
Getting Out of Our Conceptual Ruts

Strategies for Expanding Conceptual Frameworks

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ABSTRACT: *The human tendency to think recurring thoughts limits our theories and research. This article presents four sets of strategies that may be useful for generating new perspectives on familiar research problems: playing with ideas, considering contexts, probing and tinkering with assumptions, and clarifying and systematizing the conceptual frame.*

In 1879, Sir Francis Galton published an article describing a leisurely stroll he took in the interests of science—specifically to explore how the mind works. In the article, Galton told of walking down a London street and scrutinizing every object that came into his view. He recorded the first thought or two that occurred to him as he focused on each of about 300 objects. Galton reported that this method produced a great variety of associations, including memories of events that had occurred years earlier.

After several days, Galton repeated the walk and the recording procedure and again found a variety of associations. He also discovered a great deal of repetition or overlap in his thoughts on the two occasions. Galton likened his thoughts to actors in theater processions in which the players march off one side of the stage and reappear on the other. This recurrence of ideas piqued Galton's curiosity. He next devised some word association tasks that led him to the same conclusion as his walks, namely, that "the roadways of our minds are worn into very deep ruts" (Galton, 1879, cited by Crovitz, 1970, p. 35).

Although Galton's methods may have been faulty by present standards, he seems to have discovered a stable psychological principle: the recurrence of ideas (Crovitz, 1970). My comments here assume that Galton was right—that our thoughts flow in a limited number of channels and that our research efforts are thereby constrained.

This article sketches a variety of approaches for stimulating new insights on familiar research problems. Four sets of strategies, phrased as advice to researchers, are discussed as follows:

1. Researchers should play with ideas through a process of selecting and applying metaphors, representing ideas graphically, changing the scale, and attending to process.

2. Researchers should consider contexts. They can place specific problems in a larger domain, make comparisons outside the problem domain, examine processes in the settings in which they naturally occur, consider the practical implications of research, and probe library resources.

3. It is important for researchers to probe and tinker with assumptions through such techniques as exposing hidden assumptions, making the opposite assumption, and simultaneously trusting and doubting the same assumption.

4. Finally, it is vital that researchers clarify and systematize their conceptual frameworks. They should scrutinize the meanings of key concepts, specify relationships among concepts, and write a concept paper.

The need for psychologists to attend to conceptual framing processes has been widely acknowledged (see, for example, Brinberg & McGrath, 1985; Campbell, Daft, & Hulin, 1982; Caplan & Nelson, 1973; Gergen, 1978, 1982; Jones, 1983; McGuire, 1973, in press; Tyler, 1983; Wachtel, 1980; Weick, 1979).

Several caveats are in order before we proceed:

1. Some readers may already be familiar with certain strategies and find them obvious. I have tried to include a diversity of heuristics in the hope that even seasoned investigators will find something of value.

2. Given the goal of presenting a range of strategies, only limited space is available for describing and illustrating each procedure. There is a risk that important and complex topics have been oversimplified—possibly even trivialized. I strongly recommend further reading on any strategy that seems promising; references are provided in the text.

3. These strategies are offered as heuristics. Most have not been systematically evaluated, although they have been useful to the scholars who proposed them and to others who have used them.

4. The substantial and important psychological literature on problem solving and critical and creative thinking has not been reviewed or even cited here. Much of that research addresses problems for which there are consensual solutions derived from mathematical or other logical systems. And some of that

literature presumes that thinking habits developed from work on abstract puzzles or exercises are readily transferable to a wide range of other problems. The present concern is how to generate useful ideas whose "accuracy" cannot immediately be assessed. The following strategies draw upon, and in some cases expand, the researcher's existing knowledge structures (cf. Glaser, 1984). They are directly applicable to research problems in all areas of psychology.

Play with Ideas

A playful, even whimsical, attitude toward exploring ideas is appropriate for the first set of strategies. These strategies include working with metaphors, drawing sketches, imagining extremes, and recasting entities as processes.

Select and Apply Metaphors

Playing with metaphors can evoke new perspectives on a problem. One strategy for exploiting metaphors is to identify some features from the research domain that are also discernible in another domain—perhaps another discipline or area of activity. Attention is shifted to this new area (the metaphor), which is then closely examined. From this examination, the researcher may discover some variables, relationships, or patterns that can usefully be translated back to the research problem.

A productive metaphor in social psychology is McGuire's inoculation theory of resistance to persuasion. The metaphor used was the medical procedure of stimulating bodily defenses against massive viral attacks by inoculating individuals with weakened forms of the virus. This procedure suggested the possibility of increasing resistance to persuasion by presenting weak arguments before strong arguments are encountered (McGuire, 1964). (The heuristic value of metaphors is discussed in Gowin, 1981b; Smith, 1981; and Weick, 1979. Leary, 1983, has analyzed the role of metaphor in the history of psychology. See Lakoff & Johnson, 1980, for a readable philosophical/linguistic analysis of metaphors.)

Exploring multiple, unusual metaphors may lead researchers to a greater awareness of the complexities

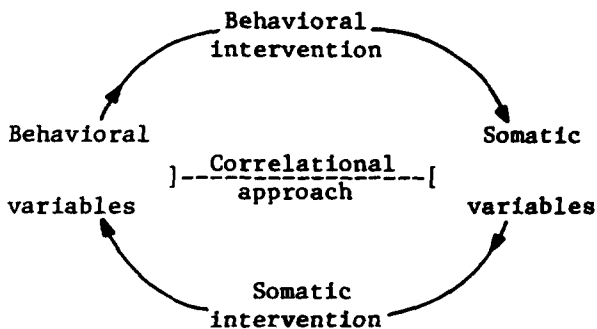
and subtleties inherent in their domains (Weick, 1979). For example, likening interpersonal attraction to magnetic fields, a performance of *Swan Lake*, symbiosis, and hypnotism may reveal significant aspects of personal relationships that are not considered by such established perspectives as social exchange and equity theories.

Represent Ideas Graphically

A casual scan of such journals as *Science*, *American Scientist*, and *Scientific American* suggests that researchers in the physical and biological sciences make greater use of graphic presentations than do psychologists. We may be overlooking a powerful tool. In the developmental stages of a research problem, a pad of large drawing paper and a set of multicolored pens may be more useful than a typewriter. Visual images and sketches of problems can be liberating to researchers accustomed to representing their ideas only in linear arrangements of words, sentences, and paragraphs. Kurt Lewin, who used diagrams extensively, reportedly was ecstatic upon discovering a three-colored automatic pencil, which he carried everywhere to sketch his ideas (R. G. Barker, personal communication, April 10, 1983).

Many kinds of graphic schemes can be used to explore ideas and communicate them to others. Tabular grids, organization charts, flow diagrams, topological regions, and schematics are examples of abstract graphic languages. They have their own grammar and syntax and can be used to portray a variety of contents (McKim, 1972; Nelms, 1981). Figure 1 illustrates the flow diagram; it simply and clearly presents the three main approaches researchers have taken in studying relations between behavioral and somatic variables.

Figure 1
A Graphic Representation of Three Approaches to Research on the Relation Between Behavioral and Somatic Variables



Note. From "Experience, Memory, and the Brain" by M. R. Rosenzweig, 1984, *American Psychologist*, 39, p. 366. Copyright 1984 by American Psychological Association. Reprinted by permission.

I am grateful to the students who have participated in my graduate seminar, *Applied Conceptual Framing and Analysis*, for assistance in evaluating numerous conceptual reframing strategies, including the ones presented here. I also acknowledge an intellectual debt to Karl E. Weick, whose various published works have stimulated my thinking more than is evident from the citations in this article. Valuable comments on previous drafts of this article were provided by several anonymous reviewers and the following colleagues: Roger G. Barker, Dale E. Berger, Arthur H. Brayfield, Robyn M. Dawes, Robert S. Gable, Jeanne King, Mark W. Lipsey, Edward Ostrander, and Kathleen O'Brien Wicker.

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In freehand idea sketching, there are no rules to be followed. With practice, researchers can fluently represent and explore their ideas and boldly experiment with relationships just as artists, composers, and urban planners have profitably done (McKim, 1972).

Change the Scale

Imagining extreme changes in proportion can stimulate our thinking. Mills (1959) gave this advice: "If something seems very minute, imagine it to be simply enormous, and ask yourself: What difference might that make? And vice versa, for gigantic phenomena" (p. 215). He then asked readers to imagine what pre-literate villages might have been like with 30 million inhabitants. Or, to take another example, consider how child-rearing would be different if at birth children had the motor ability and strength of adults. And if there were no memory loss, how would human information processing be different?

A variation of this procedure is to imagine what would be required for a perfect relationship to exist between two variables presumed to be linked. For example, psychologists have often assumed that a person's expressed attitudes determine how he or she will behave in daily affairs (Cohen, 1964). However, for people to act in complete accord with their attitudes, they would have to be independently wealthy, to have unlimited time at their disposal, to have no regard for the opinions of others, to be unaffected by unforeseen chance occurrences, to have a wide range of high-level skills, and even to be in several places at once (Wicker, 1969). Reflections on such factors can lead to more realistic theories and expectations.

Attend to Process

Research psychologists typically favor concepts that represent stable entities, perhaps because such concepts are easier to measure and to incorporate into theories than are processes. Yet it can be fruitful to view presumably stable concepts in dynamic terms. One systematic approach that can help us focus on process is the tagmemic method from the field of rhetoric: The same unit of experience is regarded alternatively as a "particle" (a thing in itself), a "wave" (a thing changing over time), and as part of a field (a thing in context; Young, Becker, & Pike, 1970).

A related strategy is changing nouns into verbs, or as Weick (1979) advised, "think 'ing.'" Many concepts in our research vocabularies are nouns: perception, organization, social norm. Weick suggested imagining such concepts not as stable entities but as dynamic processes, constantly in flux, continually being reconstructed through accretion and erosion. Changing nouns to verbs may promote process imagery. Thus, one would speak of perceiving, organizing, and "norming."

In a recent application of this strategy, Wicker

(in press) has recast the behavior setting concept from a relatively stable "given" to a more dynamic entity that develops over a series of life stages and in response to changing internal and external conditions.

Consider Contexts

The strategies in this section direct researchers' attention to the extended social world in which psychological events occur. These strategies are not theoretically neutral. They advance a viewpoint that has been expressed in ecological and environmental psychology (e.g., Barker, 1968; Stokols, 1982; Wicker, in press) and that has been stated more generally in terms of the implications for psychology of the new "realist" philosophy of science (e.g., Georgoudi & Rosnow, 1985; Manicas & Secord, 1983). The style of thought promoted here contrasts with much that is typical in psychology, but it can broaden our perspectives and suggest alternatives to traditional practices and ways of thinking.

Place Specific Problems in a Larger Domain

Researchers can use this strategy to decide where to begin work in a new area and to plan new research directions. The goal is to map out the broader domain of which an existing or contemplated study is only a part. Once the boundaries and features of a conceptual territory have been charted, judgments can be made about which areas are most promising for further exploration.

Such mapping of a research problem depends upon the researcher's current conceptual frame and upon a variety of information sources, such as intuition, theory, and research findings. An early step is to specify the boundaries of the broader domain at an appropriate level of abstraction. For example, in one of several case studies cited by McGrath (1968) to illustrate this strategy, the domain was bounded by criteria for the mental health of emotionally disturbed patients.

Once the domain has been defined, the next step is to identify the major factors or influences that bear on the topic. Each of the major factors can then be analyzed into its components or attributes, and a systematic classification scheme can be developed. By examining all logical combinations of attributes, investigators can plan research to cover appropriate—perhaps neglected—aspects of the problem. In McGrath's (1968) example, three main factors were identified and analyzed into components: (a) sources of data on patients' mental health, whose components included self-reports, ratings by staff, and observations in standard and uncontrived situations; (b) modes of behavior, including motor, cognitive, emotional, and social; and (c) temporal frame of measurement, including measures of immediate treatments, overall

hospital stay, and posthospital adjustment. This conceptual framework helped guide a study of how patients were affected by their move to a new hospital building.

A set of components applicable to most research domains consists of actors, behaviors, and contexts (Runkel & McGrath, 1972). Actors may be individuals, groups, organizations, or entire communities. Behaviors are actions that actors undertake toward objects. Contexts are immediate surroundings of actors and their behaviors, including time, place, and condition. Each component would be further subdivided into aspects appropriate to the research domain. Laying out the components and their subdivisions in a grid produces a domain "map" on which any particular investigation can be located. For example, the following factors could be used in a classification scheme for group problem solving: members' abilities and motives, type of tasks performed, relationships among members, group staffing levels, and type of settings in which groups perform.

Developing a comprehensive framework for a research domain contrasts with the more prevalent "up and out" strategy, in which investigators link their work on relatively narrow, focused topics with events outside their domain and then transpose their framework and findings to this new area. For example, research on students' verbal reactions to brief intervals of crowding has been extrapolated to prisons, homes, and transportation systems. An analysis of crowding using the three components mentioned above would reveal many additional factors that could be considered and incorporated into subsequent research. Actors could be expanded to include prisoners and homemakers; behaviors could include social interaction and task performance; contexts could include living quarters, worksites, recreational settings, and time frames of months or years. Some research on crowding reflects these broader considerations (e.g., Cox, Paulus, & McCain, 1984).

Make Comparisons Outside the Problem Domain

We are familiar with the principle that knowledge is an awareness of differences—it is our rationale for using control groups. This principle can be invoked to generate new ideas: Comparisons can be made with actors, behaviors, or settings outside one's current problem domain. For example, Piotrkowski (1978) has provided insights into family interaction patterns by examining the nature of the work that family members perform both inside and outside the home. The emotional availability of family members to one another may depend less on their personalities than on the quality and timing of their work experiences, such as how stressful and fatiguing the work is and whether overtime and late shift work is involved.

More remote comparisons may also be fruitful.

What we regard as basic social and cognitive processes are conditioned by cultural and historical factors (Gergen, 1982; Mills, 1959; Segall, Campbell, & Herkovitz, 1966). Researchers who focus on contemporary events in Western culture can profitably examine similar events in other periods and cultures. Guttentag and Secord's (1983) recent elaboration of social exchange theory to include social structural variables provides an illustration: Social exchange theorists have regarded participants in dyadic interactions as free agents capable of negotiating the most favorable outcomes for themselves. Using data from several cultures and historical periods, the investigators demonstrated that the demographic condition of disproportionate sex ratios (substantially more men than women in a particular population, or vice versa) directly affected the exchange process between men and women. For example, when men outnumbered women, men were less likely to enter or stay in a monogamous heterosexual relationship. Women might either cater to men or withdraw from them to express female independence (Guttentag & Secord, 1983; Secord, 1984). (More general treatments of theoretical and methodological issues in historical and cross-cultural research are found in Gergen & Gergen, 1984, and Malpass, 1977.)

We can also probe the structure of contemporary society for subtle influences on how we frame research topics. Sampson (1981) was concerned that psychologists interpret and present socially and historically limited events as fundamental properties of the human mind. He argued that the predominant psychological world view portrays people as independent agents whose primary functions are ruminations—cognitive activities such as planning, wishing, thinking, organizing, and problem solving—with little regard for the objective social world. Furthermore, he contended that such a view may not only be time bound, but may also serve to reaffirm present societal arrangements and values. Sampson's advocacy of a "critical study of psychology and society, a study that is self-conscious about its context, its values, and its relationship to human freedom (p. 741)" has numerous and profound implications for many specific research domains. Theories of work motivation, for example, may need to consider the worker's psychological state *and* the organizational, legal, economic, cultural, and even nutritional conditions under which work is performed (cf. Barrett & Bass, 1976).

Parenthetically, it is worth noting that academic disciplines and research specialties may also benefit from "outside" influences; for example, requirements in graduate programs for coursework outside the major field (Lawson, 1984), cross-disciplinary collaboration, and serious efforts to include perspectives of women, ethnic minorities, gays, and scholars from developing countries.

Examine Processes in the Settings in Which They Naturally Occur

Most psychological and behavioral processes unfold in behavior settings (taken-for-granted configurations of time, place, and objects where routine patterns of behavior occur) such as offices, workshops, hospital waiting rooms, parks, and worship services (Barker, 1968). These small-scale, commonsense units of social organization variously promote, afford, permit, encourage, and require behaviors that are part of or are compatible with the main activity, and they discourage or prohibit behaviors that interfere with it.

By contrast, much psychological research is conducted in contrived environments that lack the characteristics of behavior settings. Table 1 illustrates some differences between features of a typical laboratory study of small groups (see Miller, 1971) and a behavior setting.

In some psychological specialties, theories are formulated and may be revised on the basis of generations of studies conducted exclusively in the laboratory. Recognized experts may lack firsthand experience with the events and subjects that produce their data (cf. Jones, 1983). Yet the work of such seminal figures as Piaget and Lewin illustrates the benefits

of direct observation of behaviors in context. (Observational strategies are discussed by Lofland, 1976, and Weick, 1968.)

Ideally, researchers who wish to consider contextual factors would first identify and then representatively sample settings where the behaviors of interest regularly occur (cf. Brunswik, 1947; Petrinovich, 1979). But such an extensive effort may not be necessary to gain insights from behavioral contexts. Investigators might observe people in a few settings where the behaviors or processes of interest are a significant part of the program. For example, workers' adjustments to stress can be studied in police dispatcher worksites (Kirmeyer, 1984).

Ventures out of the laboratory can reveal neglected but significant influences on a behavior or process. For example, an environmental psychologist interested in personal space might, by observing people in medical office waiting rooms, discover that people's sense of what is a comfortable distance from others depends on how ill they feel, on whether the others may have contagious diseases, and on furniture arrangements and design, including whether chairs have armrests.

Consider Practical Implications of Research

Reflections on how research might be applied also can lead to expanded views of basic psychological processes. For example, theories and findings on human learning and memory can be used to design instructional materials. Through such efforts, previously unseen gaps in existing frameworks might become evident and could lead to broadened research procedures. Stimulus materials could be made more complex and more natural, response alternatives increased and made more meaningful, time frames expanded, and tasks and environments made more realistic (Mackie, 1974). Designed applications could be discussed with practitioners and then be implemented and evaluated.

Probe Library Resources

One of the most accessible vehicles for transcending narrow conceptual frames is the research library, whose extensive resources are scarcely considered by many researchers. As psychologists, we may limit our literature searches to work listed in the *Psychological Abstracts* or even to a few select journals. If so, we are ignoring enormous amounts of potentially useful information and sources of ideas from the larger social world.

The resources include both quantitative and qualitative data. Baseline data and other statistics relevant to most research topics can usually be found. For example, the *Statistical Abstract of the United States* (1985), published annually by the Bureau of the Census, includes national data on health, educa-

Table 1
Contrast Between a Typical Small Group Study and Behavior Setting Features

Typical small group study	Behavior setting features
Fixed duration, 1 hour or less	Indefinite duration, typically months or years
Group composed of college students	Staff composed of community members
No prior interaction among group members	Extensive prior interaction among staff members
Imposed task, often an intellectual problem to be solved	Endogenous tasks, typically involving behavior objects such as equipment and supplies
Casual interactions	Meaningful interactions
No enduring local culture	Established local culture
No hierarchical relationships among members	Hierarchical relationships among members
Closed system: no personnel changes, not part of a system network including suppliers, external information sources, and recipients of products	Open system: changes in personnel, part of a system network that includes suppliers, external information sources, and recipients of products

tion, housing, social services, the labor force, energy, transportation, and many other topics. It also contains a guide to other statistical publications.

Statistics such as these can provide perspectives not generally available in the psychological literature. They can, for example, show trends in the frequency and distribution of events. Such data can suggest new research directions: A researcher might choose to give greater emphasis to cases that are more frequent, use more resources, have more beneficial or detrimental consequences, affect more people, or are on the leading edge of an important trend or development. Researchers of legal decision making might, for example, be influenced by the following facts: (a) In each of the past several years, less than 7% of civil cases before U.S. District Courts came to trial, and (b) from 1965 to 1983, the percentage of cases (civil and criminal cases combined) tried by jury in these courts declined from 51% to 40% (*Statistical Abstract of the United States*, 1985, pp. 178–179). Researchers of mock juries might profitably expand their work to include other aspects of legal decision making such as pretrial negotiations and the ways that judges consider and weigh evidence. (Bibliographies of useful statistical sources are found in Bart & Frankel, 1981; and Cottam & Pelton, 1977.)

Libraries are also a bountiful source of qualitative information on the range of human experience and behavior. These data take many forms: newspapers and magazines, popular nonfiction, oral histories, legal cases, ethnographies, diaries and letters, atlases, novels, and photographs, as well as the scholarly literature. Such materials can be sampled and analyzed much as a sociological field worker selects and studies people and events in a community. Qualitative information in libraries can be perused at the researcher's convenience, and it often covers extended time periods, allowing for analyses of trends. (The use of library data in theory building is discussed by Glaser & Strauss, 1967, chapter 7.)

The benefits of consulting a broad range of sources are evident in Heider's (1958/1983) influential book, *The Psychology of Interpersonal Relations*. In an attempt to document and systematize the layperson's knowledge of social relationships, Heider drew upon the works of philosophers, economists, novelists, humorists—and social scientists. For example, he credited the 17th century philosopher Spinoza for the insights that led to his statement of cognitive balance.

An illustration of the creative use of qualitative data in a psychological specialty where laboratory investigations predominate is Neisser's (1981) study of the memory of former presidential counsel John Dean. Neisser compared Dean's testimony before the Senate Watergate Investigating Committee with subsequently revealed transcripts of the conversations Dean had testified about. Neisser's analysis drew upon

memory theories and recent laboratory-based research to suggest a new term (*episodic*) for memories that are accurate in general substance but inaccurate in their detail (Neisser, 1981).

Probe and Tinker With Assumptions

Virtually any conceptual framework, methodology, or perspective on a problem incorporates judgments that are accepted as true, even though they may not have been confirmed. Probing and tinkering with these assumptions can stimulate thinking in productive directions. Strategies considered here include making hidden assumptions explicit, making opposing assumptions, and simultaneously trusting and discrediting the same assumption.

Expose Hidden Assumptions

The task of revealing our own implicit assumptions is inherently difficult and can never be fully accomplished. Some assumptions may be imbedded in everyday or technical language, and others may be tied into our sensory and nervous systems. About all we can hope for is an increased awareness of a small portion of the assumptive network. And to probe any assumption, we must trust many others (Campbell, 1974).

The contrastive strategy—juxtaposing dissimilar elements from alternative or competing perspectives—is one way to uncover hidden assumptions. The juxtaposition can also lead to more precise statements of one or both conceptual frameworks. The conditions under which the alternative perspectives are most applicable may thus be clarified (McGuire, in press). To illustrate, two theories make contradictory predictions about how staff members respond when service settings such as child day care facilities and emergency medical services are understaffed. One theory (Barker, 1968) predicted a positive response: The staff will work harder, will assume additional responsibilities, and will have increased feelings of self-worth and competence. Another theory (Milgram, 1970) predicted such negative responses as disaffection with the work and disregard for clients' individual needs and low-priority claims for attention. Both theories are likely to be correct in certain circumstances. Positive responses may occur in settings where understaffing is infrequent and known to be temporary, whereas negative responses may characterize settings where there is a chronic shortage of staff members (Wicker, 1979/1983). In this case, the theorists apparently made different implicit assumptions about the frequency and duration of understaffing.

Allison's (1971) analysis of governmental decision making during the 1962 Cuban Missile Crisis illustrates the benefits of applying different conceptual perspectives to the same set of events. He demon-

strated that certain actions were best explained by assuming that the various branches of the American and Soviet governments (such as the U.S. Navy and the Soviet KGB) followed their standard operating procedures. Other actions were better understood as “resultants” of pulling and hauling by political players within the governments. Both perspectives were contrasted with the more commonly accepted “rational actor model,” which presumes that governmental actions are chosen after reviews of the costs and benefits of alternatives (Allison, 1971).

Make the Opposite Assumption

A more playful strategy is to recast an explicit assumption into its opposite and then to explore the implications of the reversal. A general procedure for recasting theoretical assumptions has been suggested by Davis (1971), who contended that theories are judged interesting when they challenge the assumption ground of an audience. He identified 12 general ways of recasting theoretical statements (see Table 2).

The following example illustrates the general-local contrast from Davis's list. Many research psychologists assume that if they empirically test a hypothesized relationship and the predicted result is obtained, they confirm not only that particular relationship but also the higher level conceptual hypothesis and the general theory from which it was derived. An opposing assumption is that demonstrated effects are conceptually local, that is, limited to a subset of populations and/or conditions similar to those in the investigation. Researchers who seriously con-

sider this latter assumption may become more sensitive to differences in populations and conditions and may even become interested in developing taxonomies that would be useful for specifying limits of generality.

An argument along these lines has been advanced by McKelvey (1982). He stated that management theorists and academic social scientists (notably social psychologists and sociologists) routinely advance principles that they assume are applicable to organizations in general. In a provocative challenge to this assumption, McKelvey drew upon evolutionary theory to propose an “organizational species” concept, “dominant competence,” that he believed could be used to build a taxonomy of organizations.

Numerous recognized theoretical contributions in psychology can be viewed as articulated denials of existing assumptions. For example, Barker's (1963) classic article introducing behavior settings was essentially a rejection of the view that human environments are disordered, unstable, and without obvious boundaries. And Zajonc's (1965) analysis of social facilitation was a demonstration that seemingly incompatible research findings can coexist in a framework that distinguishes between responses that are high and low in the subject's response hierarchy.

Simultaneously Trust and Doubt the Same Assumption

Our thinking becomes more complicated when we devalue what we believe:

Any person who has a view of the world and who also discredits part of that view winds up with two ways to examine a situation. Discrediting is a way to enhance requisite variety and a way to register more of the variety that's present in the world. (Weick, 1979, p. 228)

Researchers can use this device to introduce flexibility and ambivalence into their conceptual framework—they can trust an assumption for some purposes and distrust it for others. The strategy has both theoretical and methodological applications. For example, when attempting to explain the behavior of people over their life span, a personality theorist might presume that actions are guided by a few enduring behavioral dispositions (traits), but when considering how people act on a specific occasion the theorist might doubt that traits are useful. Or a researcher might devise and administer a questionnaire or interview schedule on the assumption that people respond openly and freely, but interpret the responses in a way that assumes people respond primarily in guarded and self-serving ways.

Clarify and Systematize the Conceptual Framework

Most of the above strategies will expand the researcher's conceptual framework. At some point the enlarged

Table 2
Ways of Recasting Theoretical Statements

What something seems to be	What it is in reality (or vice versa)
Disorganized	Organized
Heterogeneous	Composed of a single element
A property of persons	A property of a larger social system
Local	General
Stable and unchanging	Unstable and changing
Ineffective	Effective
Bad	Good
Unrelated	Correlated
Coexisting	Incompatible
Positively correlated	Negatively correlated
Similar	Opposite
Cause	Effect

Note. Adapted from “That's Interesting: Toward a Phenomenology of Sociology and a Sociology of Phenomenology” by M. S. Davis, 1971, *Philosophy of the Social Sciences*, 1, pp. 309–314. Copyright 1971 by Wilfred Laurier University Press. Adapted by permission

set of ideas should be reviewed to select the most provocative thoughts for further, more intensive analysis. The following procedures can be helpful in this sifting process as well as earlier in the conceptual framing process.

Scrutinize the Meanings of Key Concepts

Researchers should have and communicate a clear understanding of the concepts they use. One way to clarify meanings of key terms is to explore their roots, synonyms, and earliest known uses. Numerous sources are available, including dictionaries (etymological, unabridged, reverse, technical), technical books, handbooks, and encyclopedias. The nuances in meaning revealed by these sources can help researchers choose terms that precisely express their ideas. Consider, for example, the nuances implicit in the root meanings of these related words: *educate* (to rear or bring up), *instruct* (to construct or arrange), *teach* (to show, guide, or direct), and *train* (to pull, draw, or drag) (*Webster's Third New International Dictionary of the English Language, Unabridged*, 1969).

Theorists need to be sensitive to the different levels of generality that are implied by their concepts. Often it is advisable to examine terms at more than one level. Abstract terms can often be broken into components whose various meanings are worth exploring. For example, *health-promoting behavior* may include several types of actions, including habits like tooth brushing and infrequent voluntary activities like scheduling and taking a physical examination. More general terms may be sought for theoretical concepts currently defined in a limited domain. More abstract terms also may suggest other domains where the theory might be applied (Mills, 1959, pp. 212–213). For example, the concept “social loss of dying patients” can be expanded to “the social value of people” (Glaser & Strauss, 1967).

Concept analysis, a procedure developed by philosophers, can be used to clarify our thinking about terms we use in research. The first step is to identify cases or examples that clearly fit the intended meaning of the concept being analyzed. To illustrate, a clear example of my concept of job involvement might be working extra hours without pay when there is no external pressure to do so. Other examples—ones that are clearly outside the intended meaning and others that are borderline—are then evoked. From a careful review of such cases, the researcher can draw out the essential properties of the concept as he or she uses it. (Concept analysis is described and illustrated in Wilson, 1963, and in Gowin, 1981b, pp. 199–205.)

Specify Relationships Among Concepts

The most rigorous ways of expressing relationships among concepts, such as mathematical modeling and

hypothetico-deductive systems, are well known to psychologists. Other procedures such as concept mapping can also be used to simplify and clarify a research domain. Figure 2 illustrates a concept map; it represents Gowin's (1981a) theory of educating. The first step in producing such a map is to list the major concepts that are part of a developing framework or theory. The concepts are then ranked in order of importance. This order is preserved in the concept map, with the most important concept at the top, and so on. Concepts are placed in boxes, and relationships among concepts are indicated by lines and brief verbal descriptions (Gowin, 1981a, pp. 93–95).

In another variation of concept mapping, arrows are used to show a presumed direction of causality, and signs (+, –) are used to show whether the influence is positive or negative. From the pattern of such relationships, inferences can be drawn about the domain being considered; for example, whether a system is amenable to change, and if so, where change efforts might be directed (Maruyama, 1963; Weick, 1979, 68–88).

Write a Concept Paper

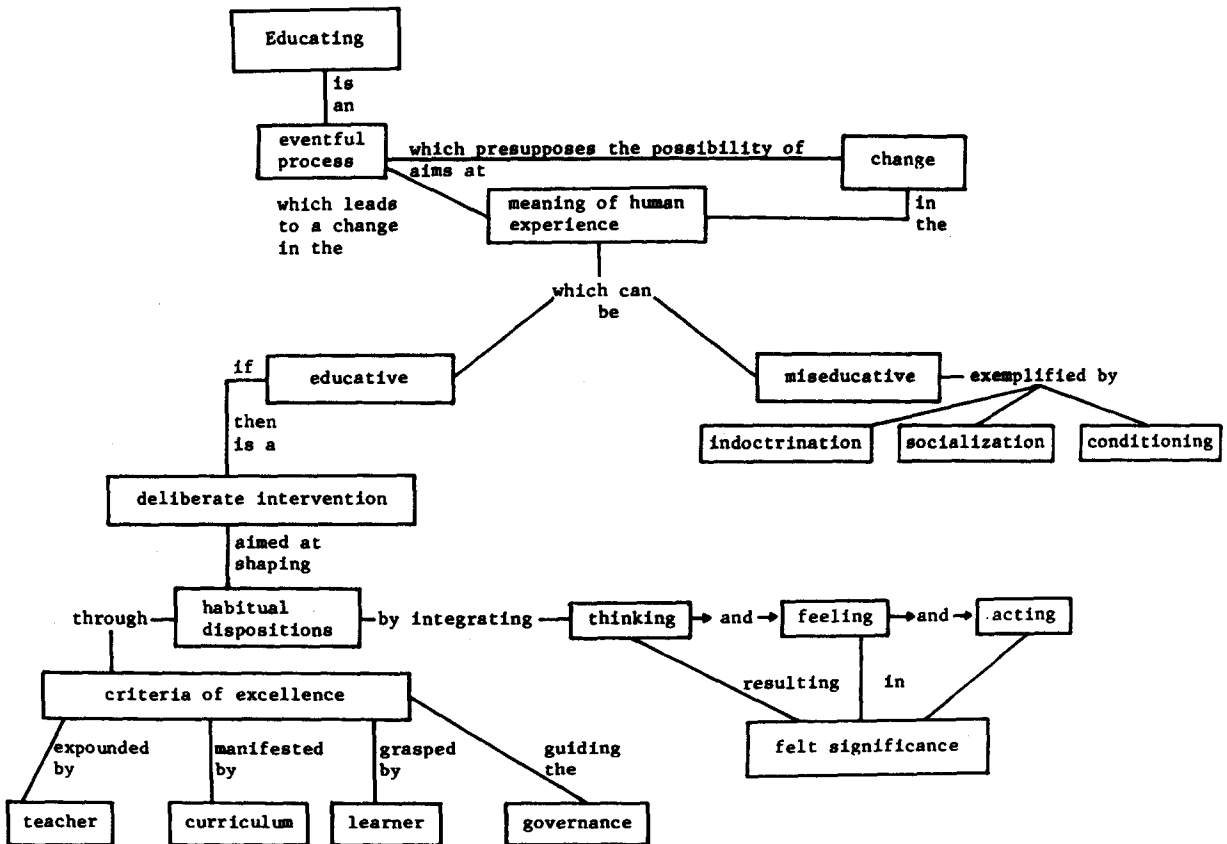
Perhaps the most powerful tool for ordering and clarifying thinking is putting one's ideas into words. Writing is so familiar and often so burdensome that we often overlook or avoid it until we feel ready to communicate with an audience. Writing should be brought into play much earlier; it is an excellent medium for experimenting with conceptual meanings and relationships. Working papers can help researchers explore their thoughts and reveal gaps, inconsistencies, and faulty reasoning (Flower, 1981). In such papers researchers should address questions such as these: What is the core issue or question here? Why is it important? What key concepts are imbedded in this topic and how are they related? What alternative methods can be used to answer the central question? What types of answers are desirable and feasible? (cf. Gowin, 1981a, pp. 86–107).

How to Begin

Researchers who wish to explore these techniques should choose several strategies that seem appropriate to their problem and then consult the cited references for further details on each strategy. Any strategy explored should be given at least several hours of the researcher's “best time”—a period when he or she is alert, relaxed, and free from distractions and interruptions. Not every strategy attempted will prove fruitful for a given person or problem.

Devoting time to expanding and ordering one's conceptual frame can seem like a frivolous diversion from more pressing tasks. Yet the potential payoffs are substantial. A single new insight can go a long way, particularly in specialties in which theoretical

Figure 2
A Concept Map of Gowin's Theory of Educating



Note. From *Educating* (p. 94) by D. B. Gowin, 1981, Ithaca, NY: Cornell University Press. Copyright 1981 by Cornell University Press. Reprinted by permission.

and methodological traditions are strong and in which most published contributions are variations on familiar themes. Properly developed, a fresh idea can have a lasting impact.

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