we must grant that the evidence is not at all clear. The experiences in the worlds of fundamentalist apocalypse are dramatically consistent, provide a load balance, and very much involve participation in socially valued decision making. In this they are very much like the homogeneous communities described above. There are alternative possibilities. For some, the path of fundamentalism, as it leads to a shattering rock of reality, is devastating. For others, marching along the road of history and salvation is slowly transmuted into a truly valuable experience out of which the gold of belonging, comradeship, meaning, and clarity retains its enriching quality, while the dross is sloughed off, and the adolescent moves on to a sobering adulthood with more doubt and skepticism about the world but ready to translate his experiences into a steady, strong SOC. And for still others, fundamentalism, linked with power, is never challenged but, rather, is reinforced by reality. They become the Bolshevik commissars and the yogi, the mullahs and the mafiosi, the police torturers and the professional terrorists—all, I am afraid, moving from an adolescent to an adult strong SOC. These, too, are ways of putting one's act together.

Adulthood

The adolescent, at the very best, can only have gained a tentative strong SOC, which may be useful for short-range prediction about coping with stressors and health status. It is with entry into adulthood, with long-range commitment to persons, social roles, and work, that the experiences of childhood and adolescence are reinforced or reversed, in both directions.

Most young adults go to work. This may be unpaid housework or work in a place of employment. In these social settings, the adult will spend more than half of his or her waking hours for the next forty or so years. Anticipatory socialization has been completed and one is on one's own, in a particular culture and society. It is in the period of early adulthood, I believe, that one's location on the SOC continuum becomes more or less fixed. I shall deal with the question of the dynamics of the SOC below. For the time being, let us explore its formation in young adulthood.

Let us start with the life experiences of the person who bears a major responsibility for running a home, the housewife role. One path, widely known in human history, revolves around the theme of relational responsibility. From early childhood, a woman has known that her destined role is that of wife and mother. Through attachment and identification, she has had the chance to acquire the great variety of skills needed to perform this role well. Moreover, she has learned early on that not only does her culture value this role highly, but it is regarded as the cornerstone of the society. To the extent that she has been cared for well, she has become capable of caring for others. She marries and begins to have children and to make a home. What is her daily life like, in terms of the life experiences of consistency, load balance, and participation in socially valued decision making?

By and large, there is a great deal of consistency and predictability in her life. There are the mysterious illnesses of children and the perpetual anxiety about accidents, the tempers of the neighbors, and the moods of her husband when he returns from work, but these become part of a familiar ebb and flow. Moreover, within her domain, it is she who sets tempo, changes the order of duties to be performed to allow breathing space.

She organizes household rituals and structure, orchestrates comings and goings. The strands of webbed relationships are strongly woven. Entrances and exits are developmentally harmonious.

The core problem of this housewife, in our terms, is typically overload. There is never enough time and energy to do everything that must be done. Bearing and raising children, cooking, cleaning, and clothing are each full-time jobs, even without the emergencies. Add to these, as is often the case in such cultures, growing vegetables or milking cows, helping in the family store, caring for an elderly parent, or sharing the sorrow of neighbors in trouble, and the load is truly great. But the sense of burden is mitigated often by the knowledge that if there were the time and energy to do everything, one could manage well. One does one's best. We must not, however, ignore the problem of underload. This comes into being when one's life is so structured that one's skills, abilities, interests, and potential have no channel for expression. For those who have never spent a day caring for a child or cooking for a family, it may be hard to realize what talents are needed to do them well. If one is Virginia Woolf or Carol Brice, then telling stories to one's children or singing lullabies is indeed underload. But for most, the housewife's role, *in a given cultural setting,* is not one of frustrated potential.

It bears repeating that, in many cultures, the role of the housewife, moreover, does indeed provide life experiences characterized by participation in socially valued decision making. Husband and wife, jointly or autonomously, in different but equally valued areas, have acknowledged power and authority. The way the home is run and the children are brought up is socially regarded as no less important than extrafamily activities. Superior physical strength is valued no more, or even less, than superior emotional stamina. I have no illusions, as Illich (1985) seems to have in his image of husband and wife in all non-Western cultures as intertwined hands, that the housewife role always makes for a strong SOC. Living in the reality of the Middle East, I could hardly think this to be the case. My concern here has been to delineate one particular pattern of life experiences that can provide a strong SOC. For those skeptical about

whether such patterns have existed in reality, who cannot read Sholom Aleichem in the original Yiddish, may I suggest studying Meyerhoff's (1978) moving, loving, anthropological study of an old-age center in Venice, California. Or see Reiss (1981, chapter 3) on the pioneer family.

Having said this, I must go on to add that, in the reality of Western (including Soviet) societies, this integrated pattern of life experiences is well nigh nonexistent. Not only does the housewife not "work"; when she does work, that is, becomes part of the paid labor force, it is overwhelmingly in a work role that, as we shall see below, is itself not conducive to a strong SOC, doubly so because she most often works in a disvalued female job. When to the social disvaluation of the housewife role is added, as is frequently the case, economic dependence of the housewife on her husband, the application of superior physical strength, the cultural definition of the woman as serving the needs, sexual and otherwise, of her master—whatever life experiences of consistency and load balance the housewife may enjoy will be inadequate to provide her with a strong SOC. Such unhappy patterns remind us in particular of those women whose burden is indeed greatest: the poor and working-class women. They have few amenities and little assistance, function in a cultural setting in which men do not share the burden, and, to top it off, engage in paid work as well as housework. Class differences remain quite as significant as gender differences.

My intention here is not to analyze the life experiences of women as women (or of men as men) in terms of the SOC but to focus on the major role activity of adults. Being a housewife in one social structure can lead to a stronger SOC; in another, to a weaker SOC. What of the paid worker?

Sorokin long ago (1927, p. 321) proposed a basic premise: "All the psychological processes of any member of an occupation undergo modification, especially when one stays for a long time in the same occupation. . . . *Still greater is the occupational influence on the processes and on the character of one's evaluations, beliefs, practical judgments, opinions, ethics, and whole ideology.*" This premise has received much empirical support, but it is far too general to produce detailed under-

standing of how one's job shapes one's SOC. One must specify the particular aspects of the job that are pertinent.

But before turning to a detailed analysis, one crucial issue must be raised at the outset. One need not be a Marxist to become painfully aware that, almost without exception, the literature on occupational stress deals with the immediate objective job conditions and subjective perception of these, with complete disregard of the historical and broader social-structural situation in which one's work is embedded. Conceivably, we can come to understand the sense of manageability by studying only the immediate work process; this is difficult with respect to comprehensibility and virtually impossible with respect to meaningfulness.

Hoiberg (1982) analyzed the data on occupational stress and hospitalization rates of U.S. Navy enlisted men over a thirty-year period without any mention that the period covered included the Vietnam war. As one who took part in World War II, which we defined as a just war, and as one familiar with the pioneering enterprise of Israeli kibbutzim transforming a desert into a land of milk and honey, I must call attention to the possibility of situations in which the historical-cultural context far overrides the particular work conditions in shaping the SOC. I suggest that this is not only relevant on a grand, dramatic scale. Does work have the same meaning for and impact on the person who is engaged all his or her working hours in writing jingles to advertise soap as it would for the same person, in the same working conditions, writing children's books? Does it make any difference whether a computer specialist works in a cancer research center or in a nuclear facility? Or a floor cleaner in a hospital or an office building?

I do not know the answer, although I am quite sure that for at least a relatively brief period of years, involvement in enterprises culturally valued or regarded as heroic does weigh more heavily than specific work conditions. I stress this from a salutogenic point of view. That is, if the grand enterprise is indeed grand, we exploit its meaning, if only to give us the energy to bear with the not necessarily happy details. If the enterprise in which we are engaged is not grand, we tend to forget the broader picture, and the details of work conditions become all-impor-

tant. In other words, I am proposing a research agenda that, as far as I know, has been ignored in the study of the impact of work on the way one sees one's world. Now let us turn to the question of work conditions, starting from the character of those conditions which enhance a view of the world as meaningful.

Continued experience of participation in socially valued decision making is the source of feeling meaningfulness in one's work. This can be understood in two ways: what Frankenhaeuser (1981) calls "joy and pride in work" and discretionary freedom. Whether one has freely chosen to do what one is doing or has fallen into the work, if there is joy and pride, there will be a sense that "it is mine," that "I wish to do what I am doing." What determines joy and pride? Intellectuals, writing about work, tend to see self-expression as the central issue. Without disregarding its importance, I suggest that for most workers social valuation, on two levels, is of greater significance. First is the question of the social valuation of the "enterprise" (the occupation, the industry, the plant) in which one is engaged. Such valuation is expressed in the resources (power, rewards, prestige) allocated by the society to the collectivity. Second, the same question is to be asked with respect to the individual worker. The more one perceives the social valuation of one's work as meeting one's criteria of equity, the more is one likely to feel that "this is mine."

Discretionary freedom is most often, in the study of occupational stress, taken to refer to the decision latitude of the individual worker. And indeed, the worker who feels that it is within his or her realm of choice to choose the tasks, the sequence, and the pace of work is likely to see the work as meaningful. To have a voice in what one does leads one to wish to invest energy in it. But such reference disregards the collective context of most work. Of no less significance for meaningfulness is the extent to which one has a voice in what goes on around one. This leads us to ask how one's work is linked to that of others: Does it give rise to detached, antagonistic, complementary, or cooperative relations with others? (See Coser, 1963, for an analysis of the meaningfulness—in the context of alienation theory—of the work of nurses in two different social

structures.) But we must go further and ask about one's voice in the overall production process, at the local and the societal levels. The phrase "one's voice" includes, on the one hand, the element of the power of the individual to influence what he or she does and what goes on around him or her which is seen to matter. On the other hand, it does not necessarily imply a monopoly of such control. The decisive issue is whether one perceives control as *legitimately* lodged and whether one has what one regards as an appropriate input, as part of a collective, in the decisions made.

Experiences of an appropriate load balance are seen as decisive in determining the sense of manageability. The issue of control has been raised above, but it is also linked to manageability. The more I myself, or legitimate (in my eyes) others, set problems before me, the more likely am I to feel that I have the resources to solve them. But whoever sets the problems before the worker, the problem of overload is that of not having the resources at one's disposal to deal with them successfully. "Resources at one's disposal" means, in the first place, the knowledge, skills, materials, and equipment one has. We must, however, go two steps further. First, the formal social structure in which the work of almost all of us is embedded must be perceived as providing us with the appropriate environment and equipment we feel we need to do our work well. In most work settings we can only feel that we work well when we perceive that those with whom we are interdependent also work well: those who have worked on the product before us, who have provided us with materials and equipment, who have organized the work. Second, we must take note that in almost all work settings informal social structures come into being. At times the character of social relations assumes even greater importance than our own resources or those that the formal structure places at our disposal. If one is feeling bad, can one count on others to take over? If one messes up, can one count on others to cover?

In sum, perceived resources are the key to the problem of overload. But the resources in question may also be collective or extraindividual. What impinges on the sense of manageability is chronic or frequently repeated acute overload, without ade-

quate opportunity for rest and recuperation. Overload remains the major issue with regard to manageability, particularly if we keep in mind the data, frequently ignored, about moonlighting, shift work, and the housewives who work at two jobs though paid for only one. If, however, we think of soldiers in battle, surgeons operating, scientists at research, or pioneers draining swamps, we can see how hitherto untapped resources emerge, enhancing our sense of manageability (see Engel and Schmale, 1972, whose discussion of the conservation-withdrawal hypothesis is most relevant to the issue of overload and underload).

In sum, we can say that repeated work experiences which are appropriate to the worker's abilities, which place adequate material, social, and organizational resources at his or her disposal, and which provide occasional overload as well as occasional opportunity for withdrawal and conservation of energy, will strengthen the sense of manageability. But there is the other side of the coin: the problem of underload. We have too long ignored the knowledge that psychology has gained of sensory deprivation. (See Lipowski, 1975, whose theoretical perspective on overload is easily enlarged to include underload.) When our work experiences are continually such that we are seldom called on to exercise our abilities or to actualize our potentials, when they are always unidimensional and monotonous, we can never come to have confidence that the world is manageable.

This, I believe, is the most significant implication of the work of Kohn and his colleagues (Kohn and Schooler, 1983) on substantive complexity. They have shown the long-range implications for a variety of personality dimensions, including a sense of distress, of the extent to which people's jobs are characterized by demands that require substantive complexity for adequate performance. Although their discussion disregards the danger of an overload of complexity, there is little question that for all too many people—and, first and foremost, minority groups, women, and people with disabilities—the lack of substantive complexity at work, disregarding their potentials, leads to increasing paralysis of the sense of manageability.

To experience, time and again, things that fit together, unknowns that are explained to one's satisfaction, and ordered

patterns strengthens one's sense of comprehensibility. Perhaps I will be forgiven a personal example that conveys what I mean. In 1973 I joined a small group to plan a medical school based on considerably different values, conceptions, and goals from those characterizing traditional schools. I took part in selection of students and taught them (including the knowledge that emerged from my own research) throughout the six years, being in touch with other things they were learning. Today, I continue to be in contact with them as formal consultant, friend, or simply well-wisher as they work as doctors and as some join us as young teachers. Further, continuing involvement between the school's faculty and its graduates in working toward a transformation of the region's health care system links me to the broader social structure. The entire work experience fits together in a picture that makes sense to me. Contrast this with Charlie Chaplin in *Modern Times,* performing one operation on the production line without the slightest notion of the product he presumably is helping to produce.

I have described a work setting that, though highly complex, made up one integrated system. It was clear how present flowed from past and reasonable to think that a specifiable future would flow from present. Not only was my own role clear; the roles of others, and how they linked to mine, were equally clear. If so complex a structure facilitated the experience of consistency, certainly those who work in it come to believe that simpler things in life are also comprehensible.

One analytic point is in place here. I have sought to emphasize the cognitive map that such a work setting produces, a map which gives confidence that maps can be readily read. Rereading the description of the work situation points to the interweaving of comprehensibility with meaningfulness. Because my own role in this situation was accorded a high degree of participation in socially valued decision making, the experience over years "made sense" to me not only cognitively but emotionally and motivationally as well. Theoretically, the two strands could be separated. One can be a cog in a machine that is very well understood. Or one can play a significant role in a valued enterprise—think of an officer in battle—which is confus-

ing, unpredictable, and incomprehensible. The two sets of experiences do not invariably go together.

Coser's work, on the empirical (1963) and on the theoretical (1975) level, provides further understanding of how the social structure of the enterprise is decisive in shaping experiences that enhance comprehensibility. In the former paper, Coser contrasts nurses working in a rehabilitation center with nurses in a custodial ward. The rehabilitation nurses are in frequent structured contact (and often in conflict) with other staff members, confronting common problems. They interact with patients and their families. They are linked to long-range goals. The custodial nurses work as individuals, focusing on physical order and cleanliness. In her theoretical paper, she develops the concept of structured role complexity (which is the counterpart to Kohn's concept of substantive job complexity). Familiarity with other roles in the context, with alternative solutions to problems, with the overall goals, with planning—these and other elements that derive from occupying a certain kind of role-set complex at work facilitate having a comprehensible picture of one's world. Again, one must add the caveat of the danger of overcomplexity and chaos.

But whatever the importance of role-set complexity, it is less fundamental to comprehensibility than a work condition so obvious in its significance that we often tend to disregard it: job security. In discussing my own experience above, I took it for granted that the reader understood that I had academic tenure. My job, with its quite respectable rewards, is assured until I retire and provides for a reasonable pension thereafter, and my skill is such that I can go on working as long as I choose to. Whatever social developments (barring overall destruction) occur, the university will go on. Given this situation, not only are the rules of the game clear, but the future is predictable. Surely there will be surprises, new problems (some of which, like budget cuts, will not be welcome), but these will not be chaos.

Job security must be considered on four levels. There is, first, the question of the calm belief of the individual worker that, so long as one does not violate rules accepted as legitimate, one will not be fired. Second, whatever one's own competence,

one must be confident that one's type of work or the section within which one works will not come to be defined as redundant, without anticipated and planned alternatives. The third level refers to both employed and self-employed workers: the redundancy of the enterprise, or, to put it more bluntly, its nonprofitability. Fourth, there is the level of confidence in continuity of the social system, a concern which goes beyond the world of work but which, in an era of "conventional" wars and the threat of nuclear warfare, cannot be ignored.

The third variable to be considered is the nature of the social relations in the work group. To the extent that there are shared values, a sense of group identification, and clear normative expectations, the ambience will be one of consistency. In such a setting, one will time and again experience appropriate feedback. One sends signals, knowing they will be understood, as will the signals sent to one. Symbols are shared; there is a common language. To the outsider, things may seem chaotic, but they are far from being so for the insider. Group rituals reinforce the experiences of consistency. (For a most interesting recent review of social support research whose findings are integrated in "uncertainty reduction theory," directly germane to consistency of life experiences, see Albrecht and Adelman, 1984.)

I have, in these pages, tried to analyze those characteristics of the work situation—calling attention to the historical-cultural context in which it is located—that provide the life experiences central to a stronger or weaker SOC. Participation in socially valued decision making refers to those conditions which provide joy and pride in one's work and discretionary freedom: social valuation of the enterprise and of the particular job, as expressed in equity of rewards; and decision latitude with respect to work itself and the legitimacy of power allocation in the work collectivity. Load balance refers to the availability of resources to the individual and to the collectivity within which there is interaction to get the job done well. No less does it refer to the extent to which the work situation has room for allowing potential to be utilized in substantively complex work. Consistency refers to the extent to which one's work situation allows and fosters the clarity of seeing the entire work picture

and one's place in it, provides confidence in job security, and supports communicability and feedback in social relations at the workplace.

In *Health, Stress, and Coping* (1979, pp. 144-145) I discussed the long-range research of Kohn and his associates on work and personality. His concept of the extent to which one's job allows or even requires occupational self-direction—whose principal facets are the substantive complexity of the work, closeness of supervision, and degree of routinization—is highly congruent with my analysis of work conditions that make for a strong SOC. In his most recent paper, Kohn (1985), summing up his research program, raises an issue that is germane at this point. "There is accumulating evidence," he writes, "that job conditions affect adult personality mainly through a direct process of learning and generalization. . . . In short, the lessons of work are directly carried over to nonoccupational realms . . . the fundamental sociological premise that experience in so central a domain of life as work must affect orientations to and behavior in other domains as well" (pp. 11-12).

Affect and *carried over,* however, are noncommittal terms. We can hardly disagree. But is work decisive? In focusing my entire discussion of the formation of the young adult's SOC on her or his major role activity in housework or paid work, I have implied that it is. Yet one major qualification must be made. In addition to one's major activity role, one occupies other major social roles. One is a woman, a citizen, a TV viewer, a member of a kinship network, a member of a national group, a member of an ethnic or racial group. Further, one lives in a given sociophysical environment. Each of these implies a set of life experiences relevant to the SOC. (For a fascinating analysis of the impact of the physical environment on personality, see Little, forthcoming, especially pt. 4, "Meaning, Structure, and Community as Core Dimensions," in which he discusses the SOC.) For some, these experiences may transcend the major activity role in having an impact on the SOC.

No "problem" arises, of course, when the experiences in other spheres of life are consistent with those in work life. Even when there is no generalization from work life to other spheres,

and these are autonomous in character, there may be no contradiction. Experiences in nonoccupational spheres may be conducive to a strong SOC and generalize to the work sphere that, for a given person, may be of lesser importance. Or—and this is empirically far more common—the former experiences are damaging to the SOC and carry over to the work sphere. The life of discriminated-against minorities is the best example. Being black, female, or disabled may be more important in one's life than the work one does, but most often the experiences in these roles are consistent with work experiences. Even when work experiences are positive, the dominant character of one's life is still shaped by the nonwork role.

But surely we must acknowledge the possibility that for some, the drama of consistency, load balance, and participation in socially valued decision making in nonwork life becomes all-important, and work life pales into relatively minor significance. One does one's work, defines it as at least giving one the wherewithal to turn to important things, and then turns to experiencing life. Moreover, as we move into a postindustrial society and the work ethic becomes less central, this pattern may become increasingly frequent.

Mention of a postindustrial society reminds us, further, that there are societies in which the kinship role, for example, is more significant in structuring life experiences than the work role. It would have been ludicrous for me to attempt an analysis of all the patterns of life experiences of the young adult, cross-culturally, that relate to the SOC. By analyzing in some detail the patterns of the housewife and the paid worker, I sought to indicate what crucial questions are to be asked about all spheres of life.

In the third decade of life, then, having by and large committed ourselves (or been committed) to an identity, a social role set, a career in the broadest sense, having made our choices (or having had them made for us), we have been exposed to a pattern of life experiences for some years and have fashioned an image of our world as more or less comprehensible, manageable, and meaningful. The lability and exploration of the adolescent are behind us.

Dynamics of the SOC

The first decade or so of one's adult life involves a broad set of commitments. There are for all of us, no doubt, inconsistencies in the nature of life experiences in the different spheres of our commitments. But there is an inevitable tendency, during this period, to put things together, to rid oneself of cognitive dissonance. At the one extreme, despite twists and turns, life experiences in all spheres tend to persuade one that life is chaotic, unmanageable, and meaningless. Somewhere in the middle, one's SOC is moderate, bolstered by experiences in one area, weakened by experiences in others. Pearlin (1980, p. 186) recounts the story of the woman whose husband frequently drinks to excess and abuses her. But "she pays no attention to it, for in the things that really matter—being a steady worker and a good earner—he is a prince." Pearlin, however, disregards the likely dynamics. The woman's life becomes more and more hellish, as her husband's drinking becomes chronic alcoholism, he loses his job, and she sinks into apathy. Or, alternatively, she slams the door in his face and, with pain and courage, rebuilds her life. (See Woody Allen's *Purple Rose of Cairo* for the sad, most likely scenario.)

I am, then, suggesting that by the end of the first decade or so of one's adulthood, having sorted out or accepted the inconsistencies in the different areas of life, one has attained a given location on the SOC continuum. This brings us to consideration of the rest of the life-cycle trajectory. In *Health, Stress, and Coping* (p. 188), I committed myself to the hypothesis that "it is unlikely . . . that one's sense of coherence, once formed and set, will change in any radical way." Clarification and qualification are necessary.

At first glance, the hypothesis seems to be a gross violation of what we have learned about adult development in recent decades. The literature is vast, documenting development, transition, exits and entrances, disengagement and reengagement, gains and losses, movement and restructuring. How, then, being aware of this literature, could I have maintained that a person's SOC is likely to be stable throughout adulthood?

Let me make the case even harder for myself by referring to one of the more significant contributions to the adult development literature. Levinson (1980) proposed adoption of a perspective within which to view adult development, socialization, and adaptation to events, a perspective he calls the evolution of the individual life structure. He sees adult life as a process of alternating structure-building and structure-changing and identifies three major periods of transition and reconstruction. "Each period is characterized by tasks that are in principle developmental: they define essential work that people must engage in if they are to form a way of living that is appropriate to their current time of life and that provides a basis on which further development can occur in subsequent periods" (p. 289). In other words, in even the smoothest of lives, adulthood is constantly complex and dynamic.

I could not agree more. Levinson focuses on the normal adult life cycle, within a given culture, on the "marker events"—marriage, birth of a child, move to a new community and to a different-level job, children leaving home, death of parents, and so on—that happen "on time." But in the lives of all of us there are also major changes of the kind that Parkes (1971, p. 103) calls "psychosocial transitions": "those major changes in life space which are lasting in their effects, which take place over a relatively short period of time, and which affect large areas of the assumptive world." The examples he gives: loss of a job, being blinded in an accident, premature death of a loved person, housing relocation in an urban slum-clearing project. Having devoted all of chapter 3 in *Health, Stress, and Coping* to a catalogue of stressors inherent in human existence, on what grounds did I expect the SOC to be fairly stable throughout adulthood?

What is now clear to me, as it was not in 1978, is that in formulating the stability hypothesis, I had in mind the person with a strong SOC. In Chapter Six I will discuss the SOC as an independent variable, analyzing the pathways through which it affects one's health. This discussion must be briefly anticipated here. The issue can perhaps best be put in terms of the maintenance of balance at a low level of entropy, of disorder, by the

open system that is the human organism. Entropic forces are indeed constantly and powerfully at work in the lives of all human beings. One's SOC is constantly and inevitably being attacked. But what characterizes the person who has, in early adulthood, crystallized a strong SOC is the ability to bring into play the generalized resistance resources available to him or her. Levinson's tasks and Parkes's psychosocial transitions are seen as challenges, sad and difficult as some of them may be, and dealt with. For a short period, the level of entropy increases. But the very process of meeting the challenge, and the likelihood of a successful outcome, restores the low level of disorder.

In citing the woman reported by Pearlin as having a husband who drinks but is a steady worker, I pointed to two possible developments. Let us assume that her earlier life experiences had generated a strong SOC but that she had made what turned out to be not exactly an idyllic marriage. Such mistakes are made by all of us, although they are less likely for someone with a strong SOC. I suggested the possibility of slamming the door in her husband's face and rebuilding her life. The transition will not be easy, but it is possible. Or take the fifty-year-old industrial chemist whose job disappears when the plant in which he has been working for twenty years cuts its R&D budget. With a strong SOC, he explores the possibility of an exciting new career as a high school chemistry teacher. Of course, it does not depend entirely on him. He may be faced with being redundant. The Czech professor of literature who speaks out for human rights is reduced to being a night watchman—except that he does not define it as "reduction." Or, if I might remind the reader that the content of the life of someone with a strong SOC is not necessarily what we would applaud, an equally appropriate example is the Treblinka torturer who manages to escape to Paraguay and rebuilds an integrated life there.

In sum, the person with a strong SOC can, to use Schrödinger's (1968) vivid image, suck orderliness from the environment which counterbalances the pressures toward disorder from the internal and external environments. Entropy is controlled by feedback, by the constant introduction of negative entropy. Can we then expect that the strength of the SOC will continu-

ally be increased? This is not likely. As I have emphasized throughout, stressors are ubiquitous in human existence. Reconceptualization of the stressor as a generalized resistance deficit, as "a characteristic that introduces entropy into the system" (as defined in Chapter Two), suggests that, at best, the person with a strong SOC, fortunate as he or she may be, will maintain an ever-challenged equilibrium. His or her life will be like that of Holmes's (1884, p. 155) wonderful one-hoss shay, toward the end:

> There are traces of age in the one-hoss-shay,
> A general flavor of mild decay,
> But nothing local, as one may say . . .
> And yet, *as a whole,* it is past a doubt
> In another hour it will be *worn out*!

If this conceptualization of GRR-RDs shaping the SOC level is useful, then it would follow—as I did not appreciate in 1978—that the person with a moderate SOC level in early adulthood will tend to move to a lower level over time. Selection of SOC-reinforcing situations and avoidance of SOC-debilitating situations will be less successful. Encounters with stressors will tend to be entropic, not adequately balanced by the GRRs in one's life. Childhood, adolescent, and early adult experiences with moratoria, with maturational growth, without full responsibility for one's own life, may have been adequate to achieve a moderate SOC. One has not been fully on one's own. GRRs have been available, which in part offset the GRDs. But when one is a committed adult, socially defined as one who is expected to give, a downward trend is initiated. One begins to succumb. Pearlin's informant takes on the burden, defined as a burden and not a challenge, of earning the family's living and accepting her husband's abuse. One's life is more like a spiral than a vicious circle, but the spiral is downward.

For the person with a weak SOC in early adulthood, life becomes a vicious circle. GRDs play an increasingly prominent role, as encounter after encounter debilitates the SOC ever more. The "loser" continues to lose, and life becomes more and more chaotic, unmanageable, and meaningless.

In other words, I am suggesting that adulthood will show an increasing disparity in the strength of the SOC between those who embark on this period of life with a strong SOC and those with a moderate SOC, and an even greater disparity between these and those with a weak SOC.

These are statistical, not clinical individual, predictions. For any given person, a chance encounter, a courageous decision, or even an externally imposed change may initiate a considerable transformation of the level of the SOC, in either direction. These are not likely. The person with a strong SOC, catapulted into a situation imposing a high GRD level on him or her, will search out experiences that counterbalance the stressors. But if the degrees of freedom are very limited, he or she may not be able to succeed. Thus a woman whose husband is transferred to a distant new community may find, cut off from her friends and community activities, her children having gone off to college, living in a social climate alien to her, that the character of life experiences undermines her SOC. Or if, previously having had a moderate or even a low SOC, she encounters a consciousness-raising group in her new community, goes out to work, and accidentally becomes involved in a rejuvenating love relationship, her SOC status may rise considerably.

Such changes in the SOC, however, are rare. When they do happen, they are never the result of the fortuitous encounter, the change itself, the single decision; they occur only because these initiate a new pattern of life experiences. If this pattern is maintained over a period of years, gradual change can occur. For the middle-aged adult, the new marriage, new job, new country, new social climate, or new therapist can only at best (or at worst) begin to initiate change, insofar as this stimulus provides a different long-range set of life experiences characterized by different levels of consistency, load balance, and participation in socially valued decision making.

The Possibility of Intentional Modification

When I have presented the salutogenic model orally, one of the issues most frequently raised in the discussion, particularly by people in the helping professions, has been the possibil-

ity of planned, intentional modification of the SOC. Particularly for those attracted to the model, for those searching for some systematic way of understanding the strengths and not only the risk factors, it was most disturbing to hear that, on the one hand, someone with a strong SOC doesn't really need such helpers and that, on the other, someone with a weak SOC cannot really be helped by a transient agent. While not as extreme, I was almost perceived as the Illich of the helping professions. The charge, as should be seen from the preceding pages, is not completely unwarranted; for what I have said amounts to saying that without very considerable, quite radical change in the institutional, social, and cultural settings that shape people's life experiences, it is utopian to expect that an encounter, or even a series of encounters, between client and clinician can significantly change the SOC. One's orientation to the world, formed over the course of decades, is too deeply rooted a phenomenon to be changed in such encounters.

Nonetheless, this is not the entire story. There are three ways in which professionals bearing responsibility for the relationship between psychosocial factors and health, or willing to assume such responsibility, can have an impact on the SOC. The first two ways refer to temporary, minor modification, whereas the third refers to significant change.

In saying that the SOC of the adult is a deeply rooted, stable dispositional orientation of a person, I did not wish to imply that it is rigidly fixed and only changes gradually in response to major changes in patterns of life experiences. There are also temporary changes, fluctuations around a mean. The person with a strong SOC whose child is killed in a traffic accident will be knocked off balance; the world will become incoherent. The person with a weak SOC whose union wins major concessions in a victorious strike will suddenly see the world differently. But these are temporary states, as is evident from the brief biographies presented in Chapter Four. One soon returns to one's mean. Perhaps it is a function of my age that I do not wish to dismiss the significance of such temporary changes—for what they mean is a little more or a little less suffering, a little more or a little less joy.

For the helping professional, this point is of no little significance. Medical students are supposed to learn that the very elementary precept of clinical medicine is *Primum non nocere.* The encounter with the physician in the office or in a hospital ward very rarely transforms a person's life. Even when the patient is unexpectedly informed of a terrible disease, it is not the information itself that is devastating, but the chain of events which the message sets in motion or of which it is the symbol. But what can and does frequently happen is that temporary damage is done. The physician will have structured an experience out of which the patient can make no sense for hours, days, or weeks. Harm is done. It is not permanent or decisive but is damaging nonetheless. A patient with an SOC score of 80 will be, to put it crudely, knocked down to 75. And this will express itself, for example, in a greater need for pain medication, in an extra day or two of hospitalization. It is in these terms that I would think we can understand the frequent complaints of hospital patients about lack of information and lack of control (see Janis and Rodin, 1979). One way, then, for the clinician to modify the SOC—or at least not modify it negatively—is to structure encounters so that this damage is not done.

Conversely, it is possible for the clinician to structure encounters so that the SOC score of 80 is raised to 85. Again, the gain is modest and temporary, but for this too we must be grateful. The question, then, is to be asked of each client/clinician encounter: Does the experience pressure the client to see it as consistent, balanced, and meaningfully participant, or the contrary? The client, of course, provides his or her own input, but this does not mean that the impact of the objective situation can be disregarded. The valid objection might be raised that the objective situation is shaped by the socialization of the professional, the power relationship between professional and client, and the social structure of the encounter. But this does not mean that there are no degrees of freedom. The professional, by virtue of the very fact of being a professional, has some autonomy and discretion. Moreover, there is always some room for change in social organization. When Kaiser-Permanente, a health

maintenance organization in California, came up with the category of the "worried well" and institutionalized the ways such persons were received (Collen, 1977), it opened the way for at least a minor and temporary impact on the SOC of its members.

This brings us to the third and far more important, though far more difficult, possibility of planned modification by practitioners of the SOC of those for whom they bear some responsibility. The data presented by Meichenbaum and Cameron (1983) dealing with "stress inoculation" and by Rosenbaum (1983) on "learned resourcefulness," both based on theoretical models that are consonant with the SOC model, are highly suggestive. These approaches, however, are limited in that they do not, and cannot, seek to change the life situations of people that shape their experiences. They do, however, enable people to begin to do more than reinterpret these experiences, in that they equip people to seek out, within the scope of their lives, what I would call SOC-enhancing experiences. This would be true for any therapeutic mode that facilitates a long-lasting, consistent change in the real-life experiences that people undergo.

Even more to the point are those situations in which the practitioner has a good deal of control over the client's life situation over a long period. In Coser's (1963) account of the redefinition of a ward for the terminally ill as a rehabilitation ward, a redefinition that had many organizational and value implications, we see how the entire work life of the nurses was transformed. If such a change were institutionalized and maintained, there would be reason to expect that, over the course of years, the SOC level of the nursing staff personnel would be raised considerably. This would be true of any chronic institution, for patients no less than for staff.

Perhaps the most significant ongoing experiments that demonstrate the possibility for intentional modification of the SOC are those taking place in a number of Scandinavian industrial plants (Gardell and Johansson, 1981). It would take us too far afield to discuss these experiments in detail, and the data are still too scarce to indicate that solutions are available. But insofar as they focus on the nature of work groups, the search for potential, the control over process, and so on—and all in a na-

tional context, as expressed in legislation that provides broad cultural sanctioning—these experiments provide what I see to be the very best promise for positive modification of the SOC.

This chapter has examined the SOC as a dependent variable. Within a life-cycle framework, I have examined how the SOC is formed, emerging from culturally and structurally shaped patterns of experiences of consistency, load balance, and participation in socially valued decision making. To return to the metaphor with which the chapter opened, I have asked: What are the factors which pollute parts of the river in which we all swim and purify other branches, which allow easy navigation for some and force others to encounter rapids and whirlpools? And, whatever the character of the river we are in, what facilitates the capacity to swim well and joyously for some and, for others, makes even staying afloat a constant struggle?

As far as I know, this attempt is the only one of its kind. The studies on analogous concepts—internal-external locus of control, self-efficacy, learned helplessness or resourcefulness, Type A behavior pattern, state-trait anxiety, meaningfulness in life, hardiness, and so on—take the existence of these dispositional orientations as given. There is no inquiry into the historical origins and development of the orientation. At best, there are studies of its modification. Moreover, the various theories of child and adult development are not linked to such orientations. The closest parallel to my attempt of which I know is found in the study by Kohn, Slomczynski, and Schoenbach (1986) examining the links between the social stratification position of the parental family, the extent of occupational self-direction of the parents, and the values of the adolescent and young adult offspring.

No doubt a great deal of empirical research is required before we can fully understand the process of formation of the SOC. But whatever intrinsic interest the concept may arouse, its power, as specified by the salutogenic model, is in its implications for health status, that is, as an independent variable. How does the SOC work to influence health status? It is to this crucial question that we now turn.

6

Pathways Leading to Successful Coping and Health

"The fact is that there is a substantial gloss on this question in the literature on social supports [why they have health consequences], the excitement about demonstrating that there are such effects having substituted for the necessary analysis of process" (Seeman, Seeman, and Sayles, 1985, p. 246).

"Generally, the broad-based acceptance of this conclusion [that social support is an important element in the prevention and treatment of illness] is not grounded in an understanding of *why* and *how* social support has beneficial effects" (Reis, 1984, p. 21).

Such quotations can be multiplied. About a decade ago, when the study of social supports was coming into vogue, researchers were content with simply showing that there was a relationship with illness. The next step was to conceptualize it as a buffer between life events and illness, as a mediating variable. This thinking was rooted in the stressor/illness tradition, rather than linked to the more sociological Durkheimian tradition of anomie, which focused on the direct consequences of lack of social rootedness. Recent data indeed indicate that social support seems to have direct, and not only buffering, effects in warding off illness (but see Lin, Woelfel, and Light, 1985). We now seem to be ready to tackle the questions of why and how.

But social support enthusiasts tend to forget that this is

only one of many variables that I have called generalized resistance resources–resistance deficits. As Kaplan (1985) pointed out, there are scores of psychosocial variables that seem to be linked to health maintenance and disease etiology. "Progress in psychosocial epidemiology," he noted (p. 239), "will depend to a great extent on our ability to convert long lists of variables to coherent theories or models." It is no less important to ask why and how having or not having money, high self-esteem, a culturally stable environment, or a doctor one trusts contributes to health maintenance or deterioration as it is to ask these questions about social supports.

It is this very issue that led me to formulate the SOC concept. What is important about GRRs, I proposed, is that they provide life experiences that promote development and maintenance of a strong SOC. And, I would now add, what is important about GRDs is that they provide experiences that vitiate one's SOC. The crucial question remains, although it is now moved to the next link in the chain: How and why does a strong SOC promote health? It is to this question that the present chapter is devoted.

Before we turn to that discussion, however, the question must be linked to the reconceptualization of stressors proposed in Chapter Two (pp. 27ff). There I made the distinction between stressor life situations, viewed as resistance deficits, that is, as providing life experiences conducive to a weak SOC, and stressor life events as the concept is more generally used, that is, as demands to which there are no readily available or automatic adaptive responses. If our goal is to understand the formation of the SOC, then it is useful to think in the former terms, in which the stressor, the counterpart to the resource, has negative implications. If our goal is to understand the resolution of tension, then the stressor is open-ended; it cannot automatically be assumed that the consequences will be negative. In other words, the young adult, having known in his or her life a given pattern of life experiences generated by a resource/deficit balance, will have arrived at a given location on the SOC continuum. He or she will continue to be confronted, over and over again, with stressor events, whether these are daily hassles or derive from

potentially stress-inducing acute or chronic situations. Children are born; loved ones die; significant job changes occur (or do not occur; we tend to forget that "nonevents" such as not being promoted or not being able to have a child are no less stressors); one moves to a new community. How and why does having a strong or a weak SOC make a difference in confronting these stressors?

Stressors and Tension

In chapter 6 of *Health, Stress, and Coping* I reviewed a wide body of evidence from studies whose results "are at least compatible with hypotheses that would be derived from the concept of the sense of coherence." I added, "I have intentionally made no mention of the mechanisms and channels through which the sense of coherence is related to health." I noted, however, that I believed that the answer depended on making "the fundamental distinction between a state of tension and a state of stress" (p. 180). In chapter 7, in which the salutogenic model was presented in full, this issue was briefly discussed (pp. 193–194). The time has come to face the issue squarely.

The fundamental philosophic view of the human organism as prototypically being in a dynamic state of heterostatic disequilibrium is at the heart of the salutogenic orientation. Whether the source of the stressors is the internal or external environment, whether they are daily hassles, acute or chronic and endemic, whether they are imposed on us or freely chosen, our lives are replete with stimuli to which we have no automatic, adequate adaptive response and in the face of which we must respond. The message to the brain, unless sensors have been damaged, is clear: You have a problem. The nature of the problem is dual, consisting of what has come to be called the problem-solving or instrumental issue and the issue of the regulation of emotion. Tension, then, reflects the recognition in the brain that some need one has is unfulfilled, that a demand on one has to be met, that one must do something if one is to realize a goal.

Let us take some examples. A forty-year-old steelworker is informed that his plant is to be closed down. A twenty-seven-year-old junior executive learns that unless she complies with her boss's demand that she sleep with him, any promotion is out and her job is endangered. The morning after, one's wife informs one of the crude and brutal remarks one made while dead drunk at the party the night before. In each case, one is confronted by the dual question: What am I to do? What am I worth? But, as I have insisted, stressors can also be happy events. A woman gives birth to her first child, a lovely, healthy infant. A widower meets a most attractive woman, and the chemistry is right. One is elected chair of one's department. The instrumental and emotion-regulating problems come to the fore of one's agenda. One has entered a state of tension. Whatever the stressor, then, one must act, much as in a state of cognitive dissonance. Let us trace this process of action.

There are, unfortunately, contradictory strands in the many seminal and significant contributions of Lazarus to the study of coping. These may be summed up by reference to his use of two words: *taxing* and *endangering.* I have followed his definition of stressor (Lazarus and Cohen, 1977, p. 109), which focuses on a stimulus that "tax[es] or exceed[s] the resources of a system." But elsewhere (Lazarus and Folkman, 1984, p. 19) he writes, "Psychological stress is a particular relationship between the person and the environment that is appraised by the person as taxing or exceeding his or her resources and endangering his or her well-being." Thus stimuli that are appraised as benign, positive, or irrelevant are excluded from the category of stressors. Moreover, in discussing daily hassles and distinguishing them from daily uplifts (Lazarus, 1984a, p. 376), he writes of the former that "what makes them harmful or threatening is that they involve demands that tax or exceed the person's resources." I find the first definition most useful. The failure to extend the definition of stressors to all stimuli that are taxing, whether or not they are appraised as endangering, underlies the widespread failure to distinguish between tension and stress (and derives from a pathogenic orientation).

Lazarus himself, by use of his concept of the appraisal

process, has opened the way to solution of the problem. The stimulus that reaches the brain is indeed defined initially as a stressor or nonstressor. Let us call this *primary appraisal-I.* If the latter, then the appropriate system resources are brought into play to respond to the stimulus. If, however, the former is the case, then we are witness to the creation of a state of tension, manifested in increased psychophysiological activity and emotion. The reader is asked to keep in mind the six examples given two paragraphs earlier. In each case, happy or unhappy stimulus, the chances are that most of us would define the stimulus as a stressor. This is not to say, of course, that the same stimulus would be defined by all of us as stressor or nonstressor. Called on unexpectedly at an international meeting of experts to make spontaneous remarks is likely to put a graduate student into a tizzy; I would not be fazed. Approached seductively at a party, one person would react with easy delight, another with intense tension.

The very first mechanism through which the SOC operates, I propose, is related to this primary appraisal-I. By and large, I hypothesize, the person with a strong SOC is more likely to define stimuli as nonstressors, to assume that he or she can adapt automatically to the demand, than one with a weak SOC. In this way, the former will not experience tension, with the potential of its transformation into stress.

But there are the daily hassles and, of greater significance, the acute life events and those engendered by chronic endemic situations, which none can, without radical distortion, perceive as nonstressors. I cannot imagine any driver who has just stopped inches short of hitting a child who had suddenly run into the street as responding with equanimity. Nor can I imagine anyone confronting the six situations above (even though I have experienced only one personally and a second vicariously) who, in primary appraisal-I, does not enter a state of tension.

The next step, *primary appraisal-II,* is the judgment of the nature of the stimulus—now perceived as a stressor—as endangering one's well-being, positive, benign, or irrelevant. The distinction between these two appraisal stages does no violence to Lazarus's transactional model. The terms *benign* and *irrele-*

vant, however, are a bit problematic. To perceive a stressor as benign or irrelevant is to define it as of little consequence for one's life, to assume that whether one mobilizes the resources to deal with the demand matters little. It is to assume that the tension will soon be dissipated; in essence, it is taking cognitive action toward redefining the stressor as a nonstressor. "I didn't, after all, hit the child, and I had been driving carefully. My heart will soon stop racing." Or the British voter, after painfully deliberating whether to vote Labor or Social Democratic, and casting the ballot, says, "Oh, well, the important thing is that I voted against the Tories." Once again, the strong-SOC person, having had considerable experience in encountering stimuli which initially seem to be stressors but soon turn out to be non-problematic, without any particular investment of energy on her or his part, is more likely, at the primary appraisal-II stage, to define a stressor as benign or irrelevant, to feel confident that the tension will quickly dissipate.

Why is the person with a strong SOC more likely than one with a weak SOC to define a stimulus as a nonstressor or, when it is appraised as a stressor, to define it as irrelevant or benign? Because he or she has confidence that, as in the past, by and large things will work out well, that what seems to be a problem will turn out not to be much of a problem and is reasonably soluble, that the dissonance is only seeming. As I sit and write this section, I am confronted with the questions: Am I saying something new and worthwhile? Am I developing an idea that is consistent with what I wrote in Chapter Two? Will it make sense to my colleagues who read it before it goes to press? If I have a strong SOC, I can, without resistance, let these questions come to mind. And as I call up the many occasions in the past when such questions have been answered positively, the tension dissipates and I can go on working. If not, then I repress the question, go on writing, and only later have it brought to my attention that what I have written is worthless. Or I discover something urgent to be done and escape, neither solving the instrumental problem nor resolving the tension.

This approach has much in common with Bandura's (1977) self-efficacy theory. As he has noted (pp. 193-194),

"Perceived self-efficacy influences choice of behavioral settings." That is, the strong-SOC person is more likely to voluntarily choose to enter situations, not having appraised them as tension-inducing. Or if a situation is seen as tension-inducing, no unusual calling up of resources is needed, for the stressor is defined as irrelevant or benign. Bandura would, I think, concur that no particular coping behavior need be mustered. When one has "the conviction that one can successfully execute the behavior required to produce the [desired] outcome" (p. 193), tension is not much of a problem.

It is most important, particularly with respect to health matters, to qualify the hypothesis that persons with a strong SOC are more likely to define stimuli as nonstressors or as irrelevant or benign. In a detailed study of the trajectory from symptom perception to hospital care in the case of coronary artery disease, Alonzo (1986, p. 1297) writes that "the time from acute symptom onset (ASO) to arrival at definitive medical care is critical for both morbidity and mortality. Since the highest mortality from CAD occurs within the first hour after ASO, individuals should be placed under definitive care as quickly as possible. . . ." Defining chest, arm, shoulder, or jaw pains, shortness of breath, and perspiration as nonstressors or as irrelevant—the data indicate that such behavior is quite frequent—is life-threatening. The data on delay in detection of cancer point to a similar widespread problem.

There is, of course, a danger that the strong-SOC person will deceive himself or herself. But by and large, I submit, this is less likely to be the case than for the weak-SOC person. The former, with successful experience in coping with stressors, will tend to be realistic in not worrying about stimuli, while open to perceiving stimuli which are objectively threats to one's well-being as stressors to be coped with.

If, then, the strong-SOC person is advantaged in terms of primary appraisal I and II, such advantage is relatively unimportant. Given the nature of human existence, problems do not go away, and tension is generated. Over and over again, particularly if the stimulus defined as stressor is a major acute or chronic-endemic stressor, one will be confronted with the true problem

of the stress situation: How does one prevent tension from being transformed into stress?

Defining the Problem

Before we turn to the question of how the SOC works to resolve tension, preventing its transformation into stress (and hence reinforcing health and preventing dis-ease), three issues should be raised: defining the stressor as positive or negative, clarifying the emotional parameters of the problem, and clarifying its instrumental parameters.

First, it must be recalled that a stimulus defined as a stressor may be appraised as happy or unhappy, as positive or as endangering one's well-being. The literature overwhelmingly focuses on negative stressors, perhaps for good reason, since reduction of suffering may morally be taken as having higher priority than enhancement of well-being. But from a theoretical point of view, we are called on to understand how happy tension, no less than unhappy tension, is resolved. Indeed, the basic concept of the Holmes/Rahe original approach involved a rejection of this distinction, insisting that it was the life event itself, requiring adaptation, that predicted to illness. True, most subsequent research has shown that the negative life events score was a more powerful predictor than total life events (Thoits, 1981). But this may well be because it is easier to solve the instrumental and emotional problems posed by happy events. We should be able to learn as much from studying such resolutions as from studying the resolutions of the problems posed by negative stressors. Further, we must take note of the fact that many stressors are not easily and cleanly appraised as either positive or endangering. Approach/approach and approach/avoidance conflicts are hardly unknown in human life. The woman who gave birth to a lovely first child may not have the good fortune to live in Sweden and be assured of a guaranteed year's income and keeping her satisfying job.

The person with a strong SOC, I suggest, is likely to appraise a stressor as happier, as less conflictful, or as less dangerous than one with a weak SOC. Once again, the underlying con-

fidence that things will work out, that one has the resources to cope, that the confusing will become comprehensible, that the potential for tension resolution exists—this confidence in and of itself is a relevant resource.

Such confidence may well be linked to the second issue to be raised: the nature of the emotional problem engendered by a stressor. The same happy stressor will arouse different emotions. The widower who meets an attractive woman and has a strong SOC will feel hope and excitement; with a weak SOC, he will experience hopelessness and apathy. The stressor appraised as endangering will arouse, in the person with a strong SOC, sadness, fear, pain, anger, guilt, grief, worry; in one with a weak SOC, anxiety, rage, shame, despair, abandonment, bewilderment. What distinguishes these two sets of emotions is that the former provide a motivational basis for action, while the latter are paralyzing. Further, the former emotions are focused; the latter, diffuse. Or, to put it in terms of the SOC construct, the same stressor is more likely to engage the meaningfulness component of the strong-SOC person than of one with a weak SOC. Focused emotions are clearly more consonant with the sense that problems are comprehensible. Moreover, the focused emotions are more likely to lead to coping mechanisms, while the diffuse emotions will lead to unconscious defense mechanisms (Kroeber, 1963; Haan, 1977). (For a discussion of the role of awareness of the use of defense mechanisms in coping with stress, see Heilbrun and Pepe, 1985.)

The third issue to be raised is parallel to the second: how the instrumental problem involved is perceived when a stimulus has been defined as a stressor. Election to the chair of one's department, for the weak-SOC person, is likely to bring to the fore, even though the position had been wanted, a train of perceived and anticipated complex problems. Now one has to interact directly with the dean, exercise disciplinary power over students referred by teachers, allocate resources instead of just fighting for them, invite visitors for dinner, and so forth. The strong-SOC person perceives the same problems, but with greater clarity, with more specificity, with more precise differentiation. The problems, moreover, are not only seen as more com-

prehensible and manageable, but also as challenges rather than as burdens.

These two latter issues, involving the perception of the emotion-regulation and instrumental problems posed by a stressor, may well be termed *primary appraisal–III.* Shalit and Carlstedt (1984), extending Lazarus's model, have adopted a very similar approach. In a series of studies that analyzed effective coping with stressors derived from the external environment (parachute jumping, military underwater operations), Shalit proposed that the first two stages of a sequential appraisal process consisted in, first, cognitive appraisal of the quality of structure and lack of ambiguity in the perceived situation and, second, affective appraisal of emotional involvement in the situation. In order to cope well, Shalit argues, one must both have a clear picture of the situation ("One can view the incoherence of a perceived situation as the universal and primary stress factor," 1982, p. 7) and have given emotional meaning to the situation. The strong-SOC person, encountering a stressor, is more likely to be capable of introducing order and meaning into the situation.

Whether one calls these processes the first stage of the coping process or sees them as preliminary to coping, or whether one insists that they are sequential (as Shalit does) or not, does not seem to me to matter much. What I have proposed is that the extent to which one is capable of cognitively and emotionally ordering one's perception of the stressor and accepting a willingness to confront it is contributory to ultimate successful coping. Or, to put it in terms of the SOC construct, the extent to which one approaches the world with the generalized expectation that stressors are meaningful and comprehensible lays the motivational and cognitive basis for managing and for preventing the transformation of tension into stress. The strong-SOC person, then, always has a head start. Before taking action, he or she has mobilized resources to confront the stressor. By contrast, the weak-SOC person, confused and devoid of the desire to cope, tends to give up at the outset.

We can now turn to the question of action or, rather, of response to the stressor. How does the strong-SOC person man-

age? How does he or she resolve the instrumental problem and control the emotional and physiological parameters of the tension so that noxious consequences are avoided?

Resolution of Tension

The very first and fundamental point to be made is that a strong SOC is *not* a particular coping style. This is the heart of the matter. The stressors life poses are many and varied: positive or negative; brief, continuing, intermittent, or enduring; more or less objectively controllable; from within or from without; idiosyncratic, related to social roles or situations, or universal; chosen or imposed; and so on. To consistently adopt one pattern of coping—to fight, to flee, or to freeze; to depend on others or on oneself; to use denial or rationalization or sublimation; to depend on social supports or money or intelligence; and so on—is precisely to fail to respond to the nature of the stressor and hence to decrease the chances of successful coping. *What the person with a strong SOC does is to select the particular coping strategy that seems most appropriate to deal with the stressor being confronted.* Or, as I would rather put it, he or she chooses from the repertoire of generalized and specific resistance resources at his or her disposal what seems to be the most appropriate combination.

The notion of choice points to a distinction largely ignored in the literature, particularly in that large bulk of work done on coping which deals with social supports. I refer to the distinction between a resistance resource as a potential asset and the actual mobilization and utilization of a resource. True, the very knowledge that one has a variety of potential resistance resources at one's disposal is in itself a valuable asset. And it is precisely the person with a strong SOC who is more likely to have a considerable armamentarium of resources at his or her disposal. But it is in the actual mobilization of what seems to be the most appropriate resource or combination of resources in the face of the given stressor that the true advantage of the strong-SOC person comes to the fore.

The crucial factor involved in the process of mobilizing

resources, as suggested in Chapter Two, is the strong sense of meaningfulness. Confronted with a stressor, the person with a strong SOC is more likely to feel a sense of engagement, of commitment, of willingness to cope with the stressor. There tends to be an a priori assumption that dealing with the stressor is worthwhile, is a challenge to be welcomed rather than a burden to be escaped. The stressor may be very painful: being refused a job promotion one believes one deserves; being fired; being turned down by one to whom one has proposed marriage; profound conflict and a rift with one's adolescent child; the death of a spouse; the election to national office of a candidate one believes is a catastrophe. Of course we would rather these things did not happen. But they do. What is one to do, then, so that the damage is minimal, so that the pain is assuaged?

One possibility is to define the development as being beyond the boundaries of what is meaningful in one's life. One of the hallmarks of the person with a strong SOC is that the boundaries of what is meaningful are flexible and can be narrowed (or broadened)—always with the proviso that they cannot be so narrowed as to exclude the crucial spheres in human existence: inner feelings, immediate personal relations, major activity, and existential issues (see "Boundaries" in Chapter Two). The Orthodox Jew in the ghetto whose child married out of the faith would sit *shiva* (the period of mourning), defining the child as dead. Embarking on retirement after a long life of employment, one can say: "Well, paid work is no longer important in my life." The crucial questions are whether there are alternative sources of meaningfulness in one's life and whether the redefinition is an act of self-deception. It may not be.

Let us assume, however, that the problem posed by the stressor cannot be defined as beyond the boundaries of what one cares about or that to do so would involve self-deception, with repeated reminders that the problem has not gone away. The person with a weak SOC, seeing the stressor only in its burdensome aspects, will tend to focus on the emotional parameters, on handling the anxiety and unhappiness brought into being by the stressor. This is as true for a stressor deriving from the internal environment as for one externally or interactively

derived. It is as true for a happy as for an unhappy stressor. The person with a strong SOC, by contrast, will tend to focus on the instrumental parameters of the problem, will see as the challenge the question of what resources can be mobilized to meet the problem.

Before resources are mobilized, it is essential to define the nature and dimensions of the problem, to make sense of it. Is it simple and self-contained, or does it have extensive, ongoing ramifications? Does it involve only oneself, or are others involved? Is it analogous to problems one has confronted before? Does it involve moral issues? Is it likely to intensify or lose its force, irrespective of what is done? This is precisely where the comprehensibility component of the SOC comes into play. Believing that problems can be ordered and understood, the strong-SOC person can set about turning chaos into order, puzzlement into clarity. The weak-SOC person, persuaded that chaos is inevitable, gives up in advance at any attempt at making sense of the stressor. A halfhearted, ineffectual coping attempt results—or, more likely, a sole focus on dealing somehow with the emotional problem.

Although it has taken me many words to discuss the process that brings the person to the stage of what Lazarus calls *secondary appraisal,* this does not necessarily reflect the time span involved in confronting a stressor from its appearance until the moment one acts (or does not act) directly to deal with it. Nor is the process anywhere near so rational or cognitive as it may sound. The process may be most rapid and very largely unconscious.

The proposal that the hallmark of the strong-SOC person is the ability to choose what seems to be the most appropriate strategy from among the variety of potential resources available does not mean that anything goes. The distinction made in Chapter Two between the canon, or fixed rules, and flexible strategies is most pertinent. We always cope with stressors within culture contexts, which define the canon. The American will use primary control, the Japanese, secondary control (Weisz, Rothbaum, and Blackburn, 1984). A confidant(e) may be one's spouse or one's blood brother (sister). But within these cultural

constraints, the strong-SOC person will be flexible in choosing strategies.

The emphasis on flexibility in the choice of appropriate strategies resolves, I believe, the nonfruitful issue of whether the SOC is a personality trait or a disposition (an issue I discuss in Chapter Seven). To see coping as process, to insist on the importance of the concrete situation, the nature of the stressor, and the particular transaction, in no way contradicts the possibility of identifying, for a given person, a consistent pattern of coping—not in terms of selection of a particular coping style but in terms of flexibility.

The more recent literature has begun to demonstrate how the same coping style, the same behavior pattern, the same defense mechanism can be highly functional or severely dysfunctional in health terms, depending on the problem. Cohen (1984, p. 269), reviewing a substantial number of studies that linked coping patterns and disease outcome, concludes that "the key question may not be *which* coping strategies an individual uses but rather *how many* are in his or her repertoire or how flexible the person is in employing different strategies."

I should like to call the reader's attention to further studies which support Cohen's conclusion but which broaden the picture. Orr (1983), in a longitudinal study of the adaptation of women who had had a mastectomy, found that the best-adapted women were those who sought information primarily at the time of the third interview, some months after the operation. This, she proposes, is when information is most useful and manageable. Those who sought information constantly, as well as those who closed themselves off throughout, were less well adapted. The strong-SOC person, I suggest, regards information as a potential resistance resource to be sought when it can be useful, not sought when it is likely to provide overload and not to be avoided consistently. In a similar vein, Strull, Lo, and Charles (1984) distinguish between patients' desire for information and discussion and their desire to participate in medical decision making. Their data indicate that physicians underestimate the former and overestimate the latter.

The more general issue raised by these and other studies

is discussed in Lazarus's (1981) brilliant paper on denial. He points (p. 138) to the "apparent paradox that illusion or self-deception can be both adaptationally sound *and* capable of eliciting a heavy price. The paradox is: How is it possible for self-deception to be at once healthy and pathogenic?" He goes on to discuss various criteria that indicate when it may be one or the other, asking questions like: Is reality being distorted? Is action possible? How salient is the emotional distress? For present purposes, what is important about Lazarus's paper is that he subjects to close scrutiny the dominant assumption in much of psychology for many years (and, one may add, the current ethos in American culture) that one must always actively confront reality in full and head on. Whatever philosophical validity this position may have, its health consequences are problematic.

But this is not to say that anything works well. In a study of adults with four diseases having different levels of danger and controllability (hypertension, diabetes, rheumatoid arthritis, and cancer), Felton, Revenson, and Hinrichsen (1984) investigated the consequences of using different coping strategies. Although their study is cross-sectional and the results equivocal, there is some indication that "greater positive affective states . . . were associated with primarily cognitive strategies, that is, incorporating relevant information or changing the nature of one's cognitions," while "coping strategies of wish-fulfilling fantasy, emotional expression, and self-blame are not altogether positive" (p. 896).

In a more sociological vein, Seeman, Seeman, and Sayles (1985) point to the importance of making distinctions between different kinds of potential resistance resources. In a year-long study of physical illness and illness behavior, they focused on two variants in each of two resources often regarded as homogeneous. They distinguish between the denial of luck as a determinant of health and the sense of personal control, suggesting that the former is the important facet of the locus of control, while the latter may well be harmful, in that it may boomerang as a form of false consciousness. Similarly, in stressing the importance of how a social network is used, they suggest that using it instrumentally is helpful, while high consulting behav-

ior is more likely an expression of dependence and may be of more harm than good.

Dressler's study (1985) takes us a step further, in showing that "the efficacy of a particular coping style cannot be assessed apart from the specific sociocultural setting in which an individual lives" (p. 504). His focus was on the relationship between health and the use of active coping (aimed at dealing directly with the stressor) and passive coping (avoiding the stressor and dealing primarily with the emotional parameters). The study was done among Southern black women and men. "Scoring more in the direction of active coping," he found, "is beneficial to the psychological and physical health of women and deleterious to the psychological and physical health of men" (p. 502). Black men, he argues, in the context of Southern racism, get into trouble when active, whereas women, whose major role is that of the homemaker, cope successfully when active.

The historical situation may, of course, change, and the coping style that was once effective can become less so or even pathogenic. In many years of discussion with young Israelis troubled by the profound question of the Holocaust and "Why did Jews let themselves be led to the slaughter?" I have—after making very clear that the extent of active Jewish resistance in World War II is almost unbelievable, given the circumstances—sought to lead them to an understanding of Jewish history that is unfamiliar to many Israelis. Given the historical circumstances of two thousand years of exile, the Jewish culture pattern of turning inward, of maintaining one's own culture and social structure, of readiness to rebuild constantly, proved to be the most effective coping strategy for survival. In the face of the inconceivable Nazi program for a "final solution," the strategy failed.

Finally, I should like to refer to a study that, although it does not deal directly with health, is germane to the issue of selection of a coping strategy in coping with stressors. Unruh (1983) considers the social situation of the elderly in American culture and proposes the construction of a "social world" as a highly effective way of coping with a situation that is a chronic-endemic stressor for many. He defines a social world (p. 14) as

"an extremely large, highly permeable, amorphous, and spatially transcendant form of social organization wherein actors are linked cognitively through shared perspectives arising out of common channels of communication." The social world is, for Unruh, first and foremost a mental construction, a way in which "people organize their life-rounds, perceptions, and actions" so as to make "sense of that which occurred throughout their lives and rendering life meaningful" (pp. 48-49). Whether it is ballroom dancing or gleaning, two of the worlds Unruh analyzes, the construction of a social world is a choice from a variety of potentials.

Reference to these studies and to those by Cohen (1984) has been made in order to stress two points. First, the search for the personality type or coping strategy that is universally effective in successfully dealing with stressors is not only useless; any such concrete type or strategy is bound to be self-defeating. But second, not anything goes. There are times and places and situations and people where it is possible to say that this behavior is more likely to be successful than that, that that behavior is likely to be self-defeating and boomerang. Cohen, having recognized these points, avoids the underlying question, namely, can we generalize about the character of the person who has many alternative coping strategies as potentials and uses them flexibly and appropriately? This is, I suggest, the person with a strong SOC. Motivated to cope, having clarified the nature and dimensions of the problem and the reality in which it exists, he or she is well on the road to managing, by selecting the most appropriate resources to the problem at hand.

Almost two decades ago Shanan (1967) proposed the concept of an adaptive coping style, which he saw as a response set that individuals characteristically adopt in stressful situations. He pointed to four features of this set: the availability of free cathectic energy for directing attention to the sources of potential difficulty; clear articulation of the perceptual field, distinguishing between the internal and external environments as potential sources of difficulty; confronting rather than avoiding complexity and conflict in the external environment; and maintenance of an optimal balance between the demands of

reality and of the self. In a recent study, Steinglass, De-Nour, and Shye (1985) used Shanan's concept of adaptive coping style (unfortunately, they call it active coping) and the instrument he developed to measure it, in order to analyze coping with the stressor of geographical relocation. The active coping and self-image scores, they write, "appear to reflect aspects of what Antonovsky has called a 'sense of coherence' . . . active coping reflects confidence about one's external environment; positive self-image reflects the same about one's internal environment" (p. 525).

But once this confidence is established—in my terms, once the generalized view of the world as meaningful and comprehensible is focused on the specific situation—one is ready to act. Such action can be directed, simultaneously or sequentially, at solving the instrumental problem and the emotional load. What does this mean, to use one of the examples given earlier, for the forty-year-old steelworker informed that his plant is to close and he is to lose his job? Consider the following variety of resources that might be activated by the person with a strong SOC: insisting that his union keep very careful track of any attempt on the company's part to appropriate any or all of the legitimately earned severance pay, pension benefits, or vacation and sick-leave rights; making it clear that neither he nor his workmates, but rather incompetent management or general social conditions, were to blame for the plant's failure; examining the family budget, calculating what cuts can be made and how long savings might last; considering, with his wife, who has preferred to stay home, whether she should look for a job and how the kids can pitch in; taking the opportunity to reexamine whether this is not a good chance for a career shift and skill retraining; doing some of the things he has wanted to do for a long time, without interfering with job hunting, now that some leisure time can be expected; contacting his uncle or an army buddy for new job leads; rejoining the church choir and singing to let the pain ease. And looking, looking not only for another job but for one that will give him reasonable gratification, in all ways. After all, we are talking about the way he is going to spend the next twenty-five years.

There are no guarantees in life, and reality may go on and on tearing away at one's heart and one's time and one's pocket. One may well bark up the wrong tree, make mistakes, and deceive oneself. One begins to blame oneself, to nag at the wife and kids, to drink. But the chances that the strong-SOC person will take maladaptive coping actions are fewer. Whatever potential reality does offer, there is a better chance that he or she will transform it into actuality.

Fagin (1985), in a valuable summary paper of the illness consequences of unemployment, writing in a pathogenic vein, closely analyzes the psychological, social-psychological, and sociological characteristics of unemployment that facilitate illness. In a brief passing remark (p. 36), however, he notes that "a period of unemployment may be a useful turning point for a few individuals," but the question raised is nowhere pursued. My point, of course, is not that unemployment is a happy experience; quite the contrary. But, for the person with a strong SOC, it may be less damaging and may even prove to be salutary.

Reference to making mistakes brings us to the final stage of the coping process: feedback and correction of course. The stage of secondary appraisal involves selection of the appropriate resources for coping with the stressor. Transforming this potential into reality, one begins to get feedback. The friend whom one has asked for a loan is strapped. The confidant(e) to whom one has turned is too burdened with his or her own problems to listen. The self-help group turns out to be dominated by someone interested only in power. The union is run by entrenched politicians. Or, in happy contrast, one's judgment is vindicated, and the resources one has tried to activate turn out to be both available and appropriate. *Tertiary appraisal* is the making of such assessments.

At this stage, too, the strength of the SOC plays a significant role. As Cassel pointed out, in analyzing the significance of the lack of social support, "The actor is not receiving adequate evidence [feedback] that his actions are leading to anticipated consequences" (1974, p. 477). The person with a strong SOC, long familiar with looking for feedback, will both elicit it and be capable of assessing it. With a weak SOC, once one's

course is set, one tends to disregard signals that contradict the wisdom of the action chosen. There is no motivation to relinquich a course leading to a dead end and search for alternative courses of action. One goes on one's way blindly.

In summing up our book on poverty and health many years ago, my colleagues and I (Kosa, Antonovsky, and Zola, 1969, p. 325) wrote: "Whatever aspect of health, whatever stage of the morbid episode is examined, the poor are at a disadvantage." Similarly, I would suggest that at all stages of the coping-with-a-stressor episode or life situation the person with a strong SOC is at an advantage in preventing tension from being transformed into stress. An orientation toward one's world that sees stimuli as meaningful, comprehensible, and manageable provides the motivational and cognitive basis for behavior that is more likely to resolve the problems posed by stressors than is one that sees the world as burdensome, chaotic, and overwhelming.

In seeking to understand how the SOC works, it may be that I have oversimplified matters in discussing the process of coping with a single stressor. But, as Mechanic (1974) long ago pointed out, it is valuable to view coping with stress as a process, a complex set of changing conditions that have a history and a future. The very act of coping with a stressor may give rise to new stressors, as coping involves role modifications, mobilization of hitherto potential resources, shifting perceptions of the coper by others, and so on. Thus, for example, in the case of our unemployed steelworker, the process of coping may catapult him into union leadership, his wife may take on paid employment, his children may see more of him, or he may be offered a temporary unattractive job by his uncle, with whom relations have been distant. This is what real life is like. But putting matters in this context only reinforces my initial position that stressors are ubiquitous in human existence, that we are required to cope all the time. If anything, it only becomes clearer that the person with a weak SOC will be overwhelmed and that one with a strong SOC has a chance to cope successfully.

Three reminders must be noted. First, although I have throughout referred to persons with a "strong" or with a

"weak" SOC, I trust it has been obvious that this was simply a parsimonious way of saying, "The higher one is on the SOC continuum, the more likely is it . . ." Second, the actual content of behavior, of the resources chosen to cope with stressors, is always shaped by one's culture. The concept may be cross-cultural, but its concrete translation will vary widely. Thus the confidant(e) may be a relative of the older generation, a holy person, a spouse, God, or a friend. Similarly, one's culture defines which resources are appropriate and legitimate in a given situation. Culture sets limits; within these limits, the SOC matters. Third, I hope it has not been inferred from what I have written that a strong SOC is a magic bullet, enabling one to fully solve all the problems in life posed by stressors. Not only do very few of us have a very strong, authentic SOC, many of the problems in life are intractable, not amenable to full solution no matter how strong one's SOC. What I have proposed is that people with a strong SOC will do better than those with a weak SOC in coping with these problems; that when a problem is not soluble, they will be able to go on living with it more adequately; and that they will be able to live less painfully.

Coping with Emotions

In introducing the issue to which this chapter is devoted, I noted that the nature of the problem posed by a stressor is dual: the instrumental issue and the regulation of emotion. Even when the source of the stressor is the internal environment, the problem is still instrumental. Demands that come from within—unfulfilled aspirations, approach/avoidance conflicts, cognitive dissonance, and the like—are no less instrumental problems than are demands that come from interpersonal relations, cultural and structural sources, or life events. Throughout the discussion I have focused on how the SOC facilitates coping with the instrumental demand. There is, however, no demand, no problem, that does not also raise the issue of the regulation of emotion. Tension, the response to a stressor, is an emotional phenomenon (as well as a physiological phenomenon,

an aspect to be discussed below). Thus, even though emotion is viewed as a secondary phenomenon, as a response to a stressor, it becomes a first-order problem in itself. Resolution of the instrumental problem posed by the stressor does not mean that the problem of emotion regulation is automatically solved.

In a fascinating exchange, Lazarus (1984b) and Zajonc (1984) debate the question of the primacy of cognition versus the primacy of affect. Although Lazarus does not dispute the existence of sensory states and preferences, he argues that these are usefully excluded from the concept of emotions. The latter, he states, should always and only refer to a cognition about the implication of a stimulus for one's well-being. It is in this sense that I see the problem of regulation of emotion. Once we have appraised a stimulus as a stressor, as having implications for our well-being, a set of feelings emerges. How does the SOC allow us to cope successfully with emotions?

Part of my answer has already been given. Discussing what I called primary appraisal-II, I suggested that the person with a strong SOC is more likely to define a stimulus as a happy rather than a dangerous stressor, a challenge rather than a burden. I used words like *hope* and *excitement,* in contrast to *hopelessness* and *apathy.* I further distinguished between focused and diffuse emotions. My concern there was to suggest that the former provide a more adequate motivational and cognitive basis for action in dealing with the instrumental problem. But what of the emotion itself?

The human organism cannot, without consequent damage, remain at a high and intense level of emotional tension, even if the emotion is pleasurable. One must relax, if one is not to become exhausted. The central hypothesis I would propose is that persons with a strong SOC are likely to experience different emotions than those with a weak SOC, emotions that, by virtue of a number of characteristics, are more amenable to regulation. A focused emotion is one in which the feeling is linked to a relatively clear target. One is angry about something someone has done, some event that has happened. The dimensions of the anger are delimited, as are its perceived consequences. Rage is qualitatively different; its target is the world,

life, people in general. One boils in anger, and the steam dissipates; one seethes in rage, endlessly. Similar contrasts exist between fear and anxiety, between grief and the feeling of having been abandoned. In each case, it is easier to figure out what to do about the one emotion than about the other.

A second distinguishing characteristic of the emotions is the extent to which they are at the level of the unconscious. The strong-SOC person is more likely to be aware of his or her emotions, can more easily describe them, feels less threatened by them. They are more likely to be personally and culturally acceptable; hence there is less need to disregard their existence. They are more appropriately responsive to the reality of the situation one is in.

Third, there are the many stressors that raise the attributional question of blame. The weak-SOC person is more likely to blame someone or something else, often a vague "they" or bad luck. (Several of the items on the SOC questionnaire raise this question directly.) But this expresses the often ineffectual defense mechanism of projection, a frightened escape from assuming responsibility, and leaves a nagging sense of unease. The strong-SOC person will not hesitate to blame others when reality makes this appropriate. In studies of occupational stress, and underlying many programs of stress management at work, the assumption is often made that the job demands are reasonable and the problem is to train the worker to adjust to the stressors, conveying the message that he or she is to blame. (See Schwartz, 1980, who devotes part of one paragraph to "procedures . . . geared toward helping people change their environment to be more healthful" (p. 101), referring largely to assertiveness training and anger control, and more than three and a half pages to procedures "geared toward helping people cope with an environment that cannot be changed" (pp. 101-102).) The weak-SOC person, deeply unsure of his or her own competence, will often buy this approach, in contrast to the strong-SOC person, capable of placing the blame where it belongs.

We may take the issue of attribution one step further. When one does blame oneself, the target may be characterological or behavioral. In a study of women who came to an

abortion clinic, Major, Mueller, and Hildebrandt (1985) made the distinction between women who attributed their unwanted pregnancy to not being strong or responsible people and those who focused on more concrete behaviors. The character blamers, who would, I expect, be low on the SOC, were found to cope significantly less well with the abortion than women who did not blame their characters. Guilt, I suggest, is more easily manageable when it is linked to what one has done than to who one is.

I trust that the foregoing makes it clear that the difference between the person with a strong and with a weak SOC is not that the former does not, in response to negative stressors, have strong feelings of emotional distress. If anything, he or she is more likely to allow them to come to the surface and to express them in overt behavior, rather than to repress them. In this way, one can more easily both act to deal with the instrumental problem and manage the problem of emotion regulation. Tension is much less likely to be transformed into stress. Silver and Wortman (1980), in an otherwise excellent review of the literature on coping with stressors, fail to make this distinction in their discussion of emotion regulation (pp. 327-331). They note that the evidence suggests that controlling one's emotions is not necessarily salutary. But they do not adequately make the distinctions among emotions I have noted, nor are they aware of the significance of ongoing entrapment in the intense emotions. Intense emotional distress among the recently bereaved, to take their example (p. 331), will be manifested no less, and possibly more, by persons with a strong SOC. Nor will their pain and sadness disappear for a long time, if ever. But if the distress continues to be acute, sharp, blinding, shutting out other emotions, dominating one's life—if the tensions become stress—the consequence will be pathology.

Effects on Health

Up to this point, the chapter has been concerned with explicating how the SOC lowers the probability that tension will be transformed into stress. The concept of the health ease/dis-

ease continuum has not even been mentioned. Yet the whole point of the discussion has been that by managing tension well, the person with a strong SOC will indeed reinforce or improve his or her health status. But as Kaplan warns (1984, p. 756), "a study that focuses on coping strategies is of little value unless we know that these strategies mediate health." It is to this issue that I now turn directly.

When John Snow urged closing the Lambeth Company's Broad Street pump in order to contain the cholera epidemic in London in 1853, he had formulated the hypothesis that cholera could be transmitted by discharge of fecal wastes into water supplies (Snow, 1855). He was very far from understanding the mechanisms by which using water into which sewage had been dumped led to cholera. But the epidemiologic basis for his recommendation was sound. Similarly, there seems to be sufficient evidence that stressors, unless adequately coped with, are pathogenic and at least some evidence that when coping is successful, the outcome is salutary. What are the pathways to which we can point? The discussion can at best be no more than specification of hypotheses, for I know of no data that point directly to the link between the SOC, coping, and health.

Cohen proposes that there are five "mechanisms by which coping can affect the etiology of and recovery from disease" (1984, p. 265). Three of these are on the level of direct behavioral coping:

- Habits that directly interfere with or reinforce health—for example, smoking, excessive drinking, exercise.
- Adaptive behaviors that can lessen the severity of illness—for example, seeking early treatment, openness to cardiac rehabilitation information.
- Transactions with health professionals—for example, compliance.

Although Cohen's paper is ostensibly devoted to stressors, the issues to which she refers cover the entire gamut of behaviors that presumably have a direct relationship to health. I make no claim that persons with a strong SOC are more likely to engage

in those behaviors that evidence indicates are good for the health—not eating between meals, not smoking, regular physical activity, and so on (Berkman and Breslow, 1983). These behaviors are far more determined by social-structural and cultural factors than by the way one sees the world, and I do not wish to confuse the two. It may well be that the same sociocultural factors that decrease smoking rates (for example, social class) also influence the emergence of a strong SOC, so that the chances that a strong-SOC person will not smoke are greater. But one should not distort the direction of causality.

If, however, we limit our focus to coping with stressors, we can ask: Confronted with an acute or chronic stressor, who is more likely to respond behaviorally with maladaptive health behavior, such as increased smoking or drinking, denial of symptoms, and nonadherence to medical regimens, and who is more likely to respond behaviorally with adaptive health behavior, such as cutting down smoking or drinking, alertness to symptoms, and exercising? Then I would say that the advantage would be in the hands of those who have a strong SOC. The reasoning underlying this hypothesis has been detailed above. The person with a strong SOC is more likely to accurately identify the nature and dimensions of the instrumental problem; more likely to approach it as a challenge; more likely to select from his or her repertoire of resources those that are appropriate to the problem and employ them rationally.

Thus, returning to our example of the steelworker about to lose his job, one would predict that, with a strong SOC, he will not start drinking heavily, for this would interfere with job hunting; he will try to talk to his wife about his feelings of anger at management; he will turn to a doctor if he feels disturbing chest pains; he will exercise so as to keep in shape.

From this point of view, there is indeed a basis for anticipating a causal sequence between the SOC, health behaviors, and health. That is to say, persons with a strong SOC will engage in adaptive health behaviors more often than those with a weak SOC, all other things being equal. This would be equally true for the three behavioral coping mechanisms discussed by Cohen. But my position is that there is a more direct rela-

tionship between the SOC and health, one that is linked to Cohen's other two mechanisms. As she puts it, "First, coping may increase hormonal levels, causing direct tissue damage or influencing bodily resistance to illness . . . others have suggested that positive morale and the will to live may have positive physiological consequences" (p. 265). My hypothesis, then, is that the strength of the SOC has *direct* physiological consequences and, through such pathways, affects health status.

I must grant, at the very outset, that in discussing this hypothesis I may well commit that second-most-serious scientific crime (the first being fabricating data), not knowing what I'm talking about, entering a field about which I know next to nothing. Moreover, even experts in the field grant that there is as yet very little definitive knowledge available. Nonetheless, if any progress is to be made, social and biological scientists must learn to talk to each other. We cannot become experts in the other's field. But we can make suggestions, which others may exploit. It is in this spirit that I venture to make the following remarks.[1]

The most powerful and profound (as well as most readable, for the social scientist) general paradigm within which my approach fits is Schwartz's (1979) conceptualization of the brain as a health care system. His quotation from von Bertalanffy (p. 567), unknown to me at the time I developed the salutogenic model, is crucial:

> Concepts and models of equilibrium, homeostasis, adjustment, etc., are suitable for the maintenance of systems, but inadequate for phenomena of change, differentiation, evolution, negentropy, production of improbable states, creativity, building up of tensions, self-realization, emergence, etc.; as

[1]In a most detailed recent review of what is known about the biological substrates of stress, Ciaranello and others (1982, p. 240) conclude: "Cooperation among biological, psychological, and social scientists could be tremendously valuable, because each of these fields offers a different perspective of stress. Such collaborations are especially vital for efforts to identify and characterize important mediators of stress." It is in the hope that the SOC may be such a mediator that I have included this section.

> indeed Cannon realized when he acknowledged, beside homeostasis, a "heterostasis" including phenomena of the latter nature.

Schwartz's model derives from general systems theory, his central concern being: What happens when there is disregulation in normally integrated, self-regulatory systems such as the human organism? This organism, as an open system, generally maintains a steady state, which is distinct from equilibrium (p. 553). When the entire system is functional and intact, there is a neat chain of complex, self-regulatory processes of which the person need not even be aware. The external environment provides input stimulation to the system; through sensory receptors, these inputs are registered in and processed by the brain (the information-processing subsystem); the brain, in turn, transmits orders to "peripheral organs" designed to cope adequately with the demand that has been made on the system; and, most crucial, there are numerous "input devices (biological transducers) that detect the status of the Stage 3 (peripheral organ) behavior and feed this information back to the brain (Stage 2) in a closed-loop fashion" (p. 559). If there is any indication that the problem has not been solved, the brain continues in some way to deal with it (including seeking to ignore it).

"A normally self-regulatory system," Schwartz writes (p. 563), "can become disordered when communication of essential information between specific parts of the system is, for whatever reason, disrupted." Disregulation can occur at any stage in the chain: the sensory receptors or the brain can distort the input information; inappropriate information can be given to the peripheral organs; and as Schwartz greatly emphasizes, the feedback information provided by the sensory organs to the brain can be distorted or misinterpreted. Given such disregulation, the disorder creates the possibility for the initiation of a disease process. The organism has failed to mobilize adequate or appropriate resources to cope with the threat.

Schwartz goes on (p. 567) to note what, in the present context, is a crucial issue: the recovery time following the re-

sponse to a stressor. "A more dramatic effect of disregulation," he writes, "would be seen as a deficit in recovery time." This relates most directly to my distinction between tension and stress. The brain may register disturbance or pain, physical or emotional: the pain of a broken limb or stomach-ache; the fear of the loss of a job; the ecstasy of taking part in a great military victory with its accompanying physiological deviations from a steady state. With adequate feedback loops and regulatory processes, no train of damage will ensue. But if information is distorted or disregarded, and inadequate resources available, the disorder lasts—that is, the organism enters a state of stress and damage begins. Introduction of the time dimension allows us to focus not on the response to the acute stressor, which arouses physiological deviations from a steady state but can be handled expeditiously, but on the repeated acute or chronic stressors, inadequately handled, which are the source of damage.

The strength of the SOC, I propose, is a crucial determinant of the likelihood of preventing disregulation. This is true at all but one stage of the functioning of the system. As I have noted, the person with a strong SOC is more likely to avoid entering environmentally induced stressor situations and more likely to define stimuli as nonstressors. Given the nature of human existence, however, this is a peripheral contribution to health. Once in a stressor situation, he or she is less likely to ignore or distort the nature of the problem, that is, the information received by the brain. Accurate messages are more likely to be transmitted to the peripheral organs. The feedback loop to the brain will be carefully attended to. And most important of all, the brain will select the most appropriate resources, both from among the wide variety of subsystems within the organism and from the extraorganismic environment. Note that I have ignored one stage in the circuit: the adequacy of information reception, processing, and transmission by peripheral organs. (I continue to follow Schwartz's terminology.) In Chapter Seven I will propose some speculation about this issue, hinting at the possibility of the "SOC" of subsystems.

In a fascinating aside, in which Schwartz asks about possible neuropsychological mechanisms that could cause disregula-

tion, he writes (p. 565): "One plausible theory applies research linking patterns of lateralization of brain function to patterns of cognitive and affective processes." He notes the possibility of a functional disconnection syndrome in the brain. "By the inhibition of neural transmission across the cerebral commissures, which connect the two hemispheres, each half can become disregulated by the other." In this way, adequate integration of cognitive and affective processes in coping with stressors is impeded. Henry, who has made a significant contribution to the study of the interaction of social and biological processes (1982), has suggested to me (personal communication, 1983) that at a biological substrate, the SOC is expressed in a balanced integration between the two hemispheres. The reader will perhaps recall the phrase I used in referring to the comprehensibility and meaningfulness components of the SOC: "making sense." I suggested that, for the strong-SOC person, the world makes sense both in cognitive terms—it is ordered, understandable, predictable—and in emotional terms—its demands are worthy of engagement, one cares about the world. The two hemispheres are on the same wavelength.

There is no doubt that at this very early stage of our knowledge about the workings of the human brain, the preceding paragraphs may well be little more than speculation. But they are not wild speculation; they do not violate the little that is known. Most important of all, they give us a way of thinking that generates hypotheses to be tested.

This brings us, finally, to a more precise focus on the relationship between adequate regulation and the maintenance of health (although, as always, the emphasis in the literature is on disregulation and disease processes). In the last two decades, there has been a most exciting explosion in a field that is coming to be called psychoneuroimmunology. All those involved would agree that "the concept that the immune system, operating via the central nervous and neuroendocrine systems, may act as a 'transducer' between experience and disease" (Solomon, 1985, p. 7) is no longer an alien, speculative concept, even though knowledge is just at the beginning stage.

In his recent review of the field, Solomon proposes four-

teen hypotheses on the linkages between the central nervous system and the immune system, four of which are particularly germane to the present discussion. Hypothesis I (p. 8) is put as follows: "Enduring coping style and personality factors (so-called trait characteristics) should influence the susceptibility of an individual's immune system to alteration by exogenous events, including reactions to events." Solomon arrives at the "tentative conclusion that there is . . . an 'immunosuppression-prone' personality" which, in interaction with particular pathogens and/or genetic predispositions and/or weak links, leads to disease. This approach, then, in contrast to the Type A behavior pattern, would not predict to specific diseases but to disease. Cannot we then infer that there is also an "immuno-enhancement-prone" personality? Is not a person with a strong SOC a candidate for the kind of person who, confronted with challenge to the integrity of the organism, mobilizes immunological competence?

Solomon's second hypothesis refers to the consequences of emotional upset and distress for "the incidence, severity, and/or course of diseases that are immunologically resisted . . . or are associated with aberrant immunologic function" (p. 9). In discussing this hypothesis, he refers to the possibility that Kobasa's concept of hardiness is relevant to understanding why some are protected against the immunological effects of emotional distress.

Hypothesis VIII proposes that "hormones and other substances regulated or elaborated by the central nervous system should influence immune mechanisms" (p. 12). In this hypothesis as well as in Hypothesis XIII, which relates to thymic hormones, Solomon considers the indirect impact of central nervous system (CNS) functioning on immunocompetence via neuroendocrines under the direction of the CNS. His question relates to "the effects of psychological events" (p. 12), but it might just as well relate to the processing of these events by the brain.

Finally, Hypothesis XIV raises the question of "whether behavioral intervention can enhance immunity" (p. 14). But Solomon is unclear about the goals of interventions designed to

be immunoenhancing, using phrases like "happiness, security, sense of control, relaxation, and other positive emotions." And why only positive emotions? Is it not conceivable that fear, grief, uncertainty, excitement, and other emotions characterizing tension—if backed by the conviction that they make sense, are challenges, and can be managed—can be immunoenhancing?

This very issue is raised in Corson and Corson's (1983, p. 293) discussion of Anokhin's work, which fits neatly into Schwartz's conception of the brain as a health care system. Anokhin "postulated the operation in the central nervous system of a series of feedback loops that eventually include an 'action acceptor' involving the hippocampus and frontal areas of the cerebral cortex. The operation of this action acceptor leads to the development of integrated somatic-behavioral and visceral-endocrine adaptive responses, at which point the hippocampal electrical desynchronization disappears. The information deficit is thus eliminated." Insoluble problems, Corson and Corson suggest, conditions in which an adaptive coping response cannot be achieved, open the way to disease. But if the brain can indeed direct the achievement of such a response—or, in my terms, prevent tension from being transformed into stress—immunocompetence can be enhanced.

Borysenko's (1984) brief review of psychoneuroimmunology notes this possibility, citing studies that "have even found an enhancement of outcome measures as a function of stress" (p. 250). The same point is made in an empirical study by Dillon, Minchoff, and Baker (1985-86), who conclude that the mechanism by which "positive emotional states in disease prevention and cure . . . may be found in enhancement of the immune system" (p. 17). A behavioral intervention study of geriatric residents of independent-living facilities, using relaxation training, showed a significant increase in natural killer-cell activity and other immunocompetence changes (Kiecolt-Glaser and others, 1985). But for the most part, the work in this young field has concentrated on "the complex ways in which the nervous, endocrine, and immune systems interact to affect the occurrence of disease" (Jemmott, 1985, p. 507).

In a sense, one may point to Cannon's (1942) paper

"Voodoo Death" as the progenitor of serious study of the mechanisms linking emotions and pathology. Cannon speculated that the emotional trauma generated by violation of a profound taboo led to overactivation of the sympathicoadrenal system, hypovolemic shock, and rapid death. But autonomic arousal is rarely so extremely intense and sustained as to directly abrogate vital functions and lead to death. Even in Auschwitz, the central nervous system mediated chronic trauma and sometimes made a difference. Radil-Weiss (1983, p. 259), a survivor of Auschwitz and professor at the Institute of Physiology, Czechoslovak Academy of Sciences, writes: "Under these exceptional conditions, where the stress was maximum and the reserves were subject to maximum depletion, it was more apparent than under normal circumstances to what an extent the neural and neurohumoral regulation of internal processes in the organisms depends on the psychic processes." And further, in terms surely consistent with the SOC concept: "Men of strong will, convinced of the importance of the principles they consistently followed, and imbued with a unified world conception, endured better than persons who vacillated in their points of view."

We must, then, once we accept it as plausible that CNS functioning might be a decisive determinant of the link between stressors and disease, maintain awareness of a process—a process that takes time, a process during which tension may not be transformed into stress and may even have healthy outcomes. It is within this mode of thought that the SOC hypothesis has been proposed.

One final issue: Heretofore, the thrust of the argument has been that stressors pose a dual instrumental/emotional problem. The person with a strong SOC mobilizes emotional and cognitive intra- and interpersonal and material resources to cope with problems. He or she also mobilizes, through the CNS, neuroimmunological and neuroendocrinological resources to prevent damage to the organism. The SOC, in this model, is an attribute of the person or, if one will, of the brain, a characteristic way of relating to stimuli. This seems to imply a one-way relationship between psychology and biology, were it not for

the insistence on feedback loops. But the recent work of Krantz and his colleagues on Type A behavior raises an important possibility: that the SOC might reflect an underlying biological substrate.

The preponderance of research on Type A has followed the line of thought described by Krantz and Durel (1983, p. 384): "Situations perceived as psychologically stressful or challenging are thought to elicit Type A coping behaviors in susceptible individuals and, in turn, evoke sympathetic neuroendocrine responses that act upon the cardiovascular system to promote or precipitate ischemic heart disease." Studies of surgery patients under general anesthesia, however, showed increased cardiovascular responses "under conditions where conscious perceptual mediation is minimized"; that is, "the impatience, hostility, and speech patterns exhibited by Type A individuals may, in part, *reflect* an underlying sympathetic nervous system responsivity" (p. 401). Subsequent studies of the effect of beta blockers, drugs that attenuate sympathetic reactivity, in lowering Type A behavior support the physiological substrate hypothesis. In other words, rather than the CNS controlling peripheral physiological responses and being sensitive to feedback, the responses to stimuli are initiated directly, and subsequent information processing of these responses may allow resolution of the emotional problem. Krantz and Durel do not, however, totally reverse the directionality. Rather, they propose that Type A behavior is the outcome of the interaction of constitutional sympathetic responsiveness and CNS processing of peripheral sympathetic responses which include one's psychological set and cognitive reactions to a particular situation (p. 405).

Might it be, then, that the SOC too reflects an underlying biological substrate, a prototypical pattern of responses of various physiological systems of the organism which, in *interaction* with CNS information processing, predisposes the person to cope well with stressors and the problems they raise in ways that prevent tension from being transformed into stress? This approach does not necessarily commit one to accept a genetically determined predisposition. It is equally compatible with a

view that emphasizes the repeated set of experiences over the life course, analyzed in detail in Chapter Five.

This speculation, suggesting that the SOC concept may apply not only to the psychological level but also to various organ systems and, indeed, to the organism itself as a system leads us to a fundamental issue discussed in Chapter Seven: the transformation of chaos into order in any system. But before turning to this issue, I must make one final crucial point, if only briefly.

In the diagram presenting the salutogenic model (Antonovsky, 1979, pp. 184-185), a feedback arrow was drawn from the health ease/dis-ease continuum to the GRR column. This chapter has been devoted to tracing the pathways through which the SOC leads to health. But one's state of health is itself a significant life situation GRR-RD and, as such, plays a role in strengthening or debilitating the SOC. This point had been made explicitly in discussing the model (1979, p. 196). I should like to think that the reader will have kept it in mind in reading the present chapter.

7

Solving the Mystery: Issues for Further Exploration

In the course of writing *Health, Stress, and Coping* and papers written since then, and in the preparation of this book, as well as in many exchanges with colleagues, a number of meaningful issues have come up to be thought through "later." They were not crucial to the development of the argument and so could be pushed off. But if the full richness of the salutogenic model is to be exploited, they merit serious consideration. Hence it seems appropriate at least to raise them in brief discussion, hoping that commitment to print will compel me at least to state the issues clearly. I will first turn to placing the salutogenic question in the context of what I sense is an emerging central problem in all of science, the mystery of the transformation of order out of chaos. I next consider whether it is meaningful to talk about the SOC as a group property rather than just as an individual characteristic with social sources. The third issue confronted is the legitimacy of extending the significance of the SOC beyond its implications for physical health to other elements of well-being and to competence. Finally, I will consider the seeming paradox of viewing the SOC as a trait of a person in a transactional context.

Order out of Chaos

> And new philosophy calls all in doubt,
> The element of fire is quite put out;
> The sun is lost, and the earth, and no man's wit

Can well direct him where to look for it.
And freely men confess that this world's spent,
When in the planets, and the firmament
They seek so many new; then see that this
Is crumbled out again to his atomies.
'Tis all in pieces, all coherence gone;
All just supply, and all relation:
Prince, subject, Father, Son, are things forgot.

John Donne
"An Anatomy of the World.
The First Anniversary of the Death
of Mistress Elizabeth Drury" (1611)

The central thesis of the salutogenic model is that a strong SOC is crucial to successful coping with the ubiquitous stressors of living and hence to health maintenance. If this thesis is correct, then the important question becomes: What are the conditions that shape the emergence of a strong SOC? I suggested (1979, pp. 120-122) that stressors introduce entropy, and GRRs introduce negentropy, into the human system and that one's SOC orchestrates this battleground of forces promoting order or disorder. In 1978, when I had completed the draft of the book, I presented the thesis in a symposium of Israeli scholars held at Berkeley, designed to give some superficial acquaintance with our sabbatical researches to colleagues in a wide variety of disciplines.

I happened to be the first speaker. Immediately thereafter, the physicist speaker opened his talk by saying that although he had never heard of me till that morning and certainly had no idea about my work, his paper, entitled "From Chaos to Order," dealt with precisely the issue that I had raised, as it is reflected in the frontiers of research in physics, chemistry, and biology. He too would ask, he said, how we can understand the emergence of order in systems, given the powerful, immanent, and diverse forces constantly pressing toward chaos. During the years since, although I make no pretense to being knowledgeable in fields not my own, I have encountered, over and over again, work in a variety of areas that confronts the question. I

have become persuaded not only that this is a basic common question for all of science, whatever the system level or the unit of focus it deals with, but that in time we may move toward a common answer that goes beyond analogy.

For centuries the dominant conception of order was that formulated by Newton. The Newtonian image was that "of a simple, uniform, mechanical universe . . . a clockwork, the planets timelessly orbiting, all systems operating deterministically in equilibrium, all subject to universal laws that an outside observer could discover" (Prigogine and Stengers, 1984, p. xiii). Order, then, was built into the system. Thermodynamics, dealing with closed physical systems and the universe as a whole, rejected the timelessness of the mechanistic image, pointing to a unidirectional process of increasing disorder and eventual death. Darwinism, in contrast, pointed to the increasing complexity and, presumably, increasing order of biological systems. Einstein, introducing the observer into the system, nonetheless did not reject the deterministic view of the world as a machine. God does not play dice with the world, he is reputed to have said.

The Newtonian world image, given its power and its beauty, retains a strong hold on all the sciences, despite the great challenges to which it has been subjected. But for every scientist, physical, biological, or social, no less than for the philosopher or theologian, courageous enough to look in the face of reality, the problem of chaos is omnipresent. I have found Berlin's (1981, p. 169) discussion of Johann Georg Hamann, the eighteenth-century antirationalist Prussian pietist, the most intense way of putting the problem that confronts us as scientists and as human beings. According to Hamann, Berlin writes, "Nature is no ordered whole: so-called sensible men are blinkered beings who walk with a firm tread because they are blind to the true and profoundly disturbing character of reality, sheltered from it by their man-made contraptions; if they glimpsed it as it is—a wild dance—they would go out of their minds."

One possibility is to be content to submit to the strictures of Job's friends and ultimately to the injunctions of the Lord Himself. We can, then, forgo science and choose the path of faith, giving up any possibility of ever understanding the

fundamental issue, at best limiting science to circumscribed areas. Or we can choose the path of existentialism, defining the world as absurd and choosing Sisyphus as our model. Are these, then, the only alternatives? Is there not some way, without blinders or blinkers, open to all the evidence, in which we can make sense of the world?

The cell biologist or membrane biologist poses the problem for the cell or membrane, the social psychologist for the small group, the anthropologist for the culture. In each case, the problem is: How, in the face of the constant seeming wild dance of the reality of the stimuli bombarding the system from subsystems and suprasystems, does one separate information from noise, make sense of one's world? For if one does not, if one does not succeed in some adequate level of filtration, "one"—the system—will inexorably go mad and die.

Gardner (1979, pp. 254-255) sees the universe as a rich mixture of vast overall movements toward chaos. The earth's surface swarms with billions of branch systems. In most of these systems, things are winding down, but there are some peculiar pockets where things are winding up, complexity and order increasing. Koestler, focusing on biological species, highlights the latter. "The fact remains," he writes (1967, p. 199), "that living organisms have the power to build up ordered, coherent perceptions and complex systems of knowledge out of the chaos of sensations impinging on them; life sucks information from the environment [although Koestler is unhappy about the term *negentropy*] as it feeds on its substances and synthesizes its energies."

The crucial point about both Koestler's and Gardner's discussions is that they reject the mechanistic world view of timeless, reversible processes that do not really merit a term which implies change. They bring us to direct confrontation with a concept that has seemed enchanting and yet has prevented us from understanding the order-out-of-chaos problem: homeostasis. Two recent papers (written, I am sure, without knowledge of each other, although both authors live in California) do much to clarify our problem. In one, Bailey (1984), a sociologist, deals with the concepts of equilibrium, entropy, and

homeostasis in physics, biology, economics, and sociology. In the other, Sampson (1985), a psychologist, contrasts differing approaches to equilibrium structures in physics, literary criticism, and politics and their implications for personal identity.

Bailey's paper is a most ambitious review of how the concepts of equilibrium, homeostasis, and entropy have been variously used in different sciences from the mid-nineteenth century. In the physical and chemical sciences, entropy was the dominant concept since the time of Clausius's formulation of the second law of thermodynamics of closed systems. Equilibrium is defined in terms of entropy, is reached only when entropy is maximized, and essentially is an expression of total disorder, quiescence, and death. Open systems, defined as having borders permeable to energy, matter, and information, are thus by definition not irrevocably doomed to death. Cannon, using Spencer's idea of moving equilibration, introduced the concept of homeostasis, but he was able to do so because his concern was with the mechanisms of how the part of each system contributed to maintaining the functioning of the system when subjected to disturbances. Keynesian economics, as well as Pareto and later Parsons in sociology, also tended to use equilibrium as the most powerful concept. Change is allowable in terms of feedback and checks-and-balances mechanisms, making for more or less constant growth—that is, integrated differentiation.

The thrust of Bailey's argument, if I have understood it, is a plea for reintroducing the entropy concept as the most powerful of the three concepts in studying any system. "Entropy is a content-free measure of system structure," he writes (p. 41). Applied to closed systems, it obeys the second law of thermodynamics. Applied to open systems, it is open-ended. Entropy can be increasing or decreasing in any given system; this is a matter to be empirically determined. Institutionalized patterns of conflict, he implies, do not necessarily point to increasing entropy, just as totalitarian organization based on terror does not point to decreasing entropy. Nor is *entropy* a value-laden term at the social level. Only when the assumption is made in value terms that the system is a "good" system, that

it is desirable that it go on functioning smoothly—for example, with regard to the health of the human organism—can we speak of increasing entropy as undesirable.

It is beyond the limits of Bailey's paper to discuss the forces that promote or impede entropy in open systems, beyond the vague implication that introduction of information (not stimuli, which may be noise) and energy is negentropic. At the end of his paper, he passingly refers to the "minor" problem of his focus on disorder, easily soluble: "A statistic can easily be constructed which varies directly with order" (p. 41). Had he confronted the problem, he might well have come close to the concept of coherence and begun to realize the fruitful implications of asking not only "How does chaos emerge?" but also "How does order emerge?"

This is precisely the problem confronted by Sampson (1985). Sampson's point of departure is an attack on the ideal of personhood in Western culture as inevitably self-defeating. This ideal "maintains that a particular structure of personal identity is required so that order and coherence rather than chaos will characterize the individual's life . . . the same structure is also believed to be the ground for the coherence and smooth functioning of the interpersonal and social systems" (p. 1203). His goal is to propose "an alternative perspective on the nature of both personal and social order."

The Western, and particularly American, male, egocentric core ideal is that equilibrium, order, and coherence are achieved by control and mastery over the world. This ideal leads to what is the equivalent of equilibrium death: the individual is like a molecule in a closed system at a state of complete entropy; a hypnon or sleepwalker, self-contained, integrated only within itself, ignoring all else. Sampson turns to the most recent developments in other sciences to consider the alternative, starting from Prigogine's and Jantsch's nonequilibrium physics. True, the internal component of an open system involves entropy production—that is, pressure toward disorder. But because there is entropy flow between the system and its environment, the total entropy of an open system can be reduced. "An open system of order," he quotes Jantsch as saying, "may be maintained only

in a state of *nonequilibrium*" (p. 1206). This new view of the world, of any system, "introduces us to a new kind of entity: personhood-as-process, open-ended and dwelling always at the edge, far from equilibrium. We encounter a decentralized, multifaceted ensemble whose coherence as a being is sustained only by virtue of its continuous becoming" (p. 1206). In fact, he suggests, the only temporary hope for some kind of order for equilibrium-preserving structures is autocratic, external control. Ultimately, this can only lead to a totalitarian structure of hierarchically organized units, at equilibrium in death.

Sampson sees Derrida's contribution in literary criticism as pointing in precisely the same direction as nonequilibrium theory in physics. Only if we view literature as totally open-ended, multiple-meaning texts, with reading as a dialogue over time between text and reader, with no absolute fixed textual reality, can coherence and order be approached. Subsequently, Sampson turns to recent developments in political science that argue that "sociopolitical decentralization establishes order rather than chaos because it binds in people according to principles by which communities rather than states function" (p. 1208). To avoid the no less dangerous simple *Gemeinschaft* form of order, cross-cutting ties and many-sided relationships are proposed. There is no one narrowly defined membership group. Sampson might have done well, in this context, to link his view of personhood to the work of Rose Coser, who wrote (1975, p. 259): "It is in a differentiated social structure, where individuals are segmentally involved, where they are encouraged to take distance and to articulate their roles and their thoughts, that people are able to develop that degree of individuation that goes together with rationality and flexibility."

Sampson, in this most important polemic aimed at stripping bare the danger of chaos inherent in the Western conception of personhood, too easily dismisses the danger of chaos in open-endedness and perpetual becoming. I have discussed this issue in Chapter Two, pointing to Koestler's conception of fixed rules and flexible strategies as the possible solution to the problem. In the present context, my concern has been to bring to the fore the idea that the problem of system functioning, at the

heart of which is the capacity of the system to carve out a coherent pattern of interaction with reality, is the core problem at the frontier of all science.

God, contrary to Einstein, is not a mathematician. But, as Berlin's reading of Hamann implies (1981), He may be a poet. His works are full of allusion, illusion, question, contradiction, open-ended alternatives, puns, despair, and love. Yet we can seek to understand a poem. My own work has been devoted to studying the ways human beings cope with the reality of the poem that is social existence. Clearly, other scientists are engaged in parallel endeavors. Is it too grandiose an ambition to set as a goal moving closer to an integrated theory that proposes how any system copes with its reality?

The SOC as a Group Property

An issue that has bedeviled sociological thought from at least the time of Durkheim has been the meaning of the notion of a group property. There seems to be no problem when we speak of structural characteristics—that is, a group property that is an emergent social fact from characteristics of individuals which are clearly measurable and about which there is consensus for classification purposes. We can easily and sensibly speak about the size of a group, of its age or gender or racial composition, of its labor-force or geographical distribution. That is, we agree that there are two genders and that we know how to classify a person in one or the other gender. We can then say that group A is predominantly male and B predominantly female and hypothesize consequences from this social fact.

A bit more controversial, but still manageable, are ecological properties like network linkages, social mobility, or social disorganization. These concepts require consensus about what a linkage is, what a social class is, or what an index of stability is. What about the power distribution within a group? If one observer reports that there is a broad distribution of power in a family, how can we know whether the observation is reliable and valid, even after we agree on a definition of power? Do we count interactional outcomes? Do we take account of the

sheer number of outcomes or of the centrality of a given interactional issue? Nonetheless, such properties, based on relations among members of a collectivity, are analytically manageable. (They are called structural properties in the classic paper on the subject by Lazarsfeld and Menzel, 1961, in contrast to analytical properties, based on individual characteristics.)

The problem is even more complex when we come to the cultural properties of a group, referring to behavioral or attitudinal issues. All of social anthropology is based on the assumption that we can talk about cultural properties, about group norms, values, and behavior patterns. How do we know—because a "reliable informant" has told us? Or because we have made our own observations? Or because we have conducted a survey and "most" (60 percent? 80 percent? 93 percent?) people say this is what they think? The problem is at its most difficult when we come to talk of a *Zeitgeist,* a *Weltanschauung,* a climate, an ambience.

Throughout *Health, Stress, and Coping,* my consistent reference was to the SOC of individuals. Yet throughout, I cavalierly suggested that the concept can be applied to the social level. On page 136, I put it as follows: "Though the point is most clearly seen in considering a ruling class, a strong sense of coherence can characterize any social unit, from the Jones family to a neighborhood, a city, a region, or a country; from a local voluntary association to an apocalyptic religious movement; from underdogs to overdogs."

Does this make sense? Can it mean anything more than measuring the SOC of the individuals making up the group and reporting that the mean level of this group is higher than of that, or that the former has a higher proportion of persons with a strong SOC than the latter? Or that the variance of one is greater than that of the other? Can a collectivity, as such, be characterized as having a common way of seeing the world? The importance of the question becomes clear when we consider that if the answer is positive, we can reasonably hypothesize that this way of seeing the world becomes an independent variable in shaping the SOC level of the members of the collectivity. But if this hypothesis is to be more than tautological, the group SOC

must be conceptualized and measured separately from the individual SOC.

Seeman, in a recent cogent defense of the viability and power of the concept of alienation (1983), commits himself squarely on the issue. Sprinkled throughout the paper we find phrases like "the sensed absence of control . . . [of] a working class" (p. 175); "the collective behavior process is one which turns meaninglessness into an actionable definition of the situation" (p. 177); "collective meaning-making in a chaotic situation" (p. 178). Yet at the end of the paper, he explicitly states: "My focus is steadily on the individual's conception of his or her world" (p. 181). It is the individual who feels alienated, powerless, meaningless, socially isolated, whatever the structural or historical sources of this image of the world. In other words, a collective is "alienated" only when a large proportion of its members are alienated, or, alternatively, a higher proportion than that of other collectivities.

In essence, Seeman's position is well anchored in Durkheim's original understanding of the concept of "collective conscience," which he defined (Durkheim, 1893/1933, p. 79) as "the totality of beliefs and sentiments common to average citizens of the same society." The further a social unit is from being a collection of "social molecules" (p. 130), each member of the unit being a replica of the others, and the more each has an individual conscience and participates in a variety of collective consciences, the less meaningful it is to talk of the collective conscience of a social group. The concept of "social representation" is a direct descendant of Durkheim's collective conscience, being the core concept in one of the major French contributions to medical sociology (Herzlich, 1973). In his introduction to Herzlich, Moscovici tends to slip into using phrases like "the points of view of individuals and groups . . . an individual or a community *communicate* other ways of seeing things" (p. xii). But close analysis shows that Herzlich is really committed to saying that only an individual has a point of view. What one can do, and what she does with great insight, is to study the process by which a consensus emerges among members of a social unit to become a social construction of reality, as well as the conse-

quences of this consensus for the images and behaviors of individuals. In a sense, then, the social representation has a life of its own—but, agreeing with Seeman, we can learn what this is, as we see in Herzlich's work, only by obtaining data from individuals and seeing what the members of a group have in common. In sum, we can infer that a group SOC can refer only to a picture that emerges from a set of aggregate data about individuals.

If we turn, however, to recent work in organizational sociology, we find a position that is not quite so reductionistic. Thus, in Zeitz's study of organization morale, he writes (1983, p. 1089): "A second type of organization property—an emergent collective trait—can also operate on the individual level, but becomes collective when possessed by multiple interacting members." He sees morale as such an emergent collective trait, a counterpart to individual satisfaction. The data to measure morale are indeed obtained from individual members of the organization, but the questions refer not to the individual's own morale but to "the respondent's perceptions of the quality of morale throughout the organization" (p. 1092). When there is a high level of consensus that organizational morale is high, whatever the individual's own satisfaction, Zeitz argues, we can indeed speak of a collective trait that takes on a life of its own.

Adler (1982) argues that the concept of competence is applicable at all levels of social organization. He identifies eight elements of competence of social systems. One of these, self-concept, is particularly germane to our discussion because, unlike the other elements, it relates to ways of viewing the world, not to observable group behaviors. The competent individual, Adler writes, has "an overall positive, optimistic, and proactive view of self in relation to the world" (p. 38). He goes on to say: "Such consensually arrived at judgments by systems' members about the worth of the system to which they belong is frequently quite independent of these same members' judgments of their own worth. Finally, there is a collective sense in most organizations or communities which parallels self-confidence or lack of it on behalf of the system" (p. 39). In other words, ask individual members not about their own worth or effectiveness but about the worth or effectiveness of the system.

This is precisely the approach taken by one of my students who was interested in studying the family SOC and its relationship to successful rehabilitation of disabled men (Sourani, 1983). Taking the individual SOC questionnaire items as models, she developed a set of twenty-six items each of whose referent was the family—for example, "Is there a feeling in your family that everyone understands everyone else well?" or "When something very difficult happened in your family, like a severe illness, the feeling was (this is a challenge . . . there's no point in going on living in the family)." Both spouses were interviewed individually. The individual scores, expressing the extent to which husband and wife, respectively, perceived the family as having a strong SOC, were indeed very powerful predictors to our measures of rehabilitation. Moreover, there was a very high though not perfect correlation between the spouses' perceptions. Though the number of respondents was small (sixty couples), we found that the best predictor of rehabilitation was agreement between the husband and wife that the family SOC was strong. That is, both the level of perception and the agreement between group members are relevant to coping outcome. It would take us too far afield to discuss here the theoretical and methodological problems that arise when one seeks to study consensus. My concern, rather, has been to raise an issue often ignored in the literature (see Antonovsky and Sourani, submitted for publication).

I have, then, suggested that it does make sense to talk of a group SOC. At the most elementary level, one can use aggregate data on the SOC of individuals in the group, relating to either the average score or the proportions of individuals with a strong SOC. Going one step beyond this, one can investigate perceptions by individual members of the group of how the group sees the world, again using averages or proportions of high scorers. But we can take a third step by introducing the extent of consensus of perceptions by looking at the variance of individual scorers. A group whose individual members tend to perceive the collectivity as one that views the world as comprehensible, manageable, and meaningful, *and* among whom there is a high degree of consensus in these perceptions, is a group

with a strong SOC. Although I would expect a positive correlation between a strong group SOC and the SOC of its individual members, it will not necessarily be a perfect correlation. Individuals may feel that for them personally the world is not coherent, although they are confident that it is for the collective. I have seen this over and over again in almost every beginning medical school class.

What happens at the other end of the scale is more problematic. Which has the weakest SOC: (1) that collectivity in which the variance of individual perceptions of the group is greatest (that is, some think the group as a whole sees the world very coherently, others assign a moderate score to the group, and still others see the group as having a totally confused image of the world)? Or (2) the group in which there is general consensus about group incoherence? I am afraid this is a question to which I am not yet ready to give an answer.

Thus far I have spoken of the group or collectivity without reference to what is probably a crucial parameter: size. I feel fairly confident that it does make sense to speak of the group SOC as an emergent group property when the referent is to the family, small local community, work or friendship group, or the like—that is, a primary group. I become less and less comfortable about whether the concept is applicable to a large-scale, complex, diversified collectivity: the medical profession, the employees of multinational Phillips, the working class, or Spanish society. One distinction may well be helpful, that between collectivities that are social categories and those that are associational in character, a distinction deriving from the Marxist distinction between *an sich* and *für sich.* There must, I am suggesting, be a sense of group consciousness, of a subjectively identifiable collectivity, before it is possible to talk of a group SOC. (This does not yet tell us whether the group has a strong or a weak SOC.) One cannot, then, talk about the SOC of French women; one can talk about the SOC of the French feminist movement or the Maquis.

A further dimension that is relevant to the issue is the duration of the existence of an identifiable collectivity. One of the characteristics I have insisted on in discussing the SOC of

the individual is the durability, from early adulthood, of one's location on the continuum, barring radical, lasting changes in one's life situation. Clearly, it makes no sense to speak of the SOC of a very time-limited group. Unless there is a relatively stable social context, a consistency of social conditions, that lasts for years, during which there may be turnover in the individual composition of the group but the subjectively identifiable group remains, it would be difficult to conceive of a group SOC, strong or weak. If however, we think of the Mormon church, of a stable ruling class, of a pioneering community, of a culture of poverty, of an oppressed and self-conscious minority —one can legitimately see the SOC as a group property. What characterizes these collectivities is that whatever individual differences and cross-cutting affiliations may exist, membership in the collectivity is of overriding centrality in the lives of its members. For each, the self and the social identity are deeply interwoven.

I would go one step further. One can, I think, turn to a source of data to score a group SOC other than aggregate individual data, by looking at what we might call the cultural productions of the group. One might use observations of collective behavior or analysis of the myths, rituals, humor, language, ceremonies, and so on of the group. Of the many examples of empirical studies cited in Lazarsfeld and Menzel's paper on collective properties (1961, p. 428), unfortunately only one refers to this kind of data: the frequency with which themes of achievement motive make their appearance in folk tales of American Indian tribes. A comparison of Bunyan's *Pilgrim's Progress* and Beckett's *Waiting for Godot* suggests radically different images of the comprehensibility, manageability, and meaningfulness of the world, images that might well be not only those of the individual authors but those of their societies.

This example, however, raises the very serious methodological issue of representativeness. How do we indeed know that a cultural production expresses the image of the world of the collectivity in which it was produced? The literary or social critic aims at plausible insight, at what rings true; the scientist must be concerned with reliable and valid data. The only pos-

sible solution that I can see is the use of multiple sources of data: aggregate individual data about each individual's own feelings and about his or her perceptions of the group climate; the reports of key informants; the analysis of collective behaviors and of cultural productions. When the data all tend to point in the same direction, one can with some confidence conclude something about the collective property.

Finally, we turn to the question of the difference it makes to the individual's health whether one belongs to a group or groups with a weak or a strong SOC. Does knowing this make for any better prediction than simply knowing the SOC level of the individual? There are two reasons for a positive answer.

First, as implied earlier, the group SOC may well be a significant factor in shaping and modifying the SOC of the individual. This would be particularly true for the child or adolescent. The developmental processes discussed in Chapter Five point to the importance of the social environment in providing experiences that are crucial to the emergence of a strong or a weak SOC. As a case in point, we may take Snarey's (1982) study of Kohlberg's moral development model. He compared three samples of Israeli adolescents: kibbutz-born and educated, city-born but kibbutz-educated, and city-born and educated, the latter two groups being largely of lower-class and Middle Eastern origin. Although the second, "experimental" group entered the kibbutz at a significantly lower moral stage than their kibbutz-born peers, two to five years later there were no significant differences between the two. The control group of city youth did not show the same gains. It is reasonable, I think, to expect a similar pattern were one to measure the SOC. Kohlberg's model, too, expresses a way of seeing the world, though along a different dimension.

The individual adult, it is true, with a more stable SOC level, does not gravitate randomly to this or that social setting. The person with a strong SOC is more likely to seek out affiliation with a strong-SOC group. But such matching does not always occur. The office or plant at which one works is extensively automated, but the union succeeds (or fails) in using the change to transform the organization of work radically. Because

of a change in location of one's spouse's job, one moves to a well-integrated, hospitable community eager to absorb newcomers into its ambience. In each case, over the course of time, the radical change in one's life situation may lead to significant modification of the SOC. The group with a strong SOC tends to structure situations that, over time, enhance the SOC of its individual members.

The second reason for the relevance of the group SOC is even more important than the first, in that it is concerned with a direct relationship between the group SOC and coping with stressors. Pearlin and Schooler (1978, p. 18) put it well: "There are important human problems, such as those that we have seen in occupation [jobs], that are not responsive to individual coping responses. Coping with these may require interventions by collectivities rather than by individuals. Many of the problems stemming from arrangements deeply rooted in social and economic organization may exert a powerful effect on personal life but be impervious to personal efforts to change them." They are referring, as I understand it, not only to stressors confronted by individuals about which they can do nothing without the utilization of group resources but also to collective stressors, to problems confronting the entire collectivity. In such cases, the SOC of the individual is of considerably less significance in the resolution of tension than is the group SOC. True, the former is relevant in dealing with the regulation of emotion and thus is important. But in coping with the collective stressor directly, it is what the group does that matters. A dramatic example of this situation is seen in the study by Antonovsky and Sagy (1986) of the evacuation of the Israeli settlements in Sinai in the framework of the peace treaty with Egypt. A period of three years was allotted to prepare for the evacuation, but it was not until the very last moment that a clear decision was taken by the Israeli government to evacuate. Thus all inhabitants of the settlements had lived for a lengthy period in a situation of considerable uncertainty about which they could do very little. The study, which dealt with adolescents, found that individual differences in the SOC—which did predict to successful coping with individual stressors—bore no relationship to coping with

the collective stressor of evacuation. Only individuals are more or less healthy, depending, among other things, on how well they manage tension, but in the face of collective stressors, the strength of the group, rather than of the individual, SOC is often decisive in tension management.

Health and Well-Being

In *Health, Stress, and Coping,* I very explicitly differentiated between the health ease/dis-ease continuum and other aspects of well-being. In fact, I even tended to shy away from including mental health in this continuum, although in a recent paper (Antonovsky, 1985), I discuss the possible link between the SOC and mental health. I was wary of proposing a hypothesis linking the SOC to "everything that can possibly be regarded by someone, or in some culture, as desirable" or of "defining health as coextensive with the many other dimensions of well-being" (1979, p. 68). Having taken and maintained this position, I have nonetheless left room for clarification.

In a review of eighty-one studies providing sufficient data on the relationship between health and well-being of one type or another, Zautra and Hempel (1984, p. 97) report that "the preponderance of studies find a moderate association between self-reported health and an index of subjective well-being. Somewhat less convincing have been the relationships between objective indices of health and life satisfaction." One of the major difficulties they point to that stand in the way of understanding the data is the lack of consensus on the definition of the well-being construct. The three most generally used terms are *life satisfaction, morale,* and *happiness.* Included under these rubrics are notions about life progress toward goals, transitory moods of gaiety, individual/environment fit, positive and negative affect, optimism, irritability, zest, apathy, fortitude, and satisfaction with one's attributes. Cross-cutting these terms are two general issues: Is the reference to some absolute standard or to social comparisons? Is the domain reference global or domain-specific?

But whatever the conceptual and methodological prob-

lems, I think we can agree with Zautra and Hempel that there is a relationship between health and well-being which is more than likely to be reciprocal. If the SOC is indeed related to health, should it not then reasonably be expected to be related to a variety of aspects of well-being? If successful coping with life stressors has positive consequences for health, should it not also have positive consequences for satisfaction, happiness, morale, and positive affect?

We can take the question a step further. Should we not also expect positive consequences of a strong SOC for task performance? Payne (1980, p. 270), for example, reports that people who "participate in decisions affecting them are more likely to report . . . high utilization of skills." Shalit's work (1982), referred to earlier, has shown how "coherence of appraisal" is related to the effectiveness of military groups. In both cases, the independent variables are conceptually related to the SOC. Should we stretch the idea of "task performance" beyond instrumental matters and include the ability to realize one's potential, to communicate well with others, to tolerate frustration and bear with pain, to be open to new experience, and so on, and so forth?

Note that the question is not whether the SOC is linked to all these facets of well-being and the good life *through* health, although this may well be true. It is, rather, whether it is plausible to hypothesize a direct, causal link between the SOC and these aspects of well-being.

Readers of *Health, Stress, and Coping* will recall the source of the SOC concept. I had not started with the idea of explaining well-being, task performance, or the ability to work, love, and play well. Nor was the SOC a theoretical notion that I started with, asking about its consequences for human life. Having been immersed for many years in seeking to understand the contributing role of psychosocial factors in, first, diseases, then in dis-ease, and finally in location on the health ease/dis-ease continuum, I had become familiar with the various theoretical and empirical studies that linked what I came to call GRRs to health outcome. The SOC concept was the result of, first, an attempt to understand what was common to all the GRRs and,

second, an attempt to understand the process through which the GRRs were linked to health.

Clearly, if one has a high intelligence, lots of money, or a clear ego identity or lives in a stable, integrated culture—to mention some GRRs—there will be consequences not only for the emergence of a strong SOC, and therefore health, but for other areas of well-being as well. I would, therefore, by and large expect positive correlations between the SOC and many facets of well-being to the extent that the GRRs which create the life experiences that give rise to a strong SOC also directly promote well-being. If one is happy with one's financial situation, this is not because one has a strong SOC but because one has a satisfactory income.

In sum, I think it reasonable to expect positive, though not directly causal, correlations between the SOC and well-being, on two grounds. First, if the SOC is indeed generative of good health, and health has a positive influence on global estimates of one's well-being, then the two will be related, though indirectly. Second, many of the GRRs that promote a strong SOC are also directly related to well-being. But there is, I think, a more direct causal relationship, one that requires refinement and specification of the notion of well-being into two different levels of abstraction. One can distinguish between, on the one hand, the more global referents such as happiness, life satisfaction, morale, and positive (as well as negative) affect and, on the other hand, how one feels about one's functioning. The former is strongly contingent on the inherent potential in the objective situation; the latter will be much more directly related to the SOC.

No one in his right mind will be happy, satisfied, and of high morale in a concentration camp. In every society, large numbers of people are trapped in jobs or housekeeping from which there is no socially structured opportunity for breaking out. And for all of us, there are the times when our elderly parents or other loved ones are suffering and dying, and life is repeatedly painful. The strong-SOC person will be no more happy or satisfied than the weak-SOC person in these situations. But what he or she can feel is that, given the facts of the situation,

one is handling it as well as is possible, one is making life bearable. It is to this specific sense of well-being that the SOC is directly relevant.

With respect to task performance, success is largely determined by the intelligence, knowledge, and skills the person brings to the task, as well as by the objective context. But, particularly when the task is ambiguous and complex, the strength of the SOC will be a contributory factor. The strong-SOC person will be motivated to see the task as a challenge, to impose structure, to search for appropriate resources. He or she will have more confidence that performance outcome will be reasonable. Thus, assuming that the task is within the boundaries of what matters to the person, it is indeed likely that there will be some contribution of the SOC to outcome.

I have, then, gone beyond my original position that dealt with the SOC/health relationship. I have tried to do so cautiously. My own interest remains primarily in this area. I would, of course, be flattered should other investigators report data linking the SOC to other aspects of well-being but will not be too disappointed by limited results.

State, Trait, or Dispositional Orientation?

I have clearly committed myself to seeing the SOC as a stable, enduring, and generalized orientation to one's world that characterizes a person throughout adulthood, barring radical, lasting changes in one's life situation. It is an orientation that is brought to bear in all areas of life within the boundaries of what matters to one. This position lends itself to two possible misinterpretations: psychological reductionism and the confusion between orientation and overt behavior. To deal with these two issues, it is necessary to clarify a more fundamental issue relating to a theory of personality.

At the age of sixteen, I vividly recall, I was fascinated by a lecture given by Margaret Mead, and shortly thereafter by Erich Fromm's *Escape from Freedom* and its key concept of social character. In my graduate school days, as a student of Ralph Linton and Abram Kardiner, a lifelong interest in what

used to be called the "culture and personality" field of study was kindled. And, like many others of my generation, wrestling with the integration of Marx and Freud, I could not avoid learning something about personality theory, although I have never laid claim to being a psychologist. This being so, I never had the need of committing myself to any given theory of personality. I had come to be satisfied with the proposal of Inkeles and Levinson (1954, pp. 989-993) that on the individual and social character level, we would do well not to speak of global personality types but to consider what they called analytic issues. For example, one can speak of a deep-rooted tendency to relate to authority figures on the two axes of egalitarianism-hierarchical and specificity-diffuseness. Or one can speak of prototypical bases for self-esteem: who one is, what one has done, or what one is like. Or one can speak of a tendency toward basic trust or mistrust, cross-cut by the social boundaries of the trust. Thus, without committing oneself to an overall theory of personality, one could specify a number of universal issues, confronted in every culture and by every human being, and posit the development in each person of profound tendencies to be located, throughout his or her life, somewhere on each of these continua. A dispositional orientation, then, is a relatively stable and constant orientation toward one of these universal issues. I see the SOC as one of these continua.

A psychological reductionist position would interpret the SOC as a trait, "a neuropsychic system that determines to a great extent which stimuli will be perceived (selective perception) and what kind of response will be given (selective action)" (Wolman, 1973, p. 389). This definition fails to distinguish between perception and action, an issue to be dealt with below. Moreover, adopting a trait approach tends to lead one to an endless list of personality attributes: one is kindly, dominant, sociable, insensitive, and so on. Thinking in terms of dispositional orientations, by contrast, limits one to broader, more fundamental and universal issues of how one sees one's social world. Of greater importance, the trait approach focuses on the particular individual, disregarding both the cultural-historical context of the development of the orientation and the impor-

tance of the socially structured situations in which the orientation comes to expression.

By placing the question in the context of the culture and personality approach, one comes to think in terms of opportunities, constraints, and pressures as these are transmitted through the family and other socializing agencies. One becomes sensitive to the importance of the cultural, subcultural, and social-structural sources of such personality orientations. (For a detailed cross-cultural empirical analysis of this approach as applied to the value of self-direction, see Kohn, Slomczynski, and Schoenbach, 1986.)

Seeman's (1983, p. 172) discussion of the alienation concept considers this issue. Replying to those who reject the concept because they believe that it refers "to a stable, almost immutable, quality of the individual, to a personality 'trait' that exists as a feature of the person's inner life independent of situational circumstances," he rejects the trait-versus-situation approach as a "false dichotomy." He explicitly commits himself to seeing alienation as a situational emergent. But this does not mean that it is always the detailed, immediate character of the social situation that is solely decisive in eliciting the sense of alienation. Throughout his paper, Seeman stresses the historical and social-structural contexts, and the degree of consistency of the social anomic situation in which one lives one's life, as decisive in determining the degree to which an individual tends to be alienated.

In sum, one can speak of the SOC as a dispositional orientation. The fact of having grown up in a world of experiences shaped by the culture, social structure, and historical period in which one lives, as well as by the pattern of idiosyncratic events in one's life, which push predominantly toward one or the other pole of consistency, load balance, and participation in socially valued decision making, determines one's location on this dispositional orientation. This is not to deny that in very specific situations, such as a period of hospitalization, one's SOC level can temporarily be somewhat modified, in either direction. One will, however, soon bounce back to one's "normal" level.

But what if, either in the course of growing up and/or in

adult life, the nature of experiences relevant to the SOC is consistently different in different areas of life? Might not one come to see the stimuli emerging from one's inner environment as highly comprehensible, manageable, and meaningful, while those produced in interpersonal relations contexts will be seen as moderately so, and those experienced in one's work as chaotic, unmanageable, and devoid of meaning? I very much doubt that human beings can so compartmentalize their lives, even granting that the objective realities of different areas of life may differ radically. When experiences in one area of life do not confirm those in other areas, one's SOC level will be pushed downward. What must be further emphasized is that full sensitivity to the importance of the social context of one's life and the responses it tends to elicit does not mean that one can disregard the extent to which people are active agents. Given the same situation, the person with a strong SOC will tend to search out and highlight those aspects of the situation that make sense. Even in Auschwitz, as Radil-Weiss (1983) points out, there were those who sought out meaning in comradeship. The person with a weak SOC, expecting everything to be chaotic, will tend to be oblivious of elements which even for him or her might make sense. This surely does not mean that the strong-SOC person is oblivious to disorder; quite the contrary. He or she, not frightened by disorder, physical or psychological or social, will be alert to its existence and, reasonably confident that more order can be introduced, tend to act to bring this about. The weak-SOC person, guided by his or her definition of the situation, is likely to give up.

The second source of misunderstanding that has been the focus of much discussion in psychological theorizing is related to the rejection of what has been called the paradigm of stable traits as the determinants of overt behavior. Mischel's influential book (1968) effectively demolished, on empirical and theoretical grounds, the assumption that such personality traits as dominance or sociability determine behavior. It should be clear that the same overt behavior in a given situation may have different meanings, may express different orientations for different individuals in that situation. Of even greater importance, the same

personality dispositional orientation may manifest itself in different overt behaviors in different situations, depending on the nature of the situation and how it is defined by the person.

A crucial point, stressed particularly in Chapter Six, is that the SOC concept is not a basis for prediction for the concrete substance of overt behaviors. Knowing what the SOC level of a person is, we cannot predict whether, in a given stressor situation, he or she will fight, freeze, or flee, be quiet or speak up, seek to dominate or melt into the shadows, or whatever other categories of overt behavior we may construct. What can be predicted, however, is the quality of the behavior. The strong-SOC person will tend to seek to impose structure on the situation, even when to the outside observer there is little structure; will tend to search for what seems to him to be the appropriate GRRs and SRRs that may facilitate coping with the situation; will tend to consider options within his canon; will tend to believe in self-efficacy; and will tend to accept the challenge of the situation. The weak-SOC person, in contrast, will manifest the tendency to see chaos, to feel hopeless and burdened.

In other words, the SOC will be applied, as a dispositional orientation, in a concrete situation as an emotional and cognitive appraisal of the situation. How this will be translated into concrete behaviors is another question. The quality of the behavior, in terms of the components of the SOC, can be predicted, but not its substance, for this will vary with the specific situation. To the extent that one encounters similar situations in the course of one's life, and to the extent that one perceives a situation as similar to previous ones, there will be a tendency to develop a repertoire of concrete behaviors. But it is precisely the strong-SOC person, who is open to seeing the uniqueness of each situation of which he or she is a part, who can behave flexibly.

The issue of predicting behavior from dispositional orientation is well illustrated in a recent paper. Colerick (1985) built her study of the functioning of older persons around the concept of stamina, which she explicitly equates with the SOC. She describes the behavior patterns of the high- and low-stamina groups, focusing on what she calls activity and coping modes.

"Activities involving personal growth . . . and social service . . . are commonplace for high-stamina individuals," she found, while the low-stamina elderly "tend to develop a lifestyle of ease and contentment" (p. 1001). The differences in coping modes are even more pronounced. "Almost without exception (94 percent), persons with high stamina were judged to cope actively with setbacks," in contrast to the passive strategies that typify low-stamina persons (p. 1002). In her conclusion (p. 1004), Colerick writes that "elderly with high stamina . . . have learned through the years that change is inevitable, challenging and manageable," leading them to behaviors expressing "new ways to use energy." This contrasts sharply to those who, over their lifetimes, manifest "event construal patterns characterized by helplessness, hopelessness, and fear," leading to passive, shrinking behaviors.

There is, then, no one-to-one relationship between the SOC and behavior in concrete situations. But having said this, one must add that there is indeed a firm link between the SOC and the quality of behavior, which may well become even firmer over the course of the life cycle.

I have, in this final chapter, discussed a number of issues which are not only not essential to the salutogenic model but which I have not elsewhere, except for a few words in passing, considered. In one sense, it does not matter for the SOC/health hypothesis what other fields of science and thought have to say about order out of chaos. Whether it is meaningful to talk of a group SOC is germane to understanding the origins of the SOC but not to the hypothesis. Whether the SOC has implications for other aspects of well-being than health is again a different problem. And how closely the SOC predicts to concrete behaviors is a matter for empirical investigation. Perhaps, then, inclusion of this chapter is not wholly justified. But it is included, both in the hope that the discussion of the issues suggests the richness of the salutogenic model and in order to share with the reader the pleasure (not unmixed with hesitation and difficulty) I had in wrestling with them.

Appendix: The Sense of Coherence Questionnaire

The notation to the left of each item represents the profile structure of the item, derived from the mapping sentence used in questionnaire construction (see p. 77). C = comprehensibility, MA = manageability, ME = meaningfulness. The four numerals represent the elements in facets A, B, C, and D, respectively.

A high score represents a strong SOC. Before calculating the total score, the thirteen items marked R should be reversed.

For those interested in using a short form of the SOC, the thirteen items marked * are recommended.

These notations, obviously, are to be omitted when the questionnaire is used.

ORIENTATION TO LIFE QUESTIONNAIRE

Here is a series of questions relating to various aspects of our lives. Each question has seven possible answers. Please mark the number which expresses your answer, with numbers 1 and 7 being the extreme answers. If the words under 1 are right for you, circle 1; if the words under 7 are right for you, circle 7. If you feel differently, circle the number which best expresses your feeling. Please give only one answer to each question.

C R
1312

1. When you talk to people, do you have the feeling that they don't understand you?

1	2	3	4	5	6	7
never have this feeling						always have this feeling

MA
1111

2. In the past, when you had to do something which depended upon cooperation with others, did you have the feeling that it:

1	2	3	4	5	6	7
surely wouldn't get done						surely would get done

C
1322

3. Think of the people with whom you come into contact daily, aside from the ones to whom you feel closest. How well do you know most of them?

1	2	3	4	5	6	7
you feel that they're strangers						you know them very well

ME R
1222

*4. Do you have the feeling that you don't really care about what goes on around you?

1	2	3	4	5	6	7
very seldom or never						very often

C R
1221

*5. Has it happened in the past that you were surprised by the behavior of people whom you thought you knew well?

1	2	3	4	5	6	7
never happened						always happened

MA R 1221

*6. Has it happened that people whom you counted on disappointed you?

1	2	3	4	5	6	7
never happened						always happened

ME R 2332

7. Life is:

1	2	3	4	5	6	7
full of interest						completely routine

ME 2331

*8. Until now your life has had:

1	2	3	4	5	6	7
no clear goals or purpose at all						very clear goals and purpose

MA 1222

*9. Do you have the feeling that you're being treated unfairly?

1	2	3	4	5	6	7
very often						very seldom or never

C 2331

10. In the past ten years your life has been:

1	2	3	4	5	6	7
full of changes without your knowing what will happen next						completely consistent and clear

ME R 1313

11. Most of the things you do in the future will probably be:

1	2	3	4	5	6	7
completely fascinating						deadly boring

C
2232

*12. Do you have the feeling that you are in an unfamiliar situation and don't know what to do?

1	2	3	4	5	6	7
very often						very seldom or never

MA R
2332

13. What best describes how you see life:

1	2	3	4	5	6	7
one can always find a solution to painful things in life						there is no solution to painful things in life

ME R
2132

14. When you think about your life, you very often:

1	2	3	4	5	6	7
feel how good it is to be alive						ask yourself why you exist at all

C
1112

15. When you face a difficult problem, the choice of a solution is:

1	2	3	4	5	6	7
always confusing and hard to find						always completely clear

ME R
1312

*16. Doing the things you do every day is:

1	2	3	4	5	6	7
a source of deep pleasure and satisfaction						a source of pain and boredom

C
2333

17. Your life in the future will probably be:

1	2	3	4	5	6	7
full of changes without your knowing what will happen next						completely consistent and clear

... the past your tendency was:

MA
3211

18. When something unpleasant happened in the past your tendency was:

1	2	3	4	5	6	7
"to eat yourself up" about it						to say "ok, that's that, I have to live with it," and go on

C
2122

*19. Do you have very mixed-up feelings and ideas?

1	2	3	4	5	6	7
very often						very seldom or never

MA R
1113

20. When you do something that gives you a good feeling:

1	2	3	4	5	6	7
it's certain that you'll go on feeling good						it's certain that something will happen to spoil the feeling

C
3122

*21. Does it happen that you have feelings inside you would rather not feel?

1	2	3	4	5	6	7
very often						very seldom or never

ME
2333

22. You anticipate that your personal life in the future will be:

1	2	3	4	5	6	7
totally without meaning or purpose						full of meaning and purpose

MA R
1223

23. Do you think that there will *always* be people whom you'll be able to count on in the future?

1	2	3	4	5	6	7
you're certain there will be						you doubt there will be

C
2233

24. Does it happen that you have the feeling that you don't know exactly what's about to happen?

1	2	3	4	5	6	7
very often						very seldom or never

MA R
3131

*25. Many people—even those with a strong character—sometimes feel like sad sacks (losers) in certain situations. How often have you felt this way in the past?

1	2	3	4	5	6	7
never						very often

C
1211

*26. When something happened, have you generally found that:

1	2	3	4	5	6	7
you overestimated or underestimated its importance						you saw things in the right proportion

MA R
1313

27. When you think of difficulties you are likely to face in important aspects of your life, do you have the feeling that:

1	2	3	4	5	6	7
you will always succeed in overcoming the difficulties						you won't succeed in overcoming the difficulties

ME
1212

*28. How often do you have the feeling that there's little meaning in the things you do in your daily life?

1	2	3	4	5	6	7
very often						very seldom or never

MA
3122

*29. How often do you have feelings that you're not sure you can keep under control?

1	2	3	4	5	6	7
very often						very seldom or never

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Index

A

Adelman, M. B., 116
Adler, P. T., 173
Adolescence: and fundamentalist apocalypse, 105-106; incomprehensible contexts for, 105-106; in isolated, homogeneous subcultures, 104-105; open society for, 102-104; SOC in, 101-106
Adulthood: and housewife role, 107-109; SOC in, 107-118; social roles in, 117-118; work roles in, 109-117
Affect, and recognition, primacy of, 149
Albrecht, T. L., 116
Aleichem, S., 109
Alger, H., 105
Alienation from Self Scale, 76
Allen, W., 119
Alonzo, A. A., 134
Anderson, J. P., 82, 86
Anokhin, 159
Antonovsky, A., 2-3, 7, 8, 14, 15, 16, 17, 18, 19, 22, 24, 27-28, 33, 50, 63, 64, 65, 66, 67, 79, 82, 85, 86, 89, 90, 91, 92, 93, 99, 117, 119, 120, 130, 145, 147, 162, 163, 171, 179, 180
Antonovsky, H., 36, 85, 86, 174, 178
Antze, P., 21
Appraisal Integration Model (AIM), 60-61
Asthma, and salutary factors, 6
Auschwitz, and SOC, 21, 160, 185

B

Bailey, K. D., 166-168
Baker, K. H., 159
Bandura, A., 59, 133-134
Beckett, S., 176
Benedict, R., 101, 104
Berkman, L. F., 153
Berlin, I., 165, 170
Betz, B. J., 58
Billings, A. S., 31
Biological hierarchies, adaptation and survival of, 26-27
Blackburn, T. C., 53, 140
Blalock, H. M., 82
Blau, Z. S., 103-104
Borysenko, J., 159
Boundaries: and resolution of tension, 139; to SOC, 22-24
Bowlby, J., 94
Boyce, W. T., 39-40, 47, 48, 49, 50, 52, 54, 61, 94, 95-96
Brain: as health care system, 154-156, 159; hemispheric functions of, 157
Breslow, L., 153
Brice, C., 108
Broadhead, W. E., 55

Bunyan, J., 176

C

California at San Diego, University of, SOC study at, 82
California Life Goals Evaluation Schedules, 38
Cameron, R., 60, 126
Canada, measuring SOC in, 81, 84
Cancer: and depression, 11-12; and internalization of hostility, 6
Cannon, W. B., 8, 155, 159-160, 167
Card Sort Procedure, 53-54
Carlstedt, L., 137
Cassel, J., 8, 33, 91, 146
Cassell, E. J., 5, 10, 34
Causality, and story of person, 5
Challenge, and SOC, 37-38, 48, 51
Chaplin, C., 114
Charles, G., 141
Childhood. *See* Infancy and childhood
Ciaranello, R., 154*n*
Clausius, R. J. E., 167
Closure, and SOC, 46, 48
Cognition, and affect, primacy of, 149
Cohen, F., 141, 144, 152, 154
Cohen, J. B., 131
Coherence. *See* Sense of coherence
Colerick, E. J., 186-187
Collen, M. F., 126
Commitment, and SOC, 35-36, 48, 49
Comprehensibility: in adolescence, 102; comparisons with, 48, 49-51, 59, 61; as component of SOC, 16-17; and defining dimensions of problem, 140; and group SOC, 174-175, 176; in infancy and childhood, 94-96; and life experiences, 92; manageability and meaningfulness related to, 19-22, 86-88; and meaningfulness, 114; and other views of health, 34; and questionnaire development, 76-79; and strength and rigidity, 25, 26; and stressors, 137, 147; and work roles, 114-116
Condry, J. C., 96, 98, 100, 102
Configuration, and SOC, 46, 48, 50
Conrad, J., 25
Consistency, and life experiences, 19-20, 92, 127
Constancy: and dynamics of SOC, 123; and fundamentalism, 106; and generalized resistance resources, 28; for housewife, 107-108, 109; in infancy and childhood, 95; in nonwork life, 118; and work roles, 114, 116-117
Control, and SOC, 36-37, 48, 52
Coordination, and SOC, 46-47, 48, 49
Coping: active or passive, 143; adaptive, 144-145; analysis of connections with health, 128-162; and effects on health, 151-162; with emotions, 148-151; and feedback, 146-147, 156, 159; as functional or dysfunctional, 141-143; mechanisms of impact by, 152-153; problem definition in, 135-138; and resolution of tension, 138-148; and SOC, 55, 59-61, 66*n*; with stressors and tension, 130-135
Coronary heart disease, and Type A behavior pattern, 6, 11
Corson, E. O., 159
Corson, S. A., 159
Coser, R. L., 4, 111, 115, 126, 169
Courington, S., 51
Crapo, L. M., 14

D

Dana, R. H., 85, 87
Danish, S. J., 56-57
Darwin, C., 165
D'Augelli, A. R., 56-57
Defenses, mature, and SOC, 57
De-Nour, A. K., 145
Depression: and cancer, 11-12; and learned helplessness, 6

Derrida, 169
Dillon, K. M., 159
Dirks, J. F., 6
Disposition, SOC as, 182-187
Dohrenwend, B. P., 55
Dohrenwend, B. S., 55
Donne, J., 163-164
Dressler, W. W., 143
Dubos, R. J., 9, 33
Durel, L. A., 161
Durkheim, E., 128, 170, 172

E

Edwards Personal Preference Schedule, 87
Einstein, A., 165, 170
Elderly: social world for, 143-144; and stamina, 186-187
Emotions: coping with, 148-151; focused or diffuse, 149-150; and immune system, 157-159; unconscious, 150
Engel, G. L., 113
Entropy: and dynamics of SOC, 120-122; and order out of chaos, 167-168; and stressors, 28
Environments: domains of, 40-43; and stressors, 31-32
Equilibrium, and order out of chaos, 167-170
Erikson, E. H., 34, 95, 97, 101-102
External Locus of Control Scale, 37

F

Facet design, in questionnaire drafting, 76-78, 82
Fagin, L., 146
Faigin, H., 100
Family: reality constructed by, and SOC, 45-47, 52; SOC of, 174
Family Environment Scale, 53-54
Feedback, and coping, 146-147, 156, 159
Felton, B. J., 142
Feuer, L. S., 106
Field, T. M., 94
Fiorentino, L. M., 86
Fischer, A. K., 56
Flexibility, and resolution of tension, 140-141
Folkman, S., 131
Frankenhaeuser, M., 111
Frankl, V., 18, 21
Freud, A., 99
Freud, S., 17*n*, 26, 183
Fried, M., 28-29
Fries, J. F., 14
Fromm, E., 182
Fundamentalist apocalypse, in adolescence, 105-106

G

Gaddafi, M., 106
Galdston, I., 89
Gardell, B., 126
Gardner, M., 166
Garmezy, 43-44
Gatlin, L. L., 23, 27
Generalized resistance deficits (GRDs): on continuum, 28; importance of, 129; stressors as, 27-32, 122-123
Generalized resistance resources (GRRs): as choice points, 138; concept of, 19; on continuum, 28; and dynamics of SOC, 121; importance of, 129; and life experiences, 91-92; and well-being, 180-181
Gentry, W. D., 90
Glaser, B. G., 63
Groups: as identifiable, 175-176; and individual health, 177-178; SOC as property of, 170-179; and size, 175
Goal orientation, and SOC, 42, 48, 52
Guttman, 76, 77

H

Haan, N., 136
Hamann, J. G., 165, 170
Hardiness: and immune system, 158; and SOC, 35-38, 51

Hardiness Scale, 51
Harrison, B. G., 26
Hartley, W. S., 6-7
Hawaii, longitudinal study in, 43, 44-45
Health: and adaptation, 9-11; as continuum, 3-4; coping connected with, 128-162; and development of SOC, 89-127; as deviant case, 11-12; effects on, 151-162; group and individual, 177-178; as life situation, 162; mirage of, 9; new view of, 1-14; other views of, 33-62; and salutary factors, 5-7; scale for measuring, 63-88; and SOC, 15-32; and story of person, 4-5; and stressors, 7-8; and well-being, 179-182
Health, Stress, and Coping, 2-3, 7, 8, 14, 15, 16, 17, 18, 19, 22, 24, 27-28, 33, 50, 63, 64, 65, 66, 82, 89, 91, 99, 117, 119, 120, 130, 162, 163, 171, 179, 180
Heilbrun, A. B., Jr., 136
Hempel, A., 179-180
Henry, J. P., 157
Herzlich, C., 172-173
Hildebrandt, K., 151
Hinrichsen, G. A., 142
Hitler, A., 106
Hoiberg, A., 110
Holmes, O. W., 14, 122
Holmes, T. H., 6, 29, 30, 33, 135
Homeostasis: and order out of chaos, 166-170; and SOC, 56-57
Hostility, cancer and internalization of, 6
Housewife: meaningfulness for, 93; SOC development for, 20, 107-109
Hypertension, and salutary factors, 6-7

I

Identity, and self, 25-26
Illich, I., 108, 124
Illness, new view of, 1-14
Immune system, and emotions, 157-159
Infancy and childhood: comprehensibility in, 94-96; manageability in, 97-100; meaningfulness in, 96-97; and SOC, 39-40, 43-45, 94-101; social environment for, 100-101
Inkeles, A., 183
Institute for the Advancement of Health, 8
Integrity, and SOC, 34
Internal-External Locus of Control Scale, 52, 75, 83
Invincibility, and vulnerability, and SOC, 43-45
Israel: adaptation in, 9-10; group SOC in, 177, 178-179; measuring SOC in, 64-75, 80-81, 84-85, 86, 87; social environment in, 100; survey in, 19; work roles in, 110

J

Janis, I. L., 125
Jantsch, 168
Japan, secondary control in, 53, 140
Jehovah's Witnesses, and rigid SOC, 26
Jemmott, J. B., 159
Jensen, E. W., 39
Jews: adolescence for, 105; coping strategies of, 143; and frozen ritual, 50*n*; and resolution of tension, 139; and SOC, 56
Job security, levels of, 115-116
Johansson, G., 126
Johns Hopkins University, temperament study at, 58

K

Kaiser-Permanente, and worried well category, 125-126
Kaplan, B. H., 8
Kaplan, G. A., 129
Kaplan, R. M., 82, 86, 152

Kardiner, A., 182
Keynes, J. M., 167
Khomeini, R., 106
Kiecolt-Glaser, J. K., 159
Kobasa, S. C., 35-38, 47, 48, 49, 50-51, 52, 61, 76, 158
Koestler, A., 26-27, 166, 169
Kohlberg, L., 177
Kohn, M. L., 33, 43*n*, 99, 113, 115, 117, 127, 184
Kohut, H., 25, 26
Kosa, J., 147
Krantz, D. S., 161
Kroeber, T. C., 136

L

Laudenslager, M. L., 1, 2*n*
Lazarsfeld, P. F., 171, 176
Lazarus, R. S., 30, 55, 60, 61, 131, 132, 137, 140, 142, 149
Learned helplessness, and depression, 6
Learned resourcefulness: and modification of SOC, 126; and SOC, 59
Levi, L., 55
Levi-Strauss, C., 34
Levinson, D. J., 120, 121, 183
Lieberman, M. A., 55
Lifespan: in adolescence, 101-106; in adulthood, 107-118; and contexts of experiences, 89-94; development of SOC over, 89-127; dynamics of SOC over, 119-123; in infancy and childhood, 94-101; and modification of SOC, 123-127
Light, S. C., 128
Lin, N., 128
Linton, R., 182
Lipowski, Z. J., 113
Little, B. R., 117
Lo, B., 141
Load balance: and dynamics of SOC, 123; and fundamentalism, 106; and generalized resistance resources, 28; for housewife, 93, 108, 109; in infancy and childhood, 95, 97; and life experiences, 19-20, 92, 127; in nonwork life, 118; and work roles, 112-113, 116
Locus of control: and resolution of tension, 142; and SOC, 37, 45, 48, 52, 53
Lyon, J. L., 25

M

McKeown, T., 90
Maddi, S. R., 35-38, 50-51, 76
Major, B., 151
Manageability: in adolescence, 102; comparisons with, 48, 51-53, 59; as component of SOC, 17-18; comprehensibility and meaningfulness related to, 19-22, 86-88; and group SOC, 174-175, 176; in infancy and childhood, 97-100; and life experiences, 92; and other views of health, 34; and questionnaire development, 76-79; and strength and rigidity, 25, 26; and stressors, 137, 147; and work roles, 112-113
Mao Tse-Tung, 106
Margalit, M., 86
Marx, K., 183
Matarazzo, J. D., 90
Mead, M., 182
Meaningfulness: in adolescence, 102; centrality of, 21-22; comparisons with, 48, 49, 59, 61; as component of SOC, 18-19; comprehensibility and manageability related to, 19-22, 86-88, 114; and group SOC, 174-175, 176; in infancy and childhood, 96-97; and life experiences, 92-93; and other views of health, 34; and questionnaire development, 76-79; and resolution of tension, 139; and ritual, 39; and strength and rigidity, 25, 26; and stressors, 137, 147; and work roles, 111-112
Mechanic, D., 147

Mediators, and SOC, 55
Meichenbaum, D., 59-60, 126
Menaghan, E. G., 55
Menzel, H., 171, 176
Meyerhoff, B., 109
Minchoff, B., 159
Ministry of Defense, Rehabilitation Division of, 10
Minnesota Multiphasic Personality Inventory (MMPI), 6, 11
Mischel, W., 185
Monat, A., 55
Moos, B. S., 42*n*
Moos, R. H., 31-32, 40-43, 47, 48, 49, 50, 52, 53, 54, 61
Mormons, and strong SOC, 25
Moscovici, 172
Mueller, P., 151
Mullan, J. T., 55
Multidimensional Health Locus of Control (MHLC), 85
Murphy, L., 44

N

Negative entropy, and adaptation, 9
New York, measuring SOC in, 80, 86
Newton, I., 165
Nordic respondents, for SOC measures, 81, 84
Nuckolls, K. B., 8
Nurses: comprehensibility for, 115; meaningfulness for, 4, 111-112, 126

O

Oliveri, M. E., 53-54
Order: concepts of, 165-166; and homeostasis, 166-170; out of chaos, 163-170
Orr, E., 141

P

Palo Alto Center for Advanced Studies in the Behavioral Sciences, 43-44
Pareto, V., 167
Parkes, C. M., 120, 121
Parsons, T., 167
Participation: and dynamics of SOC, 123; and fundamentalism, 106; and generalized resistance resources, 28; for housewife, 93, 108-109; in infancy and childhood, 95; and life experiences, 19-20, 92, 127; in nonwork life, 118; and work roles, 111-112, 116
Pathogenesis, salutogenesis related to, 12-14
Payne, L., 85
Payne, R., 180
Pearlin, L. I., 23, 55, 119, 121, 122, 178
Pepe, V., 136
Permanence: and harmonious continuity, 50; and SOC, 39-40
Personality: and SOC, 182-187; and work roles, 117
Polanyi, M., 23-24
Powerlessness Scale, 37
Prigogine, I., 165, 168

R

Rabkin, J. G., 55
Radil-Weiss, T., 160, 185
Rahe, R. H., 6, 29, 30, 33, 135
Reality, family construction of, 45-47, 52
Reis, H. T., 128
Reiss, D., 45-47, 48, 49, 50, 52, 53-54, 61, 93, 109
Relationships, and SOC, 42, 48, 49
Reliability, of SOC scale, 82-86
Retirement: and boundaries, 139; and flexible SOC, 24
Revenson, T. A., 142
Ritual, and SOC, 39, 49, 50
Robinson, S. K., 6
Rodin, J., 125
Rosenbaum, M., 59, 126
Rosenblatt, Z., 64*n*-65*n*
Rothbaum, F. M., 53, 140
Rotter, J. B., 52, 53, 75, 83

Rumbaut, R. G., 82-83, 84, 85, 86
Rutter, M., 94

S

Sagy, S., 85, 86, 178
Saltzer, E. B., 59
Salutogenesis: advantages of, 2; analysis of, 1-14; assumptions in, 2-3; comparisons with, 47-54; consequence of, 13; and etiology and diagnosis, 9-11; issues in, 163-187; metaphor for, 89-91, 127; and order out of chaos, 163-170; and other views of health, 33-35; partial affinities with, 54-62; pathogenesis related to, 12-14; and pathways connecting coping and health, 128-162; summary of, 12-13
Sampson, E. E., 167, 168-169
Sarason Test Anxiety Scale, 84
Sayles, M., 128, 142
Scandinavia, modification of SOC in, 126-127
Schaefer, C., 39, 40*n*
Schmale, A. H., 113
Schoenbach, C., 127, 184
Schooler, C., 113, 178
Schraa, J. C., 6
Schrödinger, E., 121
Schwartz, G. E., 2, 150, 154-157, 159
Security Scale, 38, 51
Seeman, M., 36*n*, 128, 142, 172, 173, 184
Seeman, T., 128, 142
Self, and identity, 25-26
Self-efficacy, and SOC, 59, 133-134
Seligman, 59
Selye, H., 7, 8, 33, 55
Sense of coherence (SOC): in adolescence, 101-106; in adulthood, 107-118; advantage from, 147; analysis of concept of, 15-32; and biological substrate, 161-162; boundaries to, 22-24; comparisons with, 47-54; components of, 16-19; and contexts of life experiences, 89-94; critical spheres in, 23; cross-cultural study of, 78*n*, 79-82; cultural limits for, 148; defined, 19; development of, over lifespan, 89-127; emergence of, 164; and family construction of reality, 45-47, 52; as group property, 170-179; and hardiness, 35-38, 51; health effects of, 151-162; in infancy and childhood, 39-40, 43-45, 94-101; and integrity, 34; issues of, 163-187; and lifespan, 119-127; and locus of control, 37, 45, 48, 52, 53; mapping sentence for, 77-78; modification of, 123-127; normative data on scale for, 79-82; and other views of health, 33-62; and pathways connecting coping and health, 128-162; and permanence, 39-40; physiological impact of, 154-157; pilot study for, 64-75; and prediction, 186-187; psychometric properties of scale for, 79-86; questionnaire drafting for, 75-79; questionnaire for, 189-194; relations for components of, 19-22, 86-88; and resolution of tension, 138-148; rigid type of, 106; scale for measuring, 63-88; and social climate, 40-43, 48, 49; as state, trait, or dispositional orientation, 182-187; and stressors, 27-32; strong, cases of, 67-72; strong and rigid types of, 24-27; temporary changes in, 127-126; weak, cases of, 72-75
Shalit, B., 60-61, 137, 180
Shanan, J., 144-145
Shekelle, R. B., 11-12
Shye, S., 76, 87, 145
Silver, R. L., 151
Slomczynski, K. M., 127, 184
Smith, R. S., 43
Snarey, J., 177
Snow, J., 152

Social climate, and SOC, 40-43, 48, 49
Social Readjustment Rating Scale, 30
Social supports: role of, 128-129, 146; and SOC, 33, 55
Social world, and resolution of tension, 143-145
Solomon, G. F., 157-159
Sorokin, P. A., 109
Sourani, T., 174
Spencer, H., 167
Spielberger State-Trait Anxiety Inventory, 85
Srole, L., 56, 62
Stamina: and elderly, 186-187; and SOC, 58
Stanford University, Social Ecology Laboratory at, 31
State, SOC as, 182-187
State-Trait Anxiety Inventory, 85
Steinglass, P., 145
Stengers, I., 165
Strauss, A. L., 63-64
Stress inoculation, 60, 126
Stressors: appraisals of, 132-133, 134, 137, 140, 146, 149; and attribution of blame, 150-151; chronic, 28-29; concept of, 27-28; daily hassles, 29-30; defining dimensions of, 140; defining problem of, 135-138; emotional problems of, 136; and emotions, 148-151; endemic, 29; as generalized resistance deficits, 122-123; instrumental problems of, 136-137, 140; kinds of, 28-30; life event, 29; metaphor for, 89; reconceptualization of, 129-130; and recovery time, 156; and resolution of tension, 138-148; as salutogenic, 7-8; and tension, 130-135
Struening, E. L., 55
Strull, W. M., 141
Substantive complexity, and work roles, 113
Sweden: coping studies in, 60-61; maternal leave in, 135
Synanon, and SOC, 21
System maintenance, and SOC, 42, 48, 50

T

Task performance, and SOC, 180, 182
Temperament, and SOC, 58
Tensions: and emotions, 148-149; and flexibility, 140-141; functions of, 130-131; and stressors, 130-135, 138-148
Test Anxiety Scale, 84
Thoits, P. A., 135
Thomas, C. B., 57-58
Trait, SOC as, 182-187
Type A behavior pattern: and biological substrate, 161; and coronary heart disease, 6, 11

U

Uitti, C., 39, 40*n*
Unemployment, consequences of, 145-146
Union of Soviet Socialist Republics, emigration from, 64
United Kingdom, cholera epidemic in, 152
U.S. Department of Health, Education, and Welfare, 90
U.S. Navy, occupational stress in, 110
Unruh, D. R., 143-144

V

Vaillant, G. E., 57
Validity: convergent and discriminant, 83-84; criterion, 82-83; predictive, 84-85; of SOC scale, 82-86
von Bertalanffy, L., 154
Vulnerability, and invincibility, and SOC, 43-45

W

War on Poverty, and SOC, 56

Warsaw ghetto, and SOC, 21
Weisz, J. R., 53, 140
Well-being, and health, 179-182
Werner, E. E., 43-45, 47, 48, 49, 50, 52, 61
Wheel Questionnaire, 61
Winnebago Indians, and SOC, 56
Woelfel, M. W., 128
Wolff, H., 55
Wolman, B. B., 183
Woolf, V., 108
Work Environment Scale, 31
Work roles: and development of SOC, 109-117; and personality, 117
Wortman, C. B., 151

Y

Yablonsky, L., 21

Z

Zajonc, R. B., 149
Zautra, A., 179-180
Zeitz, G., 173
Zimmerman, M. K., 6-7
Zola, I. K., 10, 147